

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A934C 030061-1007 - Diesel Engine

Sample No: LH0244862

Oil Type: CONOCO PHILLIPS GUARDOL ECT 15W40



SAMPLE INFORMATION

Sample Number	LH0244862	LH0244637	LH0244662	LH0244654
Sample Date	03 Oct 2023	14 Aug 2023	16 Jun 2023	11 May 2023
Machine Hours	32729	29000	14552	31212
Oil Hours	300	300	300	250
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

NILES IRON & METAL CO. INC.

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NILES, OH

US 44446

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OIL CONDITION

Visc @ 100°C	cSt	12.4	13.4	12.6	12.7
Base Number (BN)	mg KOH/g	7.5	7.5	6.7	7.1
Oxidation (PA)	%	43	46	49	45

Diagnosis

No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. Fuel content negligible. 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

Soot %	%	0.9	1.1	0.2	1.2
Nitration (PA)	%	51	60	44	63
Sulfation (PA)	%	49	53	47	54
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	0.4	<1.0	<1.0	<1.0
Silicon	ppm	6	7	9	6
Sodium	ppm	2	1	0	2
Potassium	ppm	2	2	3	3



WEAR METALS

Iron	ppm	7	7	4	10
Copper	ppm	<1	<1	<1	<1
Lead	ppm	<1	0	0	2
Tin	ppm	<1	0	0	<1
Aluminum	ppm	<1	<1	2	2
Chromium	ppm	<1	<1	0	1
Molybdenum	ppm	31	11	31	13
Nickel	ppm	<1	0	0	0
Titanium	ppm	4	7	22	10
Silver	ppm	0	0	0	<1
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	0	0	0



ADDITIVES

Calcium	ppm	1466	1512	1998	1584
Magnesium	ppm	463	652	557	588
Zinc	ppm	1053	1238	1499	1256
Phosphorus	ppm	902	1044	1290	1036
Barium	ppm	3	0	0	0
Boron	ppm	35	67	89	61

Depot: NILNIL

Unique No: 10697425

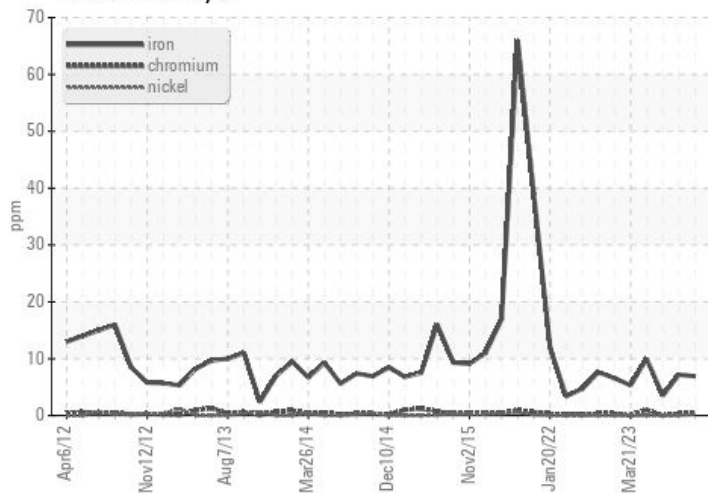
Signed: Wes Davis

Report Date: 18 Oct 2023

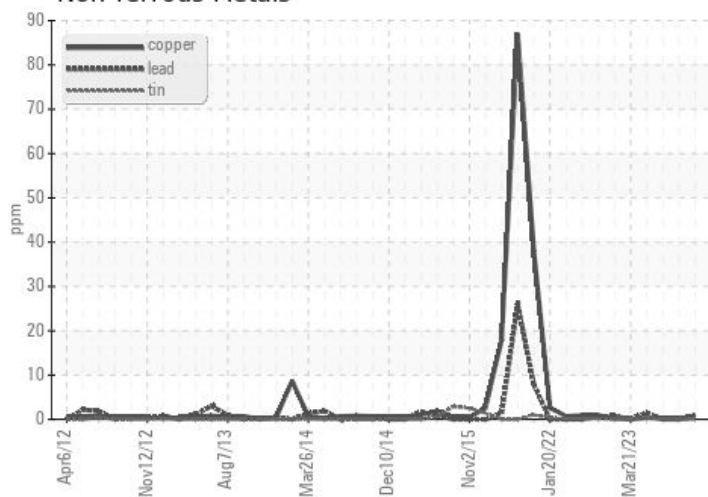


GRAPHS

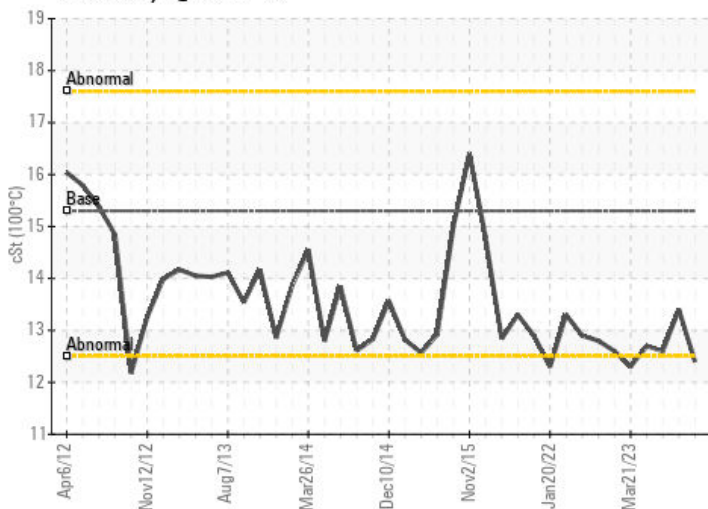
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

