

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL





SAMPLE INFORM	MATION	method				history2
Sample Number		Client Info		GFL0094649	GFL0089295	GFL0087117
Sample Date		Client Info		08 Dec 2023	12 Sep 2023	28 Jun 2023
Machine Age	hrs	Client Info		9535	8920	8380
Oil Age	hrs	Client Info		615	540	534
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAI	NORMAI
			11 1. 0			
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>165	7	8	10
Chromium	ppm	ASTM D5185m	>5	<1	<1	1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	3	0
Lead	ppm	ASTM D5185m	>150	0	<1	<1
Copper	ppm	ASTM D5185m	>90	<1	<1	<1
Tin	ppm	ASTM D5185m	>5	0	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
				-		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	maa	method ASTM D5185m	limit/base 250	current	history1	history2 0
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	limit/base 250 10	current <1 0	history1 4 0	history2 0 0
ADDITIVES Boron Barium Molvbdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	current <1 0 57	history1 4 0 60	history2 0 0 60
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	 current <1 0 57 0 	history1 4 0 60 <1	history2 0 0 60 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450	<pre>current <1 0 57 0 928</pre>	history1 4 0 60 <1 978	history2 0 0 60 <1 904
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000	 current <1 0 57 0 928 1030 	history1 4 0 60 <1 978 1206	history2 0 60 <1 904 1050
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150	 current <1 0 57 0 928 1030 967 	history1 4 0 60 <1 978 1206 1021	history2 0 60 <1 904 1050 989
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350	 current <1 0 57 0 928 1030 967 1198 	history1 4 0 60 <1 978 1206 1021 1275	history2 0 0 60 <1 904 1050 989 1207
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250	 current <1 0 57 0 928 1030 967 1198 3091 	history1 4 0 60 <1 978 1206 1021 1275 3702	history2 0 0 60 <1 904 1050 989 1207 3270
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base	current <1 0 57 0 928 1030 967 1198 3091 current	history1 4 0 60 <1 978 1206 1021 1275 3702 history1	history2 0 0 60 <1 904 1050 989 1207 3270 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 Limit/base	 current <1 0 57 0 928 1030 967 1198 3091 current 2 	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >35 >216	 current <1 0 57 0 928 1030 967 1198 3091 current 2 3 	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4 4	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >35 >216 >20	current <1 0 57 0 928 1030 967 1198 3091 current 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4 4 2	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4 3 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >35 >216 >20	current <1 0 57 0 928 1030 967 1198 3091 current 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4 2 history1	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4 3 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >35 >216 >20 limit/base	current <1 0 57 0 928 1030 967 1198 3091 current 2 3 2 3 2 3 2 3 2 3 2 2 3 2 3 2 3 2 3 2 3 2 3 0 0	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4 2 history1 0 5	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4 3 2 history2 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >35 >216 >20 limit/base >7.5 >20	current <1 0 57 0 928 1030 967 1198 3091 current 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 0.7 6	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4 2 history1 0.5 7.0	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4 3 2 history2 0.6 6.9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >35 >216 >20 limit/base >7.5 >20	current <1 0 57 0 928 1030 967 1198 3091 current 2 3 2 0.7 6.9 18 8	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4 2 history1 0.5 7.0 18.0	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4 3 2 history2 0.6 6.9 10.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >35 >216 >20 limit/base >7.5 >20 >30	current <1 0 57 0 928 1030 967 1198 3091 current 2 3 2 current 0.7 6.9 18.8	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4 2 history1 0.5 7.0 18.0	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4 3 2 history2 0.6 6.9 19.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method	limit/base 250 10 100 450 3000 1150 1350 4250 binit/base >216 >20 imit/base >7.5 >20 >30 30 limit/base	current <1 0 57 0 928 1030 967 1198 3091 current 2 3 2 0.7 6.9 18.8 current	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4 2 history1 0.5 7.0 18.0 history1	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4 3 2 history2 0.6 6.9 19.8 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	imit/base 250 10 10 450 3000 1150 1350 4250 imit/base >7.5 >20 >30 imit/base >25	current <1 0 57 0 928 1030 967 1198 3091 current 2 3 2 3 2 3 2 0.7 6.9 18.8 current 13.7	history1 4 0 60 <1 978 1206 1021 1275 3702 history1 4 2 history1 0.5 7.0 18.0 history1 13.0	history2 0 0 60 <1 904 1050 989 1207 3270 history2 4 3 2 history2 0.6 6.9 19.8 history2 15.5

Machine Ic 910013 AUTOCAR isx-12 Component

Diesel Engine Fluid **DIESEL ENGINE OIL SAE 40 (48 QTS)**

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



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OIL ANALYSIS REPORT







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	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.3	14.2	14.2
GRAPHS						
Ferrous Alloys						





* - 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)

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