Auto Diesel Fuel

sample ID	DATE	TIME	JACKET TEMP.	INITIAL TEMP.	VESSEL ID	SAMPLE WT.	DELTA T/c	GROSS BTU/LB	S BTU/LB
AF1	2/24/2024	20:01	30.0342	26.0668	1	0.515	2.3423	19578	0
AF4	2/24/2024	20:36	30.1689	26.4110	1	0.5149	2.3437	19593	0
AF5	2/24/2024	23:08	29.8966	26.800	1	0.5236	2.374	19517	0
BF2	2/24/2024	23;59	30.0149	26.0185	1	0.5388	2.4451	19536	0
BF3	2/25/2024	0:20	29.9567	26.0657	2	0.5297	2.4079	19581	0
BF4	2/25/2024	7:22	30.1190	26.1975	2	0.5681	2.5817	19578	0
BF5	2/25/2024	8:30	29.9542	26.0589	2	0.5115	2.3217	19550	0
AF7	2/25/2024	8:52	29.9871	26.2798	1	0.5112	2.385	19607	0
AF8	2/25/2024	17:51	30.0352	26.1014	1	0.5437	2.4695	19554	0
BF8	2/25/2024	18:11	29.9800	26.1484	2	0.5253	2.3834	19543	0
AF9	2/25/2024	22:01	30.0350	25.9739	1	0.5115	2.3224	19543	0
BF10	2/25/2024	22:22	30.0341	26.2762	2	0.5214	2.3248	19541	0
BF11	2/26/2024	0:03	29.9841	26.3549	2	0.5125	2.3284	19567	0
AF12	2/26/2024	0:26	29.9443	26.2576	1	0.5312	2.4261	19661	0
BF12	2/26/2024	9:47	29.9767	26.5450	2	0.5441	2.4677	19537	0
AF13	2/26/2024	10:10	30.0127	26.6254	1	0.526	2.3868	19533	0
BF13	2/26/2024	12:10	29.9349	26.0416	2	0.5233	2.3784	19576	0
AF14	2/26/2024	12:31	30.0149	26.3069	1	0.5309	2.4116	19554	0
BF14	2/26/2024	13:13	30.0149	26.3069	2	0.5324	2.4189	19571	0
BF16	2/26/2024	13:13	30.0172	26.4461	2	0.5235	2.3769	19556	0
Sample	Count	20							

Ave.	0.52693	2.3948	19564
Std.d.	0.0137	0.0620	31.25
Max	0.56810	2.58170	19661
Min	0.51120	2.32170	19517
Range	0.0569	0.26	144
%	10.8	10.86	
Median	0.52445	2.38420	19555

VESSEL ID	SAMPLE WT.	DELTA T/c	GROSS BTU/LB	VESSEL ID	SAMPLE WT.	DELTA T/c
1	0.51500	2.3423	19578	2	0.5297	2.4079
1	0.51490	2.3437	19593	2	0.5681	2.5817
1	0.52360	2.374	19517	2	0.5115	2.3217
1	0.53880	2.4451	19536	2	0.5253	2.3834
1	0.51120	2.3850	19607	2	0.5214	2.3248
1	0.54370	2.4695	19554	2	0.5125	2.3284
1	0.51150	2.3224	19543	2	0.5441	2.4677
1	0.53120	2.4261	19661	2	0.5233	2.3784
1	0.52600	2.3868	19533	2	0.5324	2.4189
1	0.53090	2.4116	19554	2	0.5235	2.3769

SAMPLES NUMBER 10

JET FUEL

DATE	TIME	JACKET	INITIAL	VESSEL	SAMPLE	DELTA	GROSS	S

		TEMP.	TEMP.	ID	WT.	T	BTU/LB	BTU/LB
2/26/2024	14:08	29.9656	26.4001	1	0.5321	2.452	19837.0	0
2/26/2024	15:59	30.0019	25.9582	1	0.5362	2.4663	19802.0	0
2/26/2024	20:32	29.9613	26.2758	1	0.5424	2.4957	19809.0	0
2/26/2024	20:11	30.0254	26.3359	1	0.5119	2.3577	19826.0	0
2/26/2024	22:39	30.0503	26.4192	1	0.5556	2.5603	19840.0	0
2/26/2024	12:26	30.0274	26.1854	1	0.5612	2.58	19794.0	0
2/27/2024	13:11	30.1013	26.2414	1	0.523	2.4087	19826.0	0
2/27/2024	13:36	30.0318	26.1025	1	0.5333	2.4554	19821.0	0
2/27/2024	13:59	29.9598	26.1711	1	0.5638	2.5946	19814.0	0
2/27/2024	14:48	29.9295	26.2500	1	0.5429	2.5016	19840.0	0
2/26/2024	15:11	29.9919	26.1223	2	0.5297	2.4392	19836.0	0
2/26/2024	16:24	30.0663	25.9995	2	0.5341	2.4637	19871.0	0
2/26/2024	20:50	29.9703	26.0584	2	0.5248	2.4136	19810.0	0
2/26/2024	21:33	30.0011	26.4766	2	0.5353	2.4636	19825.0	0
2/26/2024	22:16	30.0271	26.2908	2	0.5417	2.4951	19842.0	0
2/27/2024	11:56	30.0145	25.9412	2	0.5416	2.4958	19851.0	0
2/27/2024	12:48	30.0460	26.5913	2	0.525	2.4189	19846.0	0
2/27/2024	13:36	30.0318	26.1026	2	0.5673	2.6114	19832.0	0
2/27/2024	14:27	29.9710	26.1032	2	0.5296	2.4377	19827.0	0
2/27/2024	15:13	30.0386	26.3669	2	0.5261	2.4215	19826.0	0
			# samples		20			
			MAX		0.56730	2.6114	19871.0	
			MIN		0.5119	2.3577	19794.0	

AVER.	0.5379	2.4766	19828.8
STD.DEV.	0.01423905	0.06519	17.5
%Rsd			0.0882

JET

DATE	TIME	JACKET TEMP.	INITIAL TEMP.	VESSEL ID	SAMPLE WT.	DELTA T
########	14:08	29.9656	26.4001	1	0.53210	2.452
########	15:59	30.0019	25.9582	1	0.53620	2.4663
########	20:32	29.9613	26.2758	1	0.54240	2.4957
########	20:11	30.0254	26.3359	1	0.51190	2.3577

########	22:39	30.0503	26.4192	1	0.55560	2.5603
########	12:26	30.0274	26.1854	1	0.56120	2.5800
########	13:11	30.1013	26.2414	1	0.52300	2.4087
########	13:36	30.0318	26.1025	1	0.53330	2.4554
########	13:59	29.9598	26.1711	1	0.56380	2.5946
########	14:48	29.9295	26.2500	1	0.54290	2.5016

AVERAGE	30.0054	26.2340		0.5402	2.4872
MAX.	30.1013	26.4192		0.5638	2.5946
MIN.	29.9295	25.9582		0.5119	2.3577
		#SAMPLES	10		
		MEDIAN		0.5393	2.481
		St.dev.		0.0166	0.0756
		Ave. Dev		0.01294	0.05921
		Average		0.54024	2.48723
		Max		0.5638	2.5946
		Min		0.5119	2.3577
		%RSD			
		Range			

Home	Heating	Diesel	Oil

DATE	TIME	Sample Id	JACKET TEMP.	INITIAL TEMP.	VESSEL ID	SAMPLE WT.	Temp. Rise
2/27/2024	21:59	Hmoa1	29.9606	26.1373	1	0.53290	2.4132
2/27/2024	22:27	Hmob1	30.0369	26.4657	2	0.51770	2.3451
2/28/2024	15:56	Hmoa2	29.9781	26.4333	1	0.52700	2.3898
2/28/2024	16:18	Hmob2	29.9876	26.0431	2	0.52270	2.3709
2/28/2024	16:42	Hmoa3	30.0407	26.5816	1	0.52450	2.3756
2/28/2024	17:02	Hmob3	29.9754	26.4008	2	0.53880	2.4445
2/28/2024	17:23	Hmoa4	30.0331	26.4675	1	0.52560	2.3832
2/28/2024	20:47	Hmob4	30.0085	26.0969	2	0.54040	2.4535
2/28/2024	21:14	Hmoa5	30.0191	26.5428	1	0.54890	2.486
2/28/2024	21:42	Hmob5	30.0308	26.3599	2	0.52300	2.3762
2/28/2024	22:06	Hmoa6	29.9893	26.5555	1	0.53380	2.4234
2/28/2024	22:30	Hmob6	30.1308	26.2920	2	0.52660	2.3934

2/29/2024	15:31	Hmoa7	29.9897	26.0179	1	0.56050	2.5361
2/29/2024	15:53	Hmob7	30.0414	26.0984	2	0.55860	2.5287
2/29/2024	16:15	Hmoa8	30.0433	26.2699	1	0.52810	2.3964
2/29/2024	17:33	Hmob8	30.0332	26.5177	2	0.52970	2.3954
2/29/2024	17:56	Hmoa9	29.9869	26.2427	1	0.54750	2.4809
2/29/2024	18:21	Hmob9	30.0341	26.1514	2	0.57370	2.5983
		Average	30.01775	26.3152444		0.5366667	2.43281111
		St.dev.	0.03798677	0.18469914		0.0150134	0.06667635
		%Rsd					
		Max	30.1308	26.5816		0.5737	2.5983
		Min	29.9606	26.0179		0.5177	2.3451

Home	Heating	Diesel	Oil

DATE	TIME	Sample Id	JACKET TEMP./C	INITIAL TEMP./C	VESSEL ID	SAMPLE WT.in gms	Temp. Rise,C
2/27/2024	21:59	Hmoa1	29.9606	26.1373	1	0.53290	2.4132
2/28/2024	15:56	Hmoa2	29.9781	26.4333	1	0.52700	2.3898
2/28/2024	16:42	Hmoa3	30.0407	26.5816	1	0.52450	2.3756
2/28/2024	17:23	Hmoa4	30.0331	26.4675	1	0.52560	2.3832
2/28/2024	21:14	Hmoa5	30.0191	26.5428	1	0.54890	2.486
2/28/2024	22:06	Hmoa6	29.9893	26.5555	1	0.53380	2.4234
2/29/2024	15:31	Hmoa7	29.9897	26.0179	1	0.56050	2.5361
2/29/2024	16:15	Hmoa8	30.0433	26.2699	1	0.52810	2.3964
2/29/2024	17:56	Hmoa9	29.9869	26.2427	1	0.54750	2.4809
	# samples	9					
	average		30.0084	26.3830		0.5389	
	Std.dev.		0.0283	0.1904		0.0120	
	RSD						
	Max		30.0433	26.5816		0.56050	2.5361
	Min		29.9606	26.0179		0.52450	2.3756
	Range						

Home	Heating	Diesel	Oil	#2 set

DATE	TIME	Sample Id	JACKET TEMP.	INITIAL TEMP.	VESSEL ID	SAMPLE WT.	Temp. Rise

2/27/202	22:27	Hmob1	30.0369	26.4657	2	0.51770	2.3451
2/28/2024	16:18	Hmob2	29.9876	26.0431	2	0.52270	2.3709
2/28/2024	17:02	Hmob3	29.9754	26.4008	2	0.53880	2.4445
2/28/2024	20:47	Hmob4	30.0085	26.0969	2	0.54040	2.4535
2/28/2024	21:42	Hmob5	30.0308	26.3599	2	0.52300	2.3762
2/28/2024	22:30	Hmob6	30.1308	26.2920	2	0.52660	2.3934
2/29/2024	15:53	Hmob7	30.0414	26.0984	2	0.55860	2.5287
2/29/2024	17:33	Hmob8	30.0332	26.5177	2	0.52970	2.3954
2/29/2024	18:21	Hmob9	30.0341	26.1514	2	0.57370	2.5983
	# samples	9					
	Average		30.0350	26.2715		0.53842	2.44085455
	St.dev.		0.0522	0.1742		0.0195	0.0861
	RSD						
	Max		30.1308	26.5177		0.57370	2.5983
	Min		29.9754	26.0431		0.51770	2.3451
	Range						

Kerosene

		JACKET	INITIAL	VESSEL	SAMPLE	DELTA
DATE	TIME	TEMP./c	TEMP./c	ID	WT.gm	T/C

	3/1/2024	0:01	30.0258	25.9824	1	0.57320	2.6873
	3/1/2024	0:25	30.0306	26.1511	2	0.57290	2.6823
	3/1/2024	17:16	30.1423	26.1456	1	0.52630	2.4644
	3/1/2024	17:38	29.9550	26.3764	2	0.54040	2.5187
	3/1/2024	17:57	30.0307	26.1315	1	0.54860	2.5669
	3/1/2024	18:16	29.9503	26.0715	2	0.54550	2.5571
	3/1/2024	20:13	30.0435	26.1681	1	0.51990	2.4374
	3/1/2024	20:33	29.9819	25.9711	2	0.53120	2.4874
	3/1/2024	20:52	29.8554	26.4350	1	0.54640	2.5559
	3/1/2024	21:12	30.0485	26.3687	2	0.53650	2.5101
	3/1/2024	21:33	30.0419	26.335	1	0.54630	2.5615
	3/1/2024	21:53	30.1421	26.255	2	0.53910	2.526
	3/1/2024	22:18	29.7899	26.3459	1	0.52060	2.4341
	3/1/2024	22:38	30.2821	26.3942	2	0.55020	2.5812
	3/2/2024	9:26	29.9827	26.2434	1	0.53620	2.5101
	3/2/2024	9:46	30.0312	26.4529	2	0.55910	2.6191
	3/2/2024	10:06	30.0447	26.3343	1	0.53580	2.5087
	3/2/2024	10:25	29.9893	26.4471	2	0.54620	2.5622
	3/2/2024	10:51	30.0285	26.7478	1	0.57310	2.6823
	3/2/2024	11:11	30.0445	26.5076	2	0.54270	2.5423
Std.dev.						0.0152704	0.07215233
RSD							
Ave.			30.0220	26.2993			2.43177
Max			30.2821	26.7478			2.6873
Min.			29.7899	25.9711			2.4318

coal refrence sa

sample id	DATE	TIME	JACKET TEMP./c	INITIAL TEMP./c	VESSEL ID	SAMPLE WT.gm	DELTA T/C
A-1	########	10:39	30.0471	25.4469	1	0.9277	2.45730
A-2	########	11:14	30.1480	25.4908	1	1.0522	2.78820
A-3	########	12:54	29.9825	25.4852	1	0.9217	2.44550
A-4	########	13:32:00	30.0047	25.954	1	0.9150	2.43100
A-5	########	14:15	29.9563	25.6924	1	1.0025	2.65550
B-1	########	19:00	30.0322	25.8295	2	0.9150	2.42850
B-2	3/15/214	14:52	30.0326	25.5099	2	0.9742	2.58230
B-3	3/15/214	15:38	30.0433	25.7219	2	0.9509	2.52430
B-4	3/15/214	16:11	30.0046	25.6561	2	0.9179	2.43420
B-5	3/15/214	16:46	30.0426	25.8524	2	0.9885	2.62180

y=2.621x+0.02933

			x=sample wt in. gs	y=rise in T
Ave	30.02939	25.66391	0.95656	2.53686
Max	30.148	25.954	1.05220	2.7882
Min	29.9563	25.4469	0.91500	2.4285

Note: SULFER analysis not A

HNO3 BTU/LB	NET BTU/LB	EE CAL/C	API 60/60F	Sp.gr. 60/60	#/gal 60/60	BTU/ Gal	FLASH POINT Deg.F
18	19560	2397.77	34.98	0.8491	7.0690	138270	
18	19575	2397.77	34.98	0.8491	7.0690	138376	134
18	19499	2397.77	34.98	0.8491	7.0690	137838	
18	19518	2397.77	34.98	0.8491	7.0690	137973	
18	19563	2399.22	34.98	0.8491	7.0690	138291	
18	19560	2399.22	34.98	0.8491	7.0690	138270	
18	19532	2399.22	34.98	0.8491	7.0690	138072	
18	19589	2397.77	34.98	0.8491	7.0690	138475	
18	19536	2397.77	34.98	0.8491	7.0690	138100	
18	19525	2399.22	34.98	0.8491	7.0690	138022	
18	19525	2397.77	34.98	0.8491	7.0690	138022	
18	19523	2399.22	34.98	0.8491	7.0690	138008	
18	19549	2399.22	34.98	0.8491	7.0690	138192	
18	19643	2397.77	34.98	0.8491	7.0690	138856	
18	19519	2399.22	34.98	0.8491	7.0690	137980	
18	19515	2397.77	34.98	0.8491	7.0690	137952	
18	19558	2399.22	34.98	0.8491	7.0690	138256	
18	19536	2397.77	34.98	0.8491	7.0690	138100	
18	19553	2399.22	34.98	0.8491	7.0690	138220	
18	19538	2399.22	34.98	0.8491	7.0690	138114	

	19546		138164
	31.25		
%RSD	0.16		
	19643	Max	138856
	19499	Min	137838
	144		
	0.74		
	19537		

GROSS BTU/LB
19581
19578
19550
19543
19541
19567
19537
19576
19571
19556

	Vessel Set #	DELTA T,c
1	1	2.4520
2	1	2.4663
3	1	2.4957
4	1	2.3577
5	1	2.5603
6	1	2.5800
7	1	2.4087
8	1	2.4554

HNO3	NET	EE	API	Sp.gr.	#/gal	BTU/	FLASH

BTU/LB	BTU/LB	CAL/C	60/60F	60/60	60/60	Gal	POINT
18	19819	2397.8	43.89	0.806	6.667	132133	Deg F
18	19784	2397.8	43.89	0.806	6.667	131900	
18	19791	2397.8	43.89	0.806	6.667	131947	
18	19808	2397.8	43.89	0.806	6.667	132060	110
18	19822	2397.8	43.89	0.806	6.667	132153	
18	19776	2397.8	43.89	0.806	6.667	131847	
18	19808	2397.8	43.89	0.806	6.667	132060	
18	19803	2397.8	43.89	0.806	6.667	132027	
18	19796	2397.8	43.89	0.806	6.667	131980	
18	19822	2397.8	43.89	0.806	6.667	132153	
18	19818	2399.2	43.89	0.806	6.667	132127	
18	19853	2399.2	43.89	0.806	6.667	132360	
18	19792	2399.2	43.89	0.806	6.667	131953	
18	19807	2399.2	43.89	0.806	6.667	132053	
18	19824	2399.2	43.89	0.806	6.667	132167	
18	19833	2399.2	43.89	0.806	6.667	132227	
18	19828	2399.2	43.89	0.806	6.667	132193	
18	19814	2399.2	43.89	0.806	6.667	132100	
18	19809	2399.2	43.89	0.806	6.667	132067	
18	19808	2399.2	43.89	0.806	6.667	132060	
	19853.0					132078	
	19776.0					132360	

9	1	2.5946
10	1	2.5016
11	2	2.4392
12	2	2.4637
13	2	2.4136
14	2	2.4636
15	2	2.4951
16	2	2.4958
17	2	2.4189
18	2	2.6114
19	2	2.4377
20	2	2.4215
	Avg	2.4766
	Max	2.6114
	Min	2.3577
	Range	

	19810.8		131847
Range	77	Range	513
%	0.39		

FUEL

GROSS	S	HNO3	NET	EE
BTU/LB	BTU/LB	BTU/LB	BTU/LB	CAL/C
19837.0	0	18	19819	2397.8
19802.0	0	18	19784	2397.8
19809.0	0	18	19791	2397.8
19826.0	0	18	19808	2397.8

DATE	TIME	BUCKET TEMP.
2/26/2024	15:11	29.99190
2/26/2024	16:24	30.0663

19840.0	0	18	19822	2397.8	2/26/2024	20:50	29.9703
19794.0	0	18	19776	2397.8	2/26/2024	21:33	30.0011
19826.0	0	18	19808	2397.8	2/26/2024	22:16	30.0271
19821.0	0	18	19803	2397.8	2/27/2024	11:56	30.0145
19814.0	0	18	19796	2397.8	2/27/2024	12:48	30.0460
19840.0	0	18	19822	2397.8	2/27/2024	13:36	30.0318
					2/27/2024	14:27	29.9710
					2/27/2024	15:13	30.0386
19820.9			19803	AVERAGE			
19840.0			19822	MAX.			
19794.0			19776	MIN.			

19824

16.0239
12.92
19568
19840
19794
0.066
46

3
4
5
6
7
8
9
10

GROSS BTU/LB	S BTU/LB	HNO3 BTU/LB	NET BTU/LB	EE CAL/C	API 60/60F	Sp.gr. 60/60	#/gal 60/60	BTU/gal. Net	FLASH POINT Deg.F
19494	0	18	19476	2397.77	37.57	0.8261	6.962	135592	
19510	0	18	19492	2399.22	37.57	0.8261	6.962	135703	
19521	0	18	19503	2397.77	37.57	0.8261	6.962	135780	137
19537	0	18	19519	2399.22	37.57	0.8261	6.962	135891	
19496	0	18	19478	2397.77	37.57	0.8261	6.962	135606	
19543	0	18	19525	2399.22	37.57	0.8261	6.962	135933	
19518	0	18	19500	2397.77	37.57	0.8261	6.962	135759	
19557	0	18	19539	2399.22	37.57	0.8261	6.962	136031	
19498	0	18	19480	2397.77	37.57	0.8261	6.962	135620	
19569	0	18	19551	2399.22	37.57	0.8261	6.962	136114	
19544	0	18	19526	2397.77	37.57	0.8261	6.962	135940	
19577	0	18	19559	2399.22	37.57	0.8261	6.962	136170	

19480	0	18	19462	2397.77	37.57	0.8261	6.962	135494
19501	0	18	19483	2399.22	37.57	0.8261	6.962	135641
19534	0	18	19516	2397.77	37.57	0.8261	6.962	135870
19479	0	18	19461	2399.22	37.57	0.8261	6.962	135487
19598	0	18	19580	2397.8	37.57	0.8261	6.962	136316
19512	0	18	19494	2399.2	37.57	0.8261	6.962	135717
19526			19508					135815
32.992								
0.1689								
19598			19580					136316
19479			19461					135487

#1 set

GROSS	S	HNO3	NET	EE
BTU/LB	BTU/LB	BTU/LB	BTU/LB	CAL/C
19494	0	18	19476	2397.77
19521	0	18	19503	2397.77
19496	0	18	19478	2397.77
19518	0	18	19500	2397.77
19498	0	18	19480	2397.77
19544	0	18	19526	2397.77
19480	0	18	19462	2397.77
19534	0	18	19516	2397.77
19598	0	18	19580	2397.77
19528			19502.3	
33.6584				
0.17				
19598			19580	
19480			19462	
118				

VESSEL	SAMPLE	Temp.
ID	WT.in gm	Rise,C
1	0.5329	2.4132
1	0.5270	2.3898
1	0.5245	2.3756
1	0.5256	2.3832
1	0.5489	2.486
1	0.5338	2.4234
1	0.5605	2.5361
1	0.5281	2.3964
1	0.5475	2.4809
average	0.5365	2.4316
Max	0.5605	2.5361
Min	0.5245	2.3756

GROSS	S	HNO3	NET
BTU/LB	BTU/LB	BTU/LB	BTU/LB

VESSEL	SAMPLE	Temp.
ID	WT.	Rise

19510	0	18	19492	2	0.5177	2.3451
19537	0	18	19519	2	0.5227	2.3709
19543	0	18	19525	2	0.5388	2.4445
19557	0	18	19539	2	0.5404	2.4535
19569	0	18	19551	2	0.5230	2.3762
19577	0	18	19559	2	0.5266	2.3934
19501	0	18	19483	2	0.5586	2.5287
19479	0	18	19461	2	0.5297	2.3954
19512	0	18	19494	2	0.5737	2.5983
				average	0.53680	2.434
				Max	0.57370	2.5983
				Min	0.51770	2.3451
19531			19514	RANGE	0.05600	0.2532
33.1744						
0.165						
19577			19559			
19479			19461			
98						

GROSS	S	HNO3	NET	EE	API	Sp.gr.	#/gal	BTU/gal.	FLASH
BTU/LB	BTU/LB	BTU/LB	BTU/LB	CAL/C	60/60F	60/60	60/60	Net	POINT

20187	0	25	20162	2397.77	54.04	0.7619	6.344	127908	Deg.F
20173	0	25	20148	2399.22	54.04	0.7619	6.344	127819	
20159	0	25	20134	2397.77	54.04	0.7619	6.344	127730	
20078	0	25	20053	2399.22	54.04	0.7619	6.344	127216	108
20144	0	25	20119	2397.77	54.04	0.7619	6.344	127635	
20194	0	25	20169	2399.22	54.04	0.7619	6.344	127952	
20183	0	25	20158	2397.77	54.04	0.7619	6.344	127882	
20172	0	25	20147	2399.22	54.04	0.7619	6.344	127813	
20140	0	25	20115	2397.77	54.04	0.7619	6.344	127610	
20155	0	25	20130	2399.22	54.04	0.7619	6.344	127705	
20188	0	25	20163	2397.77	54.04	0.7619	6.344	127914	
20185	0	25	20160	2399.22	54.04	0.7619	6.344	127895	
20128	0	25	20103	2397.77	54.04	0.7619	6.344	127533	
20211	0	25	20186	2399.22	54.04	0.7619	6.344	128060	
20154	0	25	20129	2397.77	54.04	0.7619	6.344	127698	
20182	0	25	20157	2399.22	54.04	0.7619	6.344	127876	
20157	0	25	20132	2397.77	54.04	0.7619	6.344	127717	
20209	0	25	20184	2399.22	54.04	0.7619	6.344	128047	
20153	0	25	20128	2397.77	54.04	0.7619	6.344	127692	
20181	0	25	20156	2399.22	54.04	0.7619	6.344	127870	

29.7511

0.15

20167			20142					127779	
20211			20186					128060	
20078			20142					127216	

VESSEL ID	SAMPLE WT.gm	DELTA T/C	GROSS BTU/LB
1	0.57320	2.6873	20187
1	0.52630	2.4644	20159
1	0.54860	2.5669	20144
1	0.51990	2.4374	20183
1	0.54640	2.5559	20140
1	0.54630	2.5615	20188
1	0.52060	2.4341	20128
1	0.53620	2.5101	20154
1	0.53580	2.5087	20157
1	0.57310	2.6823	20153
Ave.	0.54264	2.5409	20159
Max	0.57320	2.6873	20188
Min	0.51990	2.4341	20128
Range			60
%			0.3

VESSEL ID	SAMPLE WT.gm	DELTA T/C
2	0.57290	2.6823
2	0.54040	2.5187
2	0.54550	2.5571
2	0.53120	2.4874
2	0.53650	2.5101
2	0.53910	2.526
2	0.55020	2.5812
2	0.55910	2.6191
2	0.54620	2.5622
2	0.54270	2.5423
ave	0.54638	2.55864
Max	0.57290	2.6823
Min	0.53120	2.4874
Range		
%		

ample

GROSS BTU/LB	S%	S BTU/LB	HNO3 BTU/LB	NET BTU/LB Air dry	EE CAL/C
11362	0.67	15.7	24.4	11322	2389.20
11370	0.67	15.7	24.4	11330	2389.20
11381	0.67	15.7	24.4	11341	2389.20
11396	0.67	15.7	24.4	11356	2389.20
11365	0.67	15.7	24.4	11325	2389.20
11390	0.67	15.7	24.4	11350	2390.39
11377	0.67	15.7	24.4	11337	2390.39
11394	0.67	15.7	24.4	11354	2390.39
11381	0.67	15.7	24.4	11341	2390.39
11385	0.67	15.7	24.4	11345	2390.39
			St.dev	15.61	

coal refrence s

JACKET Temp.	INITIAL Temp.	VESSEL #
30.0471	25.447	1
30.1480	25.491	1
29.9825	25.485	1
30.0047	25.954	1
29.9563	25.692	1

	Correl.	Coef.
		St.dev.
		%Rsd
30.02772	25.614	Ave
30.148	25.954	Max
29.9563	25.447	Min
		Range

	%RSD	0.14
11380.1	Ave	11340
11396	Max	11356
11362	Min	11322
	Range	34

ASTM method

JACKET Temp. In C	INITIAL Temp. In C	VESSEL#
30.0322	25.83	2
30.0326	25.51	2
30.0433	25.722	2
30.0046	25.656	2
30.0426	25.852	2

Correl. Coeff.	
	Ave
	Max
	Min
	Range

Vessel Id	Diesel Btu/lb	EE CAL/C	Vessel Id	Diesel Btu/lb	EE CAL/C
1	19578	2397.77	2	19581	2399.22
1	19593	2397.77	2	19578	2399.22
1	19517	2397.77	2	19550	2399.22
1	19536	2397.77	2	19543	2399.22
1	19607	2397.77	2	19541	2399.22
1	19554	2397.77	2	19567	2399.22
1	19543	2397.77	2	19537	2399.22
1	19661	2397.77	2	19576	2399.22
1	19533	2397.77	2	19571	2399.22
1	19554	2397.77	2	19556	2399.22

St.dev.	40.93947			St.dev.	15.76705
Ave. Dev	33.72			AVE.STDD	14.6
Average	19568			Average	19560
Max	19661			Max	19581
Min	19517			Min	19537
%RSD	0.2			%RSD	0.081
Range	44	Diesel Btu/lb	Diesel Btu/lb		

		VESSEL ID#1	VESSEL ID#2
		19578	19581
		19593	19578
		19517	19550
		19536	19543
		19607	19541
		19554	19567
		19543	19537
		19661	19576
		19533	19571
		19554	19556
	Ave	19568	19560
	Median	19554	19561.5
	Max	19661	19581
	Min	19517	19537
	Range	144	44
	%	0.74	0.23
Stdand.	Deviat.	40.939	15.76705
	RSD	0.21	0.081

JET FUEL

GROSS BTU/LB		Vessel Set #	Weight In gms	GROSS BTU/LB
19837	1	1	0.5321	19837.0
19802	2	1	0.5362	19802.0
19809	3	1	0.5424	19809.0
19826	4	1	0.5119	19826.0
19840	5	1	0.5556	19840.0
19794	6	1	0.5612	19794.0
19826	7	1	0.523	19826.0
19821	8	1	0.5333	19821.0

19814	9	1	0.5638	19814.0	
19840	10	1	0.5429	19840.0	
19836	11	2	0.5297	19836.0	
19871	12	2	0.5341	19871.0	
19810	13	2	0.5248	19810.0	
19825	14	2	0.5353	19825.0	2
19842	15	2	0.5417	19842.0	2
19851	16	2	0.5416	19851.0	2
19846	17	2	0.525	19846.0	2
19832	18	2	0.5673	19832.0	2
19827	19	2	0.5296	19827.0	2
19826	20	2	0.5261	19826.0	2
19829					2
19871					2
19794					2
77					Avg.
					max
					min

Accu Lab

JET FUEL

INITIAL TEMP.	VESSEL ID	SAMPLE WT.	DELTA T	GROSS BTU/LB	S BTU/LB	HNO3 BTU/LB	NET BTU/LB	EE CAL/C
26.1223	2	0.5297	2.4392	19836	0	18	19818	2399.22
25.9995	2	0.5341	2.4637	19871	0	18	19853	2399.22

26.0584	2	0.5248	2.4136	19810	0	18	19792	2399.22
26.4766	2	0.5353	2.4636	19825	0	18	19807	2399.22
26.2908	2	0.5417	2.4951	19842	0	18	19824	2399.22
25.9412	2	0.5416	2.4958	19851	0	18	19833	2399.22
26.5913	2	0.525	2.4189	19846	0	18	19828	2399.22
26.1026	2	0.5673	2.6114	19832	0	18	19814	2399.22
26.1032	2	0.5296	2.4377	19827	0	18	19809	2399.22
26.3669	2	0.5261	2.4215	19826	0	18	19808	2399.22
#SAMPLES	10			198366			19818.6	Ave
MEDIAN		0.5319	2.4514	19834				

St.dev.	0.0128	0.05902	16.919
Ave. Dev	0.0088	0.04083	12.72
Average	0.5355	2.46605	19837
Max	0.5673	2.6114	19871
Min	0.5248	2.4136	19810
%RSD			0.0640
Range			61

VESSEL	SAMPLE	DELTA
ID	WT.	T,c
1	0.53210	2.452
1	0.53620	2.4663

	Accu	Lab		
	JET	FUEL		
Vessel ID	Set	#1		
	DELTA	GROSS	Est.	Diff.
	T,c	BTU/LB	Btu/lb	
1	2.4520	19837	19823	14
1	2.4663	19802	19822	-20

1	0.54240	2.4957
1	0.51190	2.3577
1	0.55560	2.5603
1	0.56120	2.5800
1	0.52300	2.4087
1	0.53330	2.4554
1	0.56380	2.5946
1	0.54290	2.5016

1	2.4957	19809	19821	-12
1	2.3577	19826	19827	-1
1	2.5603	19840	19818	22
1	2.5800	19794	19817	-23
1	2.4087	19826	19825	1
1	2.4554	19821	19823	-2
1	2.5946	19814	19817	-3
1	2.5016	19840	19821	19
Avg	2.4872	19821	19822	-1
Max	2.5946	19840	19827	22
Min	2.3577	19794	19817	-23

Y=-43.22X+19929

Home Heating Diesel Oil

GROSS BTU/LB	VESSEL ID	SAMPLE WT.in gms	GROSS BTU/LB	ESTIM BTU/LB	Diff. BTU/LB
19494	1	0.5329	19494	19519.7	-26
19521	1	0.5270	19521	19520.3	1
19496	1	0.5245	19496	19520.5	-25
19518	1	0.5256	19518	19520.4	-2
19498	1	0.5489	19498	19518.1	-20
19544	1	0.5338	19544	19519.6	24
19480	1	0.5605	19480	19517.0	-37
19534	1	0.5281	19534	19520.2	14
19598	1	0.5475	19598	19518.3	80
19520	average	0.5365	19520	19519	1
19598	Max	0.5605	19598	19520.52	80
19480	Min	0.5245	19480	19516.99	-37

Y=-98.15X+19572

VESSEL ID	SAMPLE WT.in gms
1	0.5329
1	0.5270
1	0.5245
1	0.5256
1	0.5489
1	0.5338
1	0.5605
1	0.5281
1	0.5475
average	0.5365
Max	0.5605
Min	0.5245

Y=4

Home Heating Diesel Oil

GROSS BTU/LB	VESSEL ID	SAMPLE WT.	Temp. Rise	ESTIM Rise,C	Diff. T C

VESSEL ID

19510	2	0.5177	2.3451	2.3490	-0.0039	2
19537	2	0.5227	2.3709	2.3713	-0.0004	2
19543	2	0.5388	2.4445	2.4429	0.0016	2
19557	2	0.5404	2.4535	2.4500	0.0035	2
19569	2	0.5230	2.3762	2.3726	0.0036	2
19577	2	0.5266	2.3934	2.3886	0.0048	2
19501	2	0.5586	2.5287	2.5310	-0.0023	2
19479	2	0.5297	2.3954	2.4024	-0.0070	2
19512	2	0.5737	2.5983	2.5982	0.0001	2
19532	average	0.5368	2.434	2.4340	0.0000	average
19577	Max	0.5737	2.5983	2.5982	0.0048	Max
19479	Min	0.5177	2.3451	2.3490	-0.0070	Min
98	RANGE	0.0560	0.2532	0.2492	0.0118	RANGE

Y=4.44983X+0.04533

GROSS BTU/LB
20173
20078
20194
20172
20155
20185
20211
20182
20209
20181
20174
20211
20078
133
0.66

sample

SAMPLE Wt in gms	DELTA Tin C	GROSS Btu/lb
0.92770	2.4573	11362
1.05220	2.7882	11370
0.92170	2.4455	11381
0.9150	2.4310	11396
1.0025	2.6555	11365
0.99986		
		24.83
		0.2356
11379	11379	11379
1.0522	2.7882	11396
0.9150	2.4310	11362
		34

	X	Y		
VESSEL#	WT in gms	Rise in T,c	Est.	Dif.
1	0.9277	2.4573	2.4727	-0.0154
1	1.0522	2.7882	2.7952	-0.0070
1	0.9217	2.4455	2.4572	-0.0117
1	0.9150	2.4310	2.4399	-0.0088
1	1.0025	2.6555	2.6665	-0.0110
Avg	0.9638	2.5555	2.5663	-0.0108
Max	1.0522	2.7882	2.7952	-0.0070
Min	0.9150	2.431	2.4399	-0.0154
RANGE				

Y=2.59X+.07

SAMPLE Wt.in gm	DELTA T in C	GROSS Btu/lb
0.9150	2.4285	11390
0.9742	2.5823	11377
0.9509	2.5243	11394
0.9179	2.4342	11381
0.9885	2.6218	11385
0.9998671		
0.9493	2.51822	11379
0.9742	2.5823	11390
0.9150	2.4285	11377
		13
	St. Dev.	6.086
	% Rst.dev.	0.0535

VESSEL#	SAMPLE Wt.in gm	DELTA T in C	Est.
	X	Y	
2	0.9150	2.4285	2.4639
2	0.9742	2.5823	2.5935
2	0.9509	2.5243	2.5425
2	0.9179	2.4342	2.4702
2	0.9885	2.6218	2.6248
Ave	0.9493	2.5182	2.5390
Max	0.9885	2.6218	2.6248
Min	0.9150	2.4285	2.4639
RANGE			

Y=2.19X+.46

	SAMPLE WT. GMS X	DELTA T/C Y	ESTIMATE T/C	DIFFER. T/C	% ERROR
1	0.515	2.3423	2.189	0.1533	6.5
1	0.5149	2.3437	2.1887	0.155	6.6
1	0.5236	2.374	2.2148	0.1592	6.7
1	0.5388	2.4451	2.2604	0.1847	7.6
2	0.5297	2.4079	2.2331	0.1748	7.3
2	0.5681	2.5817	2.3483	0.2334	9.0
2	0.5115	2.3217	2.1785	0.1432	6.2
1	0.5112	2.385	2.1776	0.2074	8.7
1	0.5437	2.4695	2.2751	0.1944	7.9
2	0.5253	2.3834	2.2199	0.1635	6.9
1	0.5115	2.3224	2.1785	0.1439	6.2
2	0.5214	2.3248	2.2082	0.1166	5.0
2	0.5125	2.3284	2.1815	0.1469	6.3
1	0.5312	2.4261	2.2376	0.1885	7.8
2	0.5441	2.4677	2.2763	0.1914	7.8
1	0.526	2.3868	2.222	0.1648	6.9
2	0.5233	2.3784	2.2139	0.1645	6.9
1	0.5309	2.4116	2.2367	0.1749	7.3
2	0.5324	2.4189	2.2412	0.1777	7.3
2	0.5235	2.3769	2.2145	0.1624	6.8
Ave.	0.5280	2.3998	2.2281	0.17	7.08
Max	0.5681	2.5817	2.3483	0.23	9.04

Min	0.511	2.3217	2.1776	0.12	5.02

CORR. Coef.	0.96

Y=.644+3*X

JET

ID	Weight In gms	DELTA T,c	Estimate	Differ.
1	0.53210	2.4520	2.4643	-0.0123
1	0.53620	2.4663	2.4804	-0.0141
1	0.54240	2.4957	2.5047	-0.0090
1	0.51190	2.3577	2.3849	-0.0272
1	0.55560	2.5603	2.5566	0.0037
1	0.56120	2.5800	2.5786	0.0014
1	0.52300	2.4087	2.4285	-0.0198
1	0.53330	2.4554	2.4690	-0.0136
1	0.56380	2.5946	2.5888	0.0058
1	0.54290	2.5016	2.5067	-0.0051
Avg.	0.54024	2.4872	2.4962	-0.0090
Max	0.56380	2.5946	2.5888	0.0058
Min	0.51190	2.3577	2.3849	-0.0272

Y=3.9288X+.3738

ID	Weight In gms	GROSS BTU/LB
1	0.53210	19837
1	0.53620	19802
1	0.54240	19809
1	0.51190	19826
1	0.55560	19840
1	0.56120	19794
1	0.52300	19826
1	0.53330	19821
1	0.56380	19814
1	0.54290	19840
Avg.	0.54024	19821
Max	0.56380	19840
Min	0.51190	19794

Y=-28

Weight In gms	DELTA T,c	Est. value	Differ.
0.5297	2.4392	2.4595	0.0203
0.5341	2.4637	2.4630	-0.0007
0.5248	2.4136	2.4556	0.0420
0.5353	2.4636	2.4639	0.0003
0.5417	2.4951	2.4690	-0.0261
0.5416	2.4958	2.4690	-0.0268
0.5250	2.4189	2.4558	0.0369
0.5673	2.6114	2.4894	-0.1220
0.5296	2.4377	2.4594	0.0217
0.5261	2.4215	2.4566	0.0351
0.5355	2.4661	2.4641	-0.0019
0.5673	2.6114	2.4894	0.0420
0.5248	2.4136	2.4556	-0.1220

Y=.7946X+2.0386

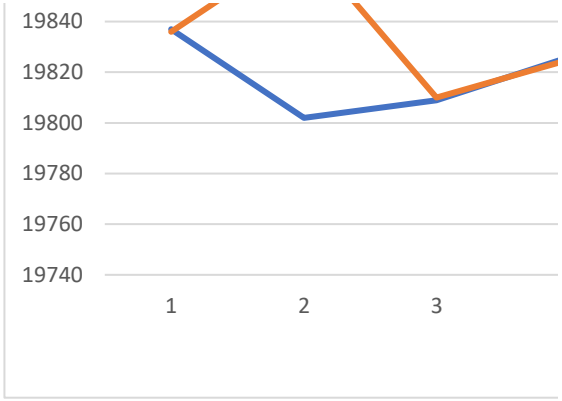
ID	Weight In gms	GROSS BTU/LB	Btu Est
2	0.52970	19836.0	19835.5
2	0.53410	19871.0	19836.3
2	0.52480	19810.0	19834.6
2	0.53530	19825.0	19836.6
2	0.54170	19842.0	19837.8
2	0.54160	19851.0	19837.7
2	0.52500	19846.0	19834.6
2	0.56730	19832.0	19842.6
2	0.52960	19827.0	19835.5
2	0.52610	19826.0	19834.8
Avg	0.53552	19836.6	19836.6
MAX	0.56730	19871.0	19842.6
MIN	0.52480	19810.0	19834.6
RANGE	0.0425	60	8

Y=186.94X+19736.5

JET FUEL

VESSEL ID	GROSS BTU/LB	GROSS BTU/LB	VESSEL ID	Difference BTU/LB
1	19837	19836	2	1
1	19802	19871	2	-69

1	19809	19810	2	-1
1	19826	19825	2	1
1	19840	19842	2	-2
1	19794	19851	2	-57
1	19826	19846	2	-20
1	19821	19832	2	-11
1	19814	19827	2	-13
1	19840	19826	2	14
Ave	19821	19837		-16



Accu	Lab
JET	FUEL
Set	#2

VESSEL ID	SAMPLE WT.	DELTA T,c	GROSS BTU/LB
2	0.5297	2.4392	19836
2	0.5341	2.4637	19871

2	0.5248	2.4136	19810
2	0.5353	2.4636	19825
2	0.5417	2.4951	19842
2	0.5416	2.4958	19851
2	0.525	2.4189	19846
2	0.5673	2.6114	19832
2	0.5296	2.4377	19827
2	0.5261	2.4215	19826
Avg	0.53552	2.46605	19837
Max	0.5673	2.6114	19871
Min	0.5248	2.4136	19810

Temp. Rise,C	ESTIM Rise,C	Diff. T C
2.4132	2.415605	-0.0024
2.3898	2.3896	0.0002
2.3756	2.3786	-0.0030
2.3832	2.3834	-0.0002
2.486	2.4861	-0.0001
2.4234	2.4196	0.0038
2.5361	2.5372	-0.0011
2.3964	2.3945	0.0019
2.4809	2.4799	0.0010
2.4316	2.431618	4.7E-06
2.5361	2.537242	0.00383
2.3756	2.378585	-0.00298

I.40714X+.06704

VESSEL ID	Temp. Rise,C	GROSS BTU/LB	ESTIM BTU/LB
1	2.4132	19494	19519.34
1	2.3898	19521	19519.49
1	2.3756	19496	19519.58
1	2.3832	19518	19519.53
1	2.486	19498	19518.88
1	2.4234	19544	19519.27
1	2.5361	19480	19518.56
1	2.3964	19534	19519.45
1	2.4809	19598	19518.91
average	2.4316	19520	19519.22
Max	2.5361	19598	19518.56
Min	2.3756	19480	19519.58

Y=-6.332X+19534.61926

Temp. Rise	GROSS BTU/LB	ESTIM BTU/LB	Diff. BTU/LB

VESSEL ID	SAMPLE WT.	GROSS BTU/LB	ESTIM BTU/LB

2.3451	19510	19532	-22
2.3709	19537	19534	3
2.4445	19543	19539	4
2.4535	19557	19540	17
2.3762	19569	19534	35
2.3934	19577	19535	42
2.5287	19501	19545	-44
2.3954	19479	19536	-57
2.5983	19512	19550	-38
2.434	19531.67	19538	-7
2.5983	19577	19550	42
2.3451	19479	19532	-57
0.2532	98	18	98

2	0.5177	19510	19533.31	
2	0.5227	19537	19534.52	
2	0.5388	19543	19538.41	
2	0.5404	19557	19538.8	
2	0.5230	19569	19534.59	
2	0.5266	19577	19535.46	
2	0.5586	19501	19543.21	
2	0.5297	19479	19536.21	
2	0.5737	19512	19546.86	
average	0.53919	19534.4	19538.51	
Max	0.5737	19577	19546.86	
Min	0.5227	19479	19534.52	
RANGE	0.051	98	12	

Y=72.2355X+19362.50936

Y=242.043*X+19408.405

coal refrence sample

	X	Y		
VESSEL#	SAMPLE	GROSS	Estm.	Diff
	Wt in gms	Btu/lb	Btu/lb	Btu/lb
1	0.9277	11362	11378	-16
1	1.0522	11370	11380	-10
1	0.9217	11381	11378	3
1	0.9150	11396	11378	18
1	1.0025	11365	11379	-14
Avg	0.9638	11374.8	11379	-4
Max	1.0522	11396	11380	16
Min	0.9150	11362	11378	-16
RANGE				

Y=14.16X+11365

	X
VESSEL#	SAMPLE
	Wt in gms
1	2.4573
1	2.7882
1	2.4455
1	2.4310
1	2.6555
Avg	2.5555
Max	2.7882
Min	2.431
RANGE	

Y=

Diff	VESSEL#	SAMPLE Wt.in gm	GROSS Btu/lb	Est. Btu/lb	Diff Btu/lb	VESSEL#	DELTA T in C
		X	Y				X
-0.0353	2	0.9150	11390	11387	3	2	2.4285
-0.0112	2	0.9742	11377	11384	-7	2	2.5823
-0.0182	2	0.9509	11394	11385	9	2	2.5243
-0.0360	2	0.9179	11381	11387	-6	2	2.4342
-0.0030	2	0.9885	11385	11383	2	2	2.6218
-0.0207	Ave	0.9493	11385	11385	0	Ave	2.5182
-0.0030	Max	0.9885	11394	11387	9	Max	2.6218
-0.0353	Min	0.9150	11377	11383	-7	Min	2.4285
	RANGE					RANGE	0.1933

Y=-53.38X+11436

DIESEL FUEL

	VESSEL ID	SAMPLE WT.	DELTA T/c	Diesel Btu/lb
1	1	0.515	2.3423	19578
2	1	0.5149	2.3437	19593
3	1	0.5236	2.374	19517
4	1	0.5388	2.4451	19536
5	2	0.5297	2.4079	19581
6	2	0.5681	2.5817	19578
7	2	0.5115	2.3217	19550
8	1	0.5112	2.385	19607
9	1	0.5437	2.4695	19554
10	2	0.5253	2.3834	19543
11	1	0.5115	2.3224	19543
12	2	0.5214	2.3248	19541
13	2	0.5125	2.3284	19567
14	1	0.5312	2.4261	19661
15	2	0.5441	2.4677	19537
16	1	0.526	2.3868	19533
17	2	0.5233	2.3784	19576
18	1	0.5309	2.4116	19554
19	2	0.5324	2.4189	19571
20	2	0.5235	2.3769	19556

DIESEL FUEL
SET #1

VESSEL ID	SAMPLE WT. X1	DELTA T/c X2	GROSS BTU/LB Y
1	0.5150	2.3423	19578
1	0.5149	2.3437	19593
1	0.5236	2.374	19517
1	0.5388	2.4451	19536
1	0.5112	2.3850	19607
1	0.5437	2.4695	19554
1	0.5115	2.3224	19543
1	0.5312	2.4261	19661
1	0.5260	2.3868	19533
1	0.5309	2.4116	19554
Ave.	0.5247	2.3907	19567.6
Max	0.5437	2.4695	19661
Min	0.5112	2.3224	19517
Range	0.0325	0.1471	144.0000

Y=-7960.38158X1+1838.422

Ave.	0.5269	2.3948	19564
Max	0.5681	2.5817	19661
Min	0.5112	2.3217	19517
Range	0.0569	0.26	144

	DIESEL	FUEL	
	SET	#2	
VESSEL ID	SAMPLE WT. X1	DELTA T/c X2	GROSS BTU/LB Y
2	0.5297	2.4079	19581
2	0.5681	2.5817	19578
2	0.5115	2.3217	19550
2	0.5253	2.3834	19543
2	0.5214	2.3248	19541
2	0.5125	2.3284	19567
2	0.5441	2.4677	19537
2	0.5233	2.3784	19576
2	0.5324	2.4189	19571
2	0.5235	2.3769	19556
Ave.	0.5292	2.3990	19560
Max	0.5681	2.5817	19581
Min	0.5115	2.3217	19537
Range	0.0566	0.26	44

Y=19462.98-1687.7X

FUEL

Test Vs.est	Difference
19823	14
19822	-20
19820	-11
19829	-3
19817	23
19815	-21
19826	0
19823	-2
19814	0
19820	20
19821	0
19829	11
19814	-20

31.32X+19972.88

ID	DELTA T,c	GROSS BTU/LB	Est.	Diff.
1	2.4520	19837	19831	6
1	2.4663	19802	19829	-27
1	2.4957	19809	19826	-17
1	2.3577	19826	19840	-14
1	2.5603	19840	19819	21
1	2.5800	19794	19817	-23
1	2.4087	19826	19835	-9
1	2.4554	19821	19830	-9
1	2.5946	19814	19816	-2
1	2.5016	19840	19826	14
Avg.	2.4872	19821	19827	-6
Max	2.5946	19840	19840	0
Min	2.3577	19794	19816	-22
Range	0.2639	46	24	

Y=-102.8X+20082.69

JET FUEL

X1

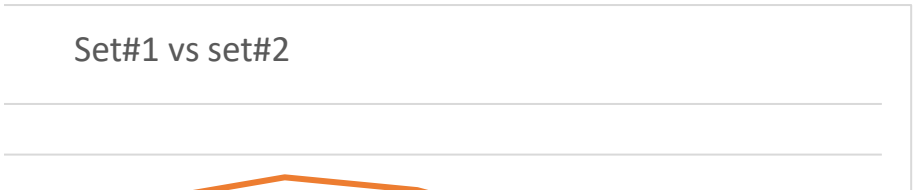
VESSEL ID	SAMPLE WT.
1	0.5321
1	0.5362
1	0.5424
1	0.5119
1	0.5556
1	0.5612
1	0.523
1	0.5333
1	0.5638
1	0.5429
Avg.	0.5402
Max	0.5638
Min	0.5119
Range	0.0519

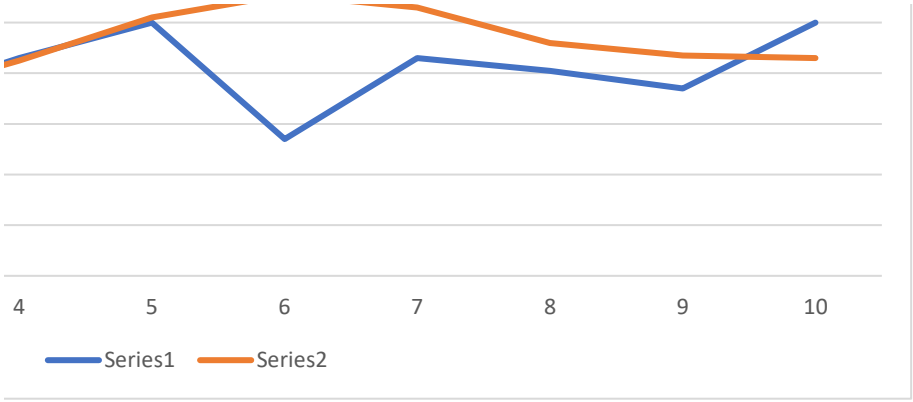
Y=19772.41+7881.

Differ. Test.vs Est.
-0.48
-34.66
24.61
11.57
-4.23
-13.25
-11.36
10.55
8.50
8.85
0.01

ID	DELTA T,c	GROSS BTU/LB	ESTM.	DIF.
2	2.4392	19836.0	19835.9	0.1
2	2.4637	19871.0	19835.1	35.9
2	2.4136	19810.0	19836.7	-26.7
2	2.4636	19825.0	19835.1	-10.1
2	2.4951	19842.0	19834.0	8.0
2	2.4958	19851.0	19834.0	17.0
2	2.4189	19846.0	19836.6	9.4
2	2.6114	19832.0	19830.1	1.9
2	2.4377	19827.0	19835.9	-8.9
2	2.4215	19826.0	19836.5	-10.5
Avg	2.4661	19836.6	19835.0	1.6
MAX	2.6114	19871.0	19836.7	35.9
MIN	2.4136	19810.0	19830.1	-26.7
RANGE	0.1078	60	6	

Y=19917.11-(33.3029*X)


Set#1 vs set#2



VESSEL ID	DELTA T	GROSS BTU/LB	SAMPLE WT.	GROSS BTU/LB
2	2.4392	19836	0.5297	19836
2	2.4637	19871	0.5341	19871

2	2.4136	19810	0.5248	19810
2	2.4636	19825	0.5353	19825
2	2.4951	19842	0.5417	19842
2	2.4958	19851	0.5416	19851
2	2.4189	19846	0.525	19846
2	2.6114	19832	0.5673	19832
2	2.4377	19827	0.5296	19827
2	2.4215	19826	0.5261	19826

Diff. BTU/LB
-25
2
-24
-2
-21
25
-39
15
79
1
79
-40

Diff. BTU/LB

-23
2
5
18
34
42
-42
-57
-35
-4
42
-57
98.75

Y		
GROSS	Estm.	Diff
Btu/lb	Btu/lb	Btu/lb
11362	11378	-16
11370	11380	-10
11381	11378	3
11396	11378	18
11365	11379	-14
11374.8	11378.4	-3.6
11396	11379.6	18.2
11362	11377.8	-15.9

=4.86X=11366

	X1	X2	Y	Y'
VESSEL	SAMPLE	DELTA	GROSS	Estm.
ID	WT.gm	T/C	BTU/LB	Btu/lb
1	0.9277	2.4573	11362	11363
1	1.0522	2.7882	11370	11371
1	0.9217	2.4455	11381	11383
1	0.9150	2.431	11396	11399
1	1.0025	2.6555	11365	11365
2	0.9150	2.4285	11390	11387
2	0.9742	2.5823	11377	11373
2	0.9509	2.5243	11394	11391
2	0.9179	2.4342	11381	11377
2	0.9885	2.6218	11385	11381
Avg	0.95656	2.5369	11380	11379
Max	1.0522	2.7882	11396	11399
Min	0.915	2.4285	11362	11363
RANGE	0.1372	0.3597	34	36

Y=-(12971.33274X1)+(4904.43505X2)+11346.092

GROSS Btu/lb	Est. Btu/lb	Diff Btu/lb
Y		
11390	11386	4
11377	11384	-7
11394	11385	9
11381	11386	-5
11385	11384	1
11385	11385	0
11394	11386	9
11377	11384	-7
17	2.681071	16

Y=-13.87X+11420

				DIESEL SET	FUEL #1		
ESTIMATE BTU/LB Y'	DIFFER. BTU/LB	VESSEL ID	SAMPLE WT. X	DELTA T/c Y	ESTIMATE T DEG C	DIFFER. T DEG C	VESSEL ID
19534	44	1	0.5150	2.3423	2.3537	-0.0114	1
19537	56	1	0.5149	2.3437	2.3533	-0.0096	1
19524	-7	1	0.5236	2.374	2.3866	-0.0126	1
19533	3	1	0.5388	2.4451	2.4446	0.00048	1
19643	-36	1	0.5112	2.3850	2.3392	0.04582	1
19539	15	1	0.5437	2.4695	2.4633	0.00617	1
19525	18	1	0.5115	2.3224	2.3403	-0.0179	1
19559	102	1	0.5312	2.4261	2.4156	0.01052	1
19528	5	1	0.5260	2.3868	2.3957	-0.0089	1
19535	19	1	0.5309	2.4116	2.4144	-0.0028	1
19546	22	Ave.	0.5247	2.3907	2.3907	0.0000	Ave.
19643	102	Max	0.5437	2.4695	2.4633	0.0458	Max
19524	-36	Min	0.5112	2.3224	2.3392	-0.0179	Min
119		Range	0.0325	0.1471	0.1242		Range

Y=3.82x+.3864

6X2+19327.22802

			DIESEL SET	FUEL #2				DIESEL SET	FUEL #2
ESTIMATE BTU/LB Y'	DIFFER. BTU/LB	VESSEL ID	SAMPLE WT. X	DELTA T/c Y	ESTIMATE T DEG C Y'	DIFFER. T DEG C	VESSEL ID	DELTA T/c X	GROSS BTU/LB Y
19561	20	2	0.5297	2.4079	2.5372	-0.1293	2	2.4079	19581
19568	10	2	0.5681	2.5817	2.7160	-0.1343	2	2.5817	19578
19557	-7	2	0.5115	2.3217	2.4524	-0.1307	2	2.3217	19550
19559	-16	2	0.5253	2.3834	2.5167	-0.1333	2	2.3834	19543
19541	0	2	0.5214	2.3248	2.4985	-0.1737	2	2.3248	19541
19558	9	2	0.5125	2.3284	2.4571	-0.1287	2	2.3284	19567
19562	-25	2	0.5441	2.4677	2.6043	-0.1366	2	2.4677	19537
19560	16	2	0.5233	2.3784	2.5074	-0.1290	2	2.3784	19576
19561	10	2	0.5324	2.4189	2.5498	-0.1309	2	2.4189	19571
19559	-3	2	0.5235	2.3769	2.5083	-0.1314	2	2.3769	19556
19559	1	Ave.	0.5292	2.3990	2.5348	-0.1358	Ave.	2.3990	19560
19568	20	Max	0.5681	2.5817	2.7160	-0.1287	Max	2.5817	19581
19541	-25	Min	0.5115	2.3217	2.4524	-0.1737	Min	2.3217	19537
27		Range	0.0566	0.26	0.2636		Range	0.26	44

1+412.1X2

Y=4.6573*x+.07023

Y=67.02104X+1

X2 Y

DELTA T	GROSS BTU/LB	Estimate BTU/LB	Diff.
2.452	19837.0	19838	-0.9
2.4663	19802.0	19802	-0.2
2.4957	19809.0	19809	-0.5
2.3577	19826.0	19826	0.2
2.5603	19840.0	19841	-0.8
2.5800	19794.0	19793	0.6
2.4087	19826.0	19826	0.0
2.4554	19821.0	19821	-0.2
2.5946	19814.0	19814	-0.4
2.5016	19840.0	19838	2.1
2.4872	19821	19821	0
2.5946	19840	19841	-1
2.3577	19794	19793	1
0.2369	46	47	

57X2-36196.48X1	

1
2
3
4
5
6
7
8
9

	X1	X2	Y		
VESSEL	SAMPLE	DELTA	GROSS	Estimate	Diff.
ID	WT.	T	BTU/LB	BTU/LB	
2	0.5297	2.439	19836	19836	0
2	0.5341	2.464	19871	19871	0
2	0.5248	2.414	19810	19810	0
2	0.5353	2.464	19825	19825	0
2	0.5417	2.495	19842	19842	0
2	0.5416	2.496	19851	19852	-1
2	0.525	2.419	19846	19846	0
2	0.5673	2.611	19832	19832	0
2	0.5296	2.438	19827	19827	0
2	0.5261	2.422	19826	19826	0
Avg	0.53552	2.466	19837	19837	0
Max	0.5673	2.611	19871	19871	0
Min	0.5248	2.414	19810	19810	-1

$$Y=19778.98+8189.82X2-37606.21$$

SAMPLE WT.	GROSS BTU/LB
0.5297	19836
0.5341	19871

0.5248	**19810**
0.5353	**19825**
0.5417	**19842**
0.5416	**19851**
0.525	**19846**
0.5673	**19832**
0.5296	**19827**
0.5261	**19826**

Diff Btu/lb
-1
-1
-2
-3
0
3
4
3
4
4
1.1
4
-3

DIESEL FUEL SET #1

SAMPLE WT. X	GROSS BTU/LB Y	ESTIMATE BTU/LB Y'	DIFFER. BTU/LB
0.5150	19578	19555	23
0.5149	19593	19555	38
0.5236	19517	19547	-30
0.5388	19536	19532	4
0.5112	19607	19558	49
0.5437	19554	19528	26
0.5115	19543	19558	-15
0.5312	19661	19539	122
0.5260	19533	19544	-11
0.5309	19554	19540	14
0.5247	19568	19546	22
0.5437	19661	19558	122
0.5112	19517	19528	-30
0.0325	144	30	

Y=-937.70X+20037.59

DIESEL FUEL SET #1

VESSEL ID	DELTA T/c X	GROSS BTU/LB Y	ESTIMATE BTU/LB Y'	DIFFER. BTU/LB
1	2.3423	19578	19542	36
1	2.3437	19593	19543	50
1	2.374	19517	19545	-28
1	2.4451	19536	19549	-13
1	2.3850	19607	19545	62
1	2.4695	19554	19551	3
1	2.3224	19543	19541	2
1	2.4261	19661	19548	113
1	2.3868	19533	19545	-12
1	2.4116	19554	19547	7
Ave.	2.3907	19568	19546	22
Max	2.4695	19661	19551	113
Min	2.3224	19517	19541	-28
Range	0.1471	144	10	

Y=64.74X+19390.831

DIESEL FUEL
SET #2

ESTIMATE BTU/LB Y'	DIFFER. BTU/LB	VESSEL ID	SAMPLE WT. X	GROSS BTU/LB Y	ESTIMAT BTU/LB Y'	DIFFER. BTU/LB
19561	20	2	0.5297	19581	19560	21
19572	6	2	0.5681	19578	19572	6
19555	-5	2	0.5115	19550	19554	-4
19559	-16	2	0.5253	19543	19558	-15
19555	-14	2	0.5214	19541	19557	-16
19555	12	2	0.5125	19567	19554	13
19565	-28	2	0.5441	19537	19564	-27
19559	17	2	0.5233	19576	19558	18
19561	10	2	0.5324	19571	19561	10
19558	-2	2	0.5235	19556	19558	-2
19560	0	Ave.	0.5292	19560	19560	0
19572	20	Max	0.5681	19581	19572	21
19555	-28	Min	0.5115	19537	19554	-27
17		Range	0.0566	44	17.674	

9399.2

Y=312.27X+19394.44

Vessel	Weight	GROSS	Estim.	Diff.
Set #	In gms	BTU/LB	Btu/lb	
1	0.5321	19837.0	19830	7
1	0.5362	19802.0	19829	-27
1	0.5424	19809.0	19828	-19
1	0.5119	19826.0	19834	-8
1	0.5556	19840.0	19826	14
1	0.5612	19794.0	19825	-31
1	0.523	19826.0	19832	-6
1	0.5333	19821.0	19830	-9
1	0.5638	19814.0	19824	-10

			X1	X2
Sample 3	Vessel	Weight	DELTA	
	Set #	In gms	T	
1	1	0.5321	2.452	
2	1	0.5362	2.4663	
3	1	0.5424	2.4957	
4	1	0.5119	2.3577	
5	1	0.5556	2.5603	
6	1	0.5612	2.5800	
7	1	0.523	2.4087	
8	1	0.5333	2.4554	
9	1	0.5638	2.5946	

1	0.5429	19840.0	19828	12
2	0.5297	19836.0	19831	5
2	0.5341	19871.0	19830	41
2	0.5248	19810.0	19832	-22
2	0.5353	19825.0	19830	-5
2	0.5417	19842.0	19828	14
2	0.5416	19851.0	19828	23
2	0.525	19846.0	19832	14
2	0.5673	19832.0	19823	9
2	0.5296	19827.0	19831	-4
2	0.5261	19826.0	19831	-5
Avg	0.5379	19828.8	19829	0
Max	0.5673	19871.0	19834	41
Min	0.5119	19794.0	19823	-31
Range	0.0544	77	11	

Y=-192.93X+19932.8

10	1	0.5429	2.5016
11	2	0.5297	2.4392
12	2	0.5341	2.4637
13	2	0.5248	2.4136
14	2	0.5353	2.4636
15	2	0.5417	2.4951
16	2	0.5416	2.4958
17	2	0.525	2.4189
18	2	0.5673	2.6114
19	2	0.5296	2.4377
20	2	0.5261	2.4215
	Avg	0.5379	2.4766
	Max	0.5673	2.6114
	Min	0.5119	2.3577
	Range		

Y= 19681.8-(-79.36x1)-(-41.0

ACCU LAB

E-MAIL FAM2140@A

DATE

DATE SAMPLE COLLECTED

DATE SAMPLE ANALYZED

COMPANY NAME

OIL TYPE

CHARACTERISTICS

TEST	RESULT
SPECIFIC GRAVITY	
TEMP. @	
SPECIFIC GRAVITY	
TEMP. @	

SULFER %

SULFER

FALSH POINT

HNO3 BTU/LB

NET BTU/ LB

BTU/GAL.

RUN BY

LAB MNAGER

DATE

Y

GROSS	Estim.	Diff.
BTU/LB	Btu/lb	
19837.0	19825	12.1
19802.0	19826	-23.8
19809.0	19827	-18.5
19826.0	19819	6.6
19840.0	19831	8.8
19794.0	19832	-38.4
19826.0	19822	3.6
19821.0	19825	-4.1
19814.0	19833	-19.3

19840.0	19828	12.2
19836.0	19824	11.8
19871.0	19826	45.5
19810.0	19823	-12.7
19825.0	19826	-0.6
19842.0	19827	14.6
19851.0	19827	23.6
19846.0	19823	23.0
19832.0	19834	-2.2
19827.0	19824	2.9
19826.0	19823	2.8
19828.8	19826.4	2.4
19871.0	19834.2	45.5
19794.0	19819.4	-38.4

77

)5x2)

OL.COM

UNITS	ASTM
	19578
	19593
	19517
	19536
	19581
	19578
	19550
	19607
	19554
	19543
	19543
	19541
	19567
	19661
	19537
	19533
	19576
	19554
	19571
	19556
Ave	19564

PPM

FEH. **D 93**

D 240

D 240

D240

19564	**14**	**196**	
19564	**29**	**841**	
19564	**-47**	**2209**	
19564	**-28**	**784**	
19564	**17**	**289**	
19564	**14**	**196**	
19564	**-14**	**196**	
19564	**43**	**1849**	
19564	**-10**	**100**	
19564	**-21**	**441**	
19564	**-21**	**441**	
19564	**-23**	**529**	
19564	**3**	**9**	
19564	**97**	**9409**	
19564	**-27**	**729**	
19564	**-31**	**961**	
19564	**12**	**144**	
19564	**-10**	**100**	
19564	**7**	**49**	
19564	**-8**	**64**	
		19536	139.7712