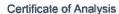


CUSTOMER: MUSC		INFO-OTHER: University Tanks
FACILITY: Building 108 #2 (Pharn	nacy gen. Tank)	
ADDRESS: 107 Jonathan Lucas Si	t. MSC 190, Charleston, SC 29425	5
CONTACT: Rick Burt, Matthew Lo	ong PHONE:	843-323-0421
EMAILburtd@musc.edu, Longmat@	@musc.edu CELL: (8	343) 792-3520
Unit Id: 108-FT-28	Type: AST Capacity: 3,0	000 Material: Dsl
ast Tank Service: 2018		
Annual/Pre-Clean Post Clean None ERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis HydroClean ILFC 1032 Biocide Predator 6000 None erior Tank Condition: Good Bad Recommend Inspection	A 19 Chottles for Samuel Market Marke	
RTS CONDITION: ood Bad N/A - Fill Cap ood Bad N/A - Vent ood Bad N/A - Fill Port ood Bad N/A - Spill Bucket ood Bad N/A - Spill Bucket ood Bad N/A - Gauge ood Bad N/A - Gaskets TANK DOES NOT PASS ASTM D975 "C AL INSPECTION cleaning is recommended based on Visual Fuel In termine fuel parameters based on ASTM D975 Spa MENTS: This is after cleaning sample	BRIGI *Lab Report *Lab Reference of the securior of the securi	VISUAL FUEL RATING: Pre-Clean Post Clean Refinery Fresh Good Watch Closely Advanced Aging Bad-Not Recommended Severe-Do Not Use TANK PASSES THE ASTM D975 "CLEAR ANT" VISUAL INSPECTION. Report will determine fuel parameters based on D975 Specifications





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

API Gravity by Hydrometer

Copper Strip Corrosion

Particulate Contamination

843-225-1777

Sample Taken From:

Sample ID:

PO: WO:

Test

Cetane Index

Distillation, 50%

Distillation, 90% Flash Point

Microbial Growth

Visual Appearance

Water and Sediment

Water by Karl Fischer

Sulfur

Cloud Point

108-FT-28

108-FT-28 632519

MUSC - University - Post

Limits

report

40 minimum

report °C

3 maximum

report °C

282 - 338 °C

52 °C minimum

report

report in milligrams/liter

15 ppm maximum

Visual

0.05 maximum (% volume)

report in ppm

Sample Collection Date:

08/9/2019

Date Received:

08/23/2019

Date Released: 08/30/2019

Component Make:

Component Model:

Tank Capacity:

AST 3,000 g

ULSD

Quantity in Tank:

ASTM D1298-99

ASTM D976-01

Test Package:

PRS Package

Type of Fuel:

Serial Number:

Result Methods

> 37 44.6

ASTM D2500-99 -9

ASTM D130-04 1a

242.78 **ASTM D86-08a** 307.22 **ASTM D86-08a**

ASTM D93-10 58.33 Negative Micro/Culture Medium

ASTM D6217-08 2.7

20 **ASTM D5453-09**

Clear, Trace Particles ASTM D4176-04

0.001 **ASTM D2709 ASTM D6304-16**

62

Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Health	1 4	DATE: 7-2-19
CUSTOMER: MUSC		NFO-OTHER: Hospital tanks
FACILITY: Building 600 - Clinical		
ADDRESS: 127 Jonathan Lucas S	t. MSC 190, Charleston, SC 29425	10
CONTACT: Rick Burt, Matthew Lo		43-323-044 1
EMAIL burtd@musc.edu, Longmat@		3) 792-3540
Unit Id: New-600-7th-275g	Type: SBT Capacity: 275	
Last Tank Service: New		
FUEL SAMPLE TAKEN: ✓ Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep ✓ Pre-clean Lab Analysis Post-clean Lab Analysis iel Treatment: ✓ HydroClean ILFC 1032 Biocide Predator 6000 None terior Tank Condition: Good Bad Recommend Inspection		eum Recovery Services Seet North Charleston, South Carolina 29418 30:225-IPRS (1777) Fax: 843-377-0412 matroleum ecoveryservices.com 2 1/9 Reco Equipment #: New - 800-71/11
RTS CONDITION: Good Bad N/A - Fill Cap Good Bad N/A - Vent Good Bad N/A - Fill Port Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Gauge N/A - Gaskets GTANK DOES NOT PASS ASTM D975 "C GLAL INSPECTION Colcuming is recommended hased on Visual Fuel In Stermine fuel parameters based on ASTM 1973 Sp IMENTS: Picture of the before cleaning	spection ONLY. Lab Report *Lab Report ASTM DS	VISUAL FUEL RATING: Pre-Clean Post Clean Refinery Fresh Good Watch Closely Advanced Aging Bad-Not Recommended Severe-Do Not Use ANK PASSES THE ASTM D975 "CLEAR" VISUAL INSPECTION. Foot will determine fuel parameters based on 1975 Specifications





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

PO:

WO:

Sample ID:

632488

MUSC-Hospital - Pre

NEW-600-7th-275

NEW-600-7th-275

Sample Collection Date:

Date Received:

Date Released:

Component Make: Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

SBT 275 g

07/2/2019

07/16/2019

07/19/2019

Petroleum Recovery Pkg.

ULSD

Serial Number:

Test API Gravity by Hydrometer Cetane Index **Cloud Point** Copper Strip Corrosion Distillation, 50% Distillation, 90%

Flash Point Microbial Growth

Particulate Contamination

Sulfur

Visual Appearance Water and Sediment

Water by Karl Fischer

Limits report 40 minimum

report °C 3 maximum report "C

282 - 338 °C 52 °C minimum

report report in milligrams/liter

> 15 ppm maximum Visual

0.05 maximum (% volume) report in ppm

Methods **ASTM D1298-99**

ASTM D976-01 ASTM D2500-99 ASTM D130-04

ASTM D86-08a ASTM D86-08a **ASTM D93-10**

Micro/Culture Medium ASTM D6217-08 ASTM D5453-09

ASTM D4176-04 **ASTM D2709**

ASTM D6304-16

Result

37 44 -10 1a

240.56 306.67 75.56

Negative 0

25

Clear, Few Particles 0.001

39

Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healt	h		DATE: 07-03-19	
CUSTOMER: MUSC			INFO-OTHER: University Tanks	
FACILITY: BSB Grounds (White	Port Gen)		J. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	
ADDRESS: 97 Jonathan Lucas St	. MSC 190, Charl	eston, SC 29425	THE PLANT IN	
CONTACT: Rick Burt, Matthew L		PHONE: 843	3-323-0411	
EMAILburtd@musc.edu, Longmat	@musc.edu	CELL: (843	3) 792-3510	
Unit Id: 100-01-100DT	Type: SBT	Capacity: 200		
Last Tank Service: 2018				
FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning		to M-225-1PRS (1	overy Services & Strateston, South Carolina 2411 (1777) Fax: 843-377-0412 (1997-98-19) (1997-98-	
Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Fuel Treatment: HydroClean ILFC 1032 Biocide Predator 6000 None xterior Tank Condition: Good Bad		3 1 13 More 153 Gards		
Recommend Inspection				
Good Bad N/A -Fill Cap Good Bad N/A - Vent Good Bad N/A - Fill Port Good Bad N/A - Sump Good Bad N/A - Spill Bucket Good Bad N/A - Gauge Good Bad N/A - Gaskets	Pre-Clean Non Bulk	Water bended Water ro-organisms ments	VISUAL FUEL RATING: ✓ Pre-Clean Post Clean Refinery Fresh ✓ Good Watch Closely Advanced Aging Bad-Not Recommended Severe-Do Not Use	
IS TANK DOES NOT PASS ASTM D975 "G SUAL INSPECTION	CLEAR & BRIGHT' Inspection ONLY. Lab Repectifications	*Lab Repo	NK PASSES THE ASTM D975 "CLEAR & VISUAL INSPECTION. rt will determine fuel parameters based on 15 Specifications	

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)
4310 Amsterdam St., N. Charleston, SC 29418
www.petroleumrecoveryservices.com

SERVICE TECHNICIAN: Ron, Steven & Mike

DATE: 07-03-19





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO: WO:

100-01-100DT 100-01-100DT

632487

MUSC-University - Pre

Sample Collection Date:

07/3/2019 07/15/2019

Date Received: Date Released:

07/18/2019

Component Make:

Component Model:

SBT 200 g

Tank Capacity:

Quantity in Tank:

ULSD

Test Package:

Petroleum Recovery Pkg.

Type of Fuel:

Serial Number:

Test

API Gravity by Hydrometer

Cetane Index Cloud Point

Copper Strip Corrosion

Distillation, 50% Distillation, 90%

Flash Point

Microbial Growth

Particulate Contamination

Sulfur

Visual Appearance

Water and Sediment

Water by Karl Fischer

Limits

report 40 minimum

report °C 3 maximum

report °C

282 - 338 °C 52 °C minimum

report

report in milligrams/liter

15 ppm maximum Visual.

0.05 maximum (% volume)

report in ppm

Methods

ASTM D1298-99

ASTM D976-01 ASTM D2500-99

ASTM D130-04

ASTM D86-08a

ASTM D86-08a ASTM D93-10

Micro/Culture Medium

ASTM D7321-08

ASTM D5453-09

ASTM D4176-04 **ASTM D2709**

ASTM D6304-16

Result

36

44.2

-8 1a

247.78

307.78

72.22

Positive

1.3 12

Clear, Trace Particles

0.001

79

Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healt	h	DATE: 07	7-03-19
CUSTOMER: MUSC		INFO-OTHER	University Tanks
FACILITY: BSB Grounds (Emg L	ight Terex)		
ADDRESS: 98 Jonathan Lucas St	. MSC 190, Charleston,	SC 29425	
CONTACT: Rick Burt, Matthew L	.ong	PHONE: 843-323-0412	
EMAIL burtd@musc.edu, Longmat	@musc.edu	CELL: (843) 792-3511	
Unit Id: 100-01-123DT	_ Type :SBT_ Capa	city: 50 Mate	rial: Dsl
Last Tank Service: 2018			
FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Fuel Treatment: HydroClean ILFC 1032 Biocide Predator 6000 None Exterior Tank Condition: Good Bad Recommend Inspection		3 119	ax: 843-377-0412 ervices.com Light Trice) (26) ment #: 100-26-1318
PARTS CONDITION: Good Bad N/A - Fill Cap Good Bad N/A - Vent Good Bad N/A - Fill Port Good Bad N/A - Sump Good Bad N/A - Spill Bucket Good Bad N/A - Gauge Good Bad N/A - Gaskets	None Bulk Water Suspended V Micro-orgar Sediments Rust Sludge	Water Watch isms Advar Bad-N Sever	n Closely nced Aging Not Recommended e-Do Not Use
THIS TANK DOES NOT PASS ASTM D975 "OVISUAL INSPECTION Tank cleaning is recommended based on Visual Fuel I will determine fuel parameters based on ASTM D975 S COMMENTS: Picture of the before cleaning	Inspection ONLY, Lab Report	BRIGHT" VISUAL INSI	fuel parameters based on

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)
4310 Amsterdam St., N. Charleston, SC 29418
www.petroleumrecoveryservices.com

SERVICE TECHNICIAN: Ron, Steven & Mike

DATE: 07-03-19



ABORATORIES

Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO: WO: 100-01-123DT 100-01-123DT

632487

MUSC-University - Pre

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

07/3/2019

07/15/2019

07/18/2019

SBT

50 g

Petroleum Recovery Pkg.

ULSD

Serial Number:

Test
API Gravity by Hydrometer
Cetane Index
Cloud Point
Copper Strip Corrosion
Distillation, 50%
Distillation, 90%
Flash Point
Microbial Growth
Particulate Contamination
Sulfur

Visual Appearance Water and Sediment Water by Karl Fischer

Limits report 40 minimum report °C 3 maximum report °C 282 - 338 °C 52 °C minimum report

report in milligrams/liter 15 ppm maximum

Visual 0.05 maximum (% volume) report in ppm

Methods ASTM D1298-99 ASTM D976-01 ASTM D2500-99 **ASTM D130-04 ASTM D86-08a ASTM D86-08a ASTM D93-10** Micro/Culture Medium **ASTM D6217-08**

ASTM D5453-09 ASTM D4176-04 **ASTM D2709** ASTM D6304-16

Result 242.78 307.22

> Negative 2.7 31

38

46.3

-11

1a

65.0

Clear, Trace Particles 0.001

79

Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healt	h		DATE: 07-02-19	
CUSTOMER: MUSC			INFO-OTHER: University Tanks	
FACILITY: Building 770 (ST Und	er Stairs) (770-01		12	
ADDRESS: 99 Jonathan Lucas S	100 100			
The contract America and a second contract and a co		757	202 0412	
CONTACT: Rick Burt, Matthew I		PHONE: 843		
EMAIL burld@musc.edu, Longmat	@musc.edu	CELL: (843)	792-3512	
Unit Id: 100-01-124-DT	Type:AST	Capacity: 200	Material: Dsl	
Last Tank Service: 2018			100	
FUEL SAMPLE TAKEN:				
✓ Annual/Pre-Clean			And the second s	
Post Clean				
None			Recovery Services North Charleston, South Carolina 29418	
SERVICES PERFORMED: Maintenance		2.4	Recovery Services North Charleston, South Carolina 29418 PRS (1777) Fax: 843-377-0412	
STI 001 Inspection			PRS (Verendervices.com)	
Tank Cleaning			17	
Bottom Sweep			1 /00	
✓ Pre-clean Lab Analysis		- 1	Mas (Behre)	
Post-clean Lab Analysis			24 770 Post	
Fuel Treatment:		- 1		
✓ HydroClean			# Equipment #: /40-0/-/	
ILFC 1032				
Biocide Predator 6000			Vertical and dist	
None None				
None			ALAST STATE OF THE	
terior Tank Condition:				
Good Bad		130		
Recommend Inspection				
RTS CONDITION:	CONTAMINA	ANTS FOUND:	VISUAL FUEL RATING:	
Good Bad N/A -Fill Cap		Post Clean	✓ Pre-CleanPost Clean	
Good Bad N/A - Vent	Non	The same of the sa	Refinery Fresh	
Good Bad N/A -Fill Port	***************************************	Water	✓ Good	
Good Bad N/A -Sump		ended Water	Watch Closely	
ood Bad N/A - Spill Bucket		ro-organisms	Advanced Aging	
ood Bad N/A - Gauge	Sedi		Bad-Not Recommended	
ood Bad N/A - Gaskets	Rus			
	Sluc	lge	Severe-Do Not Use	
TANK DOES NOT PASS ASTM D975"	CLEAR & BRIGHT	THIS TAN	K PASSES THE ASTM D975 "CLEAR	
AL INSPECTION			VISUAL INSPECTION.	
t cleaning is recommended hased on Visual Fuel etermine fuel parameters bused on ASTM D975 S	가 그 토막 살아왔다. 그렇게 되는 말을 살아가 되었다.		t will determine fuel parameters based on Specifications	
IMENTS: Picture of the before clean	••	1101111 2071		
AVIEN 13.				
Les I	- A - A			
	. Pon and Stayo		DATE: 07-02-19	
SERVICE TECHNICIAN	M: LIGHT SHOT STAVES	•	DATE: 07-02-19	





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

Test

100-01-124DT 100-01-124DT

632487

MUSC-University - Pre

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

Serial Number:

A	PI	Gra	vit
-	-		1

y by Hydrometer

Cetane Index Cloud Point

Copper Strip Corrosion Distillation, 50%

Distillation, 90% Flash Point

Microbial Growth

Particulate Contamination

Sulfur

Visual Appearance

Water and Sediment Water by Karl Fischer

report 40 minimum report °C

Limits

3 maximum report °C

282 - 338 °C 52 °C minimum

report

report in milligrams/liter

15 ppm maximum Visual

0.05 maximum (% volume)

report in ppm

Methods

ASTM D1298-99 ASTM D976-01 ASTM D2500-99

ASTM D130-04 ASTM D86-08a

ASTM D86-08a ASTM D93-10

Micro/Culture Medium

ASTM D7321-08

ASTM D5453-09 ASTM D4176-04

ASTM D2709 ASTM D6304-16 07/2/2019

07/15/2019

07/18/2019

AST

200 g

Petroleum Recovery Pkg.

ULSD

Result 38

46.5

-12

1a 243.33

306.67

72.22 Negative

2.7

17

Clear, Trace Particles 0.001

55

Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.



GROUP INFO: MUSC Health	h			DATE:	7-24-2019
CUSTOMER: MUSC				INFO-OTHE	R: University Tanks
FACILITY: 230 Albemarle Rd (Bla	ck Beauty	#1)			110
ADDRESS: 100 Jonathan Lucas S	-		leston, SC 2942	5	
CONTACT: Rick Burt, Matthew L				843-323-0414	
	100				The second secon
EMAIL burtd@musc.edu, Longmate	@musc.edu	1	CELL: _(343) 792-35	
Unit Id: 100-01-GEN1DT	_ Type : _	AST	Capacity: 50	0 Ma	terial: Dsl
Last Tank Service: 2018					
FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Fuel Treatment: HydroClean ILFC 1032 Biocide Predator 6000 None Exterior Tank Condition: Good Bad Recommend Inspection				Davidson or control of the control o	
ARTS CONDITION:	CONTA	MINA	NTS FOUND:	VISITAT	FUEL RATING:
Good Bad N/A -Fill Cap		re-Clean		Pre-C	lean Post Clean
Good Bad N/A - Vent		_Non			inery Fresh
Good Bad N/A -Fill Port			Water ended Water	God	
Good Bad N/A - Sump Good Bad N/A - Spill Bucket			o-organisms		tch Closely
Good Bad N/A - Gauge	V	Sedi	ments		vanced Aging I-Not Recommended
Good Bad N/A - Gaskets	-	Rust			
	1	Slud	ge	Sev	ere-Do Not Use
IS TANK DOES NOT PASS ASTM D975 "C SUAL INSPECTION ink cleaning is recommended based on Visual Fuel I determine fuel parameters based on ASTM D975 Sy MMENTS: The before cleaning sample	nspection ONL pecifications	Y. Lub Ro	port BRIG *Lab l ASTM	HT" VISUAL IN Report will determ D975 Specificatio	ine fuel parameters based on 🔽 ns
				_	
SERVICE TECHNICIAN	ı: Mike & To	mmie			DATE: 7-24-2019



72



Laboratory Number: 80219530

Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

100-01-GEN1DT

100-01-GEN1DT

632504

MUSC - University - Post

Sample Collection Date:

.

Date Received:

Date Released:

Date Released.

Component Make: Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

Serial Number:

ASTM D6304-16

07/24/2019

08/2/2019

08/7/2019

AST

A31

500 g

PRS Package

ULSD

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	47.7
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	247.78
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	64.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D7321-08	5.3
Sulfur	15 ppm maximum	ASTM D5453-09	6
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001

Comments

Water by Karl Fischer

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

report in ppm

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



CUSTOMER: MUSC FACILITY: 230 Albemarle Rd (Black Beauty #2) ADDRESS: 101 Jonathan Lucas St. MSC 190, Charleston, SC 29425 CONTACT: Rick Burt, Matthew Long PHONE: 843-323-0415 EMAIL burtd@musc.edu, Longmat@musc.edu CELL: (843) 792-3514 Unit Id: 100-01-GEN2DT Type: AST Capacity: 1,000 Material: Dsl Last Tank Service: 2018 FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES FERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis	GROUP INFO: MUSC Healt	h		DATE: 7-22-2019
FACILITY: 230 Albernarle Rd (Black Beauty #2) ADDRESS: 101 Jonathan Lucas St. MSC 190, Charleston, SC 29425 CONTACT: Rick Burt, Matthew Long PHONE: 843-323-0415 EMAIL burld@musc.edu, Longmat@musc.edu CELL: (843) 792-3514 Unit Id: 100-01-GEN2DT Type: AST Capacity: 1,000 Material: Dsl Last Tank Service: 2018 FUEL SAMPLE TAKEN:	100000000000000000000000000000000000000	and the same	INF	O-OTHER: University Tanks
ADDRESS: 101 Jonathan Lucas St. MSC 190, Charleston, SC 29425 CONTACT: Rick Burt, Matthew Long PHONE: 843-323-0415 EMAIL burtd@musc.edu, Longmat@musc.edu CELL: (843) 792-3514 Unit Id: 100-01-GENZDT Type: AST Capacity: 1,000 Material: Dsl Last Tank Service: 2018 FUEL SAMPLE TAKEN: AnnualPre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection V Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Fuel Treatment: V HydroClean ILFC 1032 Biocide Predator 6000 None xterior Tank Condition: Good Bad N/A - Fill Cap Good Bad N/A - Fill Port Good Bad N/A - Spill Bucket Suspended Water Water Not Closely Advanced Aging Bad-Not Recommended Severe-Do Not Use THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION ASTM D973 Specifications		ack Beauty #2)		
CONTACT: Rick Burt, Matthew Long PHONE: 843-323-0415 EMAIL burtd@musc.edu, Longmat@musc.edu CELL: (843) 792-3514 Unit Id: 100-01-GEN2DT Type: AST Capacity: 1,000 Material: Dsl Last Tank Service: 2018 FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Post-clean Lab Analysis Fuel Treatment: HydroClean ILFC 1032 Biscide Predator 6000 None xterior Tank Condition: Good Bad N/A -Fill Cap None Recommend Inspection RRTS CONDITION: CONTAMINANTS FOUND: VFre-Clean Post Clean Post Clean Refinery Fresh Refinery Fresh Good Bad N/A - Vent Bulk Water Suspended Water Bulk Water Suspended Water Micro-organisms Good Bad N/A - Gauge Good Bad N/A - Gauge Suspended Water Micro-organisms Sediments Rust Sludge Severe-Do Not Use THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION Kelcaning in commended based on Visual Fuel Inspection ONLY. Lab Report At Alb Report Will determine fuel parameters based on ASTM D975 Specifications			arleston, SC 29425	
EMAIL burld@musc.edu, Longmat@musc.edu CELL: (843) 792-3514 Unit Id: 100-01-GEN2DT Type: AST Capacity: 1,000 Material: Dsl Last Tank Service: 2018 FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-Clean Lab Analysis Post-clean Lab Analysis Post-clean Lab Analysis HydroClean ILFC 1032 Biocide Predator 6000 None ARTS CONDITION: CONTAMINANTS FOUND: VFre-Clean Post Clean Post Clean Refinery Fresh Refinery Fresh Good Bad N/A - Fill Cap Good Bad N/A - Vent Good Bad N/A - Sump Good Bad N/A - Sump Good Bad N/A - Sump Good Bad N/A - Gauge Rust Good Bad N/A - Gaskets Siduge STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION Relation For the Commended hased on Visual Fuel Inspection ONLY. Lab Report Bat Not Description feel parameters based on ASTM D975 Specifications	And the Control of th			
Unit Id: 100-01-GEN2DT Type: AST Capacity: 1,000 Material: Dsl Last Tank Service: 2018 FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-Clean Lab Analysis Post-clean Lab Condition: Good Bad N/A - Fill Cap Good Bad N/A - Fill Cap Good Bad N/A - Fill Cap Good Bad N/A - Sump Good Bad N/A - Spill Bucket Good Bad N/A - Gauge Good Bad N/A - Ga	CONTACT: HICK Burt, Matthew L	ong		
Last Tank Service: 2018 FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES PERFORNED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Biocide Predator 6000 None xterior Tank Condition: Good Bad N/A - Fill Cap None Recommend Inspection ARTS CONDITION: CONTAMINANTS FOUND: Pre-Clean Post Clean Refinery Fresh Bulk Water Suspended Water Micro-organisms Good Bad N/A - Spill Bucket Good Bad N/A - Gauge Good Bad	EMAIL burtd@musc.edu, Longmat	@musc.edu	CELL: (843)	792-3514
FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection ✓ Tank Cleaning Bottom Sweep Pre-clean Lab Analysis ✓ Post-clean Lab	Unit Id: 100-01-GEN2DT	_ Type : _ AST	Capacity: 1,000	Material: Dsl
Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection ✓ Tank Cleaning Bottom Sweep Pre-clean Lab Analysis ✓ Post-clean Lab Analysis ✓ Pre-Clean Post Clean ✓ Post Clean ✓ Pre-Clean Post Clean ✓ Pre-Cle	Last Tank Service: 2018			
✓ Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection ✓ Tank Cleaning Bottom Sweep Pre-clean Lab Analysis ✓ Post-clean Lab Analysis Fuel Treatment: ✓ HydroClean ILFC 1032 Biocide Predator 6000 None xterior Tank Condition: Good Bad Recommend Inspection ARTS CONDITION: Good Bad N/A - Fill Cap None xterior Tank Condition: Good Bad N/A - Fill Port Good Bad N/A - Sump Bulk Water Sood Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Gauge Good Bad N/A - Gauge Good Bad N/A - Gaskets Siudge This Tank Posses The Astm D975 "CLEAR & BRIGHT" UAL INSPECTION & Clearing Bright" Visual Inspection **Lab Report will determine fuel parameters based on ASTM D975 Specifications **Lab Report will determine fuel parameters based on ASTM D975 Specifications			I I I I	
SERVICES PERFORMED: Maintenance STI 001 Inspection ✓ Tank Cleaning Bottom Sweep Pre-clean Lab Analysis ✓ Post-clean Lab Analysis ✓ Pre-Clean Post Clean ✓ Pre-Clean Post Clean ✓ Pre-Clean Vertical ✓ Pre-Clean Vertical ✓ Post-clean Lab Analysis ✓ Pre-Clean Post Clean ✓ Pre-Clean Vertical ✓ Post-clean Lab Analysis ✓ Pre-Clean Post Clean ✓ Pre-Clean Vertical ✓ Pre-Clean Vertical ✓ Pre-Clean Vertical ✓ Pre-Clean Vertical ✓ Post-clean Lab Analysis ✓ Post-clean				
SERVICES PERFORMED: Maintenance STI 001 Inspection ✓ Tank Cleaning Bottom Sweep Pre-clean Lab Analysis ✓ Post-clean Lab Analysis ✓ Post-clean Lab Analysis Fuel Treatment: ✓ HydroClean ILFC 1032 Biocide Predator 6000 None **Xetrior Tank Condition: Good Bad Recommend Inspection Recommend Inspection			18 84	
Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Post-clean Lab Analysis Post-clean Lab Analysis Post-clean Lab Analysis Fuel Treatment: HydroClean ILFC 1032 Biocide Predator 6000 None kterior Tank Condition: Good Bad Recommend Inspection RTS CONDITION: CONTAMINANTS FOUND: Pre-Clean Post Clean Post Clean Pre-Clean Post Clean Pre-Clean Post Clean Pre-Clean Post Clean Refinery Fresh Good Bad N/A - Fill Port Bulk Water Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Gauge Rust Good Bad N/A - Gauge Rust Good Bad N/A - Gaskets Scdiments Rust Scdiments Bad-Not Recommended Severe-Do Not Use STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION k cleaning is recommended hasced on Visual Fuel Inspection ONLY. Lab Report Lab Report will determine fuel parameters based on ASTM D975 Specifications				Description 2
Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Post-clean Lab Analysis Post-clean Lab Analysis Post-clean Lab Analysis Fuel Treatment: HydroClean ILFC 1032 Biocide Predator 6000 None cterior Tank Condition: Good Bad Recommend Inspection RTS CONDITION: CONTAMINANTS FOUND: Pre-Clean Post Clean Pre-Clean Post Clean Pre-Clean Post Clean Refinery Fresh Good Bad N/A - Fill Port Bulk Water Suspended Water Watch Closely Micro-organisms Advanced Aging Bad N/A - Gauge Rust Sood Bad N/A - Gaskets Sludge STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION Relication of the parameters based on ASTM D975 Specifications *Lab Report will determine fuel parameters based on ASTM D975 Specifications *Lab Report will determine fuel parameters based on ASTM D975 Specifications				
Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Pre-clean Lab	STI 001 Inspection			
Pre-clean Lab Analysis Post-clean Lab Analysis Pul Treatment: V HydroClean ILFC 1032 Biocide Predator 6000 None **Cterior Tank Condition:** Good Bad Recommend Inspection RTS CONDITION: Good Bad N/A - Fill Cap None Bad N/A - Vent Sood Bad N/A - Vent Sood Bad N/A - Spill Port Sood Bad N/A - Spill Bucket Sood Bad N/A - Gauge Rust Sood Bad N/A - Gauge Rust Soldge Severe-Do Not Use STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" JAL INSPECTION **Lab Report will determine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications			American Inches	
Post-clean Lab Analysis Fuel Treatment: W HydroClean ILFC 1032 Biocide Predator 6000 None sterior Tank Condition: Good Bad Recommend Inspection RTS CONDITION: Good Bad N/A - Fill Cap Bood Bad N/A - Vent Bood Bad N/A - Vent Bulk Water Bulk Water Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Bulk Water Bulk Water Bulk Water Bulk Water Watch Closely Wicro-organisms Advanced Aging Bad-N/A - Gaskets Bulk Water Watch Closely Wicro-organisms Advanced Aging Bad-N/A - Gaskets Bulk Water Watch Closely Watch Closely Bad-N/A - Gaskets Bulk Water Watch Closely Watch Clo				
Fuel Treatment: V HydroClean ILFC 1032 Biocide Predator 6000 None **Certior Tank Condition:** Good Bad Recommend Inspection RTS CONDITION: Good Bad N/A - Fill Cap Fre-Clean Post Clean None Refinery Fresh Bulk Water Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Gauge Bad N/A - Gauge Rust Sediments Rust Seldiments Bulk Vater Watch Closely Advanced Aging Bad-Not Recommended Severe-Do Not Use STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" JAL INSPECTION & cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report Metermine fuel parameters based on ASTM D975 Specifications *Lab Report will determine fuel parameters based on ASTM D975 Specifications				
HydroClean ILFC 1032 Biocide Predator 6000 None				
ILFC 1032 Biocide Predator 6000 None **Reterior Tank Condition:* Good Bad Recommend Inspection Recommend Inspection Recommend Inspection			100	
Biocide Predator 6000 None Contaminants Found: Contaminants Found: Visual Fuel Rating: Pre-Clean Post Clean Pre-Clean Post Cle			The second second	
None Sterior Tank Condition: Good Bad Recommend Inspection			1000	
RESCONDITION: Good Bad N/A - Fill Cap None Refinery Fresh Good Bad N/A - Fill Port Bulk Water Good Bad N/A - Spill Bucket Sediments Bad N/A - Spill Bucket Sediments Bad N/A - Gaskets Sludge Severe-Do Not Use STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION VISUAL FUEL RATING: Pre-Clean Post Clean Pre-Clean Pre-Clean Post Clean Refinery Fresh Watch Closely Micro-organisms Advanced Aging Bad-Not Recommended Severe-Do Not Use THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION. *Lab Report will determine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications	A CONTRACTOR OF THE PROPERTY O			
RECOMMENDATION: CONTAMINANTS FOUND: Pre-Clean Post Clean NAME Pre-Clean Post Clean Refinery Fresh Suspended Water Watch Closely Micro-organisms Good Bad N/A - Spill Bucket Good Bad N/A - Gauge Good Bad N/A - Gauge This TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" WAL INSPECTION Refinery Fresh Watch Closely Micro-organisms Advanced Aging Bad-Not Recommended Severe-Do Not Use THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" BRIGHT" VISUAL INSPECTION. *Lab Report will determine fuel parameters based on ASTM D975 Specifications *ASTM D975 Specifications	rterior T1- C ditions			
Recommend Inspection ARTS CONDITION: Good Bad N/A - Fill Cap Good Bad N/A - Vent Good Bad N/A - Vent Good Bad N/A - Spill Port Good Bad N/A - Spill Port Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Gauge This TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION Ast Commended based on ASTM D975 Specifications THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" WALD Report will determine fuel parameters based on ASTM D975 Specifications				
RTS CONDITION: Good Bad N/A -Fill Cap Good Bad N/A - Vent Good Bad N/A - Fill Port Good Bad N/A - Spill Port Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Spill Bucket Good Bad N/A - Gauge Good Bad N/A - Gaskets Subspended Water Watch Closely Micro-organisms Advanced Aging Bad-Not Recommended Good Bad N/A - Gaskets Sludge STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION. **Lab Report will determine fuel parameters based on ASTM D975 Specifications The transfer of the parameters based on ASTM D975 Specifications				
Good Bad N/A - Fill Cap None Refinery Fresh Good Bad N/A - Vent Bulk Water Good Good Bad N/A - Fill Port Suspended Water Watch Closely Good Bad N/A - Spill Bucket Sediments Advanced Aging Good Bad N/A - Gauge Rust Sludge Severe-Do Not Use STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION. **Lab Report will determine fuel parameters based on ASTM D975 Specifications Pre-Clean Post Clean Prost Clea	Recommend Inspection			
Good Bad N/A - Fill Cap None Refinery Fresh Good Bad N/A - Vent Bulk Water Good Good Bad N/A - Fill Port Suspended Water Watch Closely Good Bad N/A - Spill Bucket Sediments Advanced Aging Good Bad N/A - Gauge Rust Sludge Severe-Do Not Use STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION. **Lab Report will determine fuel parameters based on ASTM D975 Specifications Pre-Clean Post Clean Prost Clea	BTS CONDITION.	CONTAMIN	ANTS FOUND	VISUAL FUEL DATING:
Good Bad N/A - Vent Bulk Water Good Watch Closely Good Bad N/A - Sump Suspended Water Watch Closely Good Bad N/A - Spill Bucket Sediments Advanced Aging Good Bad N/A - Gauge Sediments Bad-Not Recommended Good Bad N/A - Gaskets Sludge Severe-Do Not Use STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION k cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report BRIGHT" VISUAL INSPECTION. *Lab Report will determine fuel parameters based on ASTM D975 Specifications This TANK PASSES THE ASTM D975 "CLEAR BRIGHT" UAL INSPECTION. *Lab Report will determine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications		✓ Pre-Clea	n Post Clean	Pre-Clean Post Clean
Bad N/A - Fill Port Suspended Water Watch Closely Micro-organisms Advanced Aging Bad N/A - Spill Bucket Sediments Bood Bad N/A - Gauge Sediments Bad N/A - Gauge Rust Sludge Severe-Do Not Use STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION K cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report Report Will determine fuel parameters based on ASTM D975 Specifications This TANK PASSES THE ASTM D975 "CLEAR Report Report Will determine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications				
Suspended Water Watch Closely		Bu	lk Water	
Good Bad N/A - Spill Bucket Micro-organisms Advanced Aging Sediments Bad N/A - Gauge Rust Sludge Severe-Do Not Use S TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION k cleaning is recommended hased on Visual Fuel Inspection ONLY. Lab Report Recommended BRIGHT" VISUAL INSPECTION. *Lab Report will determine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications		Su	spended Water	
Good Bad N/A - Gauge Rust Bad-Not Recommended Severe-Do Not Use S TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION k cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report BRIGHT" VISUAL INSPECTION. *Lab Report will determine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications				
Bad N/A - Gaskets Rust Sludge Severe-Do Not Use S TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION k cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report letermine fuel parameters based on ASTM D975 Specifications THIS TANK PASSES THE ASTM D975 "CLEAR BRIGHT" VISUAL INSPECTION. *Lab Report will determine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications				
STANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" UAL INSPECTION k cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report determine fuel parameters based on ASTM D975 Specifications THIS TANK PASSES THE ASTM D975 "CLEAR BRIGHT" VISUAL INSPECTION. *Lab Report will determine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications	AN OWNER CONTROL OF THE PROPERTY OF THE PROPER			
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UAL INSPECTION k cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report letermine fuel parameters based on ASTM D975 Specifications BRIGHT" VISUAL INSPECTION. *Lab Report will determine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications	S TANK DOES NOT PASS ASTM D975	CLEAR & BRIGHT	THIS TAN	K PASSES THE ASTM D975 "CLEAR &
letermine fuel parameters based on ASTM D975 Specifications ASTM D975 Specifications	UAL INSPECTION		BRIGHT"	
MMENTS: The before cleaning sample is on the left and the after cleaning sample is on the right				
	MMENTS: The belore cleaning sample	e is on the left a	nu the after cleaning sa	unple is on the right
		1 1 2 1		
	SERVICE TECHNICIAN	1: MIKE & TOWN!	е	DATE: 7-22-2019





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO: WO:

100-01-GEN2DT

100-01-GEN2DT

632504

MUSC - University - Post

Sample Collection Date:

07/22/2019

Date Received:

08/2/2019 08/7/2019

Date Released: Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

1,000 g

AST

Test Package:

PRS Package

Type of Fuel:

Serial Number:

ULSD

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	36
Cetane Index	40 minimum	ASTM D976-01	42.7
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.22
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	74.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	1.3
Sulfur	15 ppm maximum	ASTM D5453-09	8
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	62

Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

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GROUP INFO: MUSC Healt	h	I	DATE: 7-22-2019	
CUSTOMER: MUSC		INFO-OTHER: University Tanks		
FACILITY: 230 Albemarle Rd (Bla	ack Beauty #3)		V (100 C) (100 C) (100 C) (100 C)	
ADDRESS: 102 Jonathan Lucas S		n, SC 29425		
CONTACT: Rick Burt, Matthew L	.ong	PHONE: 843-3	23-0416	
EMAIL burtd@musc.edu, Longmat	@musc.edu	CELL: (843) 7	792-3515	
Unit Id: 100-01-GEN3DT	_ Type :AST_ Cap	pacity: 1,000	Material: Dsl	
Last Tank Service: 2018				
FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis HydroClean ILFC 1032 Biocide Predator 6000 None Sterior Tank Condition: Good Bad				
Recommend Inspection				
RTS CONDITION:	CONTAMINANTS ✓ Pre-Clean I	FOUND: ost Clean	VISUAL FUEL RATING: Pre-Clean Post Clean	
Good Bad N/A - Fill Cap	None	051 014411	Refinery Fresh	
ood Bad N/A - Vent ood Bad N/A -Fill Port	Bulk Wate	- -	✓ Good	
ood Bad N/A -Sump	Suspended	l Water	Watch Closely	
ood Bad N/A - Spill Bucket	Micro-org		Advanced Aging	
ood Bad N/A - Gauge	Sediments		Bad-Not Recommended	
ood Bad N/A - Gaskets	Rust Sludge		Severe-Do Not Use	
TANK DOES NOT PASS ASTM D975 "CAL INSPECTION cleaning is recommended based on Visual Fuel termine fuel parameters based on ASTM D975 Statement of the before cleaning samplements:	inspection ONLY. Lab Report _ pecifications	*Lab Report w ASTM D975 S		
SERVICE TECHNICIAN	J. Mike & Tommie		DATE: 7-22-2019	





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO: WO:

632504

MUSC - University - Post

100-01-GEN3DT

100-01-GEN3DT

Sample Collection Date:

Date Received:

Date Released:

Component Make: Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

07/22/2019

08/2/2019

08/7/2019

AST

1,000 g

PRS Package

ULSD

Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	37
Cetane Index	40 minimum	ASTM D976-01	45.1
Cloud Point	report °C	ASTM D2500-99	-8
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	244.44
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	64.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	4.7
Sulfur	15 ppm maximum	ASTM D5453-09	8
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	98

Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

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GROUP INFO: MUSC Health	1	DATE: 07-03-19
CUSTOMER: MUSC	ellered Helm	INFO-OTHER: University Tanks
FACILITY: Portable Fuel Trailer (8	10-01-01P)	
ADDRESS: 103 Jonathan Lucas St	t. MSC 190, Charleston, SC 29	9425
CONTACT: Rick Burt, Matthew Lo		VE: 843-323-0417
EMAILburtd@musc.edu, Longmat@		(843) 792-3516
Unit Id: 100-FT-990G	Type: AST Capacity:	990 Material: Dsl
Last Tank Service: 2018		1000
FUEL SAMPLE TAKEN:		
Annual/Pre-Clean		Repoletim Recovery Services
Post Clean None		Arthern North Charleston, South Cases Arthern M-725-IPRS (1777) Fax: 843-377-0412
SERVICES PERFORMED:		
Maintenance		1 3 / 19
STI 001 Inspection		r Muse
Tank Cleaning	6	= My Ret Feel Tenilor (Rola)
Bottom Sweep Pre-clean Lab Analysis		Es. 447 Equipment #: 100-CP-9416
Post-clean Lab Analysis Post-clean Lab Analysis		
Fuel Treatment:	September 1	
✓ HydroClean		
ILFC 1032	DV 074	The second second
Biocide Predator 6000	Company of the Compan	And the second second
None		
xterior Tank Condition:	10 May 1	
Good Bad		
Recommend Inspection		
RTS CONDITION:	CONTAMINANTS FOUND	visual fuel rating:
Good Bad N/A -Fill Cap	✓ Pre-Clean Post Clean	✓ Pre-Clean Post Clean
Good Bad N/A - Vent	None	Refinery Fresh
Good Bad N/A -Fill Port	Bulk Water	✓ Good
iood Bad N/A -Sump	Suspended Water	Watch Closely
ood Bad N/A - Spill Bucket	Micro-organisms	Advanced Aging
Good Bad N/A - Gauge	Sediments	Bad-Not Recommended
Good Bad N/A - Gaskets	Rust Sludge	Severe-Do Not Use
S TANK DOES NOT PASS ASTM D975 "C		HIS TANK PASSES THE ASTM D975 "CLEAR &
JAL INSPECTION k cleaning is recommended based on Visual Fuel In	(1994년 등 1978년 - 1978년 - 1978년 - 1978	RIGHT" VISUAL INSPECTION. Lab Report will determine fuel parameters based on
letermine fuel parameters based on ASTAI D975 Spe	i ii iii ii	STM D975 Specifications
MENTS: Picture of the before cleaning	ng sample	
TELYERAL TA D.	350	
SERVICE TECHNICIAN	Ron and Steven	DATE: 07-03-19





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

PO:

Sample ID:

643487

WO:

100-FT-990G 100-FT-990G

MUSC-University - Pre

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

AST 990 g

07/3/2019

07/15/2019

07/18/2019

Petroleum Recovery Pkg.

ULSD

Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	37
Cetane Index	40 minimum	ASTM D976-01	46.6
Cloud Point	report °C	ASTM D2500-99	-11
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	250.0
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	62.78
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	5.3
Sulfur	15 ppm maximum	ASTM D5453-09	4
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	63

Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

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GROUP INFO: MUSC Health	า	DATE: 07-03-19
CUSTOMER: MUSC		INFO-OTHER: University Tanks
FACILITY: Building 108 (Caterpill		
ADDRESS: 105 Jonathan Lucas S		
CONTACT: Rick Burt, Matthew L		843-323-0419
EMAIL burtd@musc.edu, Longmate	@musc.edu CELL: (8	43) 792-3518
Unit Id: 108-01-15DT	Type: AST Capacity: 75	Material: Dsl
Last Tank Service: 2018	1	
FUEL SAMPLE TAKEN:	19	
Annual/Pre-Clean		
Post Clean None	April 100	Petroleum Recovery Services Phone: 843-225-1PRS (1777)
SERVICES PERFORMED:		Petroleum Recovery Services Charleston, South Cardina Street, North Charleston, South Cardina Services Charlestone: 843-225-1PRS (1777) Fax: 843-377-0412
Maintenance	100	www.netrology
STI 001 Inspection	mind to be	www.petroleumrocoveryservices.com
Tank Cleaning		3 1 19
Bottom Sweep	a min in the last of the last	Muse
✔ Pre-clean Lab Analysis		Bly 108 (Cat Day) (Befor)
Post-clean Lab Analysis		108 (Cal o) (an)
Fuel Treatment:	Control of the Contro	Equipment #: 108-01-1101
✓ HydroClean ILFC 1032		Equipment #: /ox-o/- l/a
Biocide Predator 6000		
None		
kterior Tank Condition:		
Good Bad	Francisco .	
Recommend Inspection		
RTS CONDITION:	CONTAMINANTS FOUND:	VISUAL FUEL RATING:
Good Bad N/A -Fill Cap	✓ Pre-Clean Post Clean	✓ Pre-CleanPost Clean
Good Bad N/A - Vent	None	Refinery Fresh
Good Bad N/A -Fill Port	Bulk Water	✓ Good
Good Bad N/A -Sump	Suspended Water	Watch Closely
Good Bad N/A - Spill Bucket	Micro-organisms	Advanced Aging
Good Bad N/A - Gauge	Sediments	Bad-Not Recommended
Good Bad N/A - Gaskets	Rust Sludge	Severe-Do Not Use
	Blacket	
S TANK DOES NOT PASS ASTM D975 "C		FANK PASSES THE ASTM D975 "CLEAR &
UAL INSPECTION ik cleaning is recommended hased on Visual Fuel I		IT" VISUAL INSPECTION. seport will determine fuel parameters based on
determine fuel parameters bused on ASTAI D975 Sj		D975 Specifications
MMENTS: Picture of the before cleani		
MMEN 15: Totale of the belove clean	aha	
SERVICE TECHNICIAN	Ron and Steven	DATE: 07-03-19







Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

WO:

PO:

108-01-15DT 108-01-15DT

632487

MUSC-University - Pre

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

75 g

AST

07/3/2019

07/15/2019

07/18/2019

Petroleum Recovery Pkg.

ULSD

Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	37
Cetane Index	40 minimum	ASTM D976-01	44.6
Cloud Point	report °C	ASTM D2500-99	-9
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.78
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.22
Flash Point	52 °C minimum	ASTM D93-10	61.67
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	8.7
Sulfur	15 ppm maximum	ASTM D5453-09	23
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	95

Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Health	า		DATE: 8/9/19
CUSTOMER: MUSC		IN	FO-OTHER: University Tanks
ACILITY: Building 108 (Detroit D	ay Tank)		
ADDRESS: 104 Jonathan Lucas S	t. MSC 190, Charlest	on, SC 29425	
CONTACT: Rick Burt, Matthew L		PHONE: 843	3-323-0418
MAIL burtd@musc.edu, Longmat@		CELL: (843	
Jnit Id: 108-01-123DT	Type: AST Ca		Material: Dsl
ast Tank Service: 2018			
Annual/Pre-Clean Post Clean None ERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis HydroClean ILFC 1032 Biocide Predator 6000 None Prior Tank Condition: Bad	1 1 1	overy Service	
Recommend Inspection	CONTANTANT	FOUND	
TS CONDITION: ood Bad N/A -Fill Cap	CONTAMINANT:	Post Clean	VISUAL FUEL RATING: Pre-Clean Post Clean
ood Bad N/A -Fill Cap	<u> </u> None		Refinery Fresh
od Bad N/A -Fill Port	Bulk Wa		✓ Good
od Bad N/A -Sump	Suspende		Watch Closely
od Bad N/A - Spill Bucket	Micro-or	= /	Advanced Aging
od Bad N/A - Gauge od Bad N/A - Gaskets	Rust		Bad-Not Recommended
Dad Daskets	Sludge		Severe-Do Not Use
TANK DOES NOT PASS ASTM D975 "C LL INSPECTION leaning is recommended based on Visual Fuel In	spection ONLY, Lab Report	BRIGIIT" *Lab Repo	NK PASSES THE ASTM D975 "CLEAR & VISUAL INSPECTION. rt will determine fuel parameters based on 55 Specifications
rinine juei parameters basea on ASIM D915 Sp		2.07.231.4-32.4-32.4	
rmine fuel parameters based on ASTM D975 Sp MENTS: This is your after cleaning s	ample		
	ample	*	
	ample		





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

108-01-123DT 108-01-123DT

632519

MUSC - University - Post

Sample Collection Date:

Date Received:

08/9/2019 08/23/2019

Date Released:

08/30/2019

Component Make:

Component Model:

AST

Tank Capacity:

Quantity in Tank:

50 g

Test Package:

PRS Package ULSD

Type of Fuel:

Serial Number:

Test

API Gravity by Hydrometer

Cetane Index Cloud Point

Copper Strip Corrosion Distillation, 50%

Distillation, 90% Flash Point

Microbial Growth Particulate Contamination

Sulfur

Visual Appearance

Water and Sediment Water by Karl Fischer Limits report

40 minimum report °C 3 maximum

report °C 282 - 338 °C

52 °C minimum report

report in milligrams/liter

15 ppm maximum

Visual 0.05 maximum (% volume)

report in ppm

Methods

ASTM D1298-99 ASTM D976-01

ASTM D2500-99 **ASTM D130-04**

ASTM D86-08a ASTM D86-08a ASTM D93-10

Micro/Culture Medium

ASTM D6217-08 **ASTM D5453-09**

ASTM D4176-04 **ASTM D2709**

ASTM D6304-16

Result

37 44.9

-9 1a

243.89 307.78

57.22 Negative

> 6 20

Clear, Few Particles

0.005

69

Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healt	h		DATE: 07-03-19
CUSTOMER: MUSC	19 m m	INF	O-OTHER: University Tanks
FACILITY: Building 108 #1 (Behin	nd research Tank)		
ADDRESS: 106 Jonathan Lucas S		eston, SC 29425	
CONTACT: Rick Burt, Matthew L		PHONE: 843-3	202-0400
	Decl. Hotelson		
EMAIL burtd@musc.edu, Longmat	@musc.edu	CELL: (843)	
Unit Id: 108-FT-22	_ Type: _AST	Capacity: 2,000	Material: Dsl
Last Tank Service: 2018			
FUEL SAMPLE TAKEN: Annual/Pre-Clean		Petroleum F	Recovery Services
Post Clean None		Street, No	rth Charleston, South Carolina 241
ERVICES PERFORMED:			with Charleston, South Carolina 24, RS (1777) Fax: 843-377-0412
Maintenance			TOTAL US. COM
STI 001 Inspection Tank Cleaning		3 1	19
Bottom Sweep		Muc	
Pre-clean Lab Analysis		Bld wa	# 1 Behid Ros, (Behr)
Post-clean Lab Analysis		108	HI Kehind Rose (Rdw)
uel Treatment:		म्य ००५	Faul
✓ HydroClean			Equipment #_ 108-FT- 12
ILFC 1032			
Biocide Predator 6000			No. of Lot, London, March 2015
None			
erior Tank Condition:		The same of the sa	
Good Bad			A PARK I A
Recommend Inspection			
Recommend hispection			
RTS CONDITION:	CONTAMINA		VISUAL FUEL RATING: Pre-Clean Post Clean
ood Bad N/A -Fill Cap	✓ Pre-Clean	Post Clean	
ood Bad N/A - Vent	None	.,	Refinery Fresh
ood Bad N/A -Fill Port	Bulk '	water nded Water	✓ Good
ood Bad N/A -Sump		organisms	Watch Closely
bood Bad N/A - Spill Bucket	✓ Sedim		Advanced Aging
bod Bad N/A - Gauge	Rust		Bad-Not Recommended
ood Bad N/A - Gaskets	Sludg	e .	Severe-Do Not Use
TANK DOES NOT PASS ASTM D975 "	CLEAR & BRIGHT"	THIS TANK	PASSES THE ASTM D975 "CLEAR
AL INSPECTION	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		ISUAL INSPECTION.
cleaning is recommended hased on Visual Fuel I termine fuel parameters based on ASTAI D975 S.		ort *Lab Report \ ASTM D975 S	will determine fuel parameters based on
		AST IN LOYIS	specifications
MENTS: Picture of the before cleaning	ing sample		
- 1			



66



Laboratory Number: 71519508

Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO: WO: 108-FT-22

108-FT-22 632487

MUSC-University - Pre

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

ASTM D6304-16

07/3/2019

07/15/2019 07/18/2019

AST

2,000 g

Petroleum Recovery Pkg.

ULSD

Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	37
Cetane Index	40 minimum	ASTM D976-01	44.7
Cloud Point	report °C	ASTM D2500-99	-8
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.78
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.22
Flash Point	52 °C minimum	ASTM D93-10	76.67
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	4
Sulfur	15 ppm maximum	ASTM D5453-09	76
Visual Appearance	Visual	ASTM D4176-04	Clear, Few Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.005

Comments

Water by Karl Fischer

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

report in ppm

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healt	th	5	DATE: 07-02-19
CUSTOMER: MUSC	TWALE TO -	IN	FO-OTHER: University Tanks
FACILITY: Building 112			
ADDRESS: 108 Jonathan Lucas	St. MSC 190, Char	leston, SC 29425	
CONTACT: Rick Burt, Matthew		PHONE: 843	-333-U433
EMAIL burtd@musc.edu, Longma	@musc.edu	CELL: (843)) 792-3521
Unit Id :	Type :AST	Capacity: 500	Material: Dsl
ast Tank Service: 2018	_		
FUEL SAMPLE TAKEN: Annual/Pre-Clean			
Post Clean			
None			
ERVICES PERFORMED:		Mich	Recovery Services
Maintenance		but H	Gred, North Charleston, South Caroline, 25cg (1777) Fax: 843-377-0412
STI 001 Inspection Tank Cleaning		17.5	1 19
Bottom Sweep			/xC
✓ Pre-clean Lab Analysis		10 m	The state of the s
Post-clean Lab Analysis			I, IR
uel Treatment:		19	Equipment #: 112-FT-03
✓ HydroClean			
ILFC 1032			
Biocide Predator 6000			
erior Tank Condition: Good Bad Recommend Inspection			
RTS CONDITION:	CONTAMINA	NTS FOUND:	VISUAL FUEL RATING:
ood Bad N/A -Fill Cap	The state of the s	Post Clean	✓ Pre-CleanPost Clean
ood Bad N/A - Vent	None	Water	Refinery Fresh
ood Bad N/A -Fill Port		ended Water	Good
ood Bad N/A -Sump		o-organisms	Watch Closely
bod Bad N/A - Spill Bucket Bad N/A - Gauge	✓ Sedir		Advanced Aging
ood Bad N/A - Gaskets	Rust		Bad-Not Recommended
Jua	Slud	ge	Severe-Do Not Use
TANK DOES NOT PASS ASTM D975 " AL INSPECTION cleaning is recommended based on Visual Fuel termine fuel parameters based on ASTM D975 S	Impection ONLY, Lab Re	BRIGHT" *Lab Repor	K PASSES THE ASTM D975 "CLEAR VISUAL INSPECTION. t will determine fuel parameters based on Specifications
MENTS. Picture of the before clean	ing sample		
MENTS: Picture of the before clean			
MENTS:			

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)
4310 Amsterdam St., N. Charleston, SC 29418
www.petroleumrecoveryservices.com

07-02-19

DATE:

SERVICE TECHNICIAN: Ron and Steven



0.005

81



Laboratory Number: 71619519

Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO: WO: 112-FT-03 112-FT-03

632488

MUSC-University - Pre

Sample Collection Date:

07/2/2019

Date Received:

07/16/2019 07/19/2019

Date Released: Component Make:

Component Model:

AST 500 g

Tank Capacity:

Quantity in Tank:

Petroleum Recovery Pkg.

Test Package: Type of Fuel:

Serial Number:

ASTM D2709

ASTM D6304-16

ULSD

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	35
Cetane Index	40 minimum	ASTM D976-01	41.2
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.22
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.22
Flash Point	52 °C minimum	ASTM D93-10	67.78
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	2
Sulfur	15 ppm maximum	ASTM D5453-09	67
Visual Appearance	Visual	ASTM D4176-04	Clear, Few Particles

Comments

Water and Sediment

Water by Karl Fischer

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

0.05 maximum (% volume)

report in ppm

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healtl	2 21	DATE: 8/15/19	
CUSTOMER: MUSC	and a the draw	INFO-OTHER: University Tanks	
FACILITY: County Garage (Gen)			
ADDRESS: 110 Jonathan Lucas S	it. MSC 190, Charleston, SC 29425		
CONTACT: Rick Burt, Matthew L	ong PHONE: 8	843-323-0424	
EMAILburtd@musc.edu, Longmat		43) 792-3523	
Unit Id: 130-01-1DT	Type: AST Capacity: 125	Material: Dsl	
ast Tank Service: 2018			
Annual/Pre-Clean Post Clean None ERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis HydroClean ILFC 1032 Biocide Predator 6000 None Perior Tank Condition: Good Bad Recommend Inspection	O CONTROL OF THE PROPERTY OF T		
RTS CONDITION: ood Bad N/A -Fill Cap ood Bad N/A - Vent ood Bad N/A - Fill Port ood Bad N/A - Spill Bucket ood Bad N/A - Spill Bucket ood Bad N/A - Gauge ood Bad N/A - Gaskets TANK DOES NOT PASS ASTM D975 "C AL INSPECTION cleaning is recommended hased on Visual Fuel In termine fuel parameters based on ASTM D975 Sp MENTS: Photo shows after cleaning	nspection ONLY. Lub Report *Lab Re pecifications ASTM E	VISUAL FUEL RATING: Pre-Clean _ Post Clean Refinery Fresh Good Watch Closely Advanced Aging Bad-Not Recommended Severe-Do Not Use TANK PASSES THE ASTM D975 "CLEAR AIT" VISUAL INSPECTION. Poport will determine fuel parameters based on 10975 Specifications	



0.001

78



Laboratory Number: 82319517

Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

130-01-1DT 130-01-1DT

632519

MUSC - University - Post

Sample Collection Date:

Date Received:

08/15/2019 08/23/2019 08/30/2019

Date Released:

Component Make:

Component Model:

AST 125 g

Tank Capacity:

Quantity in Tank: Test Package:

PRS Package

Type of Fuel:

ASTM D2709

ASTM D6304-16

Serial Number:

ULSD

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	36
Cetane Index	40 minimum	ASTM D976-01	42.9
Cloud Point	report °C	ASTM D2500-99	-12
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.78
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.22
Flash Point	52 °C minimum	ASTM D93-10	77.22
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	2.7
Sulfur	15 ppm maximum	ASTM D5453-09	35
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles

Comments

Water and Sediment

Water by Karl Fischer

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

0.05 maximum (% volume)

report in ppm

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Health	า	DATE: 7-1-19
CUSTOMER: MUSC		NFO-OTHER: University Tanks
FACILITY: County Garage (Fire P		
CONTRACTOR	t. MSC 190, Charleston, SC 29425	
V (STEEN STANDARD STANDARD STANDARD)		45,000,0400
CONTACT: Rick Burt, Matthew L	Aut va	
MAIL burtd@musc.edu, Longmat	@musc.edu CELL: (84	3) 792-3522
Unit Id: 130-01-02dt	Type: AST Capacity: 175	Material: Dsl
ast Tank Service: 2018		
TUEL SAMPLE TAKEN:		
Annual/Pre-Clean		100
Post Clean None	14-11-12	A STATE OF THE STA
ERVICES PERFORMED:		
Maintenance		Condon (6)
STI 001 Inspection	ADDRESS NA	
Tank Cleaning		Recovery South Carolina 29418
Bottom Sweep	NURSE OF THE PARTY	#1675 PMS (TITT)
✓ Pre-clean Lab Analysis	Walter Farmers	# Equipment #: 130-01-52
Post-clean Lab Analysis		III (Baroll)
uel Treatment:		Mus 1
HydroClean ILFC 1032		LOTO Cal Garage
Biocide Predator 6000		130-01-86
None None		Equipment #:
None	Sente british	THE RESIDENCE OF THE PARTY OF T
erior Tank Condition:		
Good Bad	The state of the s	
Recommend Inspection		
TO COMPANY	CONTARABIANTS EQUIND.	VICUAL PUEL DATING
TS CONDITION:	CONTAMINANTS FOUND: ✓ Pre-Clean Post Clean	VISUAL FUEL RATING: Pre-Clean Post Clean
ood Bad N/A -Fill Cap	None	Refinery Fresh
Bad N/A - Vent	✓ Bulk Water	Good
bod Bad N/A -Fill Port	Suspended Water	✓ Watch Closely
ood Bad N/A - Sump	Micro-organisms	
ood Bad N/A - Gauge	✓ Sediments	Advanced Aging
ood Bad N/A - Gaskets	Rust	Bad-Not Recommended
Jud Jud	Sludge	Severe-Do Not Use
TANK DOES NOT PASS ASTM D975 "C	THIS TA	ANK PASSES THE ASTM D975 "CLEAR
		" VISUAL INSPECTION. [
AL INSPECTION cleaning is recommended based on Visual Fuel II termine fuel parameters based on ASTAI 19975 Se	uspection ONLY Lab Report Lab Rep	oort will determine fuel parameters based on
Common personal contract contr	ADIM D	975 Specifications
MENTS: Picture of the before cleaning	ng sample	
The same state of the same sta		





ABORATORIES

Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

130-01-02DT

632487

MUSC-University - Pre

130-01-02DT

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

Serial Number:

U	es	E		
	-	-	200010-1200	

Particulate Contamination

Sulfur

Visual Appearance

Water and Sediment Water by Karl Fischer 15 ppm maximum Visual

report in milligrams/liter

0.05 maximum (% volume) report in ppm

55-41---t-

ASTM D6217-08

ASTM D5453-09

ASTM D4176-04

ASTM D2709 ASTM D6304-16 07/1/2019

07/15/2019

07/18/2019

AST

175 g

Petroleum Recovery Pkg.

ULSD

lest	Limits	methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46.3
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.78
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.22
Flash Point	52 °C minimum	ASTM D93-10	64.44
Microbial Growth	report	Micro/Culture Medium	Negative

Cloudy, Light Sediment, Few

Particles

8.7

39

0.01 90

Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healtl	1	DATE: 7-2-19
CUSTOMER: MUSC		INFO-OTHER: University Tanks
FACILITY: 56 Courtney Dr. Fuel 7	ank #40 (PG1-Roof)	
ADDRESS: 111 Jonathan Lucas S	t. MSC 190, Charleston, SC 294	125
CONTACT: Rick Burt, Matthew L		E: 843-323-0425
EMAILburtd@musc.edu, Longmato		(843) 792-3524
Unit Id: 145-FT-40	_ Type :AST_ Capacity : _2	250 Material: Dsl
Last Tank Service: 2018		
FUEL SAMPLE TAKEN:	(1)	
Annual/Pre-Clean Post Clean		
None		In Pacayery Samilar
SERVICES PERFORMED:	Petr	coleum Recovery Services
Maintenance	Page	## 50-225-1PRS (1777) Fax: 843-377-0412
STI 001 Inspection		www.petroleumrecoveryservices.com
Tank Cleaning Bottom Sweep		2 119
✓ Pre-clean Lab Analysis		
Post-clean Lab Analysis		Muse
Fuel Treatment:	The state of the s	El Contag de Carre
✓ HydroClean	25	
ILFC 1032		Equipment #: 115.65%
Biocide Predator 6000		
None		A STATE OF THE PARTY OF THE PAR
xterior Tank Condition:		
Good Bad		
Recommend Inspection		
RTS CONDITION:	CONTAMINANTS FOUND:	VISUAL FUEL RATING:
Good Bad N/A -Fill Cap	✓ Pre-CleanPost Clean	✓ Pre-Clean Post Clean
Good Bad N/A - Vent	None	Refinery Fresh
Good Bad N/A -Fill Port	Bulk Water	✓ Good
Good Bad N/A -Sump	Suspended Water	Watch Closely
Good Bad N/A - Spill Bucket	Micro-organisms	Advanced Aging
Good Bad N/A - Gauge	✓ Sediments Rust	Bad-Not Recommended
Good Bad N/A - Gaskets	Sludge	Severe-Do Not Use
IS TANK DOES NOT PASS ASTM D975 "C UAL INSPECTION		IS TANK PASSES THE ASTM D975 "CLEAR & IGHT" VISUAL INSPECTION.
k cleaning is recommended hased on Visual Fuel li	uspection ONLY Lab Report *La	b Report will determine fuel parameters based on
letermine fuel parameters based on ASTM D975 Sp	- 15.00 O - 15.000 O	TM D975 Specifications
MMENTS: Picture of the before cleaning	ng sample	
100		
		W 16 06U
	Ron and Steven	DATE: 7-2-19





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

145-FT-40

145-FT-40 632487

MUSC-University - Pre

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

Serial Number:

07/2/2019

07/15/2019

07/18/2019

AST

250 g

Petroleum Recovery Pkg.

ULSD

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	47.8

Cloud Point Copper Strip Corrosion 3 maximum Distillation, 50% report *C

Distillation, 90% Flash Point Microbial Growth

Particulate Contamination

Sulfur

Visual Appearance

Water and Sediment Water by Karl Fischer

report °C 282 - 338 °C 52 °C minimum

report report in milligrams/liter 15 ppm maximum

Visual 0.05 maximum (% volume) report in ppm

ASTM D2500-99

ASTM D130-04 ASTM D86-08a ASTM D86-08a ASTM D93-10

Micro/Culture Medium **ASTM D6217-08 ASTM D5453-09**

> ASTM D4176-04 **ASTM D2709** ASTM D6304-16

-14 1a 248.33

307.78 64.44

Negative

14 7

Clear, Few Particles

0.005 61

Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healt	:h		DATE: 7-22-19
CUSTOMER: MUSC		INFO-OTHER: University Tank	
FACILITY: 135 Cannon (Day Tar	ık)		
ADDRESS: 112 Jonathan Lucas S	St. MSC 190, Charles	ton, SC 29425	
CONTACT: Rick Burt, Matthew I		PHONE: 843-3	323-0426
EMAILburtd@musc.edu, Longmat		CELL: (843)	The way of the state of the sta
Unit Id: 148-08-251DT		apacity: 200	
	_ Type : C	apacity: 200	wraterial:
	- I kilosili		
FUEL SAMPLE TAKEN: Annual/Pre-Clean		1	
✓ Post Clean			Modeum Recovery Services
None			Marie Communication Communicat
ERVICES PERFORMED: Maintenance		P. C.	21719
STI 001 Inspection		Street Heron Charleston, Seek Card Street, Heron Charleston, Seek Card See 54 223-4795 (1777) Fox: 943-277 SE	inus <
✓ Tank Cleaning		7 1 1/9	Charlesten 5°
Bottom Sweep		- Clark	The state of the s
Pre-clean Lab Analysis		If Course of Aug	
Post-clean Lab Analysis		To Consult 1 To	
uel Treatment:		4	
<u>✓</u> HydroClean		10	
ILFC 1032			The part of the pa
Biocide Predator 6000			
None			
erior Tank Condition:			
Good Bad		The state of the s	
Recommend Inspection		Maria Contract	
TC CONDITION	CONTAMINANT	S FOUND.	VICUAL FUEL DATING
RTS CONDITION:	Pre-Clean		VISUAL FUEL RATING: Pre-Clean ✓ Post Clean
ood Bad N/A -Fill Cap	✓ None		Refinery Fresh
ood Bad N/A - Vent	Bulk W	ater	✓ Good
ood Bad N/A -Fill Port		led Water	Watch Closely
ood Bad N/A - Spill Bucket		rganisms	Advanced Aging
ood Bad N/A - Gauge	Sedimer	nts	
ood Bad N/A - Gaskets	Rust	and the second	Bad-Not Recommended
204	Sludge		Severe-Do Not Use
TANK DOES NOT PASS ASTM D975 "	CLEAR & BRIGHT"	THIS TANK	PASSES THE ASTM D975 "CLEAR
	CLEAR & BRIGHT"		PASSES THE ASTM D975 "CLEAR & ISUAL INSPECTION.
AL INSPECTION cleaning is recommended based on Visual Fuel.	Inspection ONLY. Lah Report	BRIGHT" V *Lab Report	ISUAL INSPECTION. will determine fuel parameters based on
AL INSPECTION cleaning is recommended based on Visual Fuel itermine fuel parameters based on ASTM 19975 S	Inspection ONLY. Lah Report Specifications	BRIGHT" V *Lab Report to ASTM D975	ISUAL INSPECTION. will determine fuel parameters based on Specifications
AL INSPECTION cleaning is recommended based on Visual Fuel itermine fuel parameters based on ASTM 19975 S	Inspection ONLY. Lah Report Specifications	BRIGHT" V *Lab Report to ASTM D975	ISUAL INSPECTION. will determine fuel parameters based on
AL INSPECTION cleaning is recommended based on Visual Fuel itermine fuel parameters based on ASTM 19975 S	Inspection ONLY. Lah Report Specifications	BRIGHT" V *Lab Report to ASTM D975	ISUAL INSPECTION. will determine fuel parameters based on Specifications
AL INSPECTION cleaning is recommended based on Visual Fuel itermine fuel parameters based on ASTM 19975 S	Inspection ONLY. Lah Report Specifications	BRIGHT" V *Lab Report to ASTM D975	ISUAL INSPECTION. will determine fuel parameters based on Specifications
TANK DOES NOT PASS ASTM D975 "CAL INSPECTION cleaning is recommended based on Visual Fuel termine fuel parameters based on ASTM D975 SMENTS:	Inspection ONLY. Lah Report Specifications	BRIGHT" V *Lab Report to ASTM D975	will determine fuel parameters based on Specifications
AL INSPECTION cleaning is recommended based on Visual Fuel itermine fuel parameters based on ASTM 19975 S	Inspection ONLY. Lah Report Specifications	BRIGHT" V *Lab Report to ASTM D975	ISUAL INSPECTION. will determine fuel parameters based on Specifications



LABORATORIES

Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

148-08-251DT 148-08-251DT

632504

MUSC - University - Post

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

Serial Number:

07/22/2019

08/2/2019 08/7/2019

SBT

200 g

PRS Package

ULSD

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46.9
Cloud Point	report °C	ASTM D2500-99	-9
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	245.0
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	74.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	2.7
Sulfur	15 ppm maximum	ASTM D5453-09	20
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0,001
Water by Karl Fischer	report in ppm	ASTM D6304-16	60

Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healt	h	DATE: 7-22-2019
CUSTOMER: MUSC		INFO-OTHER: University Tanks
FACILITY: Building 163 (Helicopt		
ADDRESS: 113 Jonathan Lucas S	MINI	
-		
CONTACT: Rick Burt, Matthew L		843-323-0427
EMAIL burtd@musc.edu, Longmat	@musc.edu CELL: (8	43) 792-3526
Unit Id: 163H-01-1DT	_ Type : SBT Capacity : 425	Material: Dsl
Last Tank Service: 2018		
FUEL SAMPLE TAKEN:		
Annual/Pre-Clean		
Post Clean		
None SERVICES PERFORMED:		
Maintenance		
STI 001 Inspection		
✓ Tank Cleaning		This ROLL THE REAL PROPERTY.
Bottom Sweep		
Pre-clean Lab Analysis		
✓ Post-clean Lab Analysis		
Fuel Treatment:		
HydroClean		
ILFC 1032		
Biocide Predator 6000		
None		
Exterior Tank Condition:		
Good Bad		
Recommend Inspection		
A DEC COMPLETION	CONTAMINANTS FOUND.	VICTAL PURE DATENCE
ARTS CONDITION:	CONTAMINANTS FOUND: Pre-Clean Post Clean	VISUAL FUEL RATING: Pre-Clean Post Clean
Good Bad N/A -Fill Cap	None	Refinery Fresh
Good Bad N/A - Vent	Bulk Water	Good
Good Bad N/A -Fill Port Good Bad N/A -Sump	Suspended Water	Watch Closely
Good Bad N/A - Sump Good Bad N/A - Spill Bucket	Micro-organisms	The state of the s
Good Bad N/A - Gauge	✓ Sediments	Advanced Aging
Good Bad N/A - Gaskets	Rust	Bad-Not Recommended
GOOG Dad Gashes	Sludge	Severe-Do Not Use
HS TANK DOES NOT PASS ASTM D975 "	CLEAR & RRIGHT" THIS T	TANK PASSES THE ASTM D975 "CLEAR &
SUAL INSPECTION		IT" VISUAL INSPECTION.
ink cleaning is recommended hased on Visual Fuel i I determine fuel parameters based on ASTM D975 S		eport will determine fuel parameters based on D975 Specifications
OMMENTS: The before cleaning sample		
JAMINICIA ES.	encertaine and Ministry department of the Control o	The state of
SERVICE TECHNICIAN	_{I:} Mike & Tommie	DATE: 7-22-2019





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

163H-01-1DT

163H-01-1DT

632504

MUSC - University - Post

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

Serial Number:

07/22/2019

08/2/2019

08/7/2019

SBT

425 g

PRS Package

ULSD

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46.1
Cloud Point	report *C	ASTM D2500-99	-11
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.22
Distillation, 90%	282 - 338 °C	ASTM D86-08a	308.33
Flash Point	52 °C minimum	ASTM D93-10	63.33
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	2
Sulfur	15 ppm maximum	ASTM D5453-09	15
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	80

Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



DATE: 7-3-19
O-OTHER: University Tanks
, 0
23-0428
792-3527
Material: Dsl
at will be to
1. 100
001
very Services fls
INESTON, SOUTH CHICKING LITTLE
77) Fax. 843-377-0412 vervservices.com
(Becore)
1 0000
quipment #: 334/339 First
Name of the second second
1982
· · · · · · · · · · · · · · · · · · ·
Æ
VISUAL FUEL RATING: ✓ Pre-Clean Post Clean
Refinery Fresh
✓ Good
200.00 00 000000 00 00
Watch Closely
Advanced Aging
Bad-Not Recommended
Severe-Do Not Use
PASSES THE ASTM D975 "CLEAR
SUAL INSPECTION.
vill determine fuel parameters based on l pecifications
_





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO: WO: 334/339-FT-40

334/339-FT-40 632487

MUSC-University - Pre

Sample Collection Date:

Date Received:

Date Released:

Component Make:

Component Model:

Tank Capacity:

Quantity in Tank;

Test Package:

Type of Fuel:

Serial Number:

07/15/2019 07/18/2019

07/3/2019

UST 15,000 g

Petroleum Recovery Pkg.

ULSD

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	37
Cetane Index	40 minimum	ASTM D976-01	43.4
Cloud Point	report °C	ASTM D2500-99	-12
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	238.89
Distillation, 90%	282 - 338 °C	ASTM D86-08a	305.0
Flash Point	52 °C minimum	ASTM D93-10	73.33
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	4
Sulfur	15 ppm maximum	ASTM D5453-09	14
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	64

Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Health	h	DATE: 7-3-19
CUSTOMER: MUSC		INFO-OTHER: University Tanks
FACILITY: Building 334 (Drug Dis		
ADDRESS: 115 Jonathan Lucas S		
7. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		
CONTACT: Rick Burt, Matthew L		343-323-0429
EMAIL burtd@musc.edu, Longmate	@musc.eduCELL:_(8	43) 792-3528
Unit Id: 334/08-124DT	Type: AST Capacity: 275	Material: DSI
Last Tank Service: 2018		
FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean		
None		
SERVICES PERFORMED: Maintenance	Constitution of the second	
STI 001 Inspection	retroleur	m Recovery Services
Tank Cleaning	** Street	t. North Charleston, South Carolina 28th
Bottom Sweep	No.	riemrecovervservices.com
✓ Pre-clean Lab Analysis	3	1 19
Post-clean Lab Analysis	Dec	
Fuel Treatment:	100	
✓ HydroClean	43	Day discovery (als)
ILFC 1032 Biocide Predator 6000	0.0	3007
None None		Equipment #: 339-08-1311
Trone		
xterior Tank Condition:		A 1913 C
Good Bad		
Recommend Inspection		
DTC CONDITION.	CONTAMINANTS FOUND:	VISUAL FUEL RATING:
ARTS CONDITION: Good Bad N/A -Fill Cap	✓ Pre-CleanPost Clean	✓ Pre-Clean Post Clean
Good Bad N/A -Fill Cap Good Bad N/A - Vent	None	Refinery Fresh
Good Bad N/A - Fill Port	Bulk Water	✓ Good
Good Bad N/A -Sump	Suspended Water	Watch Closely
Good Bad N/A - Spill Bucket	Micro-organisms	Advanced Aging
Good Bad N/A - Spill Bucket N/A - Gauge	Sediments	Bad-Not Recommended
Good Bad N/A - Gaskets	Rust	Severe-Do Not Use
	Sludge	
S TANK DOES NOT PASS ASTM D975 "C		TANK PASSES THE ASTM D975 "CLEAR &
UAL INSPECTION ik cleaning is recommended hased on Visual Fuel I determine fuel parameters based on ASTA1 D975 Sq	nspection ONLY Lub Report Lab Re	IT" VISUAL INSPECTION. seport will determine fuel parameters based on O975 Specifications
MMENTS: Picture of the before cleani	ng sample	
And the state of t		
SERVICE TECHNICIAN	. Bon and Steven	DATE: 7-3-19
SERVICE IECHNICIAN		DATE



0.001

95

Laboratory Number: 71519513

LABORATORIES

Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

334-08-124DT

334-08-124DT 632487

MUSC-University - Pre

Sample Collection Date:

Date Received:

Date Released:

Component Make: Component Model:

Tank Capacity:

Quantity in Tank:

Test Package:

Type of Fuel:

Serial Number:

ASTM D2709

ASTM D6304-16

07/3/2019 07/15/2019

07/18/2019

AST

275 g

Petroleum Recovery Pkg.

ULSD

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	37
Cetane Index	40 minimum	ASTM D976-01	44.1
Cloud Point	report °C	ASTM D2500-99	-12
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	241.11
Distillation, 90%	282 - 338 °C	ASTM D86-08a	306.67
Flash Point	52 °C minimum	ASTM D93-10	66.67
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	3.3
Sulfur	15 ppm maximum	ASTM D5453-09	14
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles

Comments

Water and Sediment

Water by Karl Fischer

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

0.05 maximum (% volume)

report in ppm

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Healt	h	DATE: 7-3-19		
CUSTOMER: MUSC		INFO-OTHER: University Tanks		
FACILITY: Building 339 (Bio Gen	Day Tank)			
ADDRESS: 116 Jonathan Lucas S		25		
CONTACT: Rick Burt, Matthew L		: 843-323-0430		
EMAILburtd@musc.edu, Longmat		 (843) 792-3529		
Unit Id: 339/08-106DT	Type: AST Capacity: 10			
Last Tank Service: 2018	_ Type Capacity	Waterial.		
FUEL SAMPLE TAKEN:	Approximation in the second			
Annual/Prc-Clean Post Clean None SERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis Fuel Treatment: HydroClean ILFC 1032 Biocide Predator 6000 None xterior Tank Condition: Good Bad Recommend Inspection		Recovery Services Syste North Charleston, South Carolina 29415 1025-1978 (1777) Fax: 843-377-0412 1025-1978 (1777) Fax: 8		
ARTS CONDITION: Good Bad N/A -Fill Cap Good Bad N/A - Vent Good Bad N/A - Fill Port	CONTAMINANTS FOUND: Pre-Clean Post Clean None Bulk Water	VISUAL FUEL RATING: Post Clean Refinery Fresh Good		
Good Bad N/A -Sump	Suspended Water Micro-organisms	✓ Watch Closely		
Good Bad N/A - Spill Bucket N/A - Gauge	✓ Sediments	Advanced Aging		
Good Bad N/A - Gaskets	Rust Sludge	Bad-Not Recommended Severe-Do Not Use		
IS TANK DOES NOT PASS ASTM D975 "GUAL INSPECTION nk cleaning is recommended based on Visual Fuel I determine fuel parameters based on ASTM D975 S	CLEAR & BRIGHT" Inspection ONLY, Lab Report Lab AST.	S TANK PASSES THE ASTM D975 "CLEAR & GHT" VISUAL INSPECTION. Description of the parameters based on M D975 Specifications		
OMMENTS: Picture of the before clean		M D975 Specifications		
SERVICE TECHNICIAN	Ron and Steven	DATE: 7-3-19		



0.9

160



ABORATORIES

Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

339-08-106DT 339-08-106DT

632487

MUSC-University - Pre

Sample Collection Date:

Date Received: 07/15/2019 Date Released: 07/18/2019

07/3/2019

AST

Component Make:

Component Model:

Tank Capacity: 100 g

Quantity in Tank:

Test Package: Petroleum Recovery Pkg.

ULSD Type of Fuel:

ASTM D2709

ASTM D6304-16

Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	37
Cetane Index	40 minimum	ASTM D976-01	44.1
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	241.11
Distillation, 90%	282 - 338 °C	ASTM D86-08a	306.67
Flash Point	52 *C minimum	ASTM D93-10	74.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	159.3
Sulfur	15 ppm maximum	ASTM D5453-09	17
Visual Appearance	Visual	ASTM D4176-04	Clear, High Sediment, Many
Visual Appearance	Visual	ASTIVI D4170-04	Particles

Comments

Water and Sediment

Water by Karl Fischer

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Water and Sediment exceeded acceptable limits. . Sediment can cause clogged filters and may lead to failed fuel injectors.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

0.05 maximum (% volume)

report in ppm

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.



GROUP INFO: MUSC Health	1		DATE: 8/15/19	
CUSTOMER: MUSC		INFO-OTHER: University Tanks		
FACILITY: Building 500 (Roof Day	Tank)			
ADDRESS: 117 Jonathan Lucas St	. MSC 190, Charles	ton, SC 29425	1012.74	
CONTACT: Rick Burt, Matthew Lo	ong	PHONE: 843-3	323-0431	
EMAIL burtd@musc.edu, Longmat@		CELL: (843)		
Unit Id : 500-01-CDT	Type: AST C		798WW	
Last Tank Service: 2018				
FUEL SAMPLE TAKEN: Annual/Pre-Clean Post Clean None ERVICES PERFORMED: Maintenance STI 001 Inspection Tank Cleaning Bottom Sweep Pre-clean Lab Analysis Post-clean Lab Analysis HydroClean ILFC 1032 Biocide Predator 6000 None terior Tank Condition: Good Bad Recommend Inspection	A CONTRACT OF THE PROPERTY OF	overy Samuel		
RTS CONDITION: Sood	Micro-o Sedimen Rust Sludge LEAR & BRIGHT" spection ONLY, Lab Report	Post Clean Inter ed Water rganisms Its THIS TANK BRIGHT" V	VISUAL FUEL RATING: Pre-Clean → Post Clean Refinery Fresh ✓ Good Watch Closely Advanced Aging Bad-Not Recommended Severe-Do Not Use PASSES THE ASTM D975 "CLEAR & ISUAL INSPECTION. will determine fuel parameters based on Specifications	





Loretta Shaw

Petroleum Recovery Services

4310 Amsterdam St.

North Charleston, SC 29418

843-225-1777

Sample Taken From:

Sample ID:

PO:

WO:

500-01-CDT

500-01-CDT

632519

MUSC - University - Post

Sample Collection Date:

08/15/2019

Date Received: Date Released: 08/23/2019 08/30/2019

Component Make:

Component Model:

AST

Tank Capacity:

Quantity in Tank:

75 g

Test Package: Type of Fuel:

PRS Package

ULSD

Serial Number:

Test API Gravity by Hydrometer Cetane Index Cloud Point Copper Strip Corrosion Distillation, 50% Distillation, 90%

Flash Point Microbial Growth

Particulate Contamination

Sulfur

Visual Appearance Water and Sediment

Water by Karl Fischer

Limits

report 40 minimum report °C

3 maximum report °C 282 - 338 °C

52 °C minimum report

report in milligrams/liter

15 ppm maximum Visual

0.05 maximum (% volume)

report in ppm

Methods

ASTM D1298-99 ASTM D976-01 ASTM D2500-99

ASTM D130-04 ASTM D86-08a ASTM D86-08a

ASTM D93-10

Micro/Culture Medium ASTM D6217-08

ASTM D5453-09 ASTM D4176-04

ASTM D2709 ASTM D6304-16 Result

36

42.7 -16

1a 241.67

307.22 73.33

Negative

0.7 82

Clear, Trace Particles

0.001

68

Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.