

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend







Machine Id 620328 Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 40 (--- QTS)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) DIESEL ENGINE OIL SAE 40. Please confirm. Please specify the component make and model with your next sample.

### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### Fluid Condition

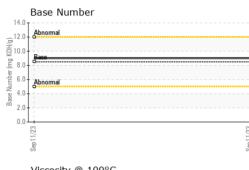
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

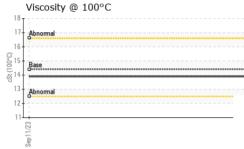
SAMPLE INFORM	<b>MATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		IL05982180		
Sample Date		Client Info		11 Sep 2023		
Machine Age	hrs	Client Info		8189		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATIO	M	method	limit/base	current	history1	history2
Fuel	N	WC Method	>5	<1.0		
Glycol		WC Method	>5	NEG		
-				NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	14		
Chromium	ppm	ASTM D5185m	>20	<1		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	3		
Lead	ppm	ASTM D5185m	>40	0		
Copper	ppm	ASTM D5185m	>330	<1		
Tin	ppm	ASTM D5185m	>15	<1		
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 2	history1	history2
	ppm ppm					
Boron		ASTM D5185m	250	2		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	2 <1		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	2 <1 59		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	2 <1 59 <1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	2 <1 59 <1 941		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	2 <1 59 <1 941 1026	  	  
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	2 <1 59 <1 941 1026 1028		
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	2 <1 59 <1 941 1026 1028 1235	    	
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	2 <1 59 <1 941 1026 1028 1235 2972		
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 <b>limit/base</b> >25	2 <1 59 <1 941 1026 1028 1235 2972 current	     history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25	2 <1 59 <1 941 1026 1028 1235 2972 current 8	     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 <b>method</b> ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >216	2 <1 59 <1 941 1026 1028 1235 2972 current 8 <	     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 <b>limit/base</b> >25 >216 >20	2 <1 59 <1 941 1026 1028 1235 2972 current 8 <1 5	     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	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >216 >216 >20	2 <1 59 <1 941 1026 1028 1235 2972 current 8 <1 5 current	    history1   history1	     history2   history2
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 ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >216 >20 <b>limit/base</b> >3	2 <1 59 <1 941 1026 1028 1235 2972 <b>current</b> 8 <1 5 <b>current</b> 0.7	     history1   history1 	     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	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>Iimit/base</b> >25 >216 >20 <b>Iimit/base</b> >3 >20	2 <1 59 <1 941 1026 1028 1235 2972 <i>current</i> 8 <1 5 <i>current</i> 0.7 7.3	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 D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 20 225 >216 >20 >20 >30 >30 Simit/base	2 <1 59 <1 941 1026 1028 1235 2972 <i>current</i> 8 <1 5 <i>current</i> 0.7 7.3 19.2 <i>current</i>	      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 D5185m	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >216 >20 <b>imit/base</b> >3 >20 >30	2 <1 59 <1 941 1026 1028 1235 2972 current 8 <1 5 current 0.7 7.3 19.2	history1 history1 history1 history1 history1	    history2  history2  history2  history2  history2



# **OIL ANALYSIS REPORT**

VISUAL





		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		
	- 23	Appearance	scalar	*Visual	NORML	NORML		
	Sep 11/23	Odor	scalar	*Visual	NORML	NORML		
	03							
		Emulsified Water	scalar	*Visual	>0.2	NEG		
		Free Water	scalar	*Visual		NEG		
		FLUID PROPER	RTIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	14.4	13.9		
		GRAPHS						
		Ferrous Alloys						
		12 - iron						
		10-						
		8						
		4						
		2						
		0						
		Sep 11/23			Sep 11/23			
		Self			Sep			
		Non-ferrous Met	als					
		10 copper						
		8-						
		essesses []]						
		6						
		E d						
		4						
		2-						
		0			11/23			
		Sep11/23			Sep11/23			
		Viscosity @ 100°	°C		Sep 11/23	Base Number		
		Sep11/23	°C		62/11 das			
		Viscosity @ 100°	°C		14.	Abnormal		
		Viscosity @ 100°	°C		14.	Abnormal		
		Viscosity @ 100°	°C		14.	Abnormal		
		Viscosity @ 100°	°C		14.	Abnormal		
		Viscosity @ 100°	°C		14.	Abnormal		
		Viscosity @ 100°	°C		14.0	Abnormal		
		Viscosity @ 100°	PC		14.	Abnormal		
		Viscosity @ 100°	PC		14.1 12.0 (PhO) V Du 8.0 10.1 10.1 10.0 10.0 10.0 10.0 10.0 1	Abnormal		
		Viscosity @ 100°	PC		14.1 12.0 (PhO) V Du 8.0 10.1 10.1 10.0 10.0 10.0 10.0 10.0 1	Abnormal		
		Viscosity @ 100° Viscosity @ 100° Abnomal Base Base Abnomal 13 14 13 12	°C		14.1 (0)H10.1 00 H10.1 00 8.1 90 90 90 90 90 90 90 90 90 90 90 90 90 9	Abnormal		
	Laboratory Sample No. Lab Number Unique Number	Viscosity @ 100° Viscosity @ 100° Abnomal Base Base Base Elimits Eli		l :180 ed :180	14.1 (0)H 10.1 (0)H 10.1 (	Abnormal Base Abnormal	CI	GHWAY DRI NCINNATI, ( US 452
	Sample No. Lab Number Unique Number Test Package	Viscosity @ 100° Viscosity @ 100° Abnomal Abnomal E : WearCheck USA - : IL05982180 : 05982180 : 05982180 : 10699475 : FLEET	- 501 Madia Receivec Diagnose Diagnose	l :180 ed :180 ician :We	14.1 12.1 10.1	Abnormal Base Abnormal	11777 HIC CI Contact: R	GHWAY DRI NCINNATI, ( US 452 OBERT BAI
discuss this	Sample No. Lab Number Unique Number Test Package sample report,	Viscosity @ 100° Viscosity @ 100° Abnomal Base Base Base Elimits Eli	- 501 Madia Received Diagnose Diagnost	l : 18 ( ed : 18 ( ician : We	ry, NC 27513 Oct 2023 s Davis	Abnormal Base Abnormal	11777 HIC CI Contact: R baierr@rushe	GHWAY DRI NCINNATI, ( US 452 OBERT BAI

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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