

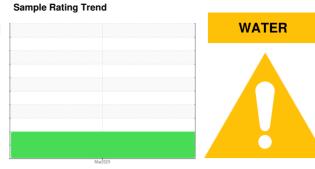
FUEL REPORT

[LNR B2B CUMMINS]

C-2-B

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

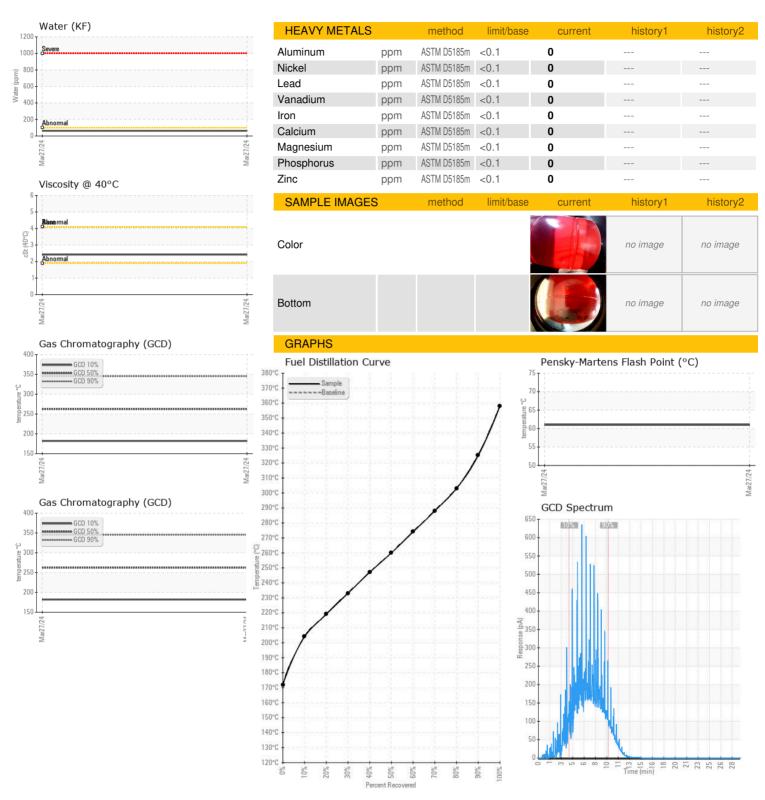
Sulfur value derived by ASTM D5453 method for ULSD validation. Sulfur level is acceptable for ULSD specification.

Client Info 27 Mar 2024					Mar2024		
Client Info	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info ABNORMAL	Sample Number		Client Info		WC0914199		
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 L4.0 Visc @ 40°C cSt ASTM D445 4.1 2.42 Persky-Martens Flash Point "C PMCC Cabulated 61 SULFUR CONTENT method limit/base current history1 history2 Sulfur ppm ASTM D5185m 0 Sulfur (UVF) ppm ASTM D5453 9 DISTILLATION method limit/base current history1 history2 Initial Boiling Point °C ASTM D86 172 5% Distillation Point °C ASTM D86 194 10% Distill Point °C ASTM D86 204 15% Distillation Point °C ASTM D86 211 20% Distill Point °C ASTM D86 219 30% Distill Point °C ASTM D86 233 40% Distill Point °C ASTM D86 247 50% Distill Point °C ASTM D86 247 50% Distill Point °C ASTM D86 260 50% Distill Point °C ASTM D86 274 50% Distill Point °C ASTM D86 288 80% Distill Point °C ASTM D86 303 80% Distill Point °C ASTM D86 343 90% Distill Point °C ASTM D86 343 90% Distill Point °C ASTM D86 343 60% Distill Point °C ASTM D86 343 90% Distill Point °C ASTM D86 343 60% Distill Point °C ASTM D86 60% Distill Point	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 Final Boiling Point °C ASTM D86 Sulfur C ASTM D86 Sulfull Point °C ASTM D86 Sulfull Point Sulfull Point Sulfull Po	ASTM Color	scalar	*ASTM D1500		L4.0		
SULFUR CONTENT method limit/base current history1 history2 Sulfur (UVF) ppm ASTM D5185m 0 Sulfur (UVF) ppm ASTM D5453 9 DISTILLATION method limit/base current history1 history2 Initial Boiling Point °C ASTM D86 194 5% Distillation Point °C ASTM D86 204 10% Distill Point °C ASTM D86 211 10% Distill Point °C ASTM D86 211 20% Distill Point °C ASTM D86 219 30% Distill Point °C ASTM D86 247 50% Distill Point °C ASTM D86 274 70% Distill Point °C ASTM D86 303 80% Distill Point	Visc @ 40°C	cSt	ASTM D445	4.1	2.42		
Sulfur ppm ASTM D5185m 0 Sulfur (UVF) ppm ASTM D5453 9 DISTILLATION method limit/base current history1 history2 Initial Boiling Point °C ASTM D86 194 5% Distillation Point °C ASTM D86 204 15% Distill Point °C ASTM D86 211 20% Distill Point °C ASTM D86 219 30% Distill Point °C ASTM D86 219 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 303 90% Distill Point <t< td=""><td>Pensky-Martens Flash Point</td><td>°C</td><td>*PMCC Calculated</td><td></td><td>61</td><td></td><td></td></t<>	Pensky-Martens Flash Point	°C	*PMCC Calculated		61		
DISTILLATION	SULFUR CONTER	NT	method	limit/base	current	history1	history2
DISTILLATION	Sulfur	ppm	ASTM D5185m		0		
Initial Boiling Point	Sulfur (UVF)	ppm	ASTM D5453		9		
194 194 195 194 195 19	DISTILLATION		method	limit/base	current	history1	history2
10% Distill Point	Initial Boiling Point	°C	ASTM D86		172		
15% Distillation Point °C ASTM D86 211 20% Distill Point °C ASTM D86 219 30% Distill Point °C ASTM D86 233 40% Distill Point °C ASTM D86 247 50% Distill Point °C ASTM D86 260 50% Distill Point °C ASTM D86 274 70% Distill Point °C ASTM D86 288 80% Distillation Point °C ASTM D86 314 90% Distill Point °C ASTM D86 314 90% Distill Point °C ASTM D86 343 95% Distillation Point °C ASTM D86 343 95% Distill Point °C ASTM D86 343 Final Boiling Point °C	5% Distillation Point	°C	ASTM D86		194		
20% Distill Point	10% Distill Point	°C	ASTM D86		204		
30% Distill Point	15% Distillation Point	°C	ASTM D86		211		
40% Distill Point	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 303 85% Distillation Point °C ASTM D86 314 90% Distill Point °C ASTM D86 343 95% Distillation Point °C ASTM D86 343 95% Distillation Point °C ASTM D86 343 95% Distillation Point °C ASTM D86 358 Final Boiling Point °C ASTM D86 358 IGNITION QUALITY method limit/base current history1 history2 API Gravity ASTM D7777 37 Cetane Index ASTM D5185m	30% Distill Point	°C	ASTM D86		233		
60% Distill Point	40% Distill Point	°C	ASTM D86		247		
Topic	50% Distill Point	°C	ASTM D86		260		
80% Distill Point °C ASTM D86 303 85% Distillation Point °C ASTM D86 314 90% Distill Point °C ASTM D86 325 95% Distillation Point °C ASTM D86 343 Final Boiling Point °C ASTM D86 358 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 314 90% Distill Point °C ASTM D86 325 95% Distillation Point °C ASTM D86 343 Final Boiling Point °C ASTM D86 358 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		303		
95% Distillation Point	85% Distillation Point	°C	ASTM D86		314		
Final Boiling Point	90% Distill Point	°C	ASTM D86		325		
IGNITION QUALITY method limit/base current history1 history2	95% Distillation Point	°C	ASTM D86		343		
API Gravity Cetane Index ASTM D4737 <40.0 48 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 Water ppm ASTM D6304 <500 Gasoline % *In-House <0.50 % Gasoline % *In-House <0.50 MICROBIAL method limit/base current history1 history2 Bacteria CFU/ml WC-Method >=100000 O Yeast CFU/ml WC-Method >=100000 O STM D6304 MICROBIAL Method limit/base current history1 history2 Yeast CFU/ml WC-Method >=100000 O -	Final Boiling Point	°C	ASTM D86		358		
Cetane Index ASTM D4737 <40.0	IGNITION QUALIT	Υ	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 0.006 ppm Water ppm ASTM D6304 <500 63 % 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	48		
Sodium	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m <0.1 0 Water % ASTM D6304 <0.05 0.006 ppm Water ppm ASTM D6304 <500 63 % 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 0.006 ppm Water ppm ASTM D6304 <500	Sodium	ppm	ASTM D5185m	<0.1	1		
ppm Water ppm ASTM D6304 <500 63 % Gasoline % *In-House <0.50	Potassium	ppm	ASTM D5185m	<0.1	0		
% 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	Water	%	ASTM D6304	< 0.05	0.006		
% 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	63		
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.

: WC0914199 Lab Number : 06138210 Unique Number : 10963018

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received : 03 Apr 2024 **Tested** Diagnosed

: 15 Apr 2024 : 15 Apr 2024 - Doug Bogart

Test Package : DF-2 (Additional Tests: Bacteria, Fuel, Screen) 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.

US 27539 Contact: SERVICE service@vitalfuelsystems.com

VITAL FUEL SYSTEMS

1076 CLASSIC RD

APEX, NC

T: (919)629-8180 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (919)303-7399

Report Id: VITAPE [WUSCAR] 06138210 (Generated: 04/15/2024 21:54:48) Rev: 1

Contact/Location: SERVICE ? - VITAPE