

### **FUEL REPORT**





# Wachine Id YFF200165

Component **Diesel Fuel** DIESEL FUEL No. 2 (--- GAL)

#### DIAGNOSIS

#### Recommendation

We advise that you follow the water drain-off procedure for this component. We recommend you service and check the fuel filters for mucous-like deposits. Check with fuel supplier for biocides available to destroy the microorganisms in the fuel system. We were unable to perform a particle count due to a high concentration of particles present in this sample.

#### Corrosion

All metal levels are normal indicating no corrosion in the system.

#### Contaminants

Moderate concentration of visible dirt/debris present in the fuel. Excessive free water present. There is a light concentration of Bacteria, Yeast and Fungus present in the sample.

#### **Fuel Condition**

The fuel is no longer serviceable due to the presence of contaminants. Sulfur value derived by ASTM D5453 method for ULSD validation. Sulfur level is acceptable for ULSD specification.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KT0000475		
Sample Date		Client Info		27 Feb 2023		
Machine Age	hrs	Client Info		64		
Sample Status				SEVERE		
PHYSICAL PROP	ERTIES	method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298		0.839		
Fuel Color	text	*Visual Screen		Yllow		
ASTM Color	scalar	*ASTM D1500		L1.5		
Visc @ 40°C	cSt	ASTM D445	4.1	2.72		
SULFUR CONTER	NT	method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		0		
Sulfur (UVF)	ppm	ASTM D5453		8		
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		160		
5% Distillation Point	°C	ASTM D86		196		
10% Distill Point	°C	ASTM D86		209		
15% Distillation Point	°C	ASTM D86		218		
20% Distill Point	°C	ASTM D86		225		
30% Distill Point	°C	ASTM D86		240		
40% Distill Point	°C	ASTM D86		253		
50% Distill Point	°C	ASTM D86		266		
60% Distill Point	°C	ASTM D86		279		
70% Distill Point	°C	ASTM D86		292		
80% Distill Point	°C	ASTM D86		307		
85% Distillation Point	°C	ASTM D86		315		
90% Distill Point	°C	ASTM D86		324		
95% Distillation Point	°C	ASTM D86		336		
Final Boiling Point	°C	ASTM D86		347		
Distillation Residue	%	ASTM D86		1.4		
Distillation Loss	%	ASTM D86		-0.3		
IGNITION QUALIT	ΓY	method	limit/base	current	history1	history2
API Gravity		ASTM D7777		37.2		
Cetane Index		ASTM D4737	<40.0	50.2		
CONTAMINANTS		method	limit/base	current	history1	history2

CONTAMINANTS	3	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	<1		
Sodium	ppm	ASTM D5185m	<0.1	<1		
Potassium	ppm	ASTM D5185m	<0.1	<1		
Water	%	ASTM D6304	<0.05	0.028		
ppm Water	ppm	ASTM D6304	<500	289.4		
% Gasoline	%	*In-House	<0.50	0.0		
% Biodiesel	%	*In-House	<20.0	5.2		



cSt (40°C)

cSt (40°C)

0. Feb27/23

## **FUEL REPORT**

Water (KF)			MICROBIAL		method	limit/base	current	history1	history2
Severe			Bacteria	CFU/ml	WC-Method	>=100000	0		
			Yeast	CFU/ml	WC-Method	>=100000	<u> </u>		
			Mold	Colonies	WC-Method	MODER			
			HEAVY METAL	S	method	limit/base	current	history1	history2
bnormal			Aluminum	ppm	ASTM D5185m	<0.1	0		
		Feb27/23 -	Nickel	ppm	ASTM D5185m	<0.1	0		
		Feb 2	Lead	ppm	ASTM D5185m		0		
iscosity @ 40°	PC .		Vanadium	ppm	ASTM D5185m	<0.1	0		
iscosity @ 40			Iron	ppm	ASTM D5185m	<0.1	0		
			Calcium	ppm	ASTM D5185m	<0.1	0		
<b>bso</b> rmal			Magnesium	ppm	ASTM D5185m	<0.1	1		
			Phosphorus	ppm	ASTM D5185m	<0.1	1		
onormal			Zinc	ppm	ASTM D5185m	<0.1	0		
			SAMPLE IMAGE	ES	method	limit/base	current	history1	history2
		7/23							
		Feb27/23	Color					no image	no image
iscosity @ 40°	°C								
<b>bao</b> rmal			Bottom					no image	no image
			20110111						
hnormal									
		nonnonnonni	GRAPHS						
			GRAPHS Fuel Distillation (	Curve			Pensky-Mart	ens Flash Point (	°C)
Abnormal			Fuel Distillation C	Curve	8 8	1	Pensky-Mart	ens Flash Point (	°C)
		co.re	Fuel Distillation C	Curve		ç		ens Flash Point (	°C)
		ст.	Fuel Distillation C	Curve		ç		ens Flash Point (	°C)
		CT-0100	Fuel Distillation C	Curve			5	ens Flash Point (	°C)
		ст) ли	Fuel Distillation C	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
		CULCT	Fuel Distillation C	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
		CC LT J	Fuel Distillation C	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
		CT-7709	Fuel Distillation C	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Sample   380°C Sample   360°C Sample   340°C Sample   320°C Sample   300°C Sample   280°C Sample	Curve	/	temperature °C	10 5 0 -5	ens Flash Point (	
			Fuel Distillation C 380°C - Sample 360°C - Sample 340°C - Sample 320°C - S	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Fuel Distillation C 380°C - Sample 360°C - Sample 340°C - Sample 320°C - S	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Sample   380°C Sample   360°C Sample   340°C Sample   320°C Sample   300°C Sample   280°C Sample	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Sample Sample   360°C Sample   360°C Sample   360°C Sample   340°C Sample   320°C Sample   300°C Sample   280°C Sample   280°C Sample   280°C Sample	Curve		temperature °C	10 5 0 -5	ens Flash Point (	°C)
			Fuel Distillation C 380°C - Sample 360°C - Sample 340°C - Sample 320°C - S	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Sample Sample   360°C Sample   360°C Sample   360°C Sample   340°C Sample   320°C Sample   300°C Sample   280°C Sample   280°C Sample   280°C Sample	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Sample   360°C Sample   360°C Sample   360°C Sample   320°C Sample   300°C Sample   280°C Sample   280°C Sample   280°C Sample   280°C Sample   200°C Sample   200°C Sample	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Fuel Distillation C 360°C 360°C 360°C 320°C 320°C 320°C 280°C 280°C 260°C 240°C 220°C	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Sample   360°C Sample   360°C Sample   360°C Sample   320°C Sample   300°C Sample   280°C Sample   280°C Sample   280°C Sample   280°C Sample   200°C Sample   200°C Sample	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Sample Sample   360°C Sample   360°C Sample   340°C Sample   320°C Sample   300°C Sample   300°C Sample   200°C Sample   200°C Sample   180°C Sample   160°C Sample	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Sample Sample   360°C Sample   360°C Sample   340°C Sample   320°C Sample   300°C Sample   220°C Sample   220°C Sample   300°C Sample   280°C Sample   280°C Sample   120°C Sample   180°C Sample	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Sample Sample   360°C Sample   360°C Sample   340°C Sample   320°C Sample   300°C Sample   320°C Sample   300°C Sample   280°C Sample   280°C Sample   280°C Sample   280°C Sample   280°C Sample   280°C Sample   120°C Sample	•			10 5 0 -5	ens Flash Point (	
			Fuel Distillation C 360°C 360°C 340°C 320°C 300°C 280°C 280°C 240°C 220°C 160°C 160°C 140°C 10°C 20°C 30°	Curve		temperature °C	10 5 0 -5	ens Flash Point (	
			Fuel Distillation C 360°C 360°C 340°C 320°C 300°C 280°C 280°C 240°C 220°C 160°C 160°C 140°C 10°C 20°C 30°	508 508			10 5 0 -5	ens Flash Point (	
		Laboratory	Fuel Distillation C 360°C 360°C 300°C 300°C 280°C 280°C 260°C 200°C 10	encent Recovered 01 Madiso	n Ave., Cary	\$00 NC 27513		PANHANDLE IM	PLEMENT IN
		Laboratory Sample No.	Fuel Distillation C 360°C 360°C 300°C 300°C 300°C 280°C 280°C 280°C 200°C 18	Percent Recovered 01 Madiso Recei	n Ave., Cary <b>ved</b> :12	, NC 27513			PLEMENT IN 5, PO BOX 67
		Laboratory	Fuel Distillation C 360°C 360°C 360°C 300°C 300°C 280°C 280°C 280°C 280°C 280°C 280°C 200°C 180°C 16	encent Recovered 01 Madiso	n Ave., Cary I <b>ved</b> : 12 <b>d</b> : 22	\$00 NC 27513	123	PANHANDLE IM	PLEMENT IN

Test Package : DF-2 (Additional Tests: Bacteria, Screen ) Certificate L2367 adrian@panhandleimplement.com 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)

Contact/Location: ADRIAN ? - PANDUM

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