

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id 712061 Component Diesel Engine

## Fluid DIESEL ENGINE OIL SAE 40 (--- GAL)

### 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.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### Fluid Condition

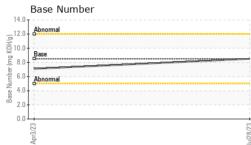
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

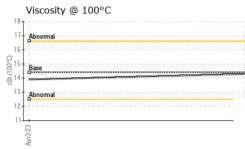
			Apr2023	Jul2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0084008	GFL0071040	
Sample Date		Client Info		28 Jul 2023	03 Apr 2023	
Machine Age	hrs	Client Info		600	1923	
Oil Age	hrs	Client Info		1923	600	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINATI	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	20	55	
Chromium	ppm	ASTM D5185m	>5	<1	1	
Nickel	ppm	ASTM D5185m	>2	0	<1	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>30	1	3	
Lead	ppm	ASTM D5185m	>30	0	0	
Copper	ppm	ASTM D5185m	>150	0	2	
Tin	ppm	ASTM D5185m	>5	<1	<1	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	8	28	
Davisura			10	0	0	
Banum	ppm	ASTM D5185m	10	U	0	
	ppm ppm	ASTM D5185m ASTM D5185m	10 100	67	68	
Molybdenum						
Molybdenum Manganese	ppm	ASTM D5185m		67	68	
Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	100	67 <1	68 1	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	100 450	67 <1 1088	68 1 887	
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000	67 <1 1088 1171	68 1 887 1166	
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150	67 <1 1088 1171 1143	68 1 887 1166 943	  
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	100 450 3000 1150 1350	67 <1 1088 1171 1143 1427	68 1 887 1166 943 1183	   
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	100 450 3000 1150 1350 4250	67 <1 1088 1171 1143 1427 4094	68 1 887 1166 943 1183 3277	   
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN' Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	100 450 3000 1150 1350 4250 limit/base	67 <1 1088 1171 1143 1427 4094 current	68 1 887 1166 943 1183 3277 history1	     history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	100 450 3000 1150 1350 4250 limit/base >20	67 <1 1088 1171 1143 1427 4094 current 2	68 1 887 1166 943 1183 3277 history1 6	    history2 
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 <i>limit/base</i> >20 >216	67 <1 1088 1171 1143 1427 4094 current 2 0	68 1 887 1166 943 1183 3277 history1 6 2	    history2 
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 <b>limit/base</b> >20 >216 >20	67 <1 1088 1171 1143 1427 4094 current 2 0 0	68 1 887 1166 943 1183 3277 history1 6 2 2 2	    history2  
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 <b>limit/base</b> >20 >216 >20 <b>limit/base</b> >3	67 <1 1088 1171 1143 1427 4094 current 2 0 0 0	68 1 887 1166 943 1183 3277 history1 6 2 2 2 history1	    history2   history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D51854	100 450 3000 1150 1350 4250 <b>limit/base</b> >20 >216 >20 <b>limit/base</b> >3 >20	67 <1 1088 1171 1143 1427 4094 current 2 0 0 0 0 current 0.5	68 1 887 1166 943 1183 3277 history1 6 2 2 2 history1 1.3	    history2   history2
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	ASTM D5185m ASTM D7844 *ASTM D7624	100 450 3000 1150 1350 4250 <b>limit/base</b> >20 >216 >20 <b>limit/base</b> >3 >20	67 <1 1088 1171 1143 1427 4094 <u>current</u> 2 0 0 0 0 <u>current</u> 0.5 8.9	68 1 887 1166 943 1183 3277 history1 6 2 2 history1 1.3 11.9	    history2  history2
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	ASTM D5185m ASTM D7844 *ASTM D7624	100 450 3000 1150 1350 4250 <b>limit/base</b> >20 >216 >20 <b>limit/base</b> >3 >20 >3	67 <1 1088 1171 1143 1427 4094 current 2 0 0 0 0 current 0.5 8.9 19.8	68 1 887 1166 943 1183 3277 history1 6 2 2 history1 1.3 11.9 25.1	    history2  history2  history2



# **OIL ANALYSIS REPORT**

VISUAL





	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt		*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
6		scalar	*Visual	NORML	NORML	NORML	
2	Appearance Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water			>0.2	NEG	NEG	
		scalar	*Visual		NEG	NEG	
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	14.4	14.3	13.9	
	GRAPHS						
	Ferrous Alloys						
	60						
	50 - chromium						
	40						
	E 20						
	Ē 30 -						
	20-						
	10-						
	53			53			
	Apr3/23			Jul28/23			
		-		7			
	Non-ferrous Meta	IS					
	copper						
	8 - hereasen lead						
	u .						
	ä. 4-						
	2						
			**********************	A D D D D D D D D D D D D D D D D D D D			
	0			/23			
	Apr3/23			Jul28/23			
	Apr3/23			Jul28/23			
	0			£Z/8ZInf - 14.0	Base Number		
	Viscosity @ 100°C	2		14.0	Abnormal		
	Viscosity @ 100°C	2		14.0	Abnormal		
	Viscosity @ 100°C	2		14.0	Abnormal		
	Viscosity @ 100°C	2		14.0	Abnormal		
	Viscosity @ 100°C	2		14.0	Abnormal Base		
	Viscosity @ 100°C			14.0	Abnormal Base Abnormal		
	Viscosity @ 100°C	2		14.0 12.0 (6/HOX Bu) 30 8.0 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Abnormal Base Abnormal		
	Viscosity @ 100°C			14.0 12.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0) (Ph 1	Abnormal Base Abnormal		
	Viscosity @ 100°C			14.0 12.0 (0)10.0 1400 1400 1400 1400 1400 1400 1400	Abnormal Base Abnormal		
	Viscosity @ 100°C			14.0 12.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0 (Ph 10.0) (Ph 1	Abnormal Base Abnormal		
Laboratory	Viscosity @ 100°C	501 Madis		14.0 12.0 (PH10.0 but http://www.sec 4.0 2.0 0.0 rry, NC 27513	Abnormal Base Abnormal	/ironmental - 402·	
Sample No.	Viscosity @ 100°C	501 Madis Received	: 08 /	14.0 12.0 (PH10.0 PH10.	Abnormal Base Abnormal	/ironmental - <b>402</b> · 4429 Alle	en Martin Dri
Sample No. Lab Number	Viscosity @ 100°C	501 Madis Received Diagnose	i : 08 / ed : 09 /	ry, NC 27513 Aug 2023 Aug 2023	Abnormal Base Abnormal	/ironmental - <b>402</b> · 4429 Alle	en Martin Dri Fort Wayne,
Sample No. Lab Number	Viscosity @ 100°C	501 Madis Received	i : 08 / ed : 09 /	14.0 12.0 (PH10.0 PH10.	Abnormal Base Abnormal	/ironmental - <b>402</b> · 4429 Alle	en Martin Dri Fort Wayne, US 468

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

F: