



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
AMR-Manchester
Machine Id
646242 144845
Component
Hydraulic System
Fluid
LIEBHERR HYDRAULIC HVI (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0024832	DJJ0013974	DJJ0003563
Sample Date		Client Info		12 Jul 2024	26 Mar 2024	09 Oct 2023
Machine Age	hrs	Client Info		2131	1529	991
Oil Age	hrs	Client Info		0	0	991
Filter Age	hrs	Client Info		2131	0	500
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				NORMAL	ATTENTION	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	10	10	8
Chromium	ppm	ASTM D5185m	>10	<1	1	<1
Nickel	ppm	ASTM D5185m	>10	0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>10	<1	1	<1
Lead	ppm	ASTM D5185m	>10	<1	2	0
Copper	ppm	ASTM D5185m	>75	8	7	3
Tin	ppm	ASTM D5185m	>10	0	1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

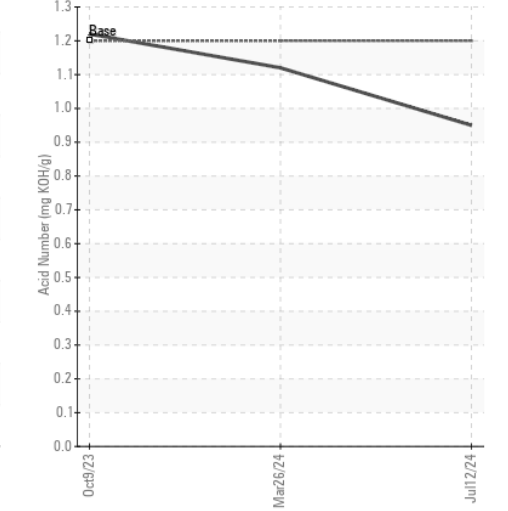
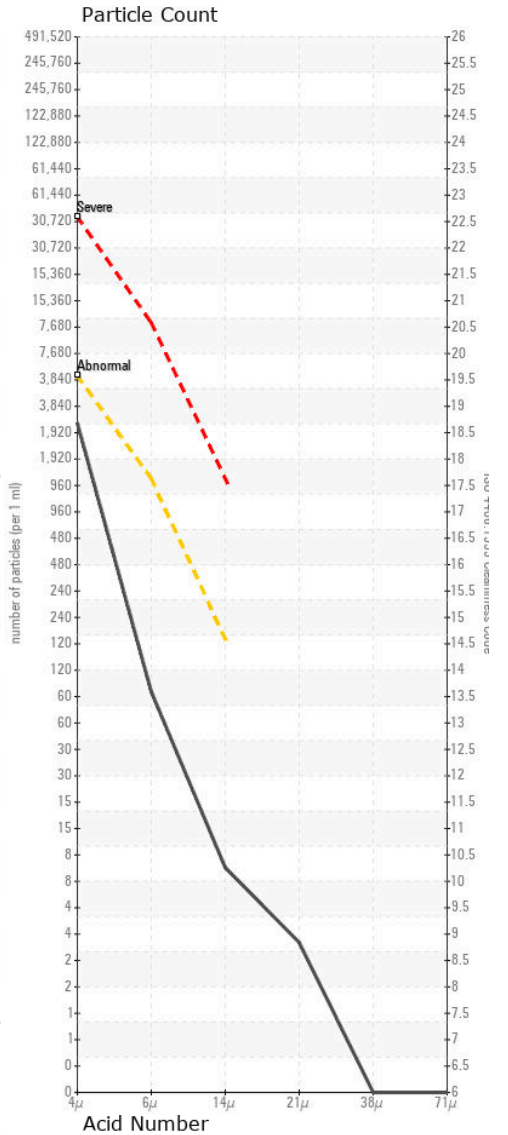
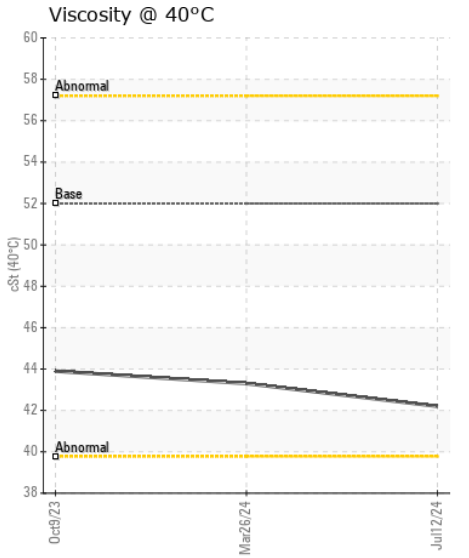
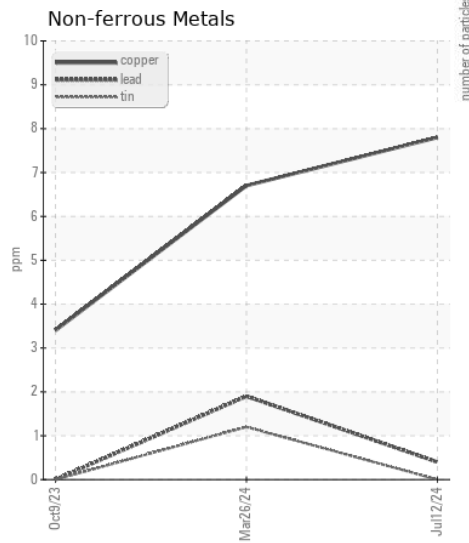
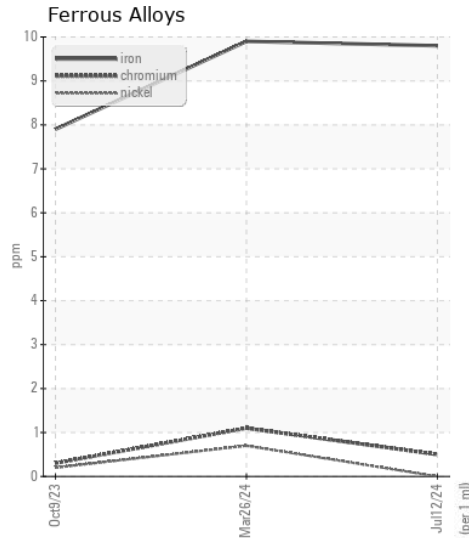
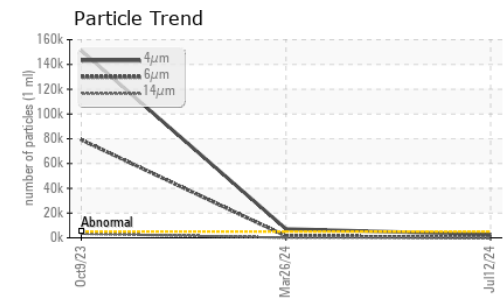
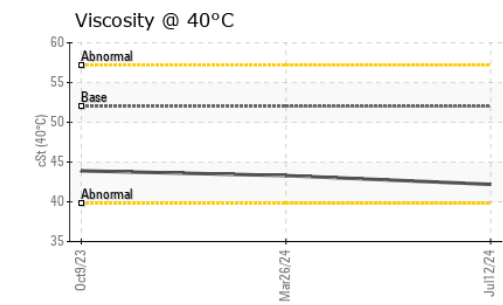
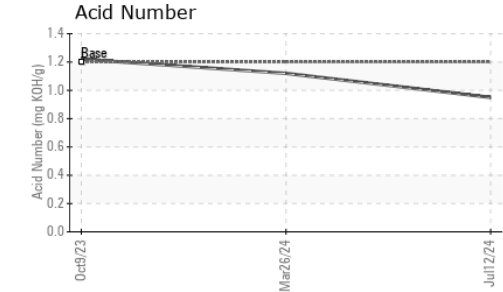
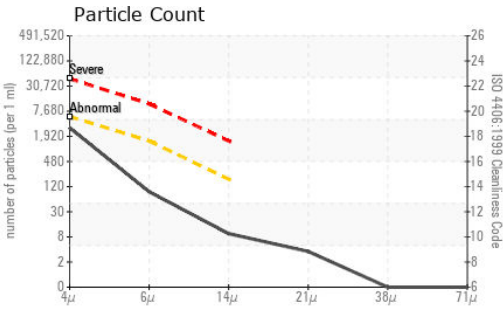
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185m	>20	4	4	4
Potassium	ppm	ASTM D5185m	>20	<1	2	1
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	2697	7234	151229
Particles >6µm		ASTM D7647	>1300	80	1453	79153
Particles >14µm		ASTM D7647	>160	8	73	3313
Particles >21µm		ASTM D7647	>40	3	12	562
Particles >38µm		ASTM D7647	>10	0	0	23
Particles >71µm		ASTM D7647	>3	0	0	1
Oil Cleanliness		ISO 4406 (c)	>19/17/14	19/13/10	20/18/13	24/23/19
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	>0.1	NEG	NEG	NEG

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		3	0	2
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		0	1	0
Manganese	ppm	ASTM D5185m		<1	1	<1
Magnesium	ppm	ASTM D5185m	7	5	3	0
Calcium	ppm	ASTM D5185m	1500	1140	1137	1280
Phosphorus	ppm	ASTM D5185m	750	606	607	545
Zinc	ppm	ASTM D5185m	820	658	622	704
Sulfur	ppm	ASTM D5185m	4000	4337	3822	4031
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	0.95	1.12	1.22
Visc @ 40°C	cSt	ASTM D445	52	42.2	43.3	43.9



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0024832
Lab Number : 06238353
Unique Number : 11127187
Test Package : CONST

Received : 16 Jul 2024
Tested : 17 Jul 2024
Diagnosed : 17 Jul 2024 - Wes Davis

ADVANTAGE METALS RECYCLING - MANCHESTER
 3005 MANCHESTER TRAFFICWAY
 KANSAS CITY, MO
 US 64129
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 F: (816)861-7670

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)