

OIL ANALYSIS REPORT

Sample Rating Trend

DEGRADATION

Machine Id G15 Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

A Recommendation

Oil and filter change at the time of sampling has been noted. 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.

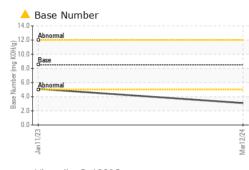
Fluid Condition

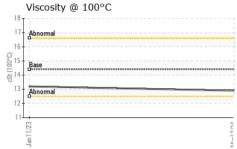
The BN level is low. The condition of the oil is acceptable for the time in service.

			Jan2023	Mar2024		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0841421	WC0758950	
Sample Date		Client Info		12 Mar 2024	11 Jan 2023	
Machine Age	hrs	Client Info		5014	3864	
Oil Age	hrs	Client Info		549	437	
Oil Changed		Client Info		Changed	N/A	
Sample Status				ABNORMAL	ABNORMAL	
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	2	7	
Chromium	ppm	ASTM D5185m	>20	_ <1	<1	
Nickel	ppm	ASTM D5185m	>4	<1	0	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m		3	2	
Lead	ppm	ASTM D5185m	>40	1	2	
Copper	ppm	ASTM D5185m	>330	1	3	
Tin	ppm	ASTM D5185m	>15	2	<1	
	1-1-			_		
Vanadium	maa	ASTM D5185m		<1	0	
	ppm ppm	ASTM D5185m ASTM D5185m		<1 <1	0	
			limit/base			
Cadmium ADDITIVES		ASTM D5185m	limit/base 250	<1	0	
Cadmium ADDITIVES Boron	ppm	ASTM D5185m method		<1 current	0 history1	 history2
Cadmium ADDITIVES Boron Barium	ppm ppm	ASTM D5185m method ASTM D5185m	250	<1 current 46	0 history1 83	 history2
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	250 10	<1 current 46 0	0 history1 83 0	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	250 10	<1 current 46 0 114	0 history1 83 0 108	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	<1 current 46 0 114 0	0 history1 83 0 108 <1	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	<1 current 46 0 114 0 119	0 history1 83 0 108 <1 21	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	<1 <u>current</u> 46 0 114 0 119 2232	0 history1 83 0 108 <1 21 21 2116	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	<1 <u>current</u> 46 0 114 0 119 2232 837	0 history1 83 0 108 <1 21 211 2116 781	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	<1 46 0 114 0 119 2232 837 1018	0 history1 83 0 108 <1 21 211 2116 781 989	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	<1 <u>current</u> 46 0 114 0 119 2232 837 1018 4215	0 history1 83 0 108 <1 21 2116 781 989 3788	 history2 -
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	<1 46 0 114 0 119 2232 837 1018 4215 current	0 history1 83 0 108 <1 21 2116 781 989 3788 history1	 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	<1 current 46 0 114 0 119 2232 837 1018 4215 current 10	0 history1 83 0 108 <1 21 2116 781 989 3788 989 3788 history1 ▲ 54	 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	<1 current 46 0 114 0 119 2232 837 1018 4215 current 10 2	0 history1 83 0 108 <1 21 2116 781 989 3788 3788 history1 ▲ 54 2	 history2 history2 history2
Cadmium 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	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	<1 current 46 0 114 0 119 2232 837 1018 4215 current 10 2 2	0 history1 83 0 108 <1 21 2116 781 989 3788 history1 ▲ 54 2 3	 history2 history2 history2
Cadmium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	<1 current 46 0 114 0 119 2232 837 1018 4215 current 10 2 2 2 current	0 history1 83 0 108 <10 21 2116 781 989 3788 history1 ≤54 2 3 × 108 108 ×	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4	ASTM D5185m method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 iimit/base >25 >158 >20 iimit/base >3	<1 current 46 0 114 0 119 2232 837 1018 4215 current 10 2 2 2 current 0	0 history1 83 0 108 <1 21 2116 781 989 3788 history1 ≤54 2 3 54 2 3 3 bistory1 0.1	 history2 history2 history2 history2
Cadmium Cadmium 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	ASTM D5185m method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20	<1 current 46 0 114 0 119 2232 837 1018 4215 current 10 2 2 current 0 8.3	0 history1 83 0 108 <10 21 2116 781 989 3788 history1 ▲ 54 2 3 history1 0.1 7.5	history2 history2 history2 history2 history2
Cadmium 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	ASTM D5185m method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	<1 current 46 0 114 0 119 2232 837 1018 4215 current 10 2 2 current 0 8.3 18.6	0 history1 83 0 108 <10 21 2116 781 989 3788 history1 ≤54 2 3 54 2 3 history1 0.1 7.5 17.5	 history2 history2 history2 history2

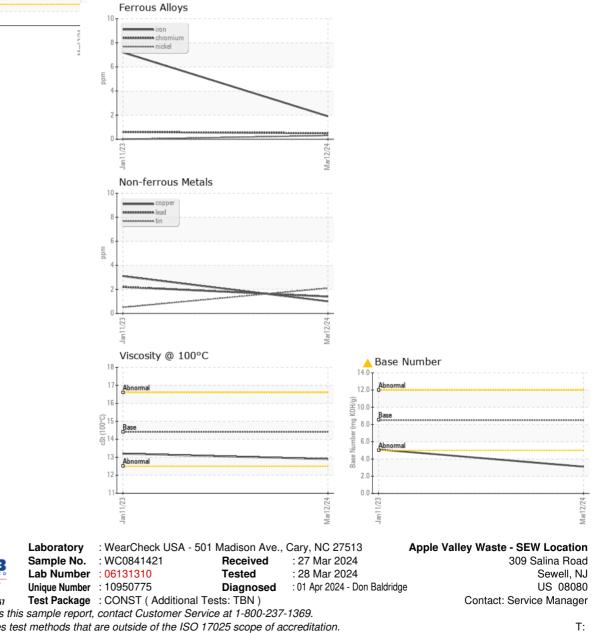


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	13.2	
GRAPHS						





Certificate L2367 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)

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