

## FUEL REPORT

% Gasoline

% Biodiesel

%

%

\*In-House <0.50

<20.0

\*In-House

0.0

2.3

#### Sample Rating Trend





**Diesel Fuel** NOT GIVEN (--- GAL)

#### Recommendation

All laboratory tests indicate that this sample meets specifications for No.2 low-sulfur diesel fuel.

#### Corrosion

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

#### Contaminants

The water content is negligible. There is no bacteria or fungus (yeast and/or mold) indicated in the sample. There is no indication of any contamination in the fuel. The amount and size of particulates present in the system are acceptable.

### **Fuel Condition**

Sulfur value derived by ASTM D5453 method for ULSD validation.

(L9502864	-			5m2023		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KT0000497		
Sample Date		Client Info		27 Sep 2023		
Machine Age	hrs	Client Info		46		
Sample Status				NORMAL		
PHYSICAL PROP	FRTIES	s method	limit/base	current	history1	history2
	LITTILC		mmbasc		· · · · · ·	· · · · · ·
Specific Gravity		*ASTM D1298		0.824		
Fuel Color	text	*Visual Screen		Yllow		
ASTM Color	scalar cSt	*ASTM D1500		L2.5		
Visc @ 40°C		ASTM D445		2.3		
Pensky-Martens Flash Point	°C	*PMCC Calculated		54		
SULFUR CONTE	NT	method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		0		
Sulfur (UVF)	ppm	ASTM D5453		17		
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		138		
5% Distillation Point	°C	ASTM D86		161		
10% Distill Point	°C	ASTM D86		172		
15% Distillation Point	°C	ASTM D86		181		
20% Distill Point	°C	ASTM D86		191		
30% Distill Point	°C	ASTM D86		214		
40% Distill Point	°C	ASTM D86		242		
50% Distill Point	°C	ASTM D86		267		
60% Distill Point	°C	ASTM D86		287		
70% Distill Point	°C	ASTM D86		304		
80% Distill Point	°C	ASTM D86		320		
85% Distillation Point	°C	ASTM D86		329		
90% Distill Point	°C	ASTM D86		340		
95% Distillation Point	°C	ASTM D86		356		
Final Boiling Point	°C	ASTM D86		363		
Distillation Residue	%	ASTM D86		1.4		
Distillation Loss	%	ASTM D86		0.8		
IGNITION QUALI	ΓY	method	limit/base	current	history1	history2
API Gravity		ASTM D7777		40.2		
Cetane Index		ASTM D4737	<40.0	54.3		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	4		
Sodium	ppm	ASTM D5185m	<0.1	0		
Potassium	ppm	ASTM D5185m	<0.1	0		
Water	%	ASTM D6304	< 0.05	0.006		
ppm Water	ppm	ASTM D6304	<500	63.2		
Casalina	0/	*le Lleure	0.50	0.0		



# **FUEL REPORT**

Particle Count 491.520 T T26	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
122,880 24	Particles >4µm		ASTM D7647	>2500	730		
30,720     Severe     -22     20     100       7,680     Abnormal     20     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100     100 <t< th=""><th>Particles &gt;6µm</th><th></th><th>ASTM D7647</th><th>&gt;640</th><th>329</th><th></th><th></th></t<>	Particles >6µm		ASTM D7647	>640	329		
Image: State	Particles >14µm		ASTM D7647	>80	66		
	Particles >21µm		ASTM D7647	>20	19		
14 m	Particles \38um		ASTM D7647	>4	2		
30- 12 25 25 - 10 50			ASTM D7647	>3	0		
	Oil Cleanliness		ISO 4406 (c)		17/16/13		
$0_{4\mu}$ $6\mu$ $14\mu$ $21\mu$ $38\mu$ $71\mu$	HEAVY METALS		method	limit/base	current	history1	history2
Water (KF)	Aluminum	nnm	ASTM D5185m	<0.1	0		
1200 T	Nickel		ASTM D5185m		0		
1000 - Severe	Lead		ASTM D5185m	<0.1	0		
<sub>夏</sub> 800	Vanadium		ASTM D5185m		0		
(iii d) 10 10 10 10 10 10 10 10 10 10 10 10 10	Iron		ASTM D5185m	<0.1	0		
≥ 400	Calcium		ASTM D5185m		5		
200 Abnormal					-		
0L.	Magnesium		ASTM D5185m ASTM D5185m	<0.1	0		
Sep 27/23 Sep 27/23	Phosphorus Zinc		ASTM D5185m ASTM D5185m		4		
ů. Š					1		
Viscosity @ 40°C	SAMPLE IMAGES	6	method	limit/base	current	history1	history2
4 Abnormal	Color					no image	no image
2 2 4 Annoma 0 22 1 4 C2//2deg	Bottom					no image	no image
ab No	GRAPHS						
Particle Trend	Fuel Distillation Cur	rve			Pensky-Marten	s Flash Point (°	C)
3k 4/m	30°C Sample			ې <sup>70</sup>	T		
$\widehat{\Xi}^{3k}$	50°CBaseline			2 anter			
2 2 k 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	40°C -						
1 2 k -	20°C -		/	40	23		
			/				2
	0°C -		-		Sep 2		Sep 27/2
		1	/		Sep 27/23		Sep 27/23
0k	_30°C -	1			Sep 2		Sep 27/2
0k	30°C -	/			Sep2		Sep 27/2
Sep21/23	_30°C -	/			2day		Sep 27/2
EUCI Distillation Curve	30°C	/	_		Sep2		Sep 27/2
Fuel Distillation Curve	30°C 50°C 40°C 220°C	/			Sep2		Sep 21/2
0k Evel Distillation Curve   400°C Sample   350°C Sample	30°C	/			Sep2		Sep21/2
Fuel Distillation Curve	30°C 50°C 40°C 220°C	/			Sep2		Sep21/2
Fuel Distillation Curve	30°C 30°C 40°C 220°C 200°C	/			Sep2		Sep 21/2
Fuel Distillation Curve	30°C 50°C 40°C 220°C 200°C 180°C	/			Sep2		Sep21/2
Fuel Distillation Curve	30°C	/			Sep2		Sep 21/2
Fuel Distillation Curve	30°C 30°C 10°C 220°C 220°C 220°C 180°C 180°C 160°C 140°C 120°C 20°C 20°C 10°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C	ent Recovered		90% 100%			Sep21/2
Fuel Distillation Curve Fuel Distillation Curve	30°C 30°C 10°C 220°C 220°C 180°C 160°C 140°C 120°C 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	01 Madiso Received Diagnose	on Ave., Ca : 27 \$ d : 10 \$	ry, NC 27513 Sep 2023 Oct 2023			<b>D EQUIPMENT</b> RABTREE RD DSSVILLE, TN
Fuel Distillation Curve Fuel Distillation Curve	30°C 30°C 10°C 220°C 220°C 200°C 160°C 160°C 120°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C 20°C	01 Madiso Received Diagnose Diagnostio sts: Scree ce at 1-80 7025 scop	on Ave., Ca : 27 S d : 10 ( cian : Dou en ) 20-237-136S pe of accred	ry, NC 27513 Sep 2023 Oct 2023 Ig Bogart D. D. Litation.	SNYDER: heath.r	174 C	D EQUIPMENT RABTREE RD DSSVILLE, TN US 38571 H RANDOLPH

Contact/Location: HEATH RANDOLPH - SNYCRO