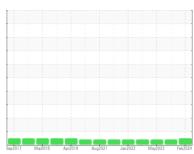


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **8819570**

Component **Diesel Engine**

DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

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

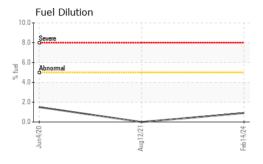
Fluid Condition

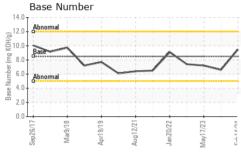
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

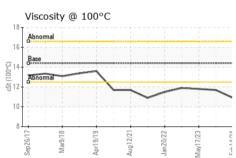
Sep 2017 Mar 2016 Apr 2019 Aur 2021 Jan 2022 May 2023 Feb 2024									
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2			
Sample Number		Client Info		IL0034868	IL0034827	IL05887761			
Sample Date		Client Info		14 Feb 2024	07 Dec 2023	17 May 2023			
Machine Age	mls	Client Info		660085	655974	604510			
Oil Age	mls	Client Info		0	0	40000			
Oil Changed		Client Info		N/A	N/A	N/A			
Sample Status				NORMAL	ATTENTION	ATTENTION			
CONTAMINATION	V	method	limit/base	current	history1	history2			
Water		WC Method	>0.2	NEG	NEG	NEG			
Glycol		WC Method		NEG	NEG	NEG			
WEAR METALS		method	limit/base	current	history1	history2			
Iron	ppm	ASTM D5185m	>100	11	50	28			
Chromium	ppm	ASTM D5185m	>20	<1	2	2			
Nickel	ppm	ASTM D5185m	>4	0	0	0			
Titanium	ppm	ASTM D5185m		0	<1	0			
Silver	ppm	ASTM D5185m	>3	0	0	0			
Aluminum	ppm	ASTM D5185m	>20	2	3	<1			
Lead	ppm	ASTM D5185m	>40	0	4	5			
Copper	ppm	ASTM D5185m	>330	2	1	<1			
Tin	ppm	ASTM D5185m	>15	0	<1	<1			
Vanadium	ppm	ASTM D5185m		0	0	0			
Cadmium	ppm	ASTM D5185m		0	0	0			
ADDITIVEC			12 - 25 /1			la la tarre O			
ADDITIVES		method				history2			
Boron	ppm	ASTM D5185m	250	current 56	history1 22	nistory2 25			
	ppm ppm		250						
Boron		ASTM D5185m	250	56	22	25			
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	56 8	22 0	25 0			
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	56 8 41	22 0 51	25 0 52			
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	56 8 41 0	22 0 51 <1	25 0 52 <1			
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	56 8 41 0 443	22 0 51 <1 554	25 0 52 <1 531			
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	56 8 41 0 443 1417	22 0 51 <1 554 1790	25 0 52 <1 531 1833			
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 ASTM D5185m	250 10 100 450 3000 1150	56 8 41 0 443 1417 722	22 0 51 <1 554 1790 728	25 0 52 <1 531 1833 783			
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 ASTM D5185m	250 10 100 450 3000 1150	56 8 41 0 443 1417 722 803	22 0 51 <1 554 1790 728 997	25 0 52 <1 531 1833 783 982			
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 ASTM D5185m	250 10 100 450 3000 1150 1350 4250	56 8 41 0 443 1417 722 803 2365	22 0 51 <1 554 1790 728 997 2363	25 0 52 <1 531 1833 783 982 2577			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	56 8 41 0 443 1417 722 803 2365	22 0 51 <1 554 1790 728 997 2363 history1	25 0 52 <1 531 1833 783 982 2577 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	56 8 41 0 443 1417 722 803 2365 current	22 0 51 <1 554 1790 728 997 2363 history1	25 0 52 <1 531 1833 783 982 2577 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	56 8 41 0 443 1417 722 803 2365 current 7	22 0 51 <1 554 1790 728 997 2363 history1 14	25 0 52 <1 531 1833 783 982 2577 history2 8			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	56 8 41 0 443 1417 722 803 2365 current 7 0	22 0 51 <1 554 1790 728 997 2363 history1 14 0 4	25 0 52 <1 531 1833 783 982 2577 history2 8 2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5	56 8 41 0 443 1417 722 803 2365 current 7 0 3 0.9	22 0 51 <1 554 1790 728 997 2363 history1 14 0 4 <1.0	25 0 52 <1 531 1833 783 982 2577 history2 8 2 2 <1.0			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5 limit/base >3	56 8 41 0 443 1417 722 803 2365 current 7 0 3 0.9	22 0 51 <1 554 1790 728 997 2363 history1 14 0 4 <1.0	25 0 52 <1 531 1833 783 982 2577 history2 8 2 <1.0 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5 limit/base	56 8 41 0 443 1417 722 803 2365 current 7 0 3 0.9	22 0 51 <1 554 1790 728 997 2363 history1 14 0 4 <1.0 history1 0.9	25 0 52 <1 531 1833 783 982 2577 history2 8 2 2 <1.0 history2 0.8			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5 limit/base	56 8 41 0 443 1417 722 803 2365 current 7 0 3 0.9 current 0.2 6.7	22 0 51 <1 554 1790 728 997 2363 history1 14 0 4 <1.0 history1 0.9 13.1	25 0 52 <1 531 1833 783 982 2577 history2 8 2 2 <1.0 history2 0.8 12.9			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7415 method	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5 limit/base >3 >20 >30 limit/base	56 8 41 0 443 1417 722 803 2365 current 7 0 3 0.9 current 0.2 6.7 22.0 current	22 0 51 <1 554 1790 728 997 2363 history1 14 0 4 <1.0 history1 0.9 13.1 25.9 history1	25 0 52 <1 531 1833 783 982 2577 history2 8 2 <1.0 history2 0.8 12.9 25.8 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7624	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >5 limit/base >3 >20 >30 limit/base >25	56 8 41 0 443 1417 722 803 2365 current 7 0 3 0.9 current 0.2 6.7 22.0	22 0 51 <1 554 1790 728 997 2363 history1 14 0 4 <1.0 history1 0.9 13.1 25.9	25 0 52 <1 531 1833 783 982 2577 history2 8 2 <1.0 history2 0.8 12.9 25.8			



OIL ANALYSIS REPORT







VISUAL		method	limit/base	current	history1	history2
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		NEG	NEG	NEG

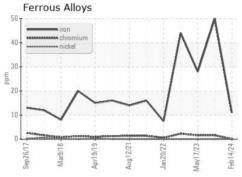
10.9

11.7

11.8

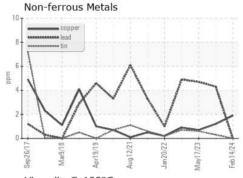
Visc @ 100	°C
GRAPHS	

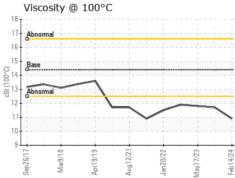
FLUID PROPERTIES

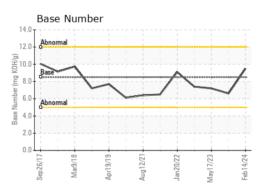


cSt

ASTM D445 14.4









Laboratory Sample No.

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

: IL0034868 Lab Number : 06100007 Unique Number: 10898237

Received **Tested**

: 26 Feb 2024 : 28 Feb 2024 Diagnosed

: 28 Feb 2024 - Jonathan Hester

IDEALEASE OF ATLANTA - FULTON 4675 BAKERS FERRY ROAD ATLANTA, GA

> US 30331 Contact: DAVID JOHNS

> > F: (404)699-7420

davidjohns@idealease.com T: (404)699-5571

Test Package: FLEET (Additional Tests: FuelDilution, PercentFuel)

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)