

OIL ANALYSIS REPORT

Sample Rating Trend



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

DIAGNOSIS

Machine Id

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.

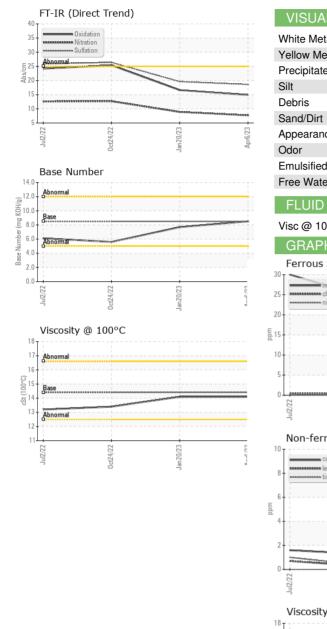
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0069347	PCA0069419	PCA0069504
Sample Date		Client Info		06 Apr 2023	20 Jan 2023	24 Oct 2022
Machine Age	mls	Client Info		181773	162712	141867
Oil Age	mls	Client Info		19061	20845	29577
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	7	10	25
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	3
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	<1	<1	1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium		AOTH DELOF		-		0
Caumum	ppm	ASTM D5185m		0	0	0
ADDITIVES	ррпі	method	limit/base	0 current	0 history1	0 history2
	ppm		limit/base 250		-	-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	250	current 4	history1 6	history2 2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	250 10	current 4 0	history1 6 0	history2 2 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	250 10	current 4 0 59	history1 6 0 61	history2 2 0 63
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	current 4 0 59 <1	history1 6 0 61 <1	history2 2 0 63 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	current 4 0 59 <1 945	history1 6 0 61 <1 955	history2 2 0 63 <1 1005
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	Current 4 0 59 <1 945 1075	history1 6 0 61 <1 955 1075	history2 2 0 63 <1 1005 1126
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	Current 4 0 59 <1 945 1075 1010	history1 6 0 61 <1 955 1075 1015	history2 2 0 63 <1 1005 1126 1003
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	250 10 100 450 3000 1150 1350	Current 4 0 59 <1 945 1075 1010 1218	history1 6 0 61 <1 955 1075 1075 1015 1222	history2 2 0 63 <1 1005 1126 1003 1253
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	250 10 100 450 3000 1150 1350 4250	Current 4 0 59 <1 945 1075 1010 1218 3578	history1 6 0 61 <1 955 1075 1015 1222 3549	history2 2 0 63 <1 1005 1126 1003 1253 2959
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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 ASTM D5185m	250 10 100 450 3000 1150 1350 4250	Current 4 0 59 <1 945 1075 1010 1218 3578 Current	history1 6 0 61 <1 955 1075 1015 1015 1222 3549 history1	history2 2 0 63 <1 1005 1126 1003 1253 2959 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm 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 ASTM D5185m method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	Current 4 0 59 <1 945 1075 1010 1218 3578 Current 4	history1 6 0 61 <1 955 1075 1015 1222 3549 history1 4	history2 2 0 63 <1 1005 1126 1003 1253 2959 history2 7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	current 4 0 59 <1 945 1075 1010 1218 3578 current 4 1	history1 6 0 61 <1 955 1075 1015 1222 3549 history1 4 1	history2 2 0 63 <1 1005 1126 1003 1253 2959 history2 7 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	Current 4 0 59 <1 945 1075 1010 1218 3578 Current 4 1 3	history1 6 0 61 <1 955 1075 1015 1222 3549 history1 4 1 4 1 4	history2 2 0 63 <1 1005 1126 1003 1253 2959 history2 7 1 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 25 >25 >158 >20 Limit/base	Current 4 0 59 <1 945 1075 1010 1218 3578 Current 4 1 3 3 Current	history1 6 0 61 <1 955 1075 1015 1222 3549 history1 4 1 4 history1	history2 2 0 63 <1 1005 1126 1003 1253 2959 history2 7 1 4 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	Current 4 0 59 <1 945 1075 1010 1218 3578 current 4 1 3 current 0.3	history1 6 0 61 <1 955 1075 1015 1222 3549 history1 4 1 4 1 4 0.4	history2 2 0 63 <1 1005 1126 1003 1253 2959 history2 7 1 4 history2 0.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	250 10 100 450 3000 1150 1350 4250 Iimit/base >25 >158 >20 Iimit/base >3 >20	Current 4 0 59 <1 945 1075 1010 1218 3578 current 4 1 3 current 0.3 7.7	history1 6 0 61 <1 955 1075 1015 1222 3549 history1 4 1 4 1 4 0.4 8.9	history2 2 0 63 <1 1005 1126 1003 1253 2959 history2 7 1 4 history2 0.6 12.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN 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	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 >3	Current 4 0 59 <1 945 1075 1010 1218 3578 current 4 1 3 current 0.3 7.7 18.6	history1 6 0 61 <1 955 1075 1015 1222 3549 history1 4 1 4 0.4 8.9 19.6	history2 2 0 63 <1 1005 1126 1003 1253 2959 history2 7 1 4 history2 0.6 12.7 26.4



OIL ANALYSIS REPORT



	VISUAL		method	limit/base	current	history1	history
	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	>0.2	NEG	NEG	NEG
	FLUID PROF		method	limit/base	current	history1	history
	Visc @ 100°C	cSt		14.4	14.1	14.1	13.4
	GRAPHS						
	Ferrous Alloys						
	30						
	25 - chromium						
	20 -						
	<u>ة</u> 15-						
	10-						
	5-						
	5-1						
			<u></u>	53			
	Jul2/22 0ct24/22		Jan 20/23	Apr6/23			
	0		ل a	4			
	Non-ferrous Me	tals					
	10 copper						
	8 - Reasons lead						
	6- Ed.						
	d 4						
	2-						
)/23	3/23			
	Jul2/22 0 0ct24/22		Jan 20/23	Apr6/23			
	Viscosity @ 100	°C	Jan20/23	Apr6/23	Base Number		
	222707 Viscosity @ 100	l⁰C	Jan 20/23	EZ/gudy 14.0	T		
	تتكريس Viscosity @ 100 ¹⁸	^{lo} C	Jan20/23	14.0	Abnormal		
	Viscosity @ 100	¹⁰ C	Jan20/23	14.0	Abnormal		
	Viscosity @ 100	^₀ C	Jan20/23	14.0	Abnormal		
	Viscosity @ 100	P°C	Jan20/23	14.0	Abnormal		
	Viscosity @ 100	P°C	Jan 20/23	14.0	Abnormal		
	Viscosity @ 100	1º C	Jan 20/23	14.0 12.0 (0)110.0 Bu 8.0 1000 Bu 6.0 1000 Bu 8.0 1000	Abnormal Base Abnormal		
	Viscosity @ 100	10C	Jan 20/23	14.0	Abnormal Base Abnormal		
	Viscosity @ 100	0°C		14.0 12.0 (6/HOX) 8.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 1	Abnormal Base Abnormal		
	Viscosity @ 100	10C		14.0 12.0 (6/HOX) 8.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 1	Abnormal Base Abnormal		
	Viscosity @ 100 ¹⁸ ¹⁷ ⁴ ¹⁶ ¹⁸ ¹⁸ ¹⁶ ¹⁸ ¹⁸ ¹⁶ ¹⁸ ¹⁶ ¹⁶ ¹⁶ ¹⁸ ¹⁸ ¹⁸ ¹⁶ ¹⁸ ¹⁸ ¹⁸ ¹⁶ ¹⁸ ¹⁸ ¹⁸ ¹⁸ ¹⁸ ¹⁶ ¹⁸ ¹⁹ ¹⁹ ¹⁸ ¹⁹ ¹		Jan 20/23 Jan 20/23 Jan 20/23	14.0 12.0 12.0 14.0 12.0 14.0 14.0 14.0 14.0 14.0 14.0 12.0 14.0 12.0 14.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12	Abnormal Base Abnormal	0ct24/22	
	Viscosity @ 100 ¹⁸ ¹⁷ ⁴ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁷ ¹⁶ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁷ ¹⁶ ¹⁷ ¹⁷ ¹⁶ ¹⁷ ¹⁷ ¹⁶ ¹⁷ ¹⁷ ¹⁷ ¹⁶ ¹⁷ ¹⁷ ¹⁷ ¹⁶ ¹⁷ ¹⁷ ¹⁷ ¹⁶ ¹⁷ ¹⁷ ¹⁷ ¹⁶ ¹⁷ ¹		Jan 20/23	14.0 12.0 (0)H10.0 (0	Abnormal Base Abnormal	0ct24,72	
	Viscosity @ 100 ¹⁸ ¹⁷ ⁴ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁶ ¹⁷ ¹⁶ ¹⁶ ¹⁷ ¹⁶ ¹⁸ ¹⁷ ¹⁶ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁶ ¹⁷ ¹⁷ ¹⁶ ¹⁷ ¹⁷ ¹⁶ ¹⁷ ¹	501 Madiso	EZIOZUE N Ave., Cary	14.0 12.0 (0)(10)(10)(0)(10)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0	Abnormal Base Abnormal	LEFEBVI	RE AND SC
	Viscosity @ 100 ¹⁸ ¹⁷ ⁴ ⁴ ¹⁶	501 Madiso Recei	n Ave., Cary ved : 25	14.0 12.0 (0)(10)(0)(10)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0	Abnormal Base Abnormal	227472700 LEFEBVI 10895 1	RE AND SC 71ST AVE
r	Viscosity @ 100 Viscosity @ 100 ¹⁸ ¹⁷ ^{4bnomal} ¹⁶ ¹⁷ ¹⁶	501 Madiso Recei Teste	n Ave., Cary ved : 25 d : 26	, NC 27513 5 Apr 2023 5 Apr 2023	Abnormal Base Abnormal	227472700 LEFEBVI 10895 1	RE AND SC 71ST AVE LK RIVER,
r	Viscosity @ 100 ¹⁸ ¹⁷ ⁴ ⁴ ¹⁶	501 Madiso Recei	n Ave., Cary ved : 25 d : 26	14.0 12.0 (0)(10)(0)(10)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0	Abnormal Base Abnormal	LEFEBVI 10895 1 E	RE AND SC 71ST AVE ILK RIVER, US 55 AY LEFEBV

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)

Report Id: LEFELK [WUSCAR] 05829432 (Generated: 04/23/2024 21:35:29) Rev: 1

Certificate L2367

Contact/Location: JAY LEFEBVRE - LEFELK Page 2 of 2

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