

# **OIL ANALYSIS REPORT**

Sample Rating Trend

FUEL

# Machine Id

FREIGHTLINER 2127

Diesel Engine Fluid MOBIL 15W40 (--- GAL)

# DIAGNOSIS

#### A Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

### Wear

All component wear rates are normal.

### Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

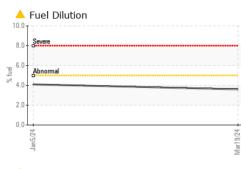
#### Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		WC0906191	WC0878828	
Sample Date		Client Info		19 Mar 2024	05 Jan 2024	
Machine Age	mls	Client Info		253145	242749	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Changed	Changed	
Sample Status				ABNORMAL	ABNORMAL	
CONTAMINATION	N	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	14	15	
Chromium	ppm	ASTM D5185m	>5	2	1	
Nickel	ppm	ASTM D5185m	>2	1	0	
Titanium	ppm	ASTM D5185m		<1	<1	
Silver	ppm	ASTM D5185m	>3	<1	0	
Aluminum	ppm	ASTM D5185m	>30	2	1	
Lead	ppm	ASTM D5185m	>30	5	4	
Copper	ppm	ASTM D5185m		1	<1	
Tin	ppm	ASTM D5185m	>5	2	<1	
Vanadium	ppm	ASTM D5185m		<1	<1	
Cadmium	ppm	ASTM D5185m		1	<1	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		1	3	
Barium	ppm	ASTM D5185m		0	0	
Molybdenum	ppm	ASTM D5185m		57	53	
Manganese	ppm	ASTM D5185m		1	<1	
Magnesium	ppm	ASTM D5185m		883	950	
Calcium	ppm	ASTM D5185m		1029	1021	
Phosphorus	ppm	ASTM D5185m		1028	988	
Zinc	ppm	ASTM D5185m		1150	1143	
Sulfur	ppm	ASTM D5185m		3218	2911	
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	5	4	
Sodium	ppm	ASTM D5185m	>118	<1	1	
Potassium	ppm	ASTM D5185m	>20	4	2	
Fuel	%	ASTM D3524	>5	<b>A</b> 3.6	<b>4</b> .1	
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.7	0.7	
Nitration	Abs/cm	*ASTM D7624	>20	6.8	6.5	
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.9	18.8	
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.7	13.4	
Base Number (BN)	mg KOH/g	ASTM D2896		8.4	8.4	

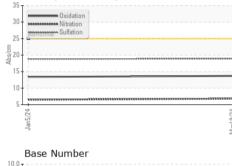


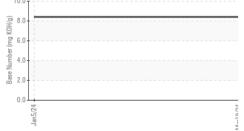
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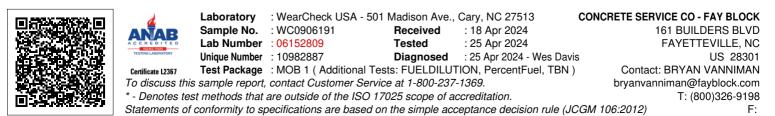


#### FT-IR (Direct Trend)





White Metal scalar 'Visual NONE NONE NONE Yellow Metal scalar 'Visual NONE NONE NONE Precipitate scalar 'Visual NONE NONE NONE Sitt scalar 'Visual NONE NONE NONE Sand/Dirit scalar 'Visual NONE NONE NONE Appearance scalar 'Visual NONE NONE NONE NONE Codor scalar 'Visual NORML NORML NORML Emulsified Water scalar 'Visual NORML NORML NORML Emulsified Water scalar 'Visual >0.2 NEG NEG Free Water scalar 'Visual GRAPHS Silicon (ppm)    Sulcon (ppm)      	VISUAL		method	limit/base	current	history1	history2
Yellow Metal   scalar   Visual   NONE   NONE   NONE      Silt   scalar   Visual   NONE   NONE   NONE      Silt   scalar   Visual   NONE   NONE   NONE   NONE      Sand/Dirt   scalar   Visual   NONE   NONE   NONE   NONE      Sand/Dirt   scalar   Visual   NONE   NONE   NONE      Sand/Dirt   scalar   Visual   NORML   NORML   NORML      Appearance   scalar   Visual   NORML   NORML   NORML   NORML      Emulsified Water   scalar   Visual   NORM   NORML   NORML   NORML   NORML   NORML     Visc @ 100°C   cSt ASTM D445   12.3   12.4       GRAPHS	White Metal	scalar	*Visual	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 Cdor scalar "Visual NORML NORML NORML NORML Emulsified Water scalar "Visual NORML NORML NORML NORML Free Water scalar "Visual NORML Imit/base current history1 history Visc @ 100°C cSt ASTM D445 12.3 12.4 GRAPHS Tron (ppm) Aluminum (ppm) Aluminum (ppm) Chromlum (ppm) Chromlum (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Chromlum (p				NONE	NONE		
Debris   scalar   *Visual   NONE   NONE      Sand/Dirt   scalar   *Visual   NONE   NONE   NONE      Appearance   scalar   *Visual   NORML   NORML   NORML      Appearance   scalar   *Visual   NORML   NORML   NORML      Emulsified Water   scalar   *Visual   NORM   NORML   NORML      Free Water   scalar   *Visual   NORM   NORM   NORM      Free Water   scalar   *Visual   NORM   NORM   NORM      Visc @ 100°C   cst   ASTM D445   12.3   12.4      Graphic   fill   fi	Precipitate	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt   scalar   *Visual   NONE   NONE   NONE      Appearance   scalar   *Visual   NORML   NORML   NORML   NORML      Odor   scalar   *Visual   NORML   NORML   NORML   NORML   NORML      Odor   scalar   *Visual   >0.2   NEG   NEG      Free Water   scalar   *Visual   NEG   NEG      Visc @ 100°C   cSt   ASTM D445   12.3   12.4      GRAPHS   Iron (ppm)   Iron	Silt	scalar	*Visual	NONE	NONE	NONE	
Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG NEG FLUID PROPERTIES method limit/base current history1 history Visc @ 100°C cSt ASTM D445   12.3   12.4 GRAPHS Iron (ppm) 	Debris	scalar	*Visual	NONE	NONE	NONE	
Odor   scalar   *Visual   NORML   NORML   NORML      Emulsified Water   scalar   *Visual   >0.2   NEG      Free Water   scalar   *Visual   >0.2   NEG      FLUID PROPERTIES   method   limit/base   current   history1   history1     Visc @ 100°C   cSt   ASTM D445   12.3   12.4      GRAPHS   Iron (ppm)	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NEG NEG FLUID PROPERTIES method limit/base current history1 history Visc @ 100°C cSt ASTM D445 12.3 12.4 GRAPHS Tron (ppm) Aluminum (ppm) Aluminum (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Silicon (ppm) Silic	Appearance	scalar	*Visual	NORML	NORML	NORML	
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FLUID PROPERTIES   method   limit/base   current   history1   history1     Visc @ 100°C   cSt   ASTM D445   12.3   12.4      GRAPHS   Iron (ppm)		scalar	*Visual	>0.2	NEG	NEG	
Visc @ 100°C cSt ASTM D445	Free Water	scalar	*Visual		NEG	NEG	
GRAPHS     Iron (ppm)     Jamma     Jamma <td>FLUID PROPERT</td> <td>TIES</td> <td>method</td> <td>limit/base</td> <td>current</td> <td>history1</td> <td>history2</td>	FLUID PROPERT	TIES	method	limit/base	current	history1	history2
Iron (ppm)	Visc @ 100°C	cSt	ASTM D445		<b>12.3</b>	<b>1</b> 2.4	
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