

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **21F150** Component **Gasoline Engine** Fluid **AMSOIL AZO 0W30 (--- GAL)**

DIAGNOSIS

A Recommendation

We recommend that you drain the oil from the component if this has not already been done. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

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

		methou	IIIIII/Dase	Current	motory	Thistory 2
Sample Number		Client Info		WC0916661	WC0916660	WC0916667
Sample Date		Client Info		14 Jun 2024	29 May 2024	29 Apr 2024
Machine Age	mls	Client Info		114698	112979	107965
Oil Age	mls	Client Info		0	1541	0
Oil Changed		Client Info		N/A	Not Change	Not Changd
Sample Status				ABNORMAI	NORMAI	ABNORMAL
Campio Claido				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		A BROTHINGE
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	4	4	14
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	2
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>40	3	4	5
Lead	ppm	ASTM D5185m	>50	0	0	0
Copper	ppm	ASTM D5185m	>155	2	1	3
Tin	ppm	ASTM D5185m	>10	0	0	2
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	maa	method ASTM D5185m	limit/base	current 243	history1	history2
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	limit/base	current 243 0	history1 309 0	history2 183 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 243 0 200	history1 309 0 192	history2 183 0 218
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 243 0 200 0	history1 309 0 192 <1	history2 183 0 218 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 243 0 200 0 779	history1 309 0 192 <1 853	history2 183 0 218 1 984
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	limit/base	current 243 0 200 0 779 1413	history1 309 0 192 <1 853 1159	history2 183 0 218 1 984 1431
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	current 243 0 200 0 779 1413 601	history1 309 0 192 <1 853 1159 655	history2 183 0 218 1 984 1431 753
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 ASTM D5185m	limit/base	current 243 0 200 0 779 1413 601 794	history1 309 0 192 <1 853 1159 655 720	history2 183 0 218 1 984 1431 753 890
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	limit/base	current 243 0 200 0 779 1413 601 794 3034	history1 309 0 192 <1 853 1159 655 720 3550	history2 183 0 218 1 984 1431 753 890 4225
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	current 243 0 200 0 779 1413 601 794 3034 current	history1 309 0 192 <1 853 1159 655 720 3550 history1	history2 183 0 218 1 984 1431 753 890 4225 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185m	limit/base	current 243 0 200 0 779 1413 601 794 3034 current 18	history1 309 0 192 <1 853 1159 655 720 3550 history1 13	history2 183 0 218 1 984 1431 753 890 4225 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 243 0 200 0 779 1413 601 794 3034 current 18 5	history1 309 0 192 <1 853 1159 655 720 3550 history1 13	history2 183 0 218 1 984 1431 753 890 4225 history2 24 7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base limit/base >30 >400 >20	current 243 0 200 0 779 1413 601 794 3034 current 18 5 3	history1 309 0 192 <1 853 1159 655 720 3550 history1 13 5 2	history2 183 0 218 1 984 1431 753 890 4225 history2 24 7 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base limit/base >30 >400 >20	current 243 0 200 0 779 1413 601 794 3034 current 18 5 3	history1 309 0 192 <1 853 1159 655 720 3550 history1 13 5 2	history2 183 0 218 1 984 1431 753 890 4225 history2 24 7 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm	method ASTM D5185m	limit/base limit/base >30 >400 >20 limit/base	current 243 0 200 0 779 1413 601 794 3034 current 18 5 3 current	history1 309 0 192 <1 853 1159 655 720 3550 history1 13 5 2 history1 0	history2 183 0 218 1 984 1431 753 890 4225 history2 24 7 4 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base limit/base >30 >400 >20 limit/base	current 243 0 200 0 779 1413 601 794 3034 current 18 5 3 current 0.1	history1 309 0 192 <1 853 1159 655 720 3550 history1 13 5 2 history1 0.1	history2 183 0 218 1 984 1431 753 890 4225 history2 24 7 4 history2 0.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 243 0 200 0 779 1413 601 794 3034 current 18 5 3 current 0.1 9.5 50.1	history1 309 0 192 <1 853 1159 655 720 3550 history1 13 5 2 history1 0.1 9.1	history2 183 0 218 1 984 1431 753 890 4225 history2 24 7 4 history2 0.1 11.8 55
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >30 >400 >20 limit/base >20 s20 >20	current 243 0 200 0 779 1413 601 794 3034 current 18 5 3 current 0.1 9.5 52.1	history1 309 0 192 <1 853 1159 655 720 3550 history1 13 5 2 history1 0.1 9.1 47.2	history2 183 0 218 1 984 1431 753 890 4225 history2 24 7 4 history2 0.1 11.8 55.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method	limit/base >30 >400 >20 limit/base >20 limit/base >20 >30 >30	current 243 0 200 0 779 1413 601 794 3034 current 18 5 3 current 0.1 9.5 52.1 current	history1 309 0 192 <1 853 1159 655 720 3550 history1 13 5 2 history1 0.1 9.1 47.2 history1	history2 183 0 218 1 984 1431 753 890 4225 history2 24 7 4 history2 0.1 11.8 55.1 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7185m ASTM D7844 *ASTM D7624 *ASTM D7414	limit/base >30 >400 >20 limit/base >20 limit/base >20 >30 limit/base >20	current 243 0 200 0 779 1413 601 794 3034 current 18 5 3 current 0.1 9.5 52.1 current 62.7	history1 309 0 192 <1 853 1159 655 720 3550 history1 13 5 2 history1 0.1 9.1 47.2 history1 55.3	history2 183 0 218 1 984 1431 753 890 4225 history2 24 7 4 history2 0.1 11.8 55.1 history2 65.9



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Marl

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Mar13/24

Viscosity @ ⁷⁰ Abnormal ⁶⁰ Base

Apr29/24

/av29/24

OIL ANALYSIS REPORT



Ap	Mar	Jur	Odor	scala
t Trend)			Emulsified Water	scala
- includy			Free Water	scala
n			FLUID PROPER	TIES
	The Los In State of Constant State		Visc @ 100°C	cSt
			GRAPHS	
			Ferrous Alloys	
Apr29/24	May29/24	¥C(¥11	iron 35 30 30	
100°C		띠	20	
			15	

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
		mothod	limit/base	ourropt	historyd	history
	IES	method	innit/base	current	riistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	59.0	9.9	9.9	10.1
GRAPHS						





Contact/Location: BILL WINNEY - BILBON