

OIL ANALYSIS REPORT

Area [21289]

20-86

Right Final Drive

GEAR OIL SAE 80W90 (--- GAL)

Sample Rating Trend



Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

All 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.

SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info WC0923361 WC0818622 WC0601421 Sample Date Client Info 10 May 2024 08 Sep 2023 17 Dec 2021 Machine Age hrs Client Info 671 5866 0 Oil Changed Client Info Changed No Changed Changed Changed No Changed Changed ABNORMAL			De	:2021	Sep 2023 May 20	124	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		WC0923361	WC0818622	WC0601421
Machine Age hrs Client Info 5975 5866 5304 Oil Age hrs Client Info 671 5866 0 Oil Changed Client Info Changed NORMAL ARMORMAL Sample Status NoRMAL NORMAL ABMORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method -0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >10 4 2 4 Nickel ppm ASTM D5185m >10 2 <1	·		Client Info		10 May 2024	08 Sep 2023	17 Dec 2021
Oil Age hrs Client Info 671 5866 0 Oil Changed Client Info Changed Not Changed Changed Changed Sample Status NorMAL NorMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >500 121 153 436 Chromium ppm ASTM D5185m >10 4 2 4 Nickel ppm ASTM D5185m >10 2 -1 0 Siliver ppm ASTM D5185m >25 2 1 6 Lead ppm ASTM D5185m >25 2 1 6 Copper ppm ASTM D5185m >20 23 21 ~2 Tin ppm		hrs			-		
Oil Changed Sample Status Client Info Changed NORMAL NORMAL NoRMAL ABNORMAL NORMAL ABNORMAL ABNORMAL NORMAL ABNORMAL	•	hrs					
NORMAL	-				-		
Water WC Method >0.2 NEG NEG NEG WEAR METALS method limil/base current history1 history2 Iron ppm ASTM D5185m >500 121 153 436 Chromium ppm ASTM D5185m >10 4 2 4 Nickel ppm ASTM D5185m >10 2 <1	•					Ü	Ü
WEAR METALS	CONTAMINATION	١	method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium ppm ASTM D5185m >10 4 2 4 Nickel ppm ASTM D5185m >10 2 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >10 2 <1 0 Titanium ppm ASTM D5185m 3 <1	Iron	ppm	ASTM D5185m	>500	121	153	436
Titanium ppm ASTM D5185m 3 <1 <1 Silver ppm ASTM D5185m 3 0 0 Aluminum ppm ASTM D5185m >25 2 1 6 Lead ppm ASTM D5185m >25 8 7 ▲ 27 Copper ppm ASTM D5185m >50 23 21 ▲ 72 Tin ppm ASTM D5185m >50 23 21 ▲ 72 Tin ppm ASTM D5185m >50 23 21 ▲ 72 Antimony ppm ASTM D5185m >5 0 Vanadium ppm ASTM D5185m 2 0 0 0 Cadmium ppm ASTM D5185m 2 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 12 3 <1	Chromium	ppm	ASTM D5185m	>10	4	2	4
Silver	Nickel	ppm	ASTM D5185m	>10	2	<1	0
Aluminum ppm ASTM D5185m >25 2 1 6 Lead ppm ASTM D5185m >25 8 7 ▲ 27 Copper ppm ASTM D5185m >50 23 21 ▲ 72 Tin ppm ASTM D5185m >10 3 <1	Titanium	ppm	ASTM D5185m		3	<1	<1
Lead ppm ASTM D5185m >25 8 7 ▲ 27 Copper ppm ASTM D5185m >50 23 21 ▲ 72 Tin ppm ASTM D5185m >10 3 <1	Silver	ppm	ASTM D5185m		3	0	0
Copper ppm ASTM D5185m >50 23 21 72 Tin ppm ASTM D5185m >10 3 <1	Aluminum	ppm	ASTM D5185m	>25	2	1	6
Tin ppm ASTM D5185m >10 3 <1 2 Antimony ppm ASTM D5185m >5 0 Vanadium ppm ASTM D5185m 2 0 0 Cadmium ppm ASTM D5185m 2 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 400 26 25 196 Barium ppm ASTM D5185m 200 3 0 0 Molybdenum ppm ASTM D5185m 12 3 <1 1 Manganese ppm ASTM D5185m 12 3 <1 1 Manganesium ppm ASTM D5185m 150 19 23 79 Calcium ppm ASTM D5185m 150 19 23 79 Zinc ppm ASTM D5185m 125 15 12 44	Lead	ppm	ASTM D5185m	>25	8	7	<u> </u>
Antimony ppm ASTM D5185m >5 0 Vanadium ppm ASTM D5185m 2 0 0 Cadmium ppm ASTM D5185m 2 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 400 26 25 196 Barium ppm ASTM D5185m 200 3 0 0 Molybdenum ppm ASTM D5185m 12 3 <1	Copper	ppm	ASTM D5185m	>50	23	21	<u>^</u> 72
Vanadium ppm ASTM D5185m 2 0 0 Cadmium ppm ASTM D5185m 2 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 400 26 25 196 Barium ppm ASTM D5185m 200 3 0 0 Molybdenum ppm ASTM D5185m 12 3 -1 1 Manganese ppm ASTM D5185m 12 3 -1 1 Magnesium ppm ASTM D5185m 12 3 2 5 Calcium ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 125 15 12 44	Tin	ppm	ASTM D5185m	>10	3	<1	2
Vanadium ppm ASTM D5185m 2 0 0 Cadmium ppm ASTM D5185m 2 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 400 26 25 196 Barium ppm ASTM D5185m 200 3 0 0 Molybdenum ppm ASTM D5185m 12 3 -1 1 Manganese ppm ASTM D5185m 12 3 -1 1 Magnesium ppm ASTM D5185m 12 3 2 5 Calcium ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 125 15 12 44	Antimony	ppm	ASTM D5185m	>5			0
Cadmium ppm ASTM D5185m 2 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 400 26 25 196 Barium ppm ASTM D5185m 200 3 0 0 Molybdenum ppm ASTM D5185m 12 3 <1	·	ppm	ASTM D5185m		2	0	0
Boron	Cadmium	ppm	ASTM D5185m		2	0	0
Barium ppm ASTM D5185m 200 3 0 0 Molybdenum ppm ASTM D5185m 12 3 <1 1 Manganese ppm ASTM D5185m 12 3 2 5 Magnesium ppm ASTM D5185m 12 3 2 5 Calcium ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 1650 385 380 977 Zinc ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 22500 19899 19077 16373 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1 5 Potassium ppm ASTM D5185m >170	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 12 3 <1 1 Manganese ppm ASTM D5185m 5 3 6 Magnesium ppm ASTM D5185m 12 3 2 5 Calcium ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 1650 385 380 977 Zinc ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 22500 19899 19077 16373 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1 5 Potassium ppm ASTM D5185m >170	Boron	ppm	ASTM D5185m	400	26	25	196
Manganese ppm ASTM D5185m 5 3 6 Magnesium ppm ASTM D5185m 12 3 2 5 Calcium ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 1650 385 380 977 Zinc ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 22500 19899 19077 16373 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1	Barium	ppm	ASTM D5185m	200	3	0	0
Magnesium ppm ASTM D5185m 12 3 2 5 Calcium ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 1650 385 380 977 Zinc ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 22500 19899 19077 16373 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1	Molybdenum	ppm	ASTM D5185m	12	3	<1	1
Calcium ppm ASTM D5185m 150 19 23 79 Phosphorus ppm ASTM D5185m 1650 385 380 977 Zinc ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 22500 19899 19077 16373 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1	Manganese	ppm	ASTM D5185m		5	3	6
Phosphorus ppm ASTM D5185m 1650 385 380 977 Zinc ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 22500 19899 19077 16373 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1	Magnesium	ppm	ASTM D5185m	12	3	2	5
Phosphorus ppm ASTM D5185m 1650 385 380 977 Zinc ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 22500 19899 19077 16373 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1	-		ASTM D5185m	150	19	23	79
Zinc ppm ASTM D5185m 125 15 12 44 Sulfur ppm ASTM D5185m 22500 19899 19077 16373 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1	Phosphorus		ASTM D5185m	1650	385	380	977
Sulfur ppm ASTM D5185m 22500 19899 19077 16373 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1			ASTM D5185m	125	15	12	44
Silicon ppm ASTM D5185m >75 8 9 30 Sodium ppm ASTM D5185m >170 2 <1 5 Potassium ppm ASTM D5185m >20 5 2 9 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NORML			ASTM D5185m	22500	19899	19077	16373
Sodium ppm ASTM D5185m >170 2 <1 5 Potassium ppm ASTM D5185m >20 5 2 9 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m >170 2 <1 5 Potassium ppm ASTM D5185m >20 5 2 9 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML	Silicon	mag	ASTM D5185m	>75	8	9	30
PotassiumppmASTM D5185m>20529VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML							
White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE 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	Potassium						9
Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE 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	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silt scalar *Visual NONE NONE 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	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORML	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORML	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Odor scalar *Visual NORML NORML NORML NORML	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
							NORM
	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML

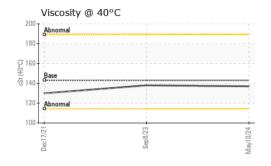
mitter By: JAMES STEELMON

NEG

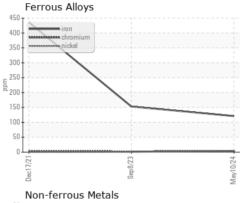
scalar *Visual

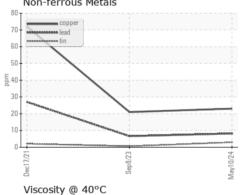


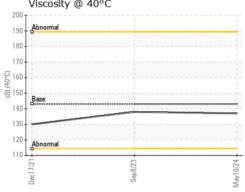
OIL ANALYSIS REPORT



FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	143	137	138	130
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color				no image	no image	no image
Bottom				no image	no image	no image
GRAPHS					•	











Certificate 12367

Laboratory Sample No.

: WC0923361 Lab Number : 06183574 Unique Number : 11034900 Test Package : CONST

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 May 2024 **Tested** : 20 May 2024

Diagnosed : 20 May 2024 - Wes Davis

5601 S 122ND E AVE TULSA, OK US 74146

Contact: BEN CALDWELL kevin.marson@wearcheck.com T: (918)728-5749

MANHATTAN ROAD AND BRIDGE

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

Submitted By: JAMES STEELMON