



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
TPR-Houston Port
 Machine Id
513177 LIEBHERR 118831
 Component
Front Axle
 Fluid
LIEBHERR GEAR BASIC 90 LS (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0023421	DJJ0018804	DJJ0018859
Sample Date		Client Info		01 Apr 2024	22 Jan 2024	22 Feb 2023
Machine Age	hrs	Client Info		10682	10024	8372
Oil Age	hrs	Client Info		500	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changed	N/A	Changed
Filter Changed		Client Info		Not Changed	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>500	13	5	7
Chromium	ppm	ASTM D5185m	>10	<1	0	0
Nickel	ppm	ASTM D5185m	>10	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	<1	<1
Lead	ppm	ASTM D5185m	>25	1	0	0
Copper	ppm	ASTM D5185m	>50	2	3	5
Tin	ppm	ASTM D5185m	>10	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

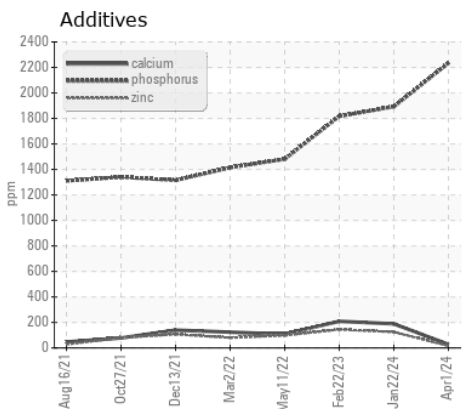
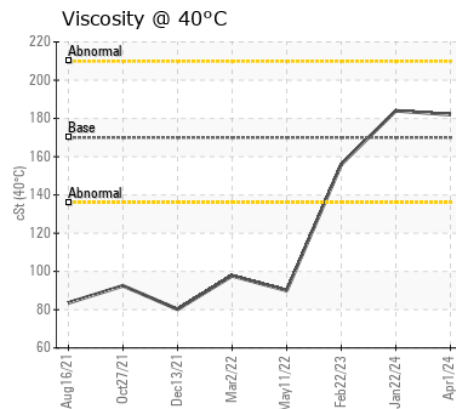
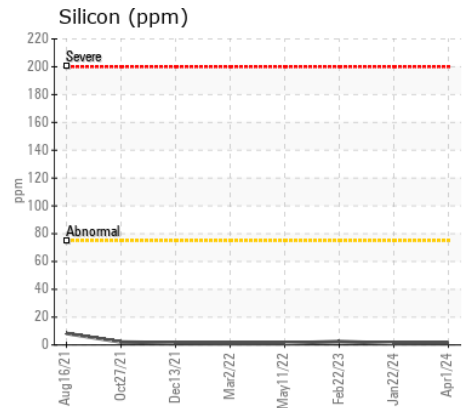
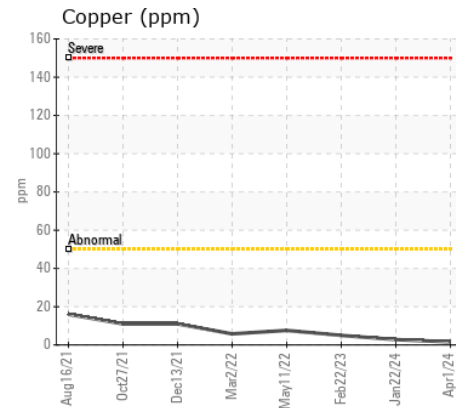
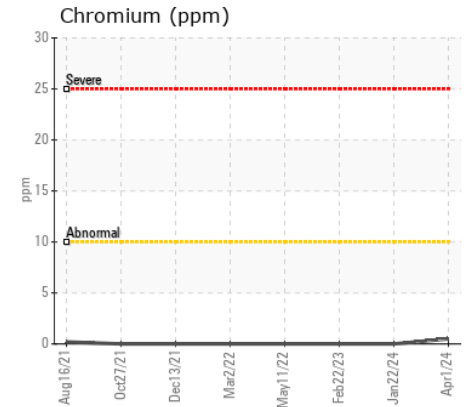
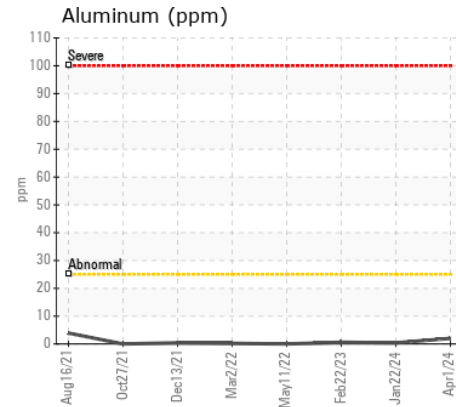
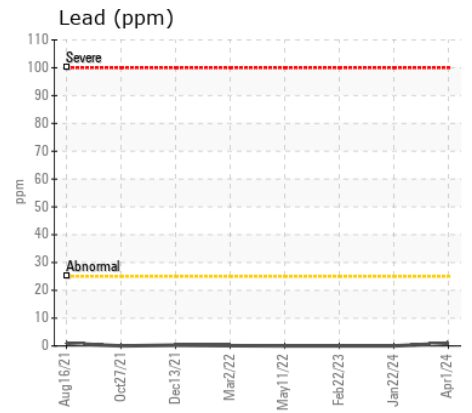
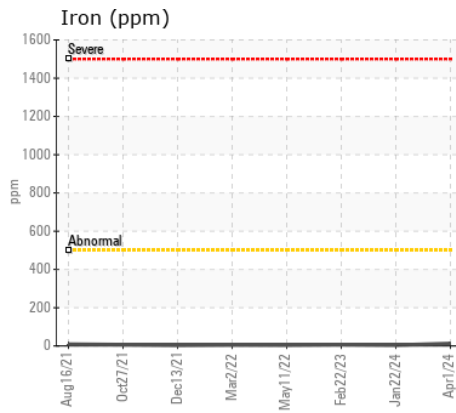
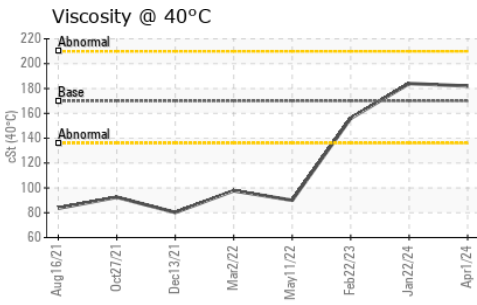
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>75	2	1	2
Potassium	ppm	ASTM D5185m	>20	1	<1	0
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		0	1	<1
Boron	ppm	ASTM D5185m	0	10	57	95
Barium	ppm	ASTM D5185m	0	2	0	0
Molybdenum	ppm	ASTM D5185m	0	13	14	17
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	<1	8	81	86
Calcium	ppm	ASTM D5185m	<1	28	189	209
Phosphorus	ppm	ASTM D5185m	2143	2234	1893	1817
Zinc	ppm	ASTM D5185m	<1	16	125	145
Sulfur	ppm	ASTM D5185m	23468	29778	21403	25023
Visc @ 40°C	cSt	ASTM D445	170	182	184	156



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0023421
Lab Number : 06153525
Unique Number : 10983603
Test Package : MOBCE

Received : 18 Apr 2024
Tested : 19 Apr 2024
Diagnosed : 22 Apr 2024 - Sean Felton

TEXAS PORT RECYCLING - HOUSTON PORT
 8945 MANCHESTER ST
 HOUSTON, TX
 US 77012
 Contact: Dale Shaw
 dale.shaw@tmrecycling.com

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)

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