

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend



Machine Id 6221297

Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 10W30 (--- 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

Metal levels are typical for a new component breaking in.

#### Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

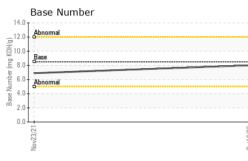
### Fluid Condition

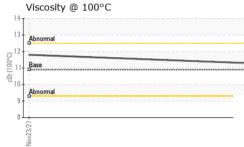
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

			Nov2021	0ct2023		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		IL06009323	IL05418721	
Sample Date		Client Info		16 Oct 2023	23 Nov 2021	
Machine Age	mls	Client Info		57950	18831	
Oil Age	mls	Client Info		20000	18831	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	50	67	
Chromium	ppm	ASTM D5185m	>20	3	3	
Nickel	ppm	ASTM D5185m	>4	<1	0	
Titanium	ppm	ASTM D5185m		<1	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	22	89	
Lead	ppm	ASTM D5185m	>40	0	<1	
Copper	ppm	ASTM D5185m	>330	4	56	
Tin	ppm	ASTM D5185m	>15	<1	2	
Antimony	ppm	ASTM D5185m			0	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
				-	Ũ	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base 250			history2
	ppm ppm	method		current	history1	history2 
Boron		method ASTM D5185m	250	current 26	history1 23	
Boron Barium	ppm	method ASTM D5185m ASTM D5185m	250 10	current 26 0	history1 23 0	
Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	250 10	current 26 0 40	history1 23 0 47	
Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	current     26     0     40     1	history1 23 0 47 5	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	current 26 0 40 1 499	history1 23 0 47 5 853	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	Current 26 0 40 1 499 1609	history1 23 0 47 5 853 1302	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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 1350	Current 26 0 40 1 499 1609 713	history1 23 0 47 5 853 1302 727	
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	250 10 100 450 3000 1150 1350	Current 26 0 40 1 499 1609 713 890	history1 23 0 47 5 853 1302 727 871	
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 ASTM D5185m	250 10 100 450 3000 1150 1350 4250	Current 26 0 40 1 499 1609 713 890 2218	history1 23 0 47 5 853 1302 727 871 2049	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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 26 0 40 1 499 1609 713 890 2218 current	history1 23 0 47 5 853 1302 727 871 2049 history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25	current     26     0     40     1     499     1609     713     890     2218     current     8	history1     23     0     47     5     853     1302     727     871     2049     history1     20	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25	current     26     0     40     1     499     1609     713     890     2218     current     8     4	history1     23     0     47     5     853     1302     727     871     2049     history1     20     8	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >20 <b>imit/base</b>	current     26     0     40     1     499     1609     713     890     2218     current     8     4     36	history1   23   0   47   5   853   1302   727   871   2049   history1   20   8   266	     history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >20 <b>imit/base</b>	current     26     0     40     1     499     1609     713     890     2218     current     8     4     36     current	history1   23   0   47   5   853   1302   727   871   2049   history1   20   8   266   history1	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	method     ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >20 <b>Imit/base</b>	current     26     0     40     1     499     1609     713     890     2218     current     8     4     36     current     1	history1   23   0   47   5   853   1302   727   871   2049   history1   20   8   266   history1   0.6	     history2  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	method     ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>i</b> mit/base >25 >20 <b>i</b> mit/base >3 >20	current     26     0     40     1     499     1609     713     890     2218     current     8     4     36     current     1     12.6	history1     23     0     47     5     853     1302     727     871     2049     history1     20     8     266     history1     0.6     12.7	     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	method     ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >20 <b>imit/base</b> >3 >20 >3	current     26     0     40     1     499     1609     713     890     2218     current     8     4     36     current     1     12.6     24.0	history1   23   0   47   5   853   1302   727   871   2049   history1   20   8   266   history1   0.6   12.7   23.9	    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	method     ASTM D5185m     ASTM D7844     *ASTM D7624     *ASTM D7415     method	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 -20 imit/base >3 >20 >30	current     26     0     40     1     499     1609     713     890     2218     current     8     4     36     current     1     12.6     24.0     current	history1   23   0   47   5   853   1302   727   871   2049   history1   20   8   266   history1   0.6   12.7   23.9   history1	    history2  history2  history2  history2  history2



# **OIL ANALYSIS REPORT**





VISUAL		method	limit/base	current	history1	history
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	TIES	method	limit/base	current	history1	history
Visc @ 100°C	cSt	ASTM D445	10.9	11.3	11.8	
GRAPHS						
Ferrous Alloys						
D iron						
0 - chromium						
D =						
D <b>-</b>						
0-						
			23			
			Jet16/23			
Nav23/21			Oct16/23 4			
	ls		Oct16/23 A			
Non-ferrous Meta	ls		Oct 6/23			
Non-ferrous Meta	ls		Oct16/23			
Non-ferrous Metal	ls		Oct16/23			
Non-ferrous Metal	ls		Oct 16/23			
Non-ferrous Meta	ls		Oct 18/23			
Non-ferrous Metal	ls		Oct 16/23			
Non-ferrous Metal	ls		0ct16/23			
Non-ferrous Meta	ls		Oct 6/23			
Non-ferrous Metal			/			
Non-ferrous Metal			/			
Non-ferrous Meta			Oct16/23			
Non-ferrous Metal			/	Base Number	r	
Non-ferrous Metal			/	Base Number	r	
Non-ferrous Metal			Oct16/23	Abnormal	r	
Non-ferrous Metal			Octie 000 000 000 000 000 000 000 000 000 0	Abnormal	r	
Non-ferrous Metal			Octie 000 000 000 000 000 000 000 000 000 0	Abnormal	r	
Non-ferrous Metal			Octie 000 000 000 000 000 000 000 000 000 0	Abnormal	r	
Non-ferrous Metal			Octie 000 000 000 000 000 000 000 000 000 0	Abnormal Base	r	
Non-ferrous Metal			Octie 000 000 000 000 000 000 000 000 000 0	Abnormal Base	r	
Non-ferrous Metal			0041802 14.0 12.0 (0) (0) (0) (0) 001 0.0 001 0.0 0	Abnormal Base Abnormal		
Non-ferrous Metal			14.0 12.0 (b(HQ)X b(HQ)X b(HQ)	Abnormal Base Abnormal		
Non-ferrous Metal			0041802 14.0 12.0 (0) (0) (0) (0) 001 0.0 001 0.0 0	Abnormal Base Abnormal	r	



Unique Number : 10743085 Diagnostician : Wes Davis Test Package : FLEET Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. davidjohns@idealease.com \* - 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)

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received

Diagnosed

: 16 Nov 2023

: 16 Nov 2023

Report Id: IDEATLGA [WUSCAR] 06009323 (Generated: 11/16/2023 20:58:06) Rev: 1

: IL06009323

: 06009323

Laboratory

Sample No.

Lab Number

Contact/Location: DAVID JOHNS - IDEATLGA

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