

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id VOLVO A45G 342399 Component Rear Axle

Fluid VOLVO SUPER GEAR OIL 75W-80-GO102 (--- GAL)

DIAGNOSIS

Recommendation

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.

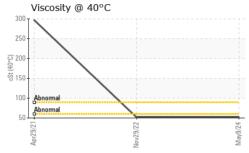
Fluid Condition

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

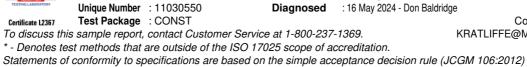
Sample Number Client Info ML0001896 VCP368482 VCP315029 Sample Date Client Info 09 May 2024 29 Nov 2022 29 Apr 2021 Machine Age hrs Client Info 7362 6131 4145 Oil Age hrs Client Info Changed Not Changed Changed Sample Status Imitibase current history1 history2 Water WC Method 0.2 NEG NEG NEG Water WC Method 0.2 NEG NEG NEG Chromium ppm ASTM 05185m 900 151 94 279 Chromium ppm ASTM 05185m 900 151 94 279 Chromium ppm ASTM 05185m 900 0	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 7362 6131 4145 Oil Age hrs Client Info 4145 2000 0 Oil Changed Client Info Changed Not Changed Changed Sample Status Imit/base current Not Changed ATTENTION CONTAMINATION method Imit/base current Nistory1 Nistory2 Water WC Method >0.2 NEG NEG NEG Iron ppm ASTM D5185m >900 151 94 279 Chromium ppm ASTM D5185m >20 2 2 5 Nickel ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >30 0 <1 <1 Lead ppm ASTM D5185m >50 0 0 0 Aluminum ppm ASTM D5185m >50 0 0 0 Cadmium	Sample Number		Client Info		ML0001896	VCP368482	VCP315029
Machine Age hrs Client Info 7362 6131 4145 Oil Age hrs Client Info 4145 2000 0 Oil Changed Client Info Changed Not Changed Changed Sample Status Imit/base current Not Changed ATTENTION CONTAMINATION method Imit/base current Nistory1 Nistory2 Water WC Method >0.2 NEG NEG NEG Iron ppm ASTM D5185m >900 151 94 279 Chromium ppm ASTM D5185m >20 2 2 5 Nickel ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >30 0 <1 <1 Lead ppm ASTM D5185m >50 0 0 0 Aluminum ppm ASTM D5185m >50 0 0 0 Cadmium	Sample Date		Client Info		09 May 2024	29 Nov 2022	29 Apr 2021
Oil Changed Sample Status Client Info Changed NORMAL Not Changed NORMAL Changed ATTENTION CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG Wear WC Method >0.2 NEG NEG NEG Iron ppm ASTM D5185m >20 2 2 5 Nickel ppm ASTM D5185m >20 2 2 5 Nickel ppm ASTM D5185m 0 0 0 0 Itianium ppm ASTM D5185m 0 0 0 0 Itianium ppm ASTM D5185m 50 0 0 0 Aluminum ppm ASTM D5185m >50 0 0 0 Aluminum ppm ASTM D5185m >50 0 0 0 Additionary ppm ASTM D5185m >50 0 0 0 Copper ppm ASTM D5185m >5 0 Vanadium ppm ASTM D5185m 310 256 166 Barium ppm ASTM D5185m 311	Machine Age	hrs	Client Info		7362	6131	
Sample StatusNORMALNORMALNORMALATTENTIONCONTAMINATIONmethodlimit/basecurrenthistory1history2WaterWC Method>0.2NEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>90015194279ChromiumppmASTM D5185m>20225NickelppmASTM D5185m>100<11<11TitaniumppmASTM D5185m>10000AluminumppmASTM D5185m>50000AuminumppmASTM D5185m>50000CopperppmASTM D5185m>50000AntimonyppmASTM D5185m>20000VanadiumppmASTM D5185m>20000CadmiumppmASTM D5185m<10000ADITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m310256166BariumppmASTM D5185m3110256166BariumppmASTM D5185m1316316CadiumppmASTM D5185m311122505621099MagneseppmASTM D5185m311122505621099MolydoenumppmASTM D	Oil Age	hrs	Client Info		4145	2000	0
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG Water WC Method >0.2 NEG NEG NEG Wear METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 2 2 5 Nickel ppm ASTM D5185m >10 0 <1 <1 Titanium ppm ASTM D5185m >30 0 <1 <1 Lead ppm ASTM D5185m >50 0 0 0 Copper ppm ASTM D5185m >50 0 0 0 Cadmium ppm ASTM D5185m >50 0 0 0 Cadmium ppm ASTM D5185m >5 0 Varadium ppm ASTM D5185m 5 0 0 0	Oil Changed		Client Info		Changed	Not Changd	Changed
Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >900 151 94 279 Chromium ppm ASTM D5185m >10 0 <1 <1 Titanium ppm ASTM D5185m >10 0 <1 <1 Silver ppm ASTM D5185m >30 0 <1 <1 Lead ppm ASTM D5185m >50 0 0 0 Copper ppm ASTM D5185m >50 0 0 0 Vanadium ppm ASTM D5185m >50 0 0 0 Cadmium ppm ASTM D5185m >50 0 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m 310 256 166	Sample Status				NORMAL	NORMAL	ATTENTION
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >900 151 94 279 Chromium ppm ASTM D5185m >20 2 2 5 Nickel ppm ASTM D5185m 10 0 <1 <1 Titanium ppm ASTM D5185m 50 0 0 0 Aluminum ppm ASTM D5185m >50 0 0 0 Copper ppm ASTM D5185m >50 0 0 0 Aluminum ppm ASTM D5185m >50 0 0 0 Antimony ppm ASTM D5185m >50 0 0 0 Vanadium ppm ASTM D5185m >50 0 0 0 Cadmium ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 1 3 1<	CONTAMINATION		method	limit/base	current	history1	history2
Iron ppm ASTM D5185m >900 151 94 279 Chromium ppm ASTM D5185m >20 2 2 5 Nickel ppm ASTM D5185m >10 0 <1 <1 Titanium ppm ASTM D5185m >10 0 0 0 Silver ppm ASTM D5185m >50 0 0 0 0 Aluminum ppm ASTM D5185m >50 0 0 0 0 Lead ppm ASTM D5185m >50 0 0 0 0 Copper ppm ASTM D5185m >50 0 Varadium pm ASTM D5185m <0 0	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 2 2 5 Nickel ppm ASTM D5185m >10 0 <1 <1 Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >50 0 0 0 Lead ppm ASTM D5185m >50 0 0 0 Copper ppm ASTM D5185m >55 0 Vanadium ppm ASTM D5185m >5 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 ASTM D5185m S16 0 0 0 0 0 ASTM D5185m 11 <1 3 16 6 Barium ppm ASTM D5185m 1 3 16 Calcium <th>WEAR METALS</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >10 0 <1	Iron	ppm	ASTM D5185m	>900	151	94	279
Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >30 0 <1 <1 Lead ppm ASTM D5185m >50 0 0 0 Copper ppm ASTM D5185m >50 0 0 0 Antimony ppm ASTM D5185m >20 0 0 0 Antimony ppm ASTM D5185m >20 0 0 0 Cadmium ppm ASTM D5185m < 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 310 256 166 Barium ppm ASTM D5185m 1 3 16 Calcium ppm ASTM D5185m 1 3 16 Calcanium ppm	Chromium	ppm	ASTM D5185m	>20	2	2	5
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >30 0 <1 <1 Lead ppm ASTM D5185m >50 0 0 0 Copper ppm ASTM D5185m >150 2 <11 3 Tin ppm ASTM D5185m >20 0 0 0 Antimony ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m >20 0 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m 310 256 166 Barium ppm ASTM D5185m 3 2 9 Manganese ppm ASTM D5185m 3 2 9 Magnesium ppm ASTM D5185m 3 22 2 Phosphorus ppm <td< th=""><th>Nickel</th><th>ppm</th><th>ASTM D5185m</th><th>>10</th><th>0</th><th><1</th><th><1</th></td<>	Nickel	ppm	ASTM D5185m	>10	0	<1	<1
Aluminum ppm ASTM D5185m >30 0 <1	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >50 0 0 0 Copper ppm ASTM D5185m >150 2 <1	Silver	ppm	ASTM D5185m		0	0	0
Copper ppm ASTM D5185m >150 2 <1	Aluminum	ppm	ASTM D5185m	>30	0	<1	<1
Tin ppm ASTM D5185m >20 0 0 0 Antimony ppm ASTM D5185m >5 0 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 310 256 166 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 21 1 3 Magnesium ppm ASTM D5185m 33 2 9 Magnesium ppm ASTM D5185m 1 3 16 Calcium ppm ASTM D5185m 2234 2114 1004 Zinc ppm ASTM D5185m 31112 25056 21099 CONTAMINANTS method limit/base	Lead	ppm	ASTM D5185m	>50	0	0	0
Tin ppm ASTM D5185m >20 0 0 0 Antimony ppm ASTM D5185m >5 0 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m <0 0 0 0 ACDDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 310 256 166 Barium ppm ASTM D5185m 310 0 0 Magnese ppm ASTM D5185m 31 2 9 Magnesium ppm ASTM D5185m 1 3 16 Calcium ppm ASTM D5185m 93 38 122 Phosphorus ppm ASTM D5185m 2234 2114 1004 Zinc ppm ASTM D5185m 31112 25056 21099 CONTAMINANTS method limit/base <th>Copper</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>150</th> <th>2</th> <th><1</th> <th>3</th>	Copper	ppm	ASTM D5185m	>150	2	<1	3
VanadiumppmASTM D5185m<1	Tin	ppm	ASTM D5185m	>20	0	0	0
CadmiumppmASTM D5185m000ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m310256166BariumppmASTM D5185m000MolybdenumppmASTM D5185m<1<13ManganeseppmASTM D5185m<1<13MagnesiumppmASTM D5185m1329MagnesiumppmASTM D5185m1316CalciumppmASTM D5185m9338122PhosphorusppmASTM D5185m223421141004ZincppmASTM D5185m462463SulfurppmASTM D5185m311122505621099CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50322SodiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONENONE	Antimony	ppm	ASTM D5185m	>5			0
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m310256166BariumppmASTM D5185m000MolybdenumppmASTM D5185m<1<13ManganeseppmASTM D5185m329MagnesiumppmASTM D5185m329MagnesiumppmASTM D5185m1316CalciumppmASTM D5185m9338122PhosphorusppmASTM D5185m223421141004ZincppmASTM D5185m311122505621099CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50322SodiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONENONESiltscalar*VisualNONENONENONENONENONENONE	Vanadium	ppm	ASTM D5185m		<1	0	0
BoronppmASTM D5185m 310 256166BariumppmASTM D5185m 0 000MolybdenumppmASTM D5185m <1 <1	Cadmium	ppm	ASTM D5185m		0	0	0
BariumppmASTM D5185m0000MolybdenumppmASTM D5185m<1<133ManganeseppmASTM D5185m329MagnesiumppmASTM D5185m1316CalciumppmASTM D5185m9338122PhosphorusppmASTM D5185m223421141004ZincppmASTM D5185m462463SulfurppmASTM D5185m311122505621099CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50322SodiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONENONE	ADDITIVES		method	limit/base	current	history1	history2
MolybdenumppmASTM D5185m<1	Boron	ppm	ASTM D5185m		310	256	166
MaganeseppmASTM D5185m329MagnesiumppmASTM D5185m1316CalciumppmASTM D5185m9338122PhosphorusppmASTM D5185m223421141004ZincppmASTM D5185m2234211463SulfurppmASTM D5185m462463SulfurppmASTM D5185m311122505621099CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50322SodiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONENONEPrecipitatescalar*VisualNONENONENONENONENONENONESiltscalar*VisualNONENONENONENONENONENONE	Barium	ppm	ASTM D5185m		0	0	0
MagnesiumppmASTM D5185m1316CalciumppmASTM D5185m9338122PhosphorusppmASTM D5185m223421141004ZincppmASTM D5185m462463SulfurppmASTM D5185m311122505621099CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50322SodiumppmASTM D5185m>50322SodiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONENONE	Molybdenum	ppm	ASTM D5185m		<1	<1	3
CalciumppmASTM D5185m9338122PhosphorusppmASTM D5185m223421141004ZincppmASTM D5185m462463SulfurppmASTM D5185m311122505621099CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m50322SodiumppmASTM D5185m4441PotassiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONENONEPrecipitatescalar*VisualNONENONENONENONENONENONESiltscalar*VisualNONEMODERNONENONENONENONE	Manganese	ppm	ASTM D5185m		3	2	9
PhosphorusppmASTM D5185m223421141004ZincppmASTM D5185m462463SulfurppmASTM D5185m311122505621099CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50322SodiumppmASTM D5185m441PotassiumppmASTM D5185m20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONENONESiltscalar*VisualNONENONENONENONENONE	Magnesium	ppm	ASTM D5185m		1	3	16
ZincppmASTM D5185m462463SulfurppmASTM D5185m311122505621099CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50322SodiumppmASTM D5185m4441PotassiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONENONEPrecipitatescalar*VisualNONENONENONENONENONESiltscalar*VisualNONEMODERNONENONENONE	Calcium	ppm	ASTM D5185m		93	38	
SulfurppmASTM D5185m311122505621099CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50322SodiumppmASTM D5185m441PotassiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONENONEPrecipitatescalar*VisualNONENONENONENONENONENONESiltscalar*VisualNONENONENONENONENONENONE	Phosphorus	ppm	ASTM D5185m		2234	2114	1004
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50322SodiumppmASTM D5185m441PotassiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONE	Zinc	ppm	ASTM D5185m		46	24	63
SiliconppmASTM D5185m>50322SodiumppmASTM D5185m441PotassiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONE	Sulfur	ppm	ASTM D5185m		31112	25056	21099
SodiumppmASTM D5185m441PotassiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONE	CONTAMINANTS		method	limit/base	current	history1	history2
PotassiumppmASTM D5185m>20000VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONE	Silicon	ppm	ASTM D5185m	>50	3	2	2
VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONE	Sodium	ppm	ASTM D5185m		4	4	1
White Metalscalar*VisualNONENONELIGHTLIGHTYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONE	Potassium	ppm	ASTM D5185m	>20	0	0	0
Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONE	VISUAL		method	limit/base	current	history1	history2
Precipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONEMODERNONENONE	White Metal	scalar	*Visual	NONE	NONE	LIGHT	LIGHT
Silt scalar *Visual NONE MODER NONE NONE	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Debris scalar *Visual NONE NONE NONE NONE	Silt	scalar	*Visual	NONE	MODER		
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt scalar *Visual NONE NONE NONE NONE	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance scalar *Visual NORML NORML NORML NORML	Appearance	scalar	*Visual	NORML	NORML		NORML
Odor scalar *Visual NORML NORML NORML NORML	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water scalar *Visual >0.2 NEG NEG NEG	Emulsified Water	scalar	*Visual	>0.2			
Free Water scalar *Visual NEG ted By Service - Alex Addersor Page 1 of 2	Erec Weter	scalar	*\/ieual		NEG	ted By: Service	- Alex Anderson



OIL ANALYSIS REPORT



FLUID PROPERTI	ES meth	nod limit/base	current	history1	history2
Visc @ 40°C	cSt ASTM	D445	52.0	51.8	297
SAMPLE IMAGES	meth	nod limit/base	current	history1	history
Color			no imaga	no imore	na imaga
Color			no image	no image	no image
Dattan					
Bottom			no image	no image	no image
GRAPHS					
Ferrous Alloys					
250 - chromium					
200					
150 ·					
100					
50					
Apr/29/21	Nov29/22 -	May9/24			
∛ Non-ferrous Metals		W			
9 copper					
8					
6- Ed 5-					
4					
2					
	-	4			
Apr29/21	Nov29/22	May9/24			
Viscosity @ 40°C					
250					
5 200 F 3 150					
3 150					
100 Abnormal	\				
50 Abnormal		24			
Apr29/2	Nov29/22	May9/24			
: WearCheck USA - 501	Madison Ave	Carv. NC 27513	MCCLUN	G-LOGAN EQUIPME	NT CO - RICHM
: ML0001896 : 06179224	Received Tested	: 14 May 2024 : 15 May 2024		1345 MO	UNTAIN RO EN ALLEN,
: 11030550 : CONST	Diagnosed	: 15 May 2024 : 16 May 2024 - Dor	n Baldridge	GL Contact: K	US 230



1345 MOUNTAIN ROAD GLEN ALLEN, VA WIS 23060 Contact: KYLE RATLIFFE KRATLIFFE@MCCLUNG-LOGAN.COM T: CGM 106:2012) F: (804)266-1611

Report Id: VOLVO8882 [WUSCAR] 06179224 (Generated: 05/16/2024 16:11:15) Rev: 1

Submitted By: Service - Alex Anderson