

Topics:

- WERF Study Revisited
- Grease Separator Retention Losses
- A New FOG Test Method Evaluated

Trapzilla *BIG DIPPER*[®]



Conclusions:

Detergent Flows Remove Retained Grease from Separators

Spectrophotometer Method = EPA 1664
Accuracy

Accurate Retention Loss Test is Possible

NEW CAMARO ZL1 TESTED, LEXUS LS REVEALED

CAR AND DRIVER

MAR 2017

INTELLIGENCE. INDEPENDENCE. IRREVERENCE.

Can the 505-hp Alfa Giulia Quadrifoglio slay these dragons?



CADILLAC
ATS-V

MERCEDES-
AMG C63 S

BMW M3

PLUS:
PIZZA-
DELIVERY
CARS
FACE OFF.
WARNING:
CONTENTS
MAY BE
CHEESY

HOW TO
LEFT-
FOOT
BRAKE
LIKE THE
RALLY
STARS

NEW
RACING
TECH
DESTINED
FOR THE
ROAD

DRIVEN:
BMW
ALPINA B7
MERCEDES-
AMG E63 S
AND GT R
LEXUS
LC500
SUBARU
IMPREZA
FLYIN'
MIATA

US \$4.95



38227

TIRES

Pirelli P Zero Corsa
Asimmetrico 2
F: 245/35ZR-19 (93Y)
R: 285/30ZR-19 (98Y)

Michelin Pilot Super Sport
F: 265/30ZR-20 (94Y)
R: 285/30ZR-20 (99Y)

Michelin Pilot Super Sport
F: 255/35ZR-18 (94Y)
R: 275/35ZR-18 (99Y)

Michelin Pilot Super Sport
F: 245/35ZR-19 93Y
R: 265/35ZR-19 98Y

CAR AND DRIVER TEST RESULTS

ACCELERATION

0-30 MPH	1.6 sec	1.8 sec	1.6 sec	1.7 sec
0-60 MPH	3.6 sec	4.0 sec	3.9 sec	3.7 sec
0-100 MPH	8.1 sec	8.6 sec	8.8 sec	8.1 sec
0-160 MPH	24.2 sec	26.7 sec	28.8 sec	22.5 sec
1/4-MILE @ MPH	11.9 sec @ 121	12.2 sec @ 120	12.2 sec @ 117	11.9 sec @ 123
ROLLING START, 5-60 MPH	4.2 sec	4.3 sec	4.3 sec	4.2 sec
TOP GEAR, 30-50 MPH	2.5 sec	2.1 sec	2.3 sec	1.9 sec
TOP GEAR, 50-70 MPH	2.8 sec	2.8 sec	2.7 sec	2.9 sec
TOP SPEED	191 mph (drag ltd, mfr's claim)	163 mph (gov ltd, C/D est)	189 mph (gov ltd, mfr's claim)	180 mph (gov ltd, mfr's claim)

CHASSIS

BRAKING, 70-0 MPH	143 ft	155 ft	150 ft	156 ft
ROADHOLDING, 300-FT-DIA SKIDPAD	1.00 g	0.98 g	0.99 g	0.97 g
610-FT SLALOM	46.1 mph	46.1 mph	45.5 mph	44.5 mph

WEIGHT

CURB	3822 lb	3662 lb	3839 lb	3958 lb
%FRONT/%REAR	52.6/47.4	52.3/47.7	52.6/47.4	53.8/46.2

FUEL

TANK	15.3 gal	15.8 gal	16.0 gal	17.4 gal
RATING	91 octane	93 octane	91 octane	91 octane
EPA COMBINED/ CITY/HWY	20/17/24 mpg	19/17/24 mpg	20/17/25 mpg	20/18/24 mpg
C/D 1100-MILE TRIP	18 mpg	20 mpg	18 mpg	18 mpg

SOUND LEVEL

IDLE	48 dBA	46 dBA	50 dBA	52 dBA
FULL THROTTLE	80 dBA	88 dBA	83 dBA	79 dBA
70-MPH CRUISE	68 dBA	70 dBA	65 dBA	68 dBA

Bill's Car for Eight Years

2006 Acura RL

Large luxury car



2005 Acura RL shown



[PRINT FULL REPORT FOR THIS VEHICLE](#)

CRASHWORTHINESS

Moderate overlap front

G

Side

G

Roof strength

M

Head restraints & seats

M

[Check for NHTSA recalls](#) ⓘ

Bill's Present Car

2014 TOP SAFETY PICK+ ⓘ

2014 Acura RLX

Large luxury car



2014 Acura RLX

 [PRINT FULL REPORT FOR THIS VEHICLE](#)

CRASHWORTHINESS

- Small overlap front
- Moderate overlap front
- Side
- Roof strength
- Head restraints & seats



CRASH AVOIDANCE & MITIGATION

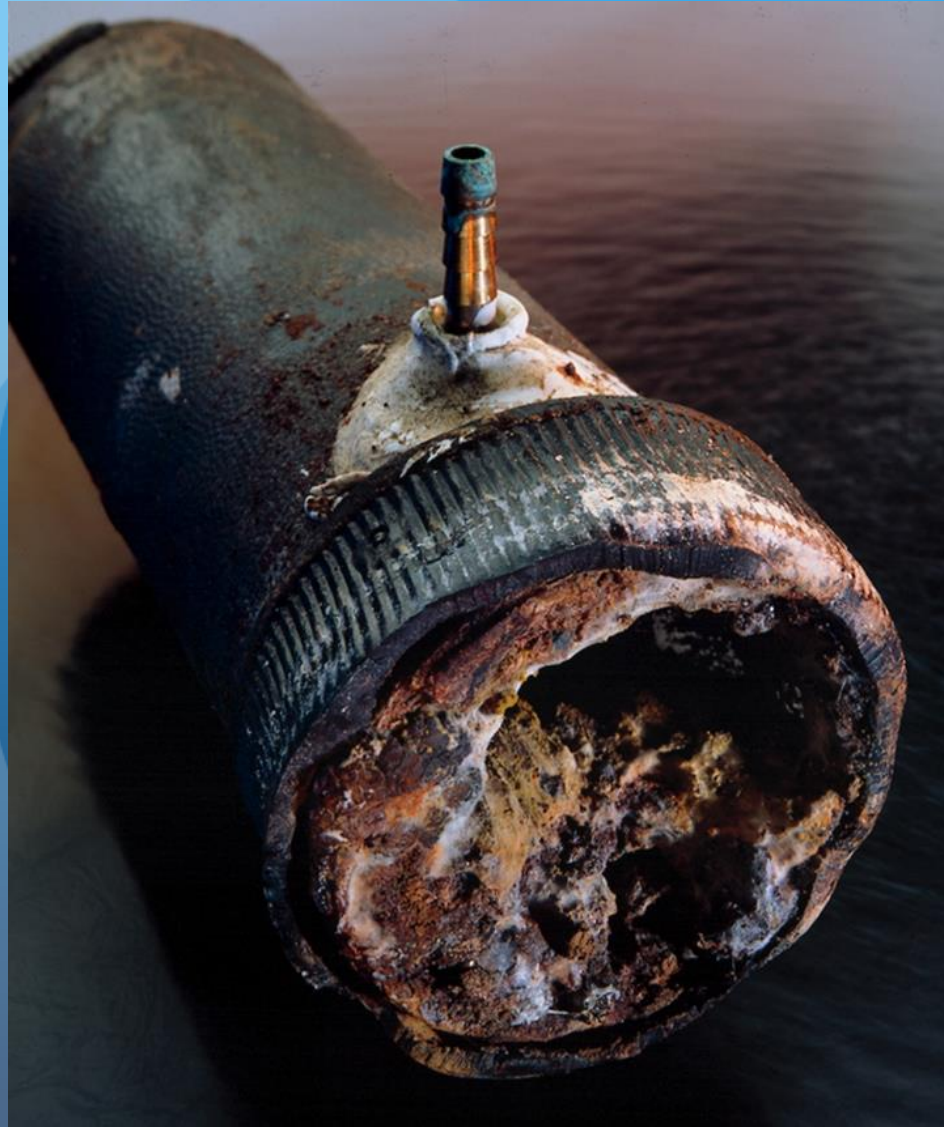
- Front crash prevention



ADVANCED
with optional
equipment

[Check for NHTSA recalls](#) ⓘ

Why Does This Happen?

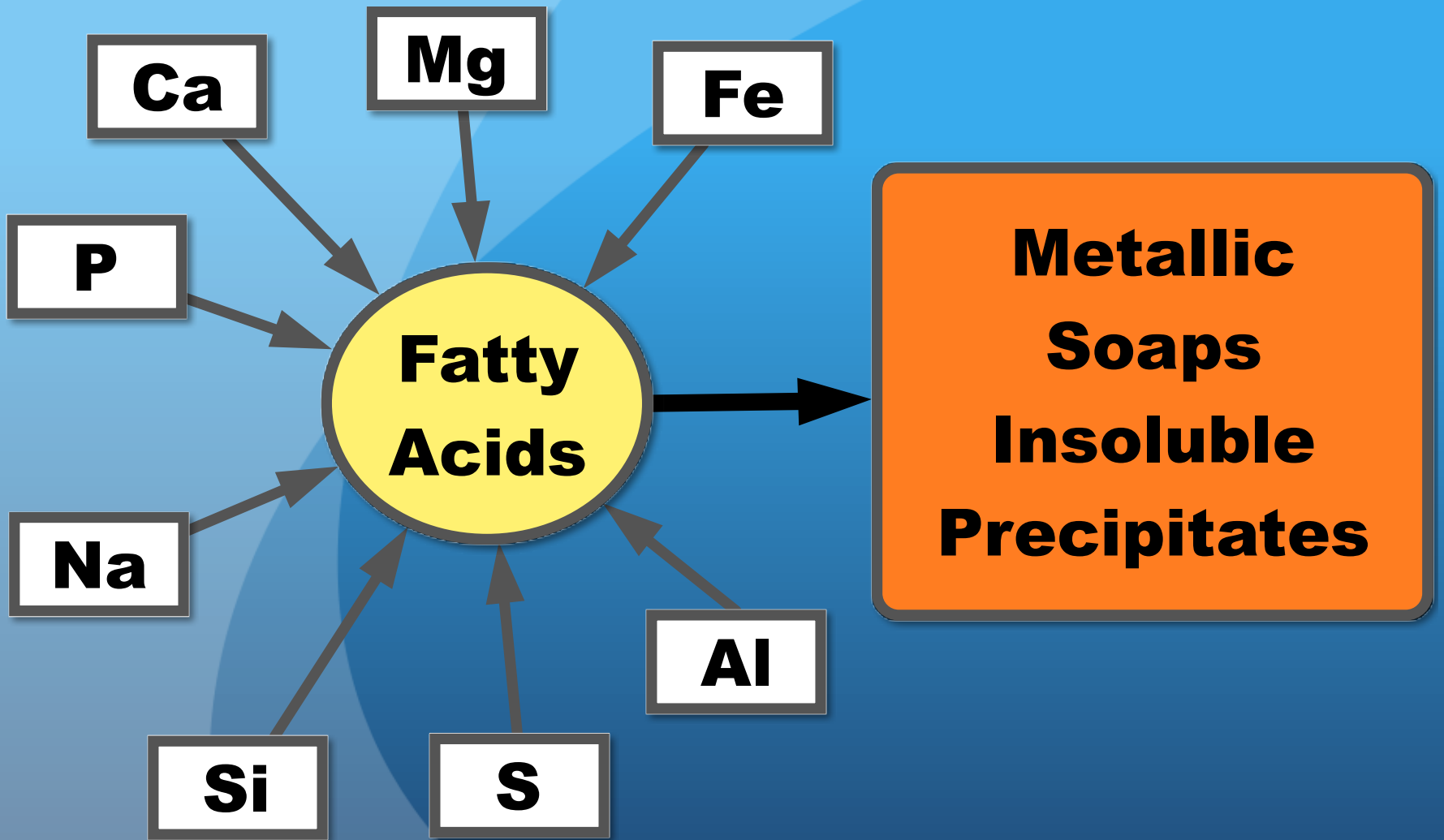


WERF Study 2008

Dr. Joel Ducoste

Tarik Aziz

N. C. State University



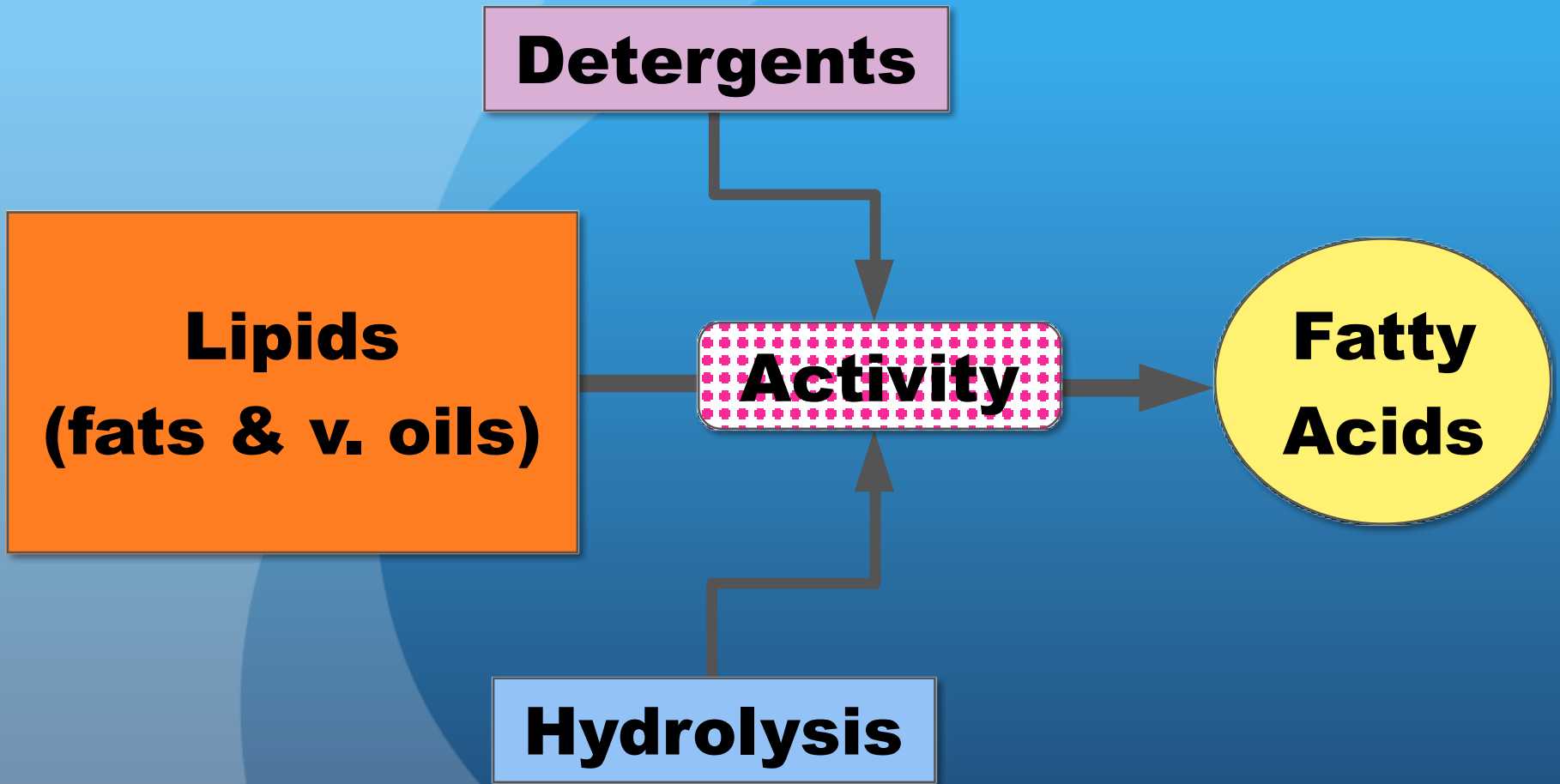
Detergents

**Lipids
(fats & v. oils)**

Activity

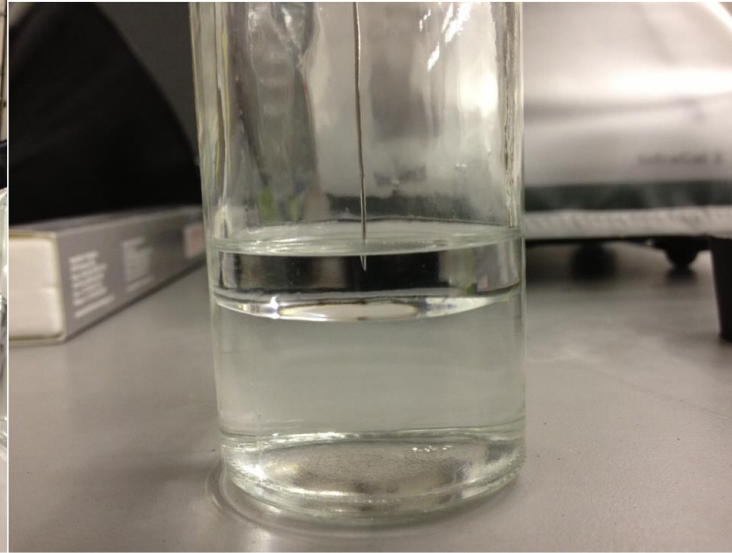
**Fatty
Acids**

Hydrolysis



Fast Assessment FOG Test

below.



Accuracy Assessment

Known Standard (ppm)	Wilks Analyzer (ppm)	Difference to Known
7.8125	3.8	51%
15.625	8.5	46%
31.25	30.8	1%
62.5	57.6	8%
125	120.3	4%
250	242.6	3%
500	475.5	5%
750	739.3	1%
1000	1022.2	-2%
1500	1510.2	-1%
2000	1953.1	2%

Known Concentrations vs Wilks Analysis

Chart Area

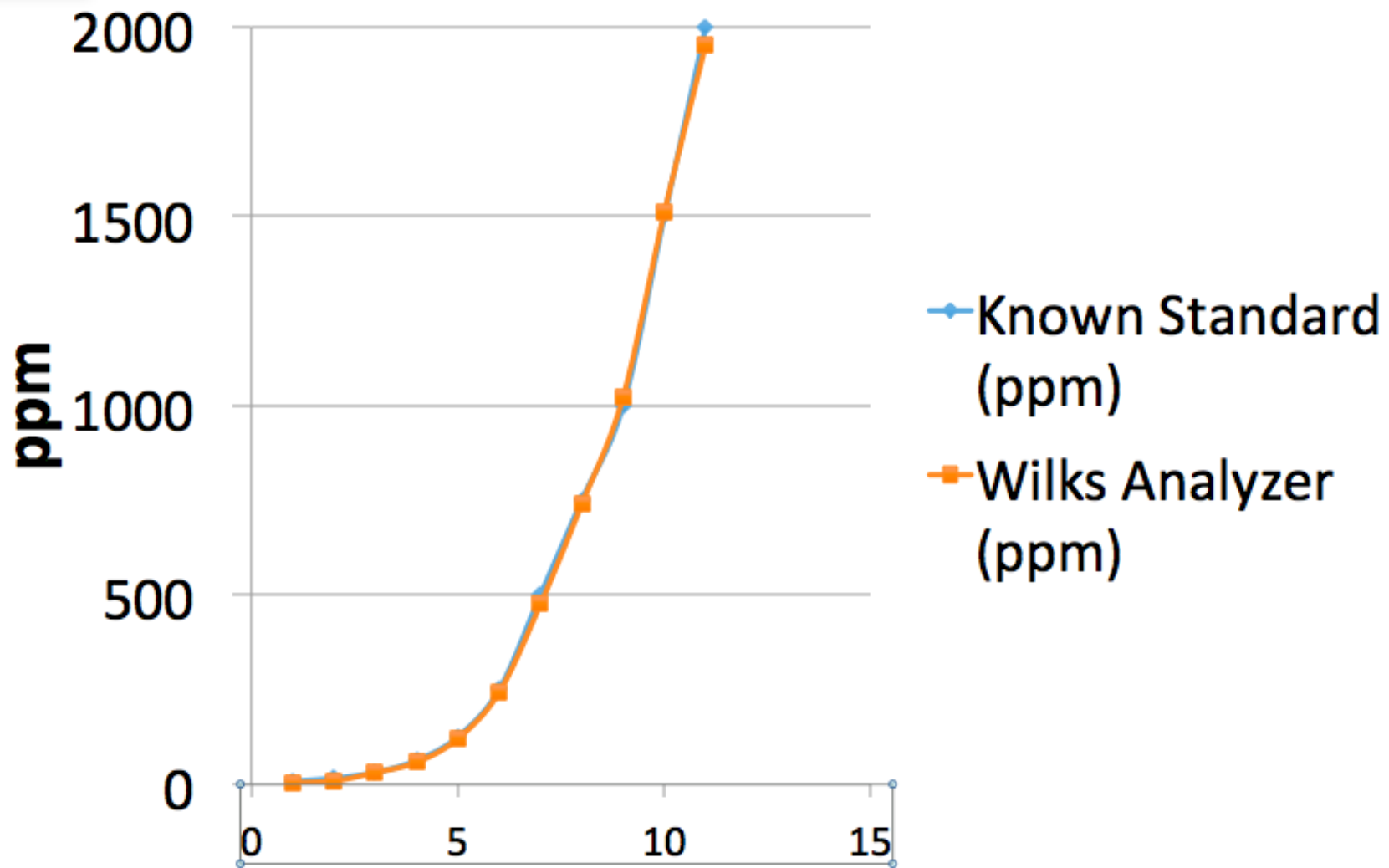
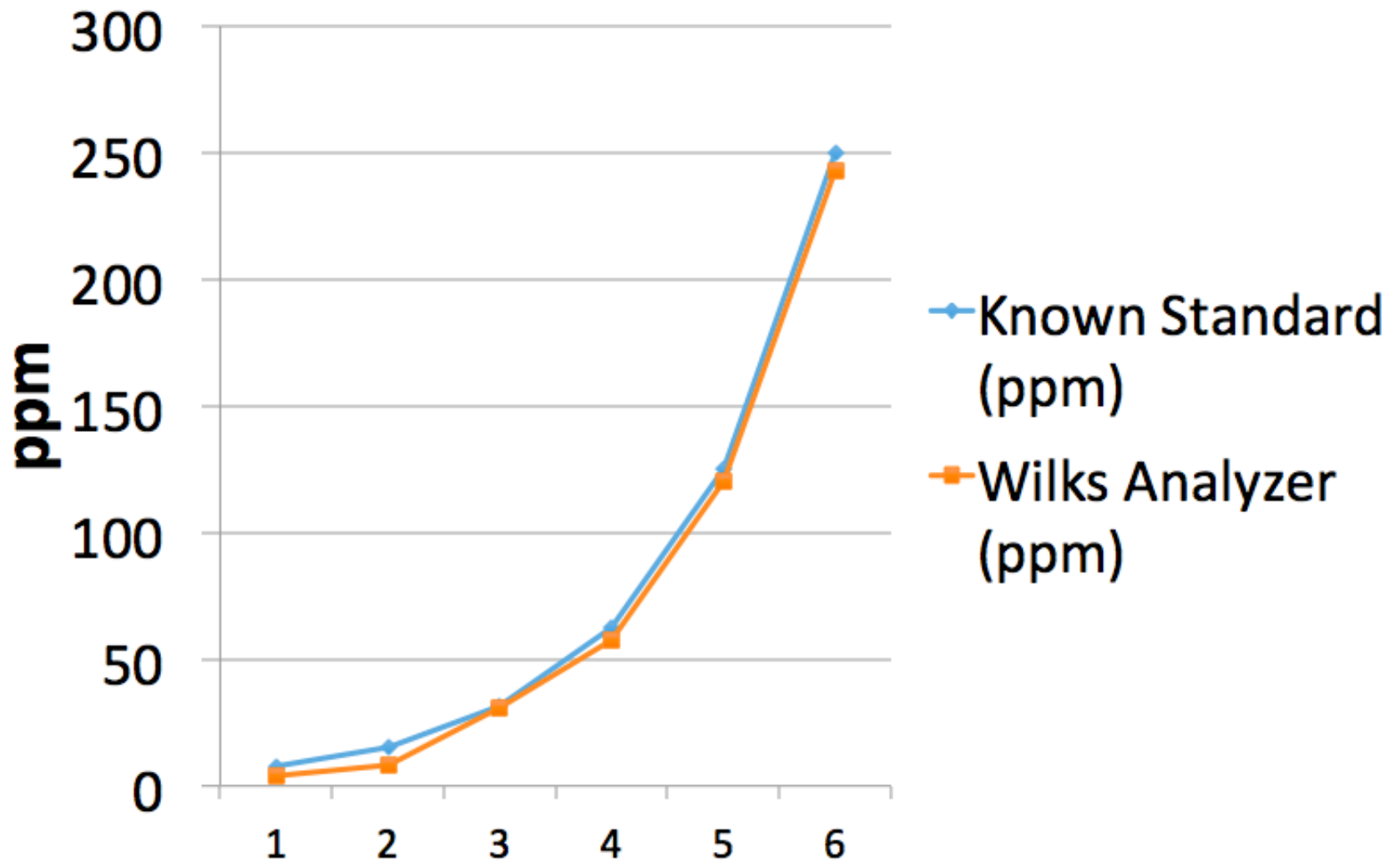


Chart Area

Known Concentration vs Wilks Analysis



FOG Separation Flows:

- 7 lbs fat per test increment
- 35 gpm flow rate
- 70 gallons 150-160 degree F water
- Two (2) minute drain time
- 12,000 mg/l effluent FOG loading
- ASME A112.14.3 input methodology
- EN 1825 effluent sampling methodology
- Continuous sampling after separator

Clearing Flows:

- 35 gpm flow rate
- 70 gallons 70 - 80 degree F water
- Two (2) minute drain time
- Zero (0) effluent FOG loading
- Conducted after FOG input runs and before detergent flow runs

Detergent Bearing Flows:

- 35 gpm flow rate
- 70 gallons 150 - 160 degree F water
- Two (2) minute drain time
- Zero (0) effluent FOG loading
- HT commercial dish machine detergent
- Continuous sampling after separator

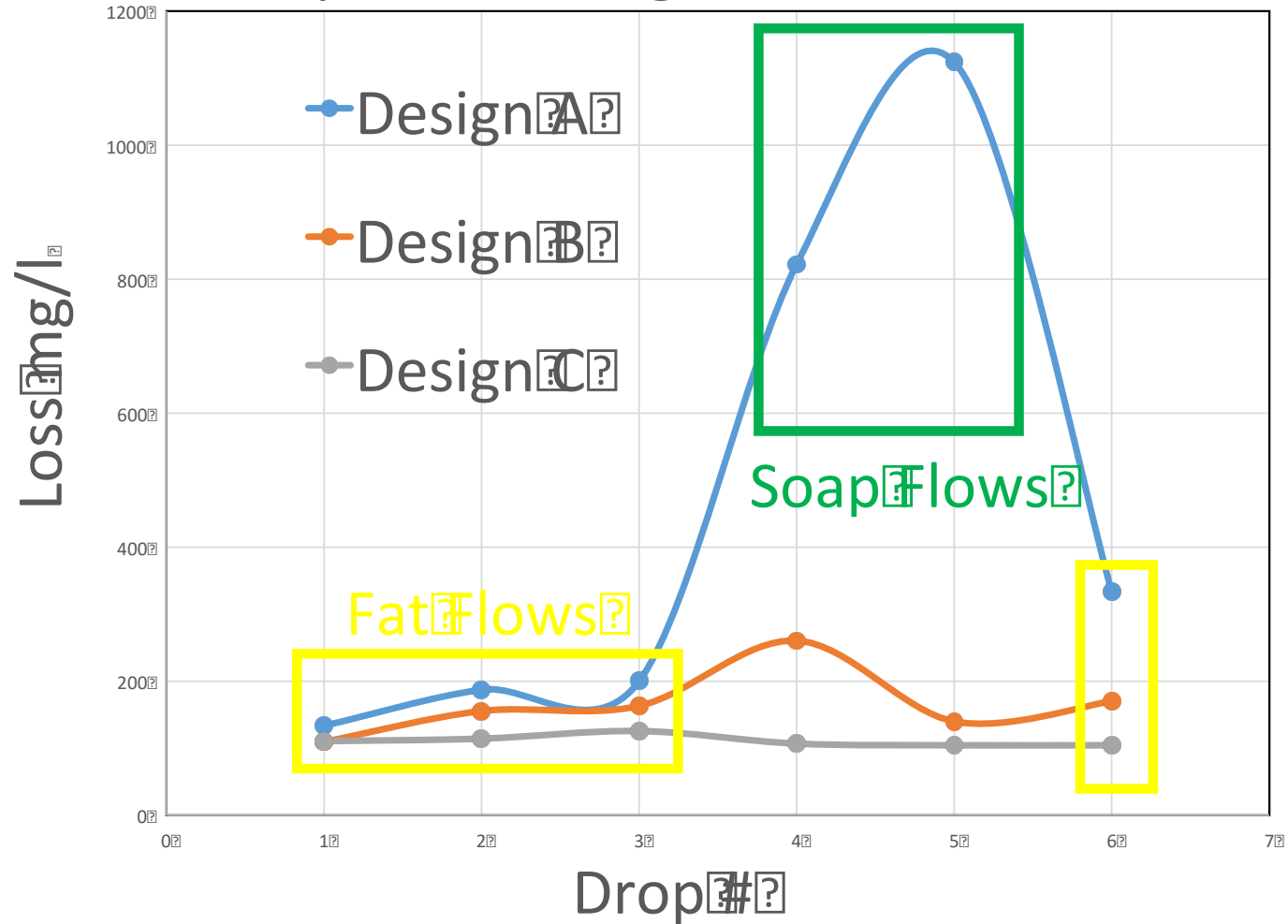
Emulsion Retention Loss Test



Effluent Sampling Methodology



Separator Design vs Emulsion Losses



Conclusions:

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For Report Info and Links:

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