

OIL ANALYSIS REPORT







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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. 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

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.

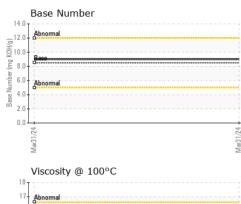
SAMPLE INFORM	IATION	method	limit/base	current		history2
Sample Number		Client Info		WC0691811		
Sample Date		Client Info		31 Mar 2024		
Machine Age	hrs	Client Info		2049		
Oil Age	hrs	Client Info		250		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	3		
Chromium	ppm	ASTM D5185m	>20	0		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		4		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	2		
Lead	ppm	ASTM D5185m	>40	0		
Copper	ppm	ASTM D5185m	>330	0		
Tin	ppm	ASTM D5185m	>15	0		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250	current 241	history1	history2
	ppm ppm					
Boron		ASTM D5185m	250	241		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	241 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	241 0 90		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	241 0 90 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	241 0 90 0 678		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	241 0 90 0 678 1757	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	241 0 90 0 678 1757 807	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	241 0 90 0 678 1757 807 895	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	241 0 90 0 678 1757 807 895 3453		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	241 0 90 0 678 1757 807 895 3453 current	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	250 10 100 450 3000 1150 1350 4250 imit/base >25	241 0 90 0 678 1757 807 895 3453 current 4	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	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	241 0 90 0 678 1757 807 895 3453 <u>current</u> 4 2	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	241 0 90 0 678 1757 807 895 3453 current 4 2 2 <1	 history1 	 history2
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 ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base	241 0 90 0 678 1757 807 895 3453 <i>current</i> 4 2 <1 <i>current</i>	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	241 0 90 0 678 1757 807 895 3453 <u>current</u> 4 2 <1 <u>current</u>	 history1 history1 	 history2 history2
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 ASTM D5185m	250 10 100 450 3000 1150 1350 4250 i mit/base >25 >158 >20 i mit/base >3 >20	241 0 90 0 678 1757 807 895 3453 current 4 2 <1 current 0.2 6.7	 history1 history1 history1	 history2 history2
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 ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base >3 >20	241 0 90 0 678 1757 807 895 3453 <u>current</u> 4 2 <1 <u>current</u> 0.2 6.7 20.3	 history1 history1 history1	 history2 history2 history2
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 ASTM D7844 *ASTM D7624 *ASTM D7415	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30	241 0 90 678 1757 807 895 3453 <i>current</i> 4 2 <1 <i>current</i> 0.2 6.7 20.3 <i>current</i>	 history1 history1 history1	 history2 history2 history2 history2



16 (100-01) 15 14 Base

13 Abnom 12 11 Mar31/24

OIL ANALYSIS REPORT



	VISUAL		method				history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
Mar31/24	Appearance	scalar	*Visual	NORML	NORML		
Mari	Odor	scalar	*Visual	NORML	NORML		
°C	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROPER	TIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	14.4	13.1		
	GRAPHS						
	Ferrous Alloys						
V C	10 iron						
2 2	8 - nickel						
4 4	6						
	u dd						
	4						
	2						
	54 	*****	*****	54			
	Mar31/24			Mar31/24			
	—	1-		Z			
	Non-ferrous Meta	IS					
	copper						
	8 - management tin						
	6 -						
	6- E						
	E 4						
	4 2 0			24			
	E 4			Aa31/24			
	4 2 0			Mar3124			
	udd 4 2 0 +7 2 1 5 2 1 5 2 1 5 2 1 5 2 1 5 2 1 5 2 1 5 2 1 5 2 1 5 2 1 5 2 1 5 2 1 5 2 1 5 2 5 1 5 1	2		+7/15mW	Base Number		
	Viscosity @ 100°C	2		2	Abnormal		
	Viscosity @ 100°C	2		≤ 14.0 12.0	Abnormal		
	Viscosity @ 100°C	5		≤ 14.0 12.0	Abnormal		
	Viscosity @ 100°C	2		≤ 14.0 12.0	Abnormal		
	Viscosity @ 100°C	5		≤ 14.0 12.0	Abnormal		
	Uiscosity @ 100°0	2		≥ 14.0 12.0 (0,110.0 ±0,000 But, 8.0 ±0,000 B	Abnormal		
	Viscosity @ 100°C	2		≥ 14.0 12.0 (0)10.0 000000000000000000000000000000000	Abnormal		
	Viscosity @ 100°C	5		≥ 14.0 12.0 (0,10.0 Hoy Bc, 8.0 2.0 2.0 0.0	Abnormal		1/24
	Viscosity @ 100°C	2		≥ 14.0 12.0 (0)10.0 000000000000000000000000000000000	Abnormal		+571EBM
	Viscosity @ 100°C			→ 14.0 12.0 (0)(10.0 bu) 8.0 bu) 400 bu) 400	Abnormal Abnormal Abnormal		
Laboratory Sample No.	Viscosity @ 100°C	11 Madisc Rece	ived : 01	≥ 14.0 12.0 14.0 14.0 14.0 12.0 14.0 14.0 14.0 10	Abnormal Abnormal Abnormal		IALS - CRANE
Sample No. Lab Number	Viscosity @ 100°C	11 Madiso Recei Teste	ived : 01 ed : 02	→ 14.0 12.0 14.0 14.0 12.0 14.0 14.0 10	Abnormal Abnormal Abnormal Abnormal Abnormal ASSOC		IALS - CRANE CONVENT, LA
Sample No. Lab Number Unique Number	Viscosity @ 100°C	11 Madiso Recei Teste	ived : 01 ed : 02	≥ 14.0 12.0 14.0 14.0 14.0 12.0 14.0 14.0 14.0 10	Abnormal Abnormal Abnormal Abnormal Abnormal ASSOC		IALS - CRANE CONVENT, LA US 70723
Certificate L2367 Sample No. Lab Number Unique Number Test Package	Viscosity @ 100°C	1 Madiso Rece Teste Diagr	ived : 01 ed : 02 nosed : 02	14.0 12.0 14.0 10.0 10.0 10.0 10.0 10.0 10.0 10	Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Base Base Abnormal Base Base Base Base Base Base Base Base	Contact:	IALS - CRANE CONVENT, LA US 70723 GREG JOSEY
Sample No. Lab Number Unique Number	WearCheck USA - 50 : WearCheck USA - 50 : WC0691811 : 06135456 : 10954921 : FLEET contact Customer Servare outside of the ISO of the	11 Madiso Rece Teste Diagr rice at 1-8	ived : 01 ed : 02 nosed : 02 800-237-1369 ope of accrea	14.0 12.0 (0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(Abnomal Abnomal Abnomal Abnomal Abnomal Abnomal Base Abnomal Base Abnomal Base Abnomal Base Base Base Base Base Base Base Base	Contact: sey@associate	IALS - CRANE CONVENT, LA US 70723 GREG JOSEY

Contact/Location: GREG JOSEY - STJCONKL