

# Machine Id 22702 **Right Final Drive** GEAR OIL SAE 80W90 (--- GAL)

### RECOMMENDATION

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

#### **WEAR**

The copper level is abnormal. All other component wear rates are normal.

#### **CONTAMINATION**

There is no indication of any contamination in the oil.

## **FLUID CONDITION**

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

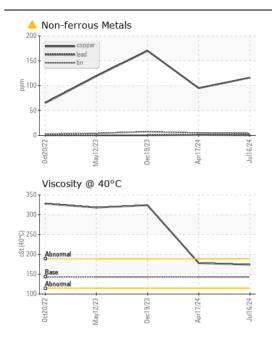
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Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0950651	WC0924555	WC0846620
Sample Date		Client Info		16 Jul 2024	17 Apr 2024	19 Dec 2023
Machine Age	hrs	Client Info		2988	2519	2035
Oil Age	hrs	Client Info		1000	500	250
Filter Age	hrs	Client Info		1000	500	0
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changd	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>500	134	142	248
Chromium	ppm	ASTM D5185m	>10	1	2	3
Nickel	ppm	ASTM D5185m	>10	<1	<1	1
Titanium	ppm	ASTM D5185m	-	0	<1	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	2	2
Lead	ppm	ASTM D5185m	>25	<1	1	0
Copper	ppm	ASTM D5185m	>50	<b>4</b> 116	<b>4</b> 95	<b>1</b> 70
Tin	ppm	ASTM D5185m	>10	4	5	7
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>75	8	7	10
Potassium	ppm	ASTM D5185m	>20	2	3	2
	ppin	7101111 00100111	~ = 0	-		
Water		WC Method	>0.2	NEG	NEG	- NEG
Water Silt	scalar	WC Method *Visual	>0.2 NONE	NEG NONE	NEG	
Water Silt Debris	scalar scalar					NEG
Silt		*Visual *Visual	NONE	NONE	NONE	NEG NONE
Silt Debris	scalar	*Visual	NONE NONE	NONE	NONE	NEG NONE NONE
Silt Debris Sand/Dirt	scalar scalar	*Visual *Visual *Visual	NONE NONE NONE	NONE NONE NONE	NONE NONE NONE	NEG NONE NONE
Silt Debris Sand/Dirt Appearance	scalar scalar scalar	*Visual *Visual *Visual *Visual	NONE NONE NORML	NONE NONE NONE NORML	NONE NONE NORML	NEG NONE NONE NORE
Silt Debris Sand/Dirt Appearance Odor Emulsified Water	scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NORML NORML >0.2	NONE NONE NORML NORML NEG	NONE NONE NORML NORML NEG	NEG NONE NONE NORML NORML NEG
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	scalar scalar scalar scalar scalar ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m	NONE NONE NORML NORML >0.2 >170	NONE NONE NORML NORML NEG 2	NONE NONE NORML NORML NEG 4	NEG NONE NONE NORML NORML NEG 5
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	scalar scalar scalar scalar scalar ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	NONE NONE NORML NORML >0.2 >170 400	NONE NONE NORML NORML NEG 2 60	NONE NONE NORML NORML NEG 4	NEG NONE NONE NORML NORML NEG 5 3
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	scalar scalar scalar scalar scalar ppm ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	NONE NONE NONE NORML >0.2 >170 400 200	NONE NONE NORML NORML NEG 2 60 19	NONE NONE NORML NORML NEG 4 80 23	NEG NONE NONE NORML NORML NEG 5 3 54
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	scalar scalar scalar scalar scalar ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	NONE NONE NORML NORML >0.2 >170 400	NONE NONE NORML NORML NEG 2 60 19	NONE NONE NORML NORML NEG 4 80 23 8	NEG NONE NONE NORML NORML NEG 5 3 54 0
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	scalar scalar scalar scalar ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 >170 400 200 12	NONE NONE NORML NORML NEG 2 60 19 7 1	NONE NONE NORML NORML NEG 4 80 23 8 8 2	NEG NONE NONE NORML NORML NEG 5 3 54 0 4
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium	scalar scalar scalar scalar ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NONE NONE NORML >0.2 >170 400 200 12	NONE NONE NORML NORML NEG 2 60 19 7 1 1	NONE NONE NORML NORML NEG 4 80 23 8 2 3 8 2 10	NEG NONE NONE NORML NORML NEG 5 3 54 0 4 2
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NONE NORML >0.2 >170 400 200 12 12 12	NONE NONE NORML NORML NEG 2 60 19 7 1 1 12 12	NONE NONE NORML NORML NEG 4 80 23 8 2 2 10 43	NEG   NONE   NONE   NORML   NORML   NEG   5   3   54   0   4   2   29
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Malybdenum Manganese Magnesium Calcium	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 >170 400 200 12 12 12 150 150	NONE NONE NORML NORML NEG 2 60 19 7 1 1 12 17 17 1365	NONE NONE NORML NORML NEG 4 80 23 8 2 3 8 2 10 43 1423	NEG   NONE   NONE   NORML   NORML   NORML   S   5   3   54   0   4   2   29   1189
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Barium Malybdenum Manganese Magnesium Calcium Phosphorus Zinc	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORME NORML >0.2 >1700 4000 2000 12 12 12 1500 1650 125	NONE NONE NORML NORML NEG 2 60 19 7 1 12 12 17 1365 37	NONE NONE NORML NORML NEG 4 80 23 8 2 3 8 2 10 43 1423 49	NEG   NONE   NONE   NORML   NORML   NEG   5   54   0   4   2   29   1189   60
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Malybdenum Manganese Magnesium Calcium	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 >170 400 200 12 12 12 150 150	NONE NONE NORML NORML NEG 2 60 19 7 1 1 12 17 17 1365	NONE NONE NORML NORML NEG 4 80 23 8 2 3 8 2 10 43 1423	NEG   NONE   NONE   NORML   NORML   NORML   S   5   3   54   0   4   2   29   1189

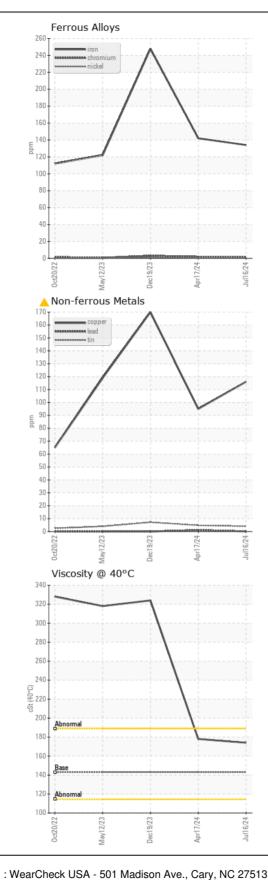
Report Id: MSCDURLH [WUSCAR] 06240722 (Generated: 07/21/2024 15:03:11) Rev: 1

Contact/Location: CHRIS CALTON - MSCDURLH

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WEAR **ABNORMAL** CONTAMINATION NORMAL **FLUID CONDITION** NORMAL





SULLIVAN EASTERN INC-LIEBHERR 2860 C SLATER RD MORRISVILLE, NC : 20 Jul 2024 - Don Baldridge US 27560 Contact: CHRIS CALTON

T:

Test Package : CONST Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

Lab Number : 06240722

Unique Number : 11129556

Laboratory

Sample No.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

: WC0950651

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (919)484-2136

: 18 Jul 2024

: 19 Jul 2024

Received

Diagnosed

Tested

Contact/Location: CHRIS CALTON - MSCDURLH Page 2 of 2