

LOW SULFUR HEATING OIL

FIELD OBSERVATIONS 2016

NORA Research Workshop

Sep. 14, 2016

Newport, RI

Tom Santa
Bridgeport, CT

Date	Terminal	API	FBP (F)	Sulfur(ppm)	Cetane	Cloud (F)	Haze
8/26/2015	P66	36.3	664	461	48.1	5	1
10/15/2015	KMI	36.2	659	498	48.7	6	1
11/10/2015	KMLT	35.9	664	496	47.7	7	1
11/30/2015	KMLT	37.2	661	483	50.5	5	1
12/10/2015	KMLT	37.2	664	484	50.0	7	1
12/22/2015	KMLT	36.7	662	494	40.6	7	1
1/4/2016	KMLT	36.0	662	490	48.6	7	1
1/15/2016	KMLT	33.3	662	414	47.1	9	1
1/21/2016	KMLT	34.0	658	387	47.6	7	1
1/31/2016	KMLT	36.6	651	481	47.8	3	1
2/22/2016	KMLT	37.2	656	499	48.3	3	1
2/19/2016	KMLT	36.6	656	493	47.8	3	1
2/29/2016	KMLT	36.1	665	490	48.3	7	1
3/13/2016	KMLT	35.7	667	498	47.5	7	1
3/28/2016	KMLT	38.2	663	479	53.6	3	1
4/15/2016	KMLT	36.0	666	485	48.5	5	1
5/2/2016	KMLT	36.8	663	416	47.5	1	1
6/17/2016	KMLT	35.6	661	477	47.9	7	1

INLAND FUEL TERMINALS BRIDGEPORT INBOUND BARGE ANALYSIS

Magellan New Haven								
Shore Tank Specifications								
Date	Terminal	API	FBP (F)	Sulfur(ppm)	Cetane	Cloud (F)	Haze	Fame %
7/1/2015	MTH	35.5	667	427	n/r	9.5	1	<1%
7/10/2015		36	n/r	455	n/r	1	1	<1%
9/24/2015		36.8	n/r	455	n/r	5	1	<1%
12/5/2015		36.1	n/r	393	n/r	9	1	4.2%
1/3/2016		36.4	n/r	489	n/r	7	1	<1%
1/30/2016		32.4	n/r	366	n/r	7	1	4.7%
4/23/2016		36.2	668	449	49	5	1	<1%

MAGELLAN NEW HAVEN SHORE TANK ANALYSIS

Inland Terminals Tiverton RI								
Shore Tank Specifications								
Date	Terminal	API	FBP (F)	Sulfur(ppm)	Cetane	Cloud (F)	Haze	Fame %
7/1/2015	MTH	35.5	667	427	n/r	9.5	1	<1%
7/10/2015		36	n/r	455	n/r	1	1	<1%
9/24/2015		36.8	n/r	455	n/r	5	1	<1%
12/5/2015		36.1	n/r	393	n/r	9	1	4.2%
1/3/2016		36.4	n/r	489	n/r	7	1	<1%
1/30/2016		32.4	n/r	366	n/r	7	1	4.7%
4/23/2016		36.2	668	449	49	5	1	<1%

INLAND TERMINALS TIVERTON RI SHORE TANK ANALYSIS

FORMULATION:

Sludge Dispersant

Will clean your fuel system by removing and dispersing existing sludge, allowing it to pass harmlessly through nozzles, screens and filters for increased burner performance and efficiency.

Antioxidant and Thermal Stabilizer

Contains antioxidants to improve thermal and oxidative stability of neat #2 and bio-blended fuel (ie. B5).

Corrosion Inhibitor

Protects metal components from rust and corrosion caused by moisture that may be in the fuel system.

Metal Deactivator

Prevents fuel degradation induced by free copper ions that are present in the lines used in the fuel system.

Water Dispersant

Reduces the opportunity for microbial growth and water-related corrosion through gradual water control

De-Foamer

Reduces the time it takes to fill a tank at the delivery point. You make more stops per day!

ADDITIVE UTILIZED IN 80-90% OF PRODUCT SOLD BY SFI
DOSAGE 1:10,000



STRAINERS RECOVERED FROM ROUTINE SERVICE
@ BRIDGEPORT CT



RANDOM FILTERS FROM ROUTINE SERVICE
@ BRIDGEPORT CT GENERAL CARTRIDGE 5294

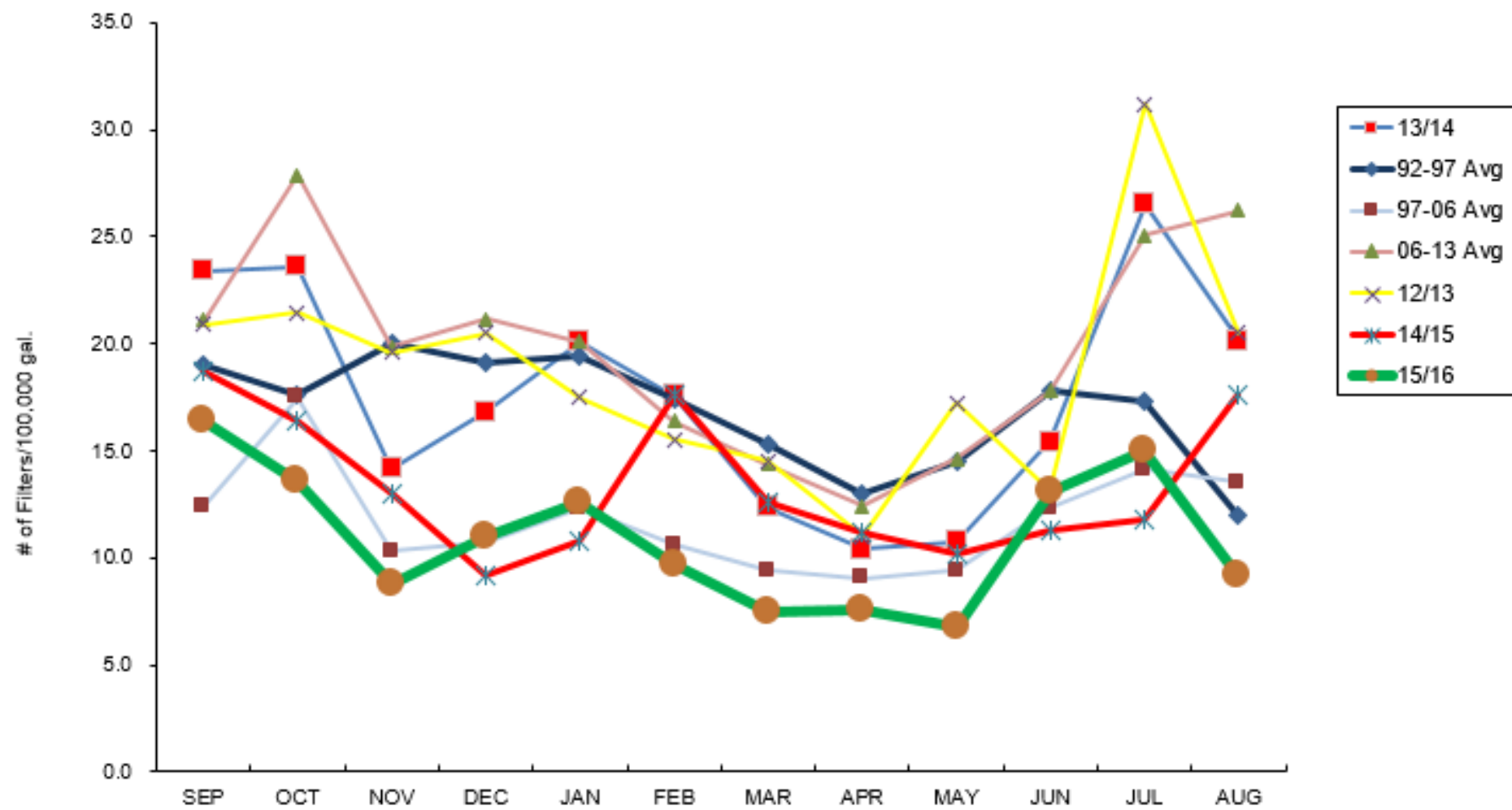


TYPICAL FELT FILTER
NEW CUSTOMER- UNKNOWN LAST MAINTENANCE DATE

Santa Fuel Inc. <u>FILTER CHANGES</u> Per 100,000 Gallons Delivered									
	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	14vs15
SEP	24.8	18.6	15.9	19.9	20.9	23.4	18.7	16.4	-10%
OCT	28.3	30.4	35.4	27.8	21.5	23.6	16.4	13.6	-12%
NOV	23.5	23.4	19.0	15.9	19.6	14.2	13.0	8.8	-30%
DEC	30.8	23.1	19.1	18.3	20.5	16.8	9.2	11.0	11%
JAN	35.7	17.4	20.0	15.8	17.5	20.1	10.7	12.6	9%
FEB	19.7	13.8	17.7	12.7	15.5	17.6	17.7	9.7	-45%
MAR	17.3	13.6	13.6	12.7	14.5	12.3	12.5	7.5	-41%
APR	12.3	10.1	12.6	10.3	11.0	10.4	11.2	7.6	-34%
MAY	15.9	13.6	18.3	13.3	17.3	10.8	10.2	6.7	-32%
JUN	17.7	26.6	15.2	21.9	13.2	15.4	11.3	13.1	12%
JUL	15.9	20.5	21.3	18.4	31.2	26.5	11.8	15.0	12%
AUG	24.0	21.6	23.0	18.8	20.5	20.1	17.6	9.1	-42%
Average YTD	24.71	18.28	18.30	15.74	17.31	16.45	12.92	10.20	-17%
Vol. Weighted Avg YTD	24.71	18.28	18.30	15.74	17.31	16.45	12.92	10.20	-17%

Filter Replacement Rate

Filters per 100,000 gal. delivered





THANK YOU FOR YOUR ATTENTION