

OIL ANALYSIS REPORT



Machine Id **608** Component **Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

DIAGNOSIS

Recommendation

Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

Metal levels are typical for a new component breaking in.

Contamination

Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative.

Fluid Condition

The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0551921	WC0716330	
Sample Date		Client Info		13 Sep 2023	20 Dec 2022	
Machine Age	hrs	Client Info		957	248	
Oil Age	hrs	Client Info		500	248	
Oil Changed		Client Info		N/A	Changed	
Sample Status				ABNORMAL	ABNORMAL	
CONTAMINATION	J	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	0.8	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	7	26	
Chromium	ppm	ASTM D5185(m)	>20	0	<1	
Nickel	ppm	ASTM D5185(m)	>4	0	0	
Titanium	ppm	ASTM D5185(m)		0	<1	
Silver	ppm	ASTM D5185(m)	>3	0	0	
Aluminum	ppm	ASTM D5185(m)	>20	11	11	
Lead	ppm	ASTM D5185(m)	>40	1	3	
Copper	ppm	ASTM D5185(m)	>330	58	135	
Tin	ppm	ASTM D5185(m)	>15	0	<1	
Antimony	ppm	ASTM D5185(m)		0	<1	
Vanadium	ppm	ASTM D5185(m)		0	0	
Beryllium	ppm	ASTM D5185(m)		0	0	
Cadmium	ppm	ASTM D5185(m)		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	250	367	207	
Boron Barium	ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10	367 <1	207 4	
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100	367 <1 944	207 4 68	
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100	367 <1 944 0	207 4 68 4	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450	367 <1 944 0 103	207 4 68 4 238	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000	367 <1 944 0 103 851	207 4 68 4 238 1621	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150	367 <1 944 0 103 851 201	207 4 68 4 238 1621 1045	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350	367 <1 944 0 103 851 201 260	207 4 68 4 238 1621 1045 1107	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	367 <1 944 0 103 851 201 260 1991	207 4 68 4 238 1621 1045 1107 3254	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	367 <1 944 0 103 851 201 260 1991 <1	207 4 68 4 238 1621 1045 1107 3254 <1	
Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 limit/base	367 <1 944 0 103 851 201 260 1991 <1 current	207 4 68 4 238 1621 1045 1107 3254 <1 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 limit/base >25	367 <1 944 0 103 851 201 260 1991 <1 current 11	207 4 68 4 238 1621 1045 1107 3254 <1 <1 history1 13	history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 iimit/base >25 >158	367 <1 944 0 103 851 201 260 1991 <1 <1 current 11 4	207 4 68 4 238 1621 1045 1107 3254 <1 kistory1 13 3	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 4 ppm 2 ppm 1	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	367 <1 944 0 103 851 201 260 1991 <1 current 11 4 ≥85	207 4 68 4 238 1621 1045 1107 3254 <1 kistory1 13 3 2	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 2 ppm 3	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	367 <1 944 0 103 851 201 260 1991 <1 <1 current 11 4 285 0.0	207 4 68 4 238 1621 1045 1107 3254 <1 history1 13 3 2 NEG	history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	367 <1 944 0 103 851 201 260 1991 <1 <1 current 11 4 285 0.0 current	207 4 68 4 238 1621 1045 1107 3254 <1 history1 13 3 2 NEG history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 4 ppm 2 ppm 4 ppm 4	ASTM D5185(m) ASTM D7922*	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	367 <1 944 0 103 851 201 260 1991 <1 <1 current 11 4 285 0.0 current 0	207 4 68 4 238 1621 1045 1107 3254 <1 history1 13 3 2 NEG history1 0	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm %	ASTM D5185(m) ASTM D7922* Contemponent ASTM D7844* ASTM D7624*	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20	367 <1 944 0 103 851 201 260 1991 <1 <1 current 11 4 285 0.0 current 0 8.6	207 4 68 4 238 1621 1045 1107 3254 <1 history1 13 3 2 NEG history1 0 8.6	history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7824* ASTM D7824* ASTM D7624*	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30	367 <1 944 0 103 851 201 260 1991 <1 11 4 285 0.0 current 0 8.6 21.5	207 4 68 4 238 1621 1045 1107 3254 <1 history1 13 3 2 NEG history1 0 8.6 21.3	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7844* ASTM D7844* ASTM D7624* ASTM D7624*	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 jantificities >3 >20 jantificities >3 >20 jantificities >3 >20 jantificities >3 >20 jantificities >3 >20 jantificities >3 >20 jantificities >3 >20 jantificities >3 >20 jantificities >3 >20 jantificities >3 >20 jantificities >3 >30 jantificities >3 >30 jantificities >3 >30 jantificities >3 >30 jantificities >3 >30 jantificities >30 >30 jantificities >3 >3 >3 >3 >3 >3 >3 >3 >3 >3	367 <1 944 0 103 851 201 260 1991 <1 current 11 4 285 0.0 current 0 8.6 21.5 current	207 4 68 4 238 1621 1045 1107 3254 <1 history1 13 3 2 NEG history1 0 8.6 21.3 history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7844* ASTM D7844* ASTM D7844* ASTM D7844* ASTM D7414*	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30 limit/base >30 >20	367 <1 944 0 103 851 201 260 1991 <1 current 11 4 ≥85 0.0 current 0 8.6 21.5 current 22.9	207 4 68 4 238 1621 1045 1107 3254 <1 history1 13 3 2 NEG history1 0 8.6 21.3 history1 16.3	

Report Id: BERLOR [WCAMIS] 02588488 (Generated: 10/12/2023 16:49:46) Rev: 1



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