

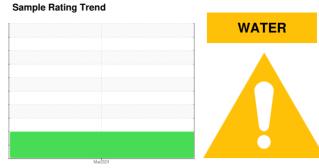
FUEL REPORT

[LNR B2B CUMMINS]

C-2-A

Bulk Tank Diesel Fuel

DIESEL FUEL No. 2 (--- GAL)



DIAGNOSIS

Recommendation

We advise that you follow the water drain-off procedure for this component, and use off-line filtration to improve the cleanliness of the system fluid. 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

Free water present. Moderate concentration of visible dirt/debris present in the fuel. There is no bacteria or fungus (yeast and/or mold) present in the sample.

Fuel Condition

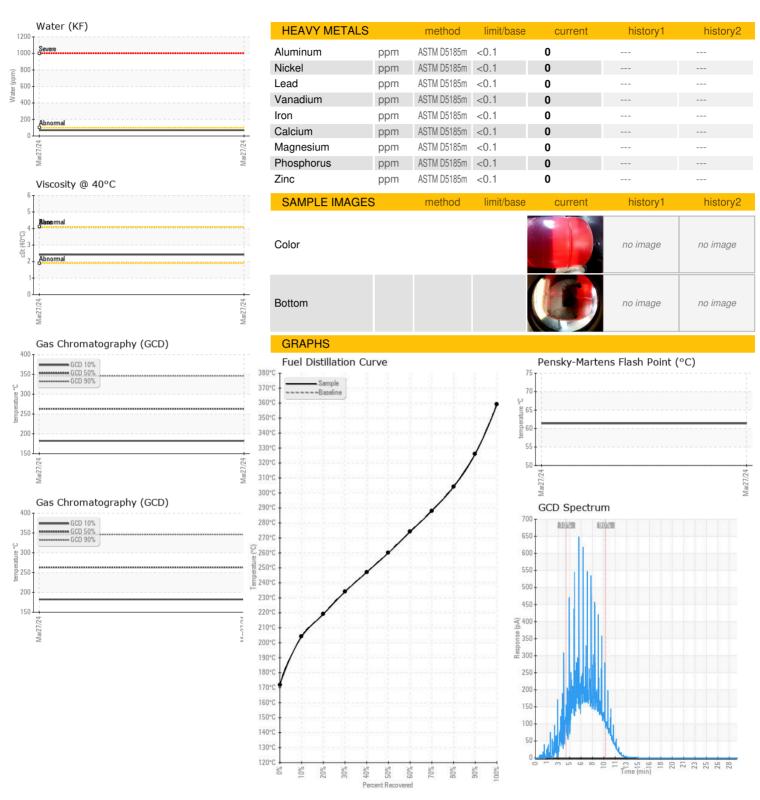
Sulfur value derived by ASTM D5453 method for ULSD validation. Sulfur level is acceptable for ULSD specification.

Client Info 27 Mar 2024					Mar2024		
Client Info	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info ABNORMAL	Sample Number		Client Info		WC0914198		
PHYSICAL PROPERTIES method limit/base current history1 history2	Sample Date		Client Info		27 Mar 2024		
PHYSICAL PROPERTIES	Machine Age	hrs	Client Info		0		
Fuel Color	Sample Status				ABNORMAL		
ASTM Color Scalar "ASTM D1500 L4.5 Visc @ 40°C cSt ASTM D445 4.1 2.42 Persky-Martens Flash Point "C PMCC Cabulated 61.4 SULFUR CONTENT 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 172 50° Distillation Point °C ASTM D86 195 10% Distill Point °C ASTM D86 204 15% Distillation Point °C ASTM D86 212 20% Distill Point °C ASTM D86 219 30% Distill Point °C ASTM D86 234 40% Distill Point °C ASTM D86 247 50% Distill Point °C ASTM D86 247 50% Distill Point °C ASTM D86 274 50% Distill Point °C ASTM D86 260 50% Distill Point °C ASTM D86 274 50% Distill Point °C ASTM D86 288 50% Distill Point °C ASTM D86 288 50% Distill Point °C ASTM D86 304 50% Distill Point °C ASTM D86 344 50% Distill Poi	PHYSICAL PROP	ERTIES	method	limit/base	current	history1	history2
Visc @ 40°C cSt ASTM D445 4.1 2.42	Fuel Color	text	*Visual Screen		Red		
Persky-Martens Flash Point °C °PMCC Calulated 61.4	ASTM Color	scalar	*ASTM D1500		L4.5		
SULFUR CONTENT method limit/base current history1 history2 Sulfur (UVF) ppm ASTM D5185m 0 Sulfur (UVF) ppm ASTM D5453 8 DISTILLATION method limit/base current history1 history2 Initial Boiling Point °C ASTM D86 195 5% Distillation Point °C ASTM D86 204 10% Distill Point °C ASTM D86 212 20% Distill Point °C ASTM D86 219 30% Distill Point °C ASTM D86 247 40% Distill Point °C ASTM D86 247 70% Distill Point °C ASTM D86 274 70% Distill Point °C ASTM D86 304 80% Distill Point	Visc @ 40°C	cSt	ASTM D445	4.1	2.42		
Sulfur ppm ASTM D5185m 0 Sulfur (UVF) ppm ASTM D5453 8 DISTILLATION method limit/base current history1 history2 Initial Boiling Point °C ASTM D86 195 10% Distill Point °C ASTM D86 204 15% Distillation Point °C ASTM D86 212 20% Distill Point °C ASTM D86 219 30% Distill Point °C ASTM D86 234 40% Distill Point °C ASTM D86 247 50% Distill Point °C ASTM D86 260 50% Distill Point °C ASTM D86 288 80% Distill Point °C ASTM D86 315 90% Distill Point <	Pensky-Martens Flash Point	°C	*PMCC Calculated		61.4		
DISTILLATION	SULFUR CONTE	NT	method	limit/base	current	history1	history2
DISTILLATION	Sulfur	ppm	ASTM D5185m		0		
Initial Boiling Point	Sulfur (UVF)	ppm	ASTM D5453		8		
195 195	DISTILLATION		method	limit/base	current	history1	history2
10% Distill Point	Initial Boiling Point	°C	ASTM D86		172		
15% Distillation Point °C ASTM D86 212 20% Distill Point °C ASTM D86 219 30% Distill Point °C ASTM D86 234 40% Distill Point °C ASTM D86 247 50% Distill Point °C ASTM D86 260 50% Distill Point °C ASTM D86 288 70% Distill Point °C ASTM D86 304 85% Distillation Point °C ASTM D86 315 90% Distill Point °C ASTM D86 315 95% Distillation Point °C ASTM D86 344 95% Distillation Point °C ASTM D86 344 Final Boiling Point °C ASTM D86 344 Foral Gravity ASTM D777	5% Distillation Point	°C	ASTM D86		195		
20% Distill Point	10% Distill Point	°C	ASTM D86		204		
30% Distill Point	15% Distillation Point	°C	ASTM D86		212		
AUNION A	20% Distill Point	°C	ASTM D86		219		
50% Distill Point °C ASTM D86 260 60% Distill Point °C ASTM D86 274 70% Distill Point °C ASTM D86 288 80% Distill Point °C ASTM D86 304 85% Distillation Point °C ASTM D86 315 90% Distill Point °C ASTM D86 326 99% Distillation Point °C ASTM D86 344 95% Distillation Point °C ASTM D86 359 Final Boiling Point °C ASTM D86 359 IGNITION QUALITY method limit/base current history1 history2 API Gravity ASTM D7777 37 Cetane Index ASTM D5185m <1.0	30% Distill Point	°C	ASTM D86		234		
60% Distill Point	40% Distill Point	°C	ASTM D86		247		
Top	50% Distill Point	°C	ASTM D86		260		
80% Distill Point °C ASTM D86 304 85% Distillation Point °C ASTM D86 315 90% Distill Point °C ASTM D86 326 95% Distillation Point °C ASTM D86 344 Final Boiling Point °C ASTM D86 359 IGNITION QUALITY method limit/base current history1 history2 API Gravity ASTM D7777 37 Cetane Index ASTM D4737 <40.0	60% Distill Point	°C	ASTM D86		274		
85% Distillation Point °C ASTM D86 315 90% Distill Point °C ASTM D86 326 95% Distillation Point °C ASTM D86 344 Final Boiling Point °C ASTM D86 359 IGNITION QUALITY method limit/base current history1 history2 API Gravity ASTM D7777 37 Cetane Index ASTM D4737 <40.0	70% Distill Point	°C	ASTM D86		288		
90% Distill Point	80% Distill Point	°C	ASTM D86		304		
95% Distillation Point	85% Distillation Point	°C	ASTM D86		315		
Final Boiling Point	90% Distill Point	°C	ASTM D86		326		
IGNITION QUALITY method limit/base current history1 history2	95% Distillation Point	°C	ASTM D86		344		
API Gravity Cetane Index ASTM D4737 <40.0 49 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m <1.0 Sodium ppm ASTM D5185m <0.1 Potassium ppm ASTM D5185m <0.1 Potassium ppm ASTM D5185m <0.1 O Water % ASTM D6304 <0.05 ppm ASTM D6304 <500 % Gasoline % *In-House <0.50 % Biodiesel % *In-House <20.0 MICROBIAL method limit/base current history1 history2 Bacteria CFU/ml WC-Method >=100000 Yeast CFU/ml WC-Method >=100000 O STM D6304 MICROBIAL method limit/base current history1 history2 CFU/ml WC-Method >=100000 O Yeast CFU/ml WC-Method >=100000 O -	Final Boiling Point	°C	ASTM D86		359		
Cetane Index ASTM D4737 <40.0	IGNITION QUALIT	ΓΥ	method	limit/base	current	history1	history2
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m <1.0	API Gravity		ASTM D7777		37		
Silicon ppm ASTM D5185m <1.0 0 Sodium ppm ASTM D5185m <0.1 1 Potassium ppm ASTM D5185m <0.1 0 Water % ASTM D6304 <0.05 0.007 ppm Water ppm ASTM D6304 <500 70 % Gasoline % *In-House <0.50 0.0 % Biodiesel *In-House <20.0 0.0 MICROBIAL method limit/base current history1 history2 Bacteria CFU/ml WC-Method >=100000 0 Yeast CFU/ml WC-Method >=100000 0	Cetane Index		ASTM D4737	<40.0	49		
Sodium	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m <0.1 0 Water % ASTM D6304 <0.05 0.007 ppm Water ppm ASTM D6304 <500 70 % Gasoline % *In-House <0.50 0.0 % Biodiesel % *In-House <20.0 0.0 MICROBIAL method limit/base current history1 history2 Bacteria CFU/ml WC-Method >=100000 0 Yeast CFU/ml WC-Method >=100000 0	Silicon	ppm	ASTM D5185m	<1.0	0		
Water % ASTM D6304 <0.05 0.007 ppm Water ppm ASTM D6304 <500	Sodium	ppm	ASTM D5185m	<0.1	1		
ppm Water ppm ASTM D6304 <500 70 % Gasoline % *In-House <0.50	Potassium	ppm	ASTM D5185m	<0.1	0		
% Gasoline % *In-House <0.50	Water	%	ASTM D6304	< 0.05	0.007		
% Biodiesel % *In-House <20.0 0.0 MICROBIAL method limit/base current history1 history2 Bacteria CFU/ml WC-Method >=100000 0 Yeast CFU/ml WC-Method >=100000 0	ppm Water	ppm	ASTM D6304	< 500	70		
MICROBIAL method limit/base current history1 history2 Bacteria CFU/ml WC-Method >=100000 0 Yeast CFU/ml WC-Method >=100000 0	% Gasoline	%	*In-House	< 0.50	0.0		
Bacteria CFU/ml WC-Method >=100000 0 Yeast CFU/ml WC-Method >=100000 0	% Biodiesel	%	*In-House	<20.0	0.0		
Yeast CFU/ml WC-Method >=100000 0	MICROBIAL		method	limit/base	current	history1	history2
Yeast CFU/ml WC-Method >=100000 0	Bacteria	CFU/ml	WC-Method	>=100000	0		
Mold Colonies WC-Method MODER	Yeast	CFU/ml		>=100000	0		
	Mold		WC-Method	MODER			

Contact/Location: SERVICE ? - VITAPE



FUEL REPORT





Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0914198 Lab Number : 06138211

Unique Number : 10963019

Received : 03 Apr 2024 **Tested** Diagnosed

: 15 Apr 2024

: 15 Apr 2024 - Doug Bogart Test Package : DF-2 (Additional Tests: Bacteria, Fuel, Screen)

US 27539 Contact: SERVICE service@vitalfuelsystems.com

T: (919)629-8180 F: (919)303-7399

VITAL FUEL SYSTEMS

1076 CLASSIC RD

APEX, NC

To discuss this sample report, contact Customer Service at 1-800-237-1369. st - 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)