

OIL ANALYSIS REPORT

Sample Rating Trend

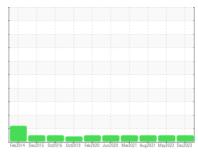




LIEBHERR Machine Id LIEBHERR A934CHD 060316-1419

Component
Front Right Wheel Hub

GEAR OIL SAE 80W90 (--- GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the fluid.

Fluid Condition

The condition of the fluid is acceptable for the time in service.

		Feb2014 Dec2	015 Oct2016 Oct2019 Feb2	020 Jun2020 Mar2021 Aug2021 May	2022 100:2023	
SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		DJJ0011208	DJJ0010978	DJJ0000795
Sample Date		Client Info		04 Dec 2023	16 May 2022	03 Aug 2021
Machine Age	hrs	Client Info		16052	14961	14100
Oil Age	hrs	Client Info		0	1000	1000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>450	44	52	48
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>15	<1	<1	<1
Lead	ppm	ASTM D5185m	>4	0	0	0
Copper	ppm	ASTM D5185m	>75	4	4	5
Tin	ppm	ASTM D5185m		0	<1	0
Antimony	ppm	ASTM D5185m	>4			0
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	400	9	38	17
Barium	ppm	ASTM D5185m	200	0	0	0
Molybdenum	ppm	ASTM D5185m	12	2	5	3
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m	12	16	30	11
Calcium	ppm	ASTM D5185m	150	101	282	25
Phosphorus	ppm	ASTM D5185m	1650	357	557	327
Zinc	ppm	ASTM D5185m	125	39	134	11
Sulfur	ppm	ASTM D5185m	22500	15986	17854	13842
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>60	8	3	2
Sodium	ppm	ASTM D5185m	>170	0	<1	<1
Potassium	ppm	ASTM D5185m	>20	1	1	18
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML

NORML

>0.2

NORML

NEG

NEG

NORML

NEG

scalar *Visual

scalar *Visual

scalar

*Visual

Odor

Emulsified Water

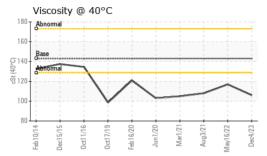
NORML

NEG

RYANEGWDEN - MEEGONNC



OIL ANALYSIS REPORT



FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	143	106	117	108
SAMPLE IMAG	iES	method	limit/base	current	history1	history2
Color				no image	no image	no image
Bottom				no image	no image	no image
GRAPHS						

GRAPHS	
Iron (ppm)	Lead (ppm)
800 Severe	8 Severe
E Abnormal	6 - Abnormal
Abnormal Abnormal	4 - Abnormal
200	2
Feb 10/14 T- Cot 11/16 - Cot 11/16 - Cot 11/19 - Feb 16/20 - Marl/21 - Aug 3/21 - Cot 4/23 - Cot 4/23 - Cot 5/23 - Cot 6/23 - Cot 6/	Feb10/14 FO Dec15/15 - Oct17/19 - Oct17/19 - Jun1/20 - Jun1/20 - May 3/21 - Dec4/23 -
Aluminum (ppm)	Chromium (ppm)
25 - Severe	10 8 - Severe
20 E 15 - Abnormal	E 6
E 15 - Abnormal	Abnormal
5	2
Feb 10/14 C Dec 15/15 - Oct 17/19 Dec 15/15 - Aug 3/21 - Aug 3/21 - Dec 4/23 - Dec 4/23	Feb10/14 To Dect 15/15 - Oct 17/19 - Feb 16/20 - Jun 1/20 - Mart 1/21 - Aug 3/21 - Dec4/23 Leb 16/23 - Dec4/23
_	
Copper (ppm) 140 _T Severe	Silicon (ppm) 120 Severe
120	100 + 7
80 Abnormal	E 60 Abnormal
40	40
20	
Feb10/14 Dec15/15. Oct17/19 Jun1/20 Jun1/20 Aug3/21 Dec4/23	Feb10/14 Dec15/15 Oct17/19 Oct17/19 Jun1/20 Marl/21: May16/22 Dec4/23
Viscosity @ 40°C	Additives
180 T Abnormal	2500 - calcium 2000 - hosphous
D-no.	1EOO
0140 Abroma 8 120	E 1000
100	500-
715 716 717 718	714
Feb10/14 Dec15/15. Oct17/19 Teb16/20 Jun1/20 Aug3/21 May16/22 Dec4/23	Feb10/14 Dec15/15 Dec15/15 Oct17/19 Cot17/19 Aug3/21 May16/22 Dec4/23





Certificate L2367

Laboratory Sample No. Lab Number

: 06029794 Unique Number : 10779585

: DJJ0011208

Test Package : MOBCE

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 08 Dec 2023 Received

Diagnosed : 12 Dec 2023 Diagnostician : Don Baldridge

METAL RECYCLING SERVICES - MONROE P.O. BOX 812 MONROE, NC

US 28111 Contact: RYAN BOWDEN

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: (704)238-0755