



LIEBHERR

OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ABNORMAL

SEVERE

NORMAL



Area
[593756]
Machine Id
LIEBHERR HS8100 184996

Component
Left Track Drive

Fluid
PETRO CANADA TRAXON 75W90 SYNTHETIC (--- GAL)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0284980	LH0261249	LH0239658
Sample Date		Client Info		26 Jan 2024	04 May 2023	29 Jul 2022
Machine Age	hrs	Client Info		12043	10190	8773
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	N/A
Filter Changed		Client Info		None	None	None
Sample Status				SEVERE	SEVERE	SEVERE

WEAR

Nickel ppm levels are abnormal. Aluminum and iron ppm levels are noted.

Iron	ppm	ASTM D5185(m)	>1000	808	372	460
Chromium	ppm	ASTM D5185(m)	>30	8	4	5
Nickel	ppm	ASTM D5185(m)	>7	11	3	2
Titanium	ppm	ASTM D5185(m)		7	6	6
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>25	143	93	90
Lead	ppm	ASTM D5185(m)	>50	1	1	2
Copper	ppm	ASTM D5185(m)	>100	47	48	70
Tin	ppm	ASTM D5185(m)	>5	2	3	5
Vanadium	ppm	ASTM D5185(m)		<1	<1	<1
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

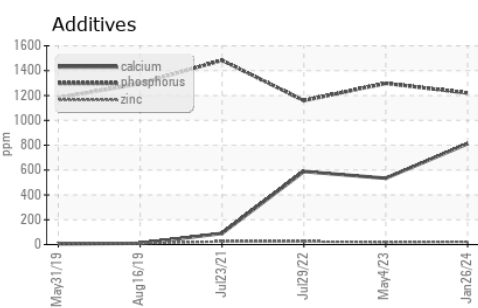
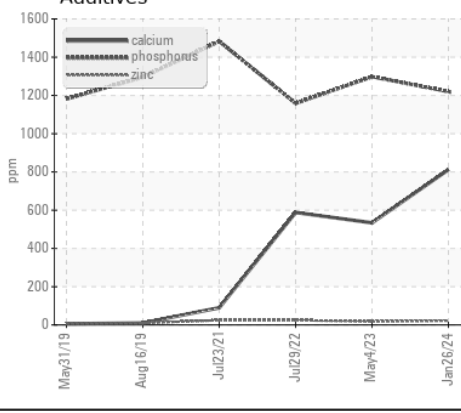
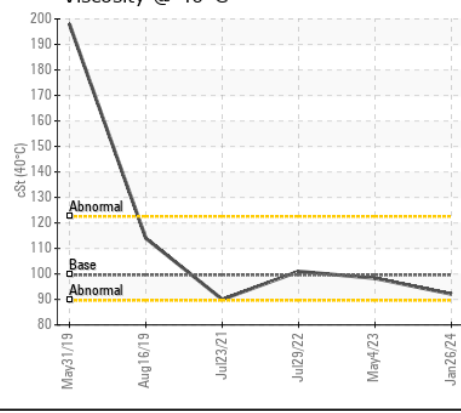
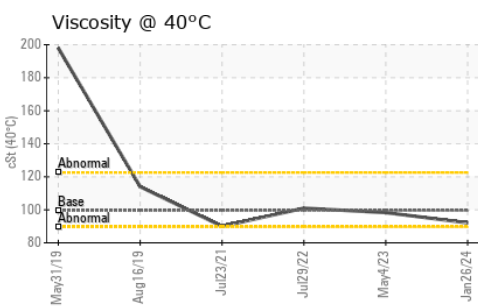
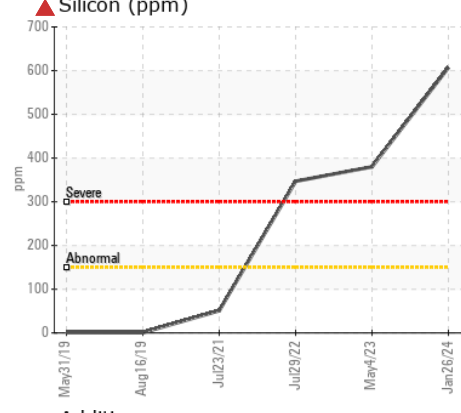
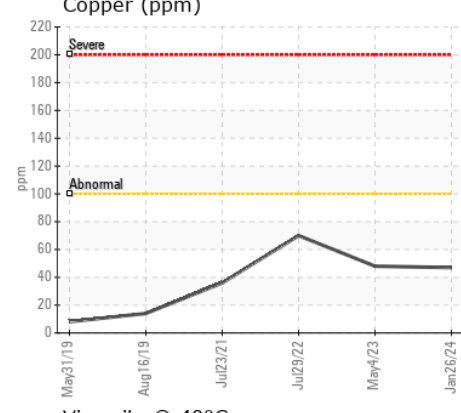
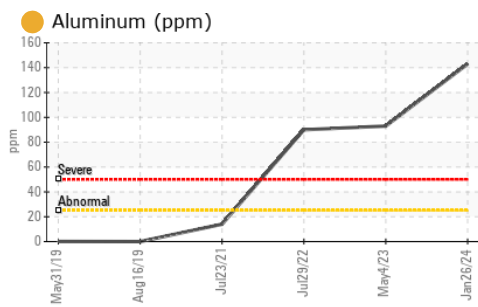
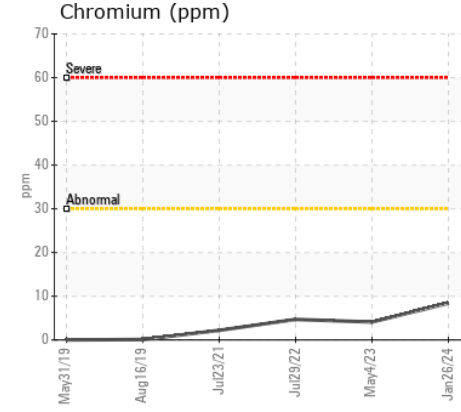
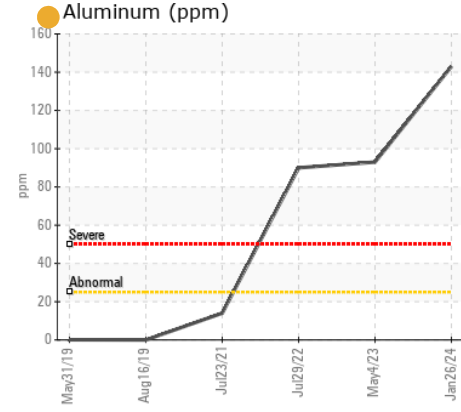
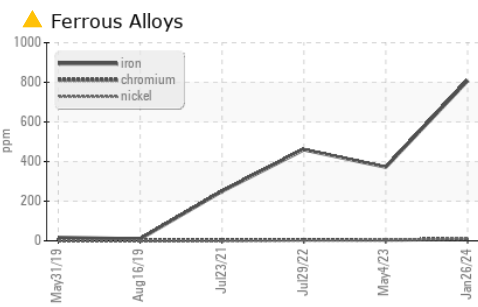
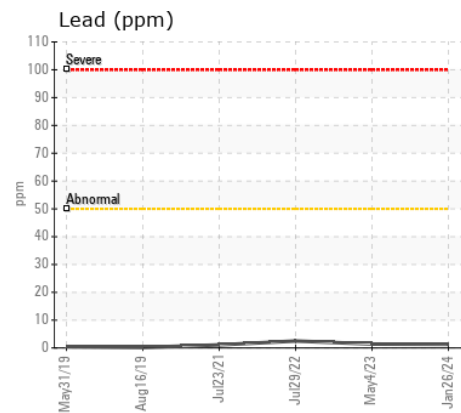
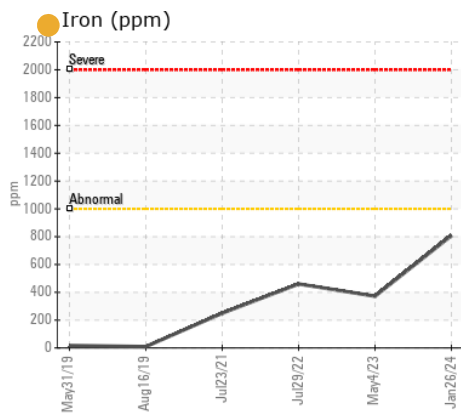
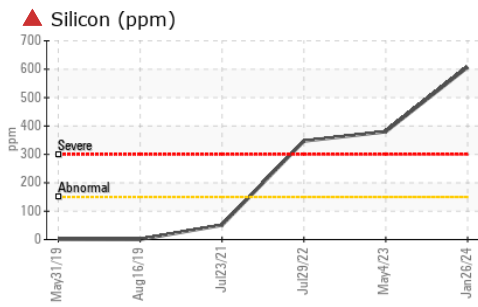
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

Silicon	ppm	ASTM D5185(m)	>150	607	380	347
Potassium	ppm	ASTM D5185(m)	>20	53	35	33
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	LIGHT	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*	>0.2	NEG	NEG	NEG

FLUID CONDITION

Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		37	22	25
Boron	ppm	ASTM D5185(m)	328	246	215	147
Barium	ppm	ASTM D5185(m)	1	<1	<1	1
Molybdenum	ppm	ASTM D5185(m)		<1	<1	<1
Manganese	ppm	ASTM D5185(m)		10	5	6
Magnesium	ppm	ASTM D5185(m)	1	98	60	53
Calcium	ppm	ASTM D5185(m)	7	812	534	588
Phosphorus	ppm	ASTM D5185(m)	1145	1220	1298	1159
Zinc	ppm	ASTM D5185(m)	3	22	18	25
Sulfur	ppm	ASTM D5185(m)	17909	20632	20990	20611
Visc @ 40°C	cSt	ASTM D7279(m)	99.6	92.1	98.3	101



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0284980
Lab Number : 02619990
Unique Number : 5737100
Test Package : MOB 1
Received : 05 Mar 2024
Tested : 05 Mar 2024
Diagnosed : 06 Mar 2024 - Kevin Marson

HIGGS & HIGGS
 RR # 4
 ST THOMAS, ON
 CA N5P 3S8
 Contact: Bernie Higgs

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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