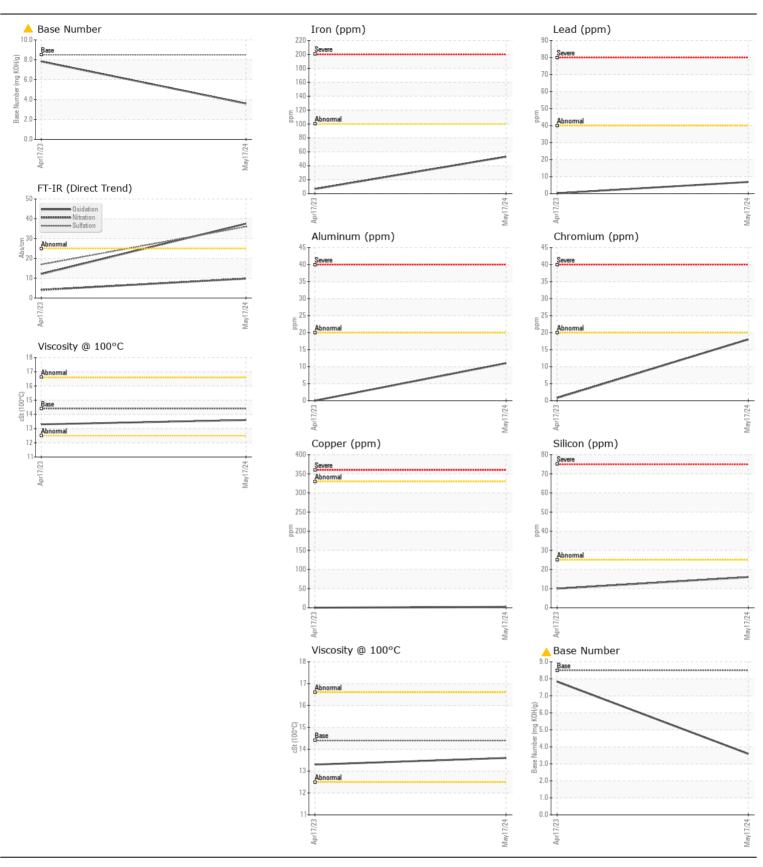


WEAR CONTAMINATION **FLUID CONDITION**

NORMAL NORMAL ABNORMAL

SHUTTLELIFT 5540F CD1538 (S/N 321538) Component Diesel Engine

Sample Number Sample Date Machine Age Oil Age Filter Age Oil Changed Filter Changed	hrs hrs	Client Info		Current HPL0005095	History1 HPL0002344	History2
Machine Age Oil Age Filter Age Oil Changed						
Oil Age Filter Age Oil Changed		Olivert		17 May 2024	17 Apr 2023	
Filter Age Oil Changed	hrs	Client Info		3149	2696	
Oil Changed		Client Info		0	582	
	hrs	Client Info		0	582	
Filter Changed		Client Info		N/A	Changed	
		Client Info		N/A	Changed	
Sample Status				ABNORMAL	NORMAL	
Iron	ppm	ASTM D5185m	>100	53	6	
Chromium		ASTM D5185m	>20	18	<1	
Nickel		ASTM D5185m	>4	<1	0	
Titanium	ppm	ASTM D5185m		2	0	
Silver	ppm	ASTM D5185m	>3	<1	0	
Aluminum	ppm			11	0	
Lead	ppm			7	<1	
Copper	ppm	ASTM D5185m	>330	2	<1	
Tin	ppm	ASTM D5185m	>15	2	0	
Vanadium	ppm	ASTM D5185m		<1	0	
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Silicon	nnm	ASTM D5185m	>25	16	10	
	ppiii					
			7 0.2			
	%		>3			
Nitration	Abs/cm	*ASTM D7624	>20	9.8	4.1	
Sulfation	Abs/.1mm	*ASTM D7415	>30	36.0	16.9	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Sodium	mag	ASTM D5185m		2	<1	
Boron			250	38	525	
Barium				0	0	
Molybdenum	ppm	ASTM D5185m	100	522	90	
Manganese	ppm	ASTM D5185m		1	<1	
Magnesium	ppm		450	908	350	
Calcium	ppm			2411	1357	
Phosphorus	ppm	ASTM D5185m	1150	995	996	
Zinc	ppm	ASTM D5185m	1350	1216	1192	
Sulfur	ppm	ASTM D5185m	4250	8340	3567	
Oxidation	Abs/.1mm	*ASTM D7414	>25	37.5	12.1	
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	4 3.59	7.83	
	Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal Yellow Metal Silicon Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Oxidation	Chromium ppm Nickel ppm Titanium ppm Silver ppm Aluminum ppm Lead ppm Copper ppm Tin ppm Vanadium ppm White Metal scalar Yellow Metal scalar Silicon ppm Potassium ppm Fuel Water Glycol Soot % % Nitration Abs/cm Sulfation Abs/.1mm Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water Sodium ppm Boron ppm Barium ppm Molybdenum ppm Manganese ppm Magnesium ppm Calcium ppm Calcium ppm Phosphorus ppm Sulfur ppm	Chromium ppm ASTM D5185m Nickel ppm ASTM D5185m Titanium ppm ASTM D5185m Silver ppm ASTM D5185m Aluminum ppm ASTM D5185m Lead ppm ASTM D5185m Copper ppm ASTM D5185m Tin ppm ASTM D5185m Vanadium ppm ASTM D5185m White Metal scalar *Visual Yellow Metal scalar *Visual Silicon ppm ASTM D5185m Potassium ppm ASTM D5185m Fuel WC Method Water WC Method Glycol WC Method Soot % *ASTM D7624 Sulfation Abs/cm *ASTM D7624 Sulfation Abs/cm *ASTM D7415 Silt scalar *Visual Debris scalar *Visual Debris scalar *Visual Sand/Dirt scalar *Visual Appearance scalar *Visual Emulsified Water scalar *Visual Sodium ppm ASTM D5185m Barium ppm ASTM D5185m Barium ppm ASTM D5185m Molybdenum ppm ASTM D5185m Manganese ppm ASTM D5185m Manganese ppm ASTM D5185m Manganese ppm ASTM D5185m Calcium Abs/.1mm *ASTM D7144 Calcium Abs/.1mm	Chromium ppm ASTM D5185m >20 Nickel ppm ASTM D5185m >4 Titanium ppm ASTM D5185m >3 Silver ppm ASTM D5185m >3 Aluminum ppm ASTM D5185m >40 Lead ppm ASTM D5185m >40 Copper ppm ASTM D5185m >330 Tin ppm ASTM D5185m >15 Vanadium ppm ASTM D5185m >15 Vanadium ppm ASTM D5185m >15 Vanadium ppm ASTM D5185m >25 Valer Visual NONE Vellow Metal scalar *Visual NONE Vellow Metal scalar *Visual NONE Valer WC Method >5 Valer WC Method >0.2 Glycol WC Method >0.2 Sulfation Abs/:mm *ASTM D7844 >3 Nitration Abs/:mm	Chromium ppm ASTM D5185m >20 18 Nickel ppm ASTM D5185m >4 <1	Chromium ppm ASTM D5185m >20 18 <1 Nickel ppm ASTM D5185m >4 <1





Certificate L2367

Sample No.

Laboratory Lab Number : 06189472

: HPL0005095 Unique Number : 11046224 Test Package : MOB 2

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 23 May 2024 **Tested** : 24 May 2024

Diagnosed

: 28 May 2024 - Sean Felton

410 STEVENSON DR BOLINGBROOK, IL US 60440 Contact: DAVE KOEHNE

STEVENSON CRANE

davidk@stevensoncrane.com T: (630)972-9199

* - 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)