

Machine Id LIEBHERR LR-1400 CR-4406 (S/N 000035-073) Component Pump Drive Fluid GEAR OIL ISO 220 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

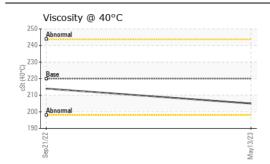
There is no indication of any contamination in the oil. Sample is layered with different type/density oil.

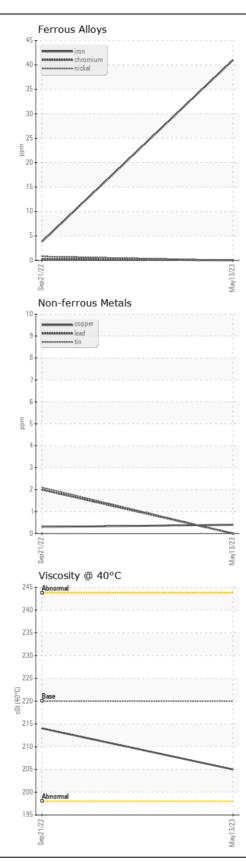
FLUID CONDITION

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0751835	WC0704537	
Sample Date		Client Info		13 May 2023	21 Sep 2022	
Machine Age	hrs	Client Info		29087	28425	
Oil Age	hrs	Client Info		1000	500	
Filter Age	hrs	Client Info		1000	0	
Oil Changed		Client Info		Changed	Not Changd	
Filter Changed		Client Info		Changed	Not Changd	
Sample Status				ATTENTION	NORMAL	
Iron		ASTM D5185m	>500	41	4	
Chromium	ppm ppm	ASTM D5185m	>15	0	<1	
Nickel		ASTM D5185m	>10	0	<1	
Titanium	ppm ppm	ASTM D5185m	>10	0	<1	
Silver	ppm	ASTM D5185m		0	0	
Aluminum	ppm	ASTM D5185m	>20	0 <1	2	
Lead	ppm	ASTM D5185m	220	0	2	
Copper	ppm	ASTM D5185m	>35	<1	<1	
Tin	ppm	ASTM D5185m	>35	0	2	
Vanadium	ppm	ASTM D5185m	~	0	<1	
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
1 cilow Metal	Jouran	Vioudi	NONE	HOME	NONE	
Silicon	ppm	ASTM D5185m	>75	7	2	
Silicon Potassium	ppm ppm	ASTM D5185m ASTM D5185m	>75 >20	7 1	2 10	
Potassium	ppm	ASTM D5185m	>20	1	10	
Potassium Water	ppm %	ASTM D5185m ASTM D6304	>20 >0.2	1 NEG	10 NEG	
Potassium Water Silt	ppm % scalar	ASTM D5185m ASTM D6304 *Visual	>20 >0.2 NONE	1 NEG NONE	10 NEG NONE	
Potassium Water Silt Debris	ppm % scalar scalar	ASTM D5185m ASTM D6304 *Visual *Visual	>20 >0.2 NONE NONE	1 NEG NONE NONE	10 NEG NONE NONE	
Potassium Water Silt Debris Sand/Dirt	ppm % scalar scalar scalar	ASTM D5185m ASTM D6304 *Visual *Visual *Visual	>20 >0.2 NONE NONE NONE	1 NEG NONE NONE NONE	10 NEG NONE NONE NONE	
Potassium Water Silt Debris Sand/Dirt Appearance	ppm % scalar scalar scalar scalar	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual	>20 >0.2 NONE NONE NONE	1 NEG NONE NONE NONE	10 NEG NONE NONE NONE NORML	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm % scalar scalar scalar scalar scalar	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.2 NONE NONE NORML NORML	1 NEG NONE NONE SOLID NORML NEG	10 NEG NONE NONE NORML NORML NEG	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm % scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >0.2 NONE NONE NORML NORML >0.2	1 NEG NONE NONE SOLID NORML NEG	10 NEG NONE NONE NORML NORML NEG 2	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm % scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	 >20 >0.2 NONE NORML >0.2 50 	1 NEG NONE NONE SOLID NORML NEG 2 24	10 NEG NONE NONE NORML NORML NEG 2 18	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm % scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	 >20 >0.2 NONE NORML NORML >0.2 50 15 	1 NEG NONE NONE SOLID NORML NEG 2 24 0	10 NEG NONE NONE NORML NORML NEG 2 18 0	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm % scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	 >20 >0.2 NONE NORML >0.2 50 	1 NEG NONE NONE SOLID NORML NEG 2 24	10 NEG NONE NONE NORML NORML NEG 2 18 0 <1	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm % scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	 >20 >0.2 NONE NORML NORML >0.2 50 15 	1 NEG NONE NONE SOLID NORML NEG 2 24 0 0 0 <1	10 NEG NONE NONE NORML NORML NEG 2 18 0	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm % scalar scalar scalar scalar scalar ppm ppm ppm ppm	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	 >20 >0.2 NONE NORME NORML >0.2 50 15 15 	1 NEG NONE NONE SOLID NORML NEG 2 24 0 0	10 NEG NONE NONE NORML NORML NEG 2 18 0 <1 <1	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium Calcium	ppm % scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	 >20 >0.2 NONE NONE NORML NORML >0.2 50 15 15 50 50 50 	1 NEG NONE NONE SOLID NORML 22 24 0 24 0 0 <1 0 17	10 NEG NONE NONE NORML NORML NEG 2 18 0 <1 <1 <1 6 6	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium	ppm % scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	 >20 >0.2 NONE NORM NORML >0.2 50 15 15 50 	1 NEG NONE NONE SOLID NORML NEG 2 24 0 0 0 <1 0	10 NEG NONE NONE NORML NORML NEG 2 18 0 <1 <1 <1 6	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm % scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	 >20 >0.2 NONE NORML NORML >0.2 50 15 15 50 50 50 350 100 	1 NEG NONE NONE SOLID NORML NEG 2 24 0 24 0 (17 550 7	10 NEG NONE NONE NORML NORML NEG 2 18 0 <1 <1 6 6 6 970 4	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Barium Malybdenum Manganese Magnesium Calcium	ppm % scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	 >20 >0.2 NONE NORML >0.2 50 15 15 50 50 50 350 	1 NEG NONE NONE SOLID SOLID NEG 2 24 0 24 0 (0 <1 0 17 550	10 NEG NONE NONE NORML NORML NEG 2 18 0 <1 <1 6 6 6 970	

Contact/Location: MICHAEL LAWSON - BUCGRA





: WearCheck USA - 501 Madison Ave., Cary, NC 27513 **BUCKNER HEAVY LIFT** Laboratory Sample No. : WC0751835 Received : 16 May 2023 4732 NC 54 EAST Lab Number : 05848899 Tested : 19 May 2023 GRAHAM, NC Unique Number : 10473006 Diagnosed : 19 May 2023 - Jonathan Hester US 27253-9215 Test Package : CONST (Additional Tests: KF) Contact: MICHAEL LAWSON Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. michaell@bucknercompanies.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (336)376-8888 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (336)376-4090

Contact/Location: MICHAEL LAWSON - BUCGRA Page 2 of 2