

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR A934C 064064-1007 - Diesel Engine

Sample No: LH0258824

Oil Type: CHEVRON DELO LE 5W40



**AMERICAN STATE EQUIPMENT CO.**  
 2400 NORTH 14TH AVENUE  
 WAUSAU, WI  
 US 54401  
 Contact: CHRIS BARTNIK  
 cbartnik@amstate.com  
 T: (715)675-6900  
 F: (715)675-9748



#### SAMPLE INFORMATION

Sample Number	LH0258824	LH0272765	LH0243356	LH0254817
Sample Date	20 Feb 2024	21 Dec 2023	02 Oct 2023	23 Jun 2023
Machine Hours	26421	25949	25481	24973
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ATTENTION	ATTENTION	NORMAL	NORMAL



#### OIL CONDITION

Visc @ 100°C	cSt	11.6	10.3	12.8	13.4
Base Number (BN)	mg KOH/g	6.6	6.2	5.9	6.4
Oxidation (PA)	%	61	61	63	67



#### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	1.3	1.1	2.5	2.2
Nitration (PA)	%	68	59	78	83
Sulfation (PA)	%	65	67	73	73
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	0.5	<1.0	<1.0
Silicon	ppm	10	6	7	7
Sodium	ppm	3	0	3	5
Potassium	ppm	2	4	4	4



#### WEAR METALS

Iron	ppm	18	15	21	23
Copper	ppm	1	3	1	2
Lead	ppm	<1	<1	<1	<1
Tin	ppm	0	<1	0	<1
Aluminum	ppm	1	1	2	0
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	2	3	7	18
Nickel	ppm	0	0	<1	0
Titanium	ppm	59	45	58	52
Silver	ppm	0	0	0	0
Manganese	ppm	<1	0	<1	<1
Vanadium	ppm	<1	<1	<1	<1



#### ADDITIVES

Calcium	ppm	1569	1561	1431	1419
Magnesium	ppm	474	320	578	681
Zinc	ppm	1131	982	1181	1181
Phosphorus	ppm	944	916	914	923
Barium	ppm	0	10	0	0
Boron	ppm	65	58	33	39

#### Diagnosis

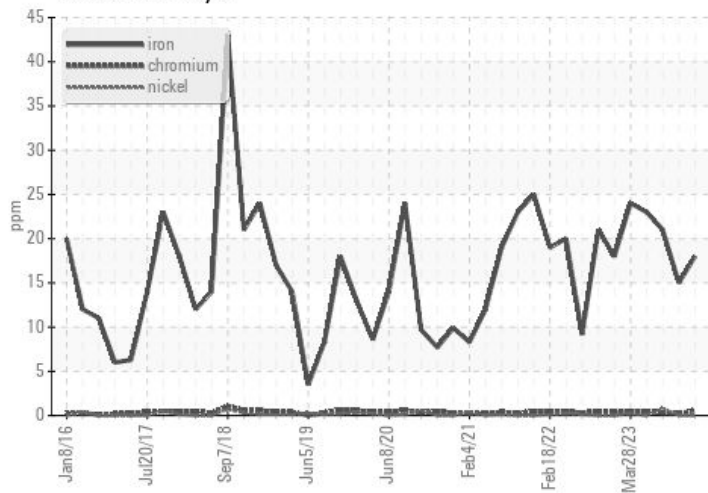
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Depot: LEC0008  
 Unique No: 10901836  
 Signed: Don Baldrige  
 Report Date: 01 Mar 2024

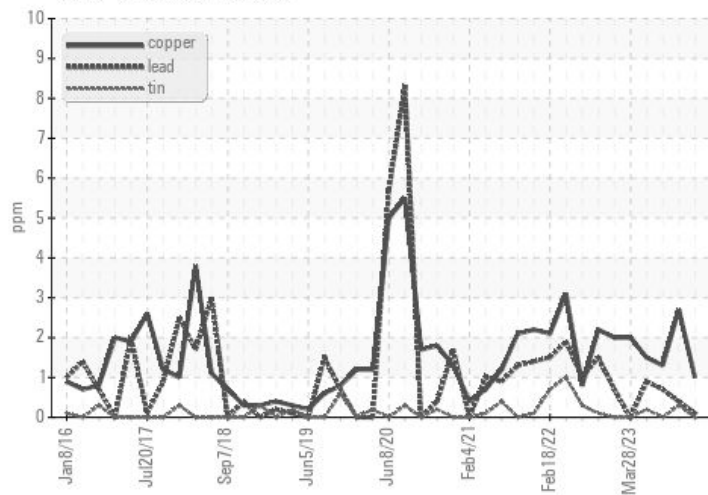


### GRAPHS

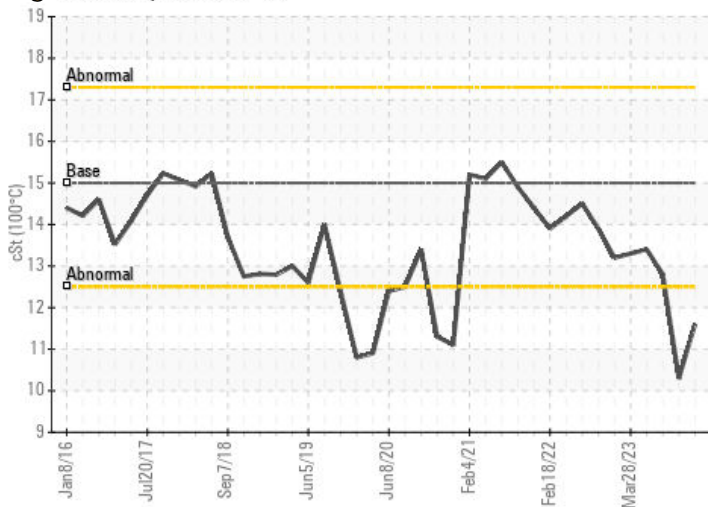
#### Ferrous Alloys



#### Non-ferrous Metals



#### Viscosity @ 100°C



#### Base Number

