

WEAR ABNORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

Machine Id **TWIN DISC DANNY K** Component **Starboard Reduction Gear** Fluid **CHEVRON DELO 400 SAE 40 (9 GAL)**

RECOMMENDATION

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

	Test	UOM	Method	Limit/Abn	Current	History1	History2
	Sample Number		Client Info		MW0060481	MW0060643	MW0014374
	Sample Date		Client Info		26 Jan 2024	14 Sep 2023	02 Nov 2022
	Machine Age	hrs	Client Info		0	26250	0
	Oil Age	hrs	Client Info		0	0	0
	Filter Age	hrs	Client Info		0	0	0
	Oil Changed		Client Info		Changed	Changed	Changed
	Filter Changed		Client Info		Changed	Changed	Changed
	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
	Iron	ppm	ASTM D5185m	>150	8	10	23
	Chromium	ppm	ASTM D5185m	>10	0	<1	<1
	Nickel	ppm	ASTM D5185m	>10	0	0	0
	Titanium	ppm	ASTM D5185m		11	7	0
	Silver	ppm	ASTM D5185m		0	0	0
	Aluminum	ppm	ASTM D5185m	>25	<1	6	3
	Lead	ppm	ASTM D5185m	>100	0	0	<1
	Copper	ppm	ASTM D5185m	>50	🔺 101	2 08	4 919
	Tin	ppm	ASTM D5185m	>10	0	0	1
	Vanadium	ppm	ASTM D5185m		0	0	0
	White Metal	scalar	*Visual	NONE	NONE	NONE	LIGHT
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Silicon	ppm	ASTM D5185m	>50	4	5	7
	Silicon Potassium	ppm ppm	ASTM D5185m ASTM D5185m	>50 >20	4 0	5 0	7
					-		
	Potassium		ASTM D5185m	>20	0	0	0
	Potassium Water	ppm	ASTM D5185m WC Method	>20 >0.1	0 NEG	0 NEG	0 NEG
	Potassium Water Silt	ppm scalar	ASTM D5185m WC Method *Visual	>20 >0.1 NONE	0 NEG NONE	0 NEG NONE	0 NEG NONE
	Potassium Water Silt Debris	ppm scalar scalar	ASTM D5185m WC Method *Visual *Visual	>20 >0.1 NONE NONE	0 NEG NONE LIGHT	0 NEG NONE NONE	0 NEG NONE NONE
	Potassium Water Silt Debris Sand/Dirt	ppm scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual	>20 >0.1 NONE NONE NONE	0 NEG NONE LIGHT NONE	0 NEG NONE NONE NONE	0 NEG NONE NONE
	Potassium Water Silt Debris Sand/Dirt Appearance	ppm scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual	>20 >0.1 NONE NONE NONE	0 NEG NONE LIGHT NONE NORML	0 NEG NONE NONE NONE NORML	0 NEG NONE NONE NONE NORML
	Potassium Water Silt Debris Sand/Dirt Appearance Odor	ppm scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual	>20 >0.1 NONE NONE NORML NORML	0 NEG NONE LIGHT NONE NORML NORML	0 NEG NONE NONE NONE NORML NORML	0 NEG NONE NONE NONE NORML NORML
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.1 NONE NONE NORML NORML	0 NEG NONE LIGHT NONE NORML NORML NEG	0 NEG NONE NONE NORML NORML 0.2%	0 NEG NONE NONE NORML NORML NEG
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm scalar scalar scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	0 NEG NONE LIGHT NONE NORML NORML NEG 3	0 NEG NONE NONE NORML NORML 0.2%	0 NEG NONE NONE NORML NORML NEG 5
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	0 NEG NONE LIGHT NONE NORML NORML NEG 3 224	0 NEG NONE NONE NORML 0.2% 4 278	0 NEG NONE NONE NORML NORML NEG 5 419
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	0 NEG NONE LIGHT NONE NORML NORML NEG 3 224 0	0 NEG NONE NONE NORML 0.2% 4 278 0	0 NEG NONE NONE NORML NORML NEG 5 419 0
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	0 NEG NONE LIGHT NORML NORML NEG 3 224 0 57	0 NEG NONE NONE NORML 0.2% 4 278 0 78	0 NEG NONE NONE NORML NORML NEG 5 419 0 114
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	0 NEG NONE LIGHT NORML NORML NEG 3 224 0 57 0	0 NEG NONE NONE NORML 0.2% 4 278 0 78 <1	0 NEG NONE NONE NORML NORML NEG 5 419 0 114 <1
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	0 NEG NONE LIGHT NORML NORML NEG 3 224 0 57 0 57	0 NEG NONE NONE NORML 0.2% 4 278 0 78 <1 686	0 NEG NONE NONE NORML NORML NEG 5 419 0 114 <1 595
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML >0.1	0 NEG NONE LIGHT NORML NORML NEG 3 224 0 224 0 57 0 57 0 717 1777	0 NEG NONE NONE NORML 0.2% 4 278 0 278 0 78 <1 686 1622	0 NEG NONE NONE NORML NORML NEG 5 419 0 114 <1 595 1754
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML >0.1	0 NEG NONE LIGHT NORML NORML NEG 3 224 0 57 0 57 0 717 1777 1777	0 NEG NONE NONE NORML 0.2% 4 278 0 278 0 78 <1 686 1622 697	0 NEG NONE NONE NORML NORML NEG 5 419 0 114 <1 595 1754 759
	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Barium Molybdenum Malybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML >0.1	0 NEG NONE LIGHT NONE NORML NEG 3 224 0 57 0 57 0 57 0 717 1777 1777 754 847	0 NEG NONE NONE NORML 0.2% 4 278 0 278 0 78 <1 686 1622 697 793	0 NEG NONE NONE NONE NORML NEG 5 419 0 114 <1 595 1754 759 835

ASTM D445 146

Visc @ 40°C cSt

WEAR

The copper level is abnormal. Clutch disc wear or oil cooler leaching indicated.

CONTAMINATION

There is no indication of any contamination in the oil.

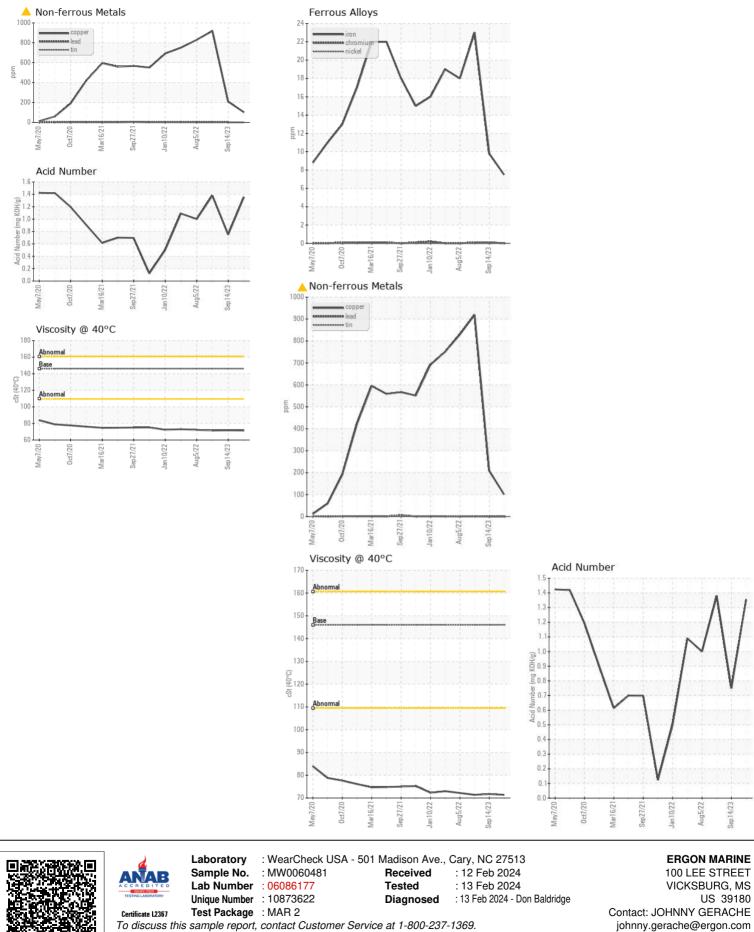
FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

Contact/Location: JOHNNY GERACHE - ERGVIC

71.4

71.7 71.4



* - 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)

Page 2 of 2

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