



LIEBHERR

OIL ANALYSIS REPORT



Machine Id
LIEBHERR LH26M 124532-1252

Component
Hydraulic System

Fluid
PETRO CANADA HYDREX AW 46 (200 LTR)

WEAR	SEVERE
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

RECOMMENDATION

Resample at the next service interval to monitor. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF).

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0181018	LH0226604	LH0181005
Sample Date		Client Info		08 Sep 2023	09 Jun 2023	10 Jan 2023
Machine Age	hrs	Client Info		4078	3671	3035
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changed	Not Changed	Not Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				SEVERE	SEVERE	ABNORMAL

WEAR

Iron ppm levels are severe. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

PQ	UOM	Method	Limit/Abn	Current	History1	History2
Iron	ppm	ASTM D5185(m)	>60	▲ 158	▲ 123	▲ 106
Chromium	ppm	ASTM D5185(m)	>40	2	1	1
Nickel	ppm	ASTM D5185(m)	>10	0	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>5	1	1	<1
Lead	ppm	ASTM D5185(m)	>5	2	2	2
Copper	ppm	ASTM D5185(m)	>15	6	6	6
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Vanadium	ppm	ASTM D5185(m)		<1	0	<1
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.

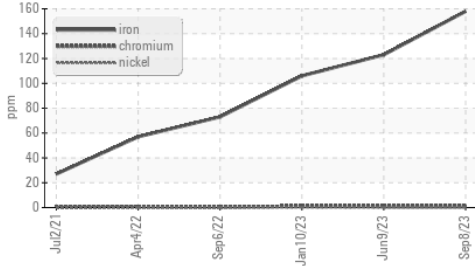
Silicon	ppm	ASTM D5185(m)	>15	3	3	3
Potassium	ppm	ASTM D5185(m)	>20	1	<1	1
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	904	409	▲ 57305
Particles >6µm		ASTM D7647	>5000	47	95	188
Particles >14µm		ASTM D7647	>640	5	10	8
Particles >21µm		ASTM D7647	>160	2	3	3
Particles >38µm		ASTM D7647	>40	1	1	0
Particles >71µm		ASTM D7647	>10	1	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	17/13/10	16/14/10	▲ 23/15/10
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
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	NEG

FLUID CONDITION

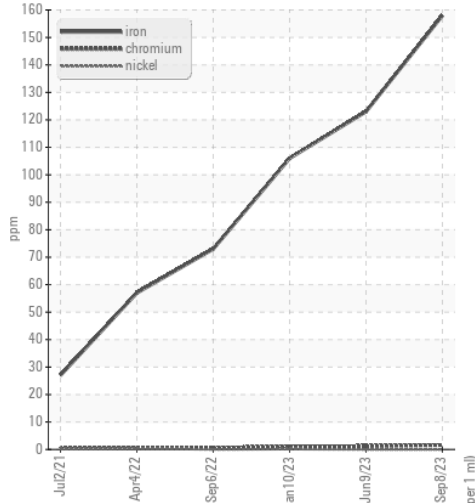
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185(m)		2	2	2
Boron	ppm	ASTM D5185(m)	0	<1	<1	<1
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	2	2	2
Magnesium	ppm	ASTM D5185(m)	0	3	3	4
Calcium	ppm	ASTM D5185(m)	50	592	622	792
Phosphorus	ppm	ASTM D5185(m)	330	521	528	582
Zinc	ppm	ASTM D5185(m)	430	613	622	650
Sulfur	ppm	ASTM D5185(m)	760	2104	2446	2547
Acid Number (AN)	mg KOH/g	ASTM D974*	0.70	0.79	---	0.91
Visc @ 40°C	cSt	ASTM D7279(m)	46.4	42.3	42.3	42.3

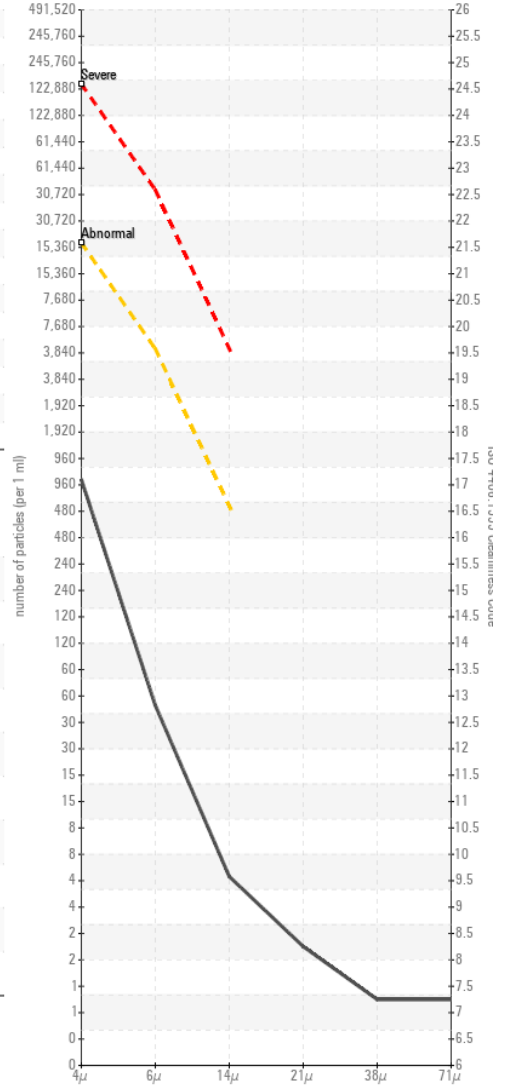
▲ Ferrous Alloys



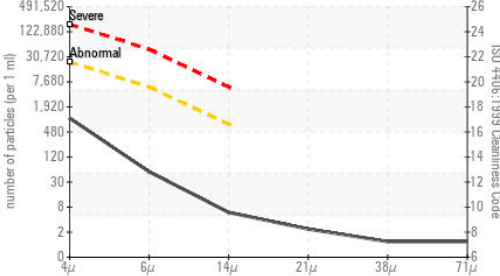
▲ Ferrous Alloys



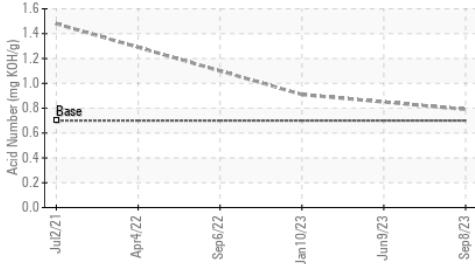
Particle Count



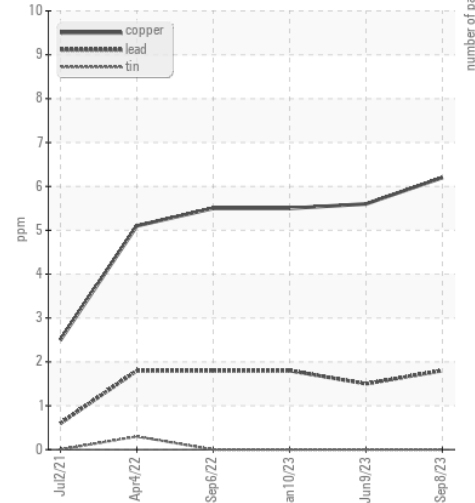
Particle Count



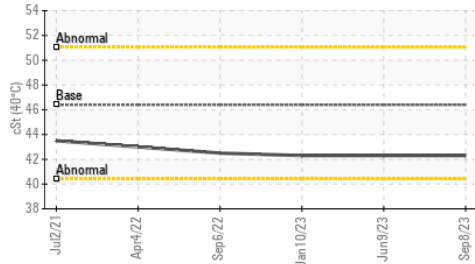
Acid Number



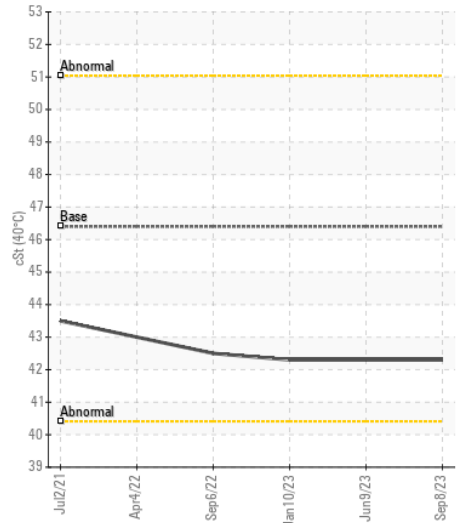
Non-ferrous Metals



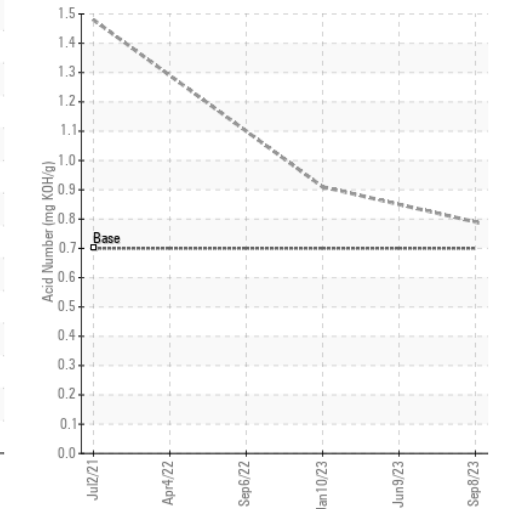
Viscosity @ 40°C



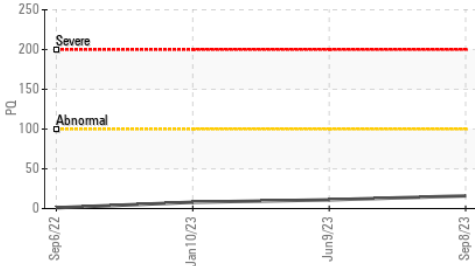
Viscosity @ 40°C



Acid Number



PQ



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0181018 **Received** : 20 Sep 2023
Lab Number : 02583985 **Tested** : 22 Sep 2023
Unique Number : 5645050 **Diagnosed** : 22 Sep 2023 - Bill Quesnel
Test Package : MOBCE (Additional Tests: PQ)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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