This presentation premiered at WaterSmart Innovations

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INNOVATIONS

MaP Testing's 8-year Anniversary:

A proven process for development & implementation of meaningful product performance standards

A historical perspective & update on MaP Testing

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K&C

VERITEC
A Miya Group company

Origin of a problem…and a solution!

- Fed Govt mandates 1.6-gal maximum flush - 1994
- Early U.S. 1.6-gal siphonic toilets did not flush well
- Why? Because many mfrs simply converted a 3.5-gallon toilet to flush with 1.6 gallons
  - Little engineering or hydraulic redesign - same tank size
  - Replaced buoyant flapper with “early closing” flapper
  - No rigorous performance requirements
- PLUS, many models could be adjusted to increase the flush volume back to 3 - 4 gals!

Current Certification Process - 3 major problems remain today!!

1. Testing fails to replicate “real world” conditions
   - Sponges?
   - Paper wads….maybe!
   - Granules?
   - Plastic balls?

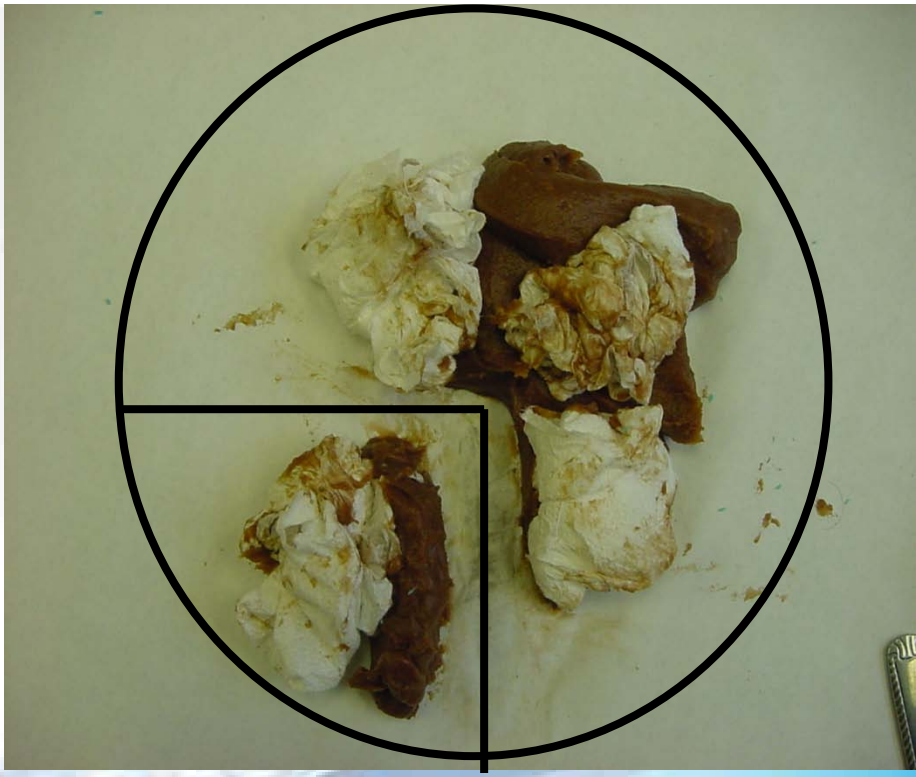
2. 100% removal not required!!

3. Pass/fail only - no rating or ranking of performance for consumers

Expect to resolve shortly via ASME / CSA Standards.

Certification in North America

- Only 22 of 28 media required to clear fixture - ~80%!!
- Question: Would a consumer be satisfied with a toilet that cleared only 80% of waste?



Like saying….

✓ Pilot to passengers:

"Folks, we're only going to use 3 of our 4 engines - but we'll be OK…"

✓ Car salesman to customer:

"The brakes on this vehicle will stop the car about 80% of the time!"

✓ Plumber to homeowner:

"This toilet should remove about 80% of the waste!"

Results…

- ✓ Early ULFTs (1.6 gallon) = performance problems
  - ✓ Water utility complaints about sustainability of savings
  - ✓ Customer complaints about flush performance
  - ✓ Outcome: Manufacturers started to get “message” and began developing better products
- ✓ ALSO….. water utility industry steps up to address:
  - ✓ Sustainability of water savings (flappers & adjustability)
  - ✓ Flush performance (customer satisfaction)

Three Water utility “responses”…

- ✓ 2000 - Los Angeles Supplementary Purchase Specification (L.A. SPS) for tank-type toilets
  - Mandate durable flappers
  - Limit flush volume adjustability
  - Require marking with flapper part number.
- ✓ 2002/03 - Maximum Performance (MaP) testing
  - Addresses flush performance issues
- ✓ 2005 - UNAR developed for W-E programs

UNAR is developed
(Uniform North American Requirements)

Maximum Performance (MaP) Testing of Popular Toilet Models

- Project sponsored by 22 water utilities and agencies in U.S and Canada
- Purposes:
  - Give consumers information they needed / wanted on toilet flush performance
  - Provide water conservation programs with info necessary to populate their approved “lists”

Maximum Performance Testing of Popular Toilet Models (MaP Testing)

- East Bay Municipal Utility District
- Los Angeles Dept of Water & Power
- Tampa Bay Water
- Seattle Public Utilities
- Calif Urban Water Conservation Council
- Toronto, Ontario
- Winnipeg, Manitoba
- Greater Vancouver Regional District
- Canada Mortgage & Housing Corp.
- B.C. Buildings Corp. Victoria B.C.
- Capital Regional District, Victoria B.C.
- Canadian Water & Wastewater Association (Lead)
- Region Durham, Ontario
- Region Halton, Ontario
- Region Waterloo, Ontario
- Hamilton, Ontario
- Region Peel, Ontario
- Calgary, Alberta
- Edmonton, Alberta
- Montreal, Quebec
- Ottawa, Ontario
- Halifax, Nova Scotia

Maximum Performance (MaP) Testing

- Why MaP? ….MaP testing filled an obvious void as certification testing is sometimes a very poor measure of "real world" performance …. and consumers want to compare products!
- MaP Features -
  - Replicates "real world" with special test media
  - An independent measure of toilet performance
  - Scientifically based minimum performance threshold for waste removal (250g = 95th percentile for men)
  - User-friendly basis for toilet selection

Test Media: Soy Bean Paste


On/Off
Toggle
Print
CF
0.3500 kg
F
Zero
Tare
sartorius


10.99


HEALTH GARDS®
toilet seat covers
FOR YOUR AWAY FROM HOME NEEDS


toilet seat covers

MaP Testing

- ✓ Uncased soy bean paste: primary test media, extruded into 4-inch x 7/8-inch “logs”, 50g each
- ✓ BUT, costs escalate
  - ✓ One-time use
  - ✓ Worldwide distribution
- ✓ Seek out a “re-usable” alternative = encased soy bean paste

MaP Testing

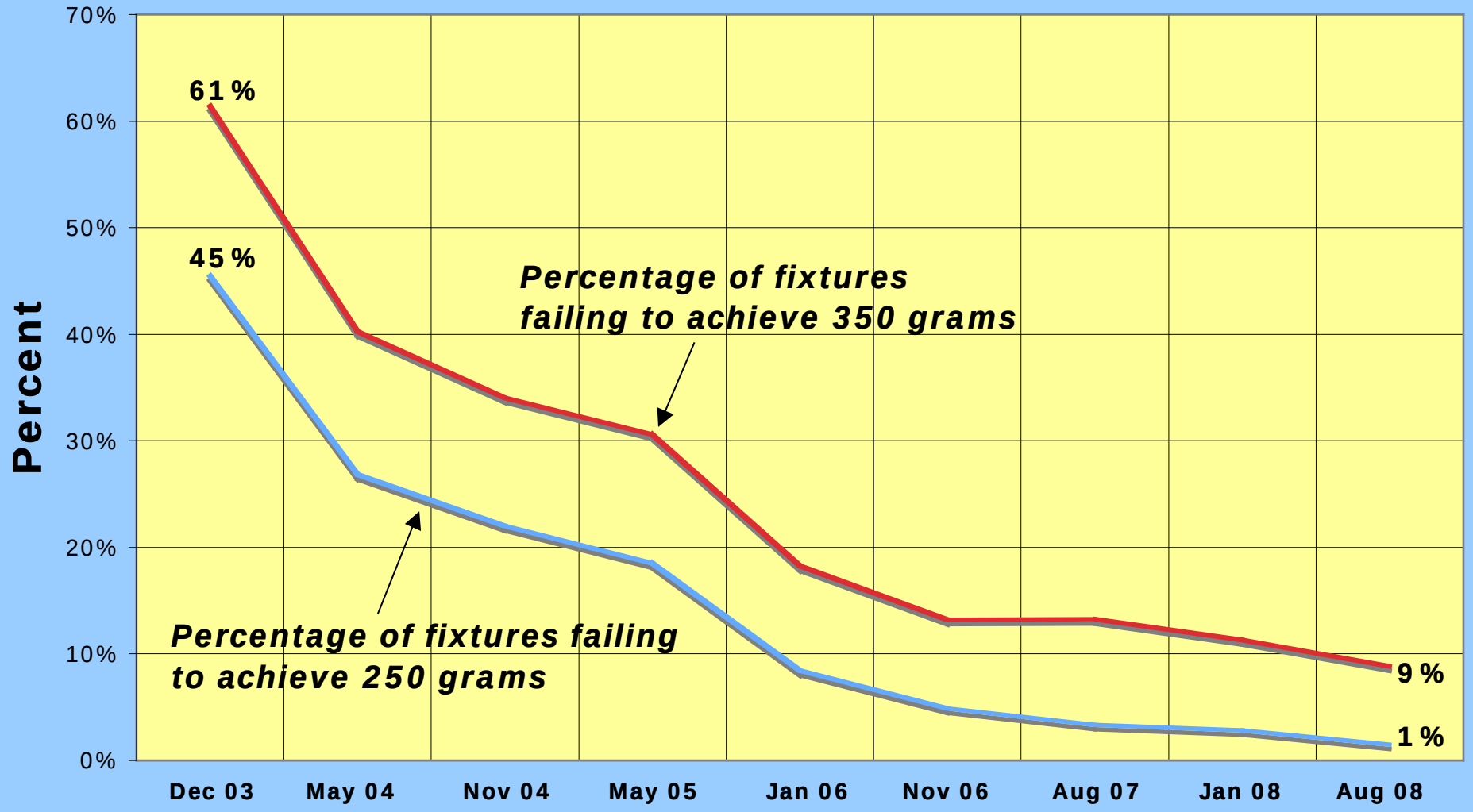
- ✓ 18th Edition report now posted (August 2010)
  - ✓ 1300+ different toilet fixture models tested!
  - ✓ Tank-type AND flushometer valve fixtures
- ✓ Used or adopted by various large production builders, designers, specifiers, retailers, water utilities, plumbers, consumers, & others for product selection
- ✓ All WaterSense®-certified HETs MUST meet 350g threshold
- ✓ All WaterSense®-certified HETs must be INDEPENDENTLY tested
- ✓ Manufacturers worldwide now testing to MaP
- ✓ Manufacturers submit products for **independent testing**
- ✓ Future MaP initiatives -
  - Flushometer valve toilet fixtures

Improving Flush Performance

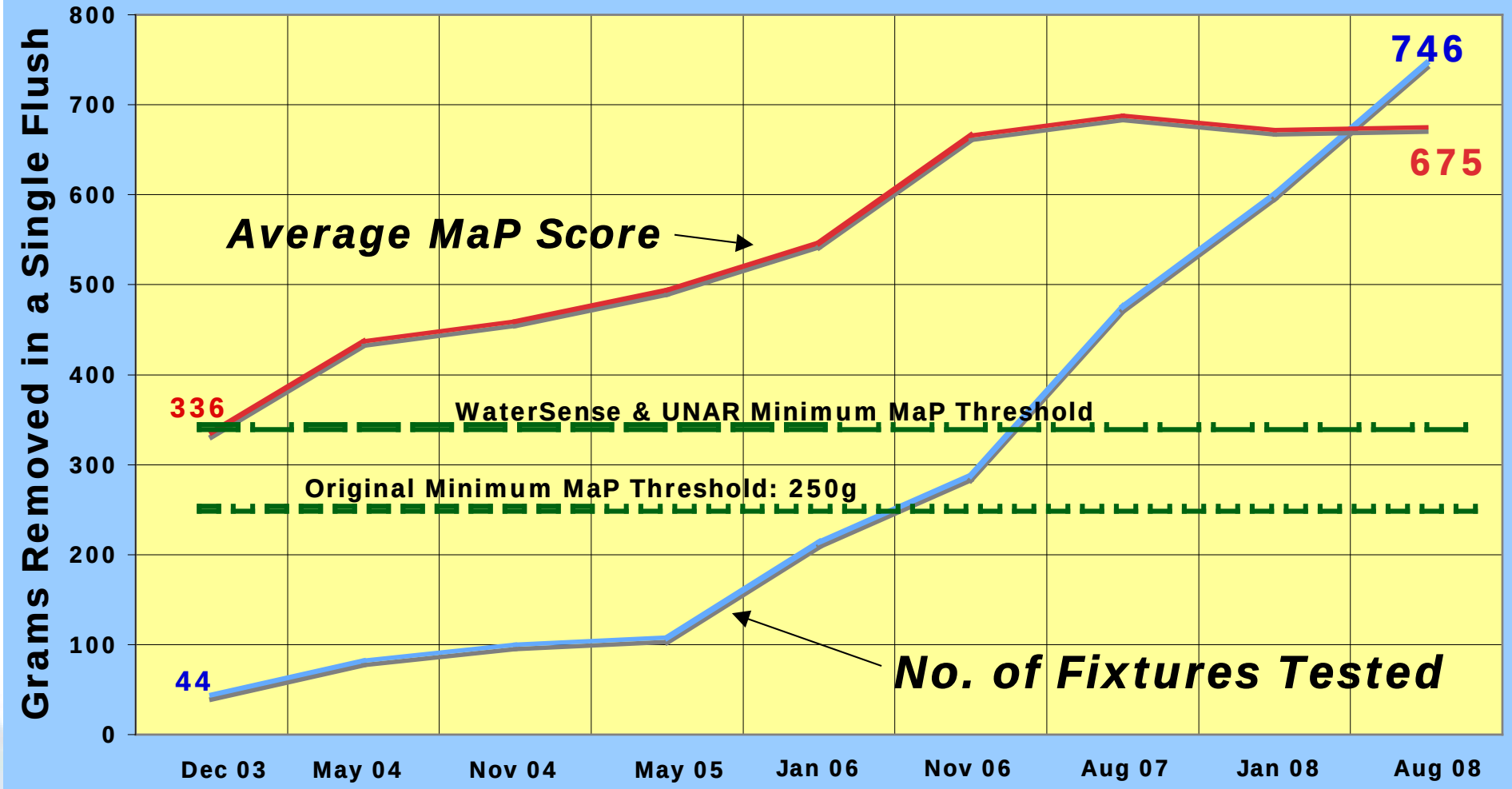
- Early ULFTs (1.6gal) - minimal testing, poor performance, significant dissatisfaction by consumers
- Today - MaP testing leads to improved performance and improved water savings
- New HETs (0.8 to 1.28gal) offer outstanding performance
- WaterSense®-certified HETs outperform older water guzzling toilets

- TODAY: Over 900 different HET models available (>700 are WaterSense certified!)

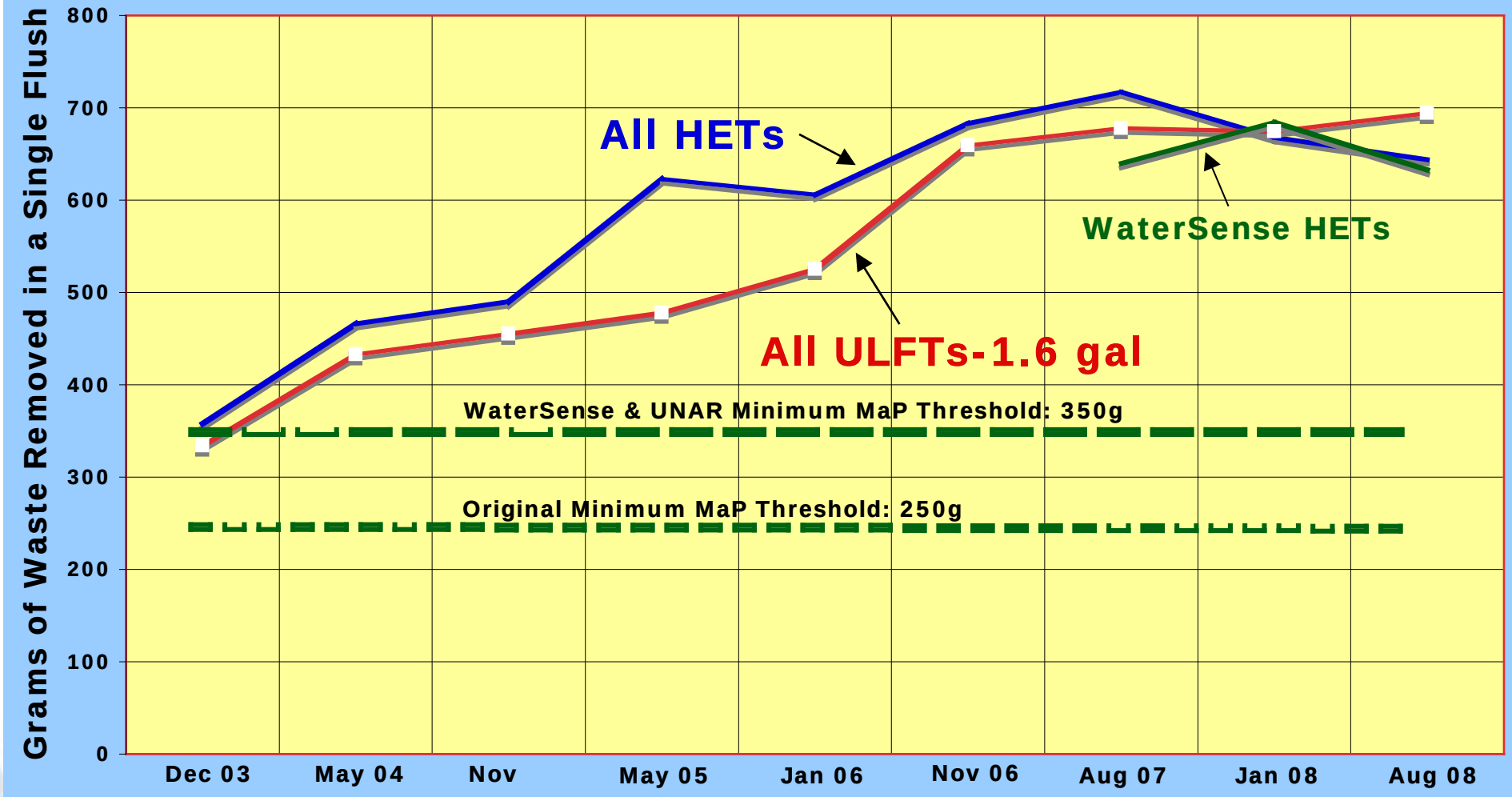
Percentage of MaP-tested fixtures failing to meet minimum performance



Toilet Fixtures Tested - Average MaP Score



Average MaP Scores - 2003 to 2008



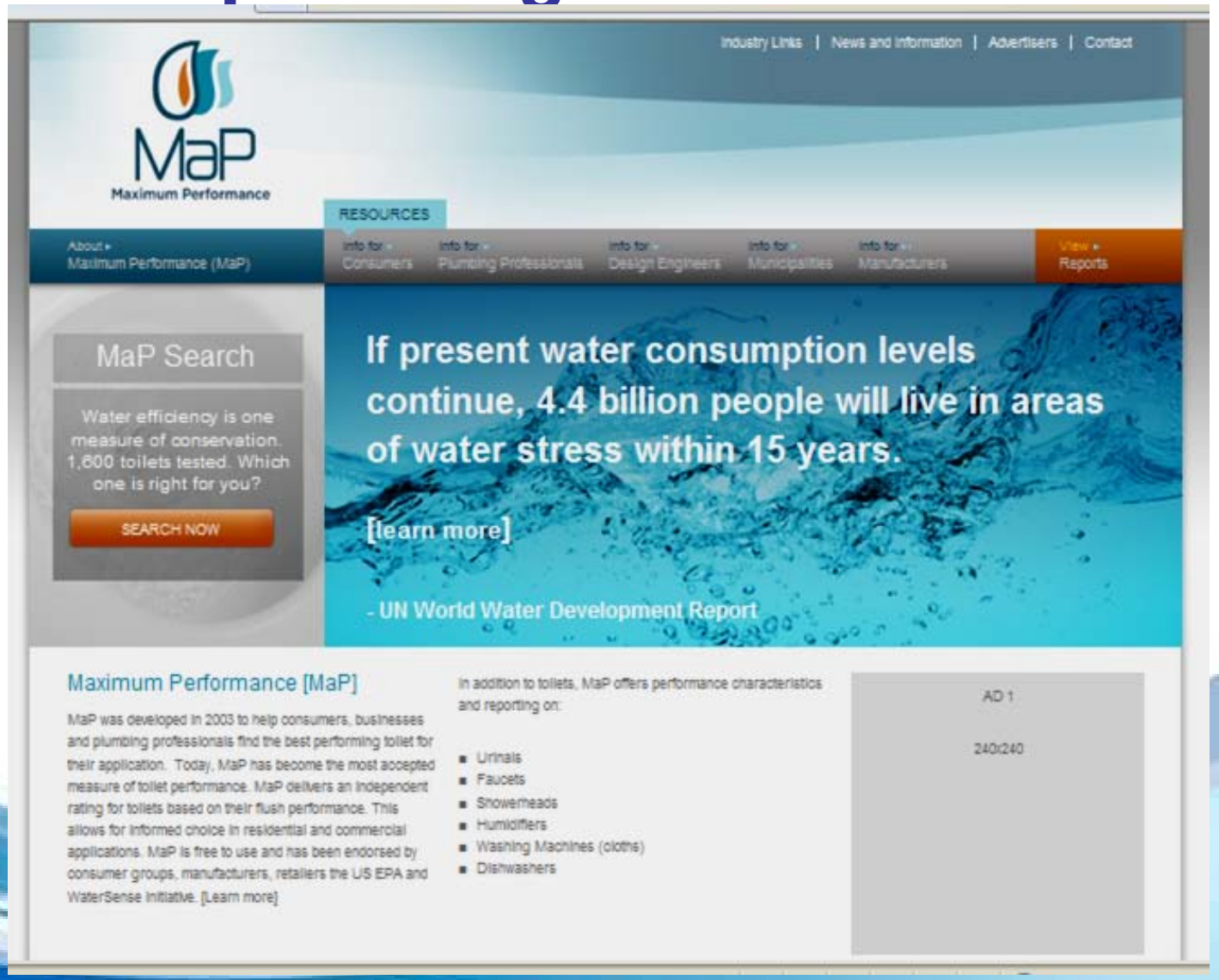
Independent Lab Testing

- More and more labs want to conduct MaP and/or WaterSense testing (USA, China, etc.), even though -
  - MaP program is voluntary
  - WaterSense is voluntary
- Consumers and water agencies rely heavily on test results
- Need to ensure “MaP-approved” still means something
- Expanding MaP testing to other products
- New MaP Logo
- New MaP website


MaP
Maximum Performance

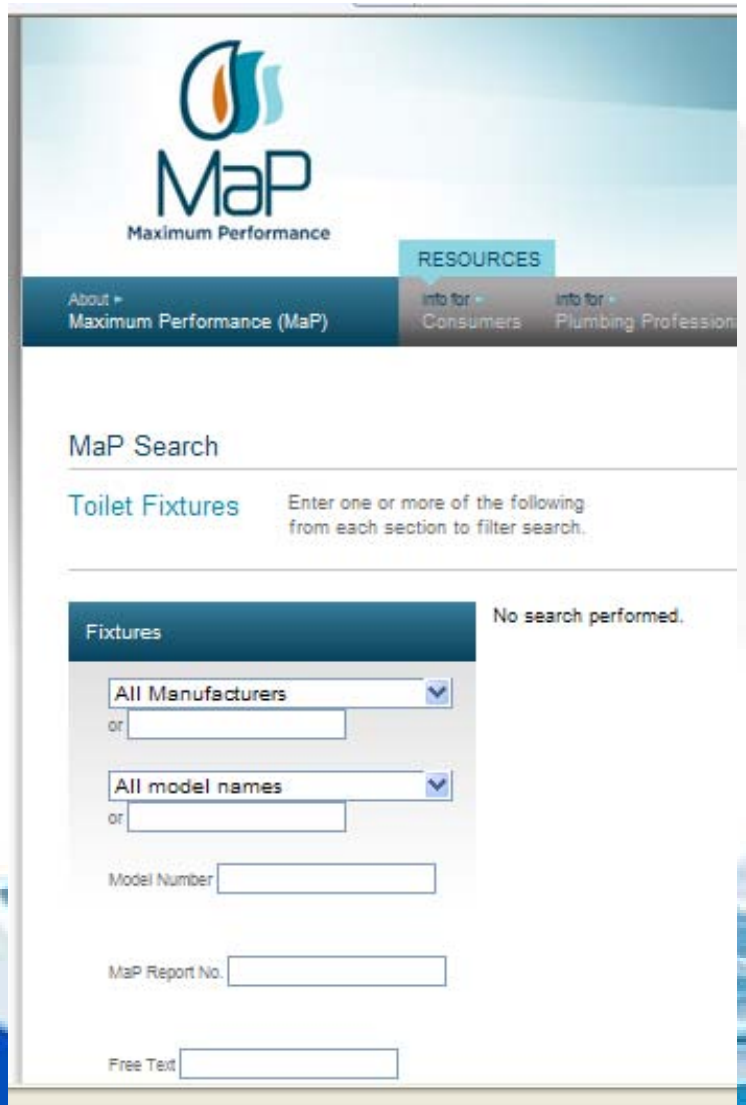
MaP | Maximum Performance

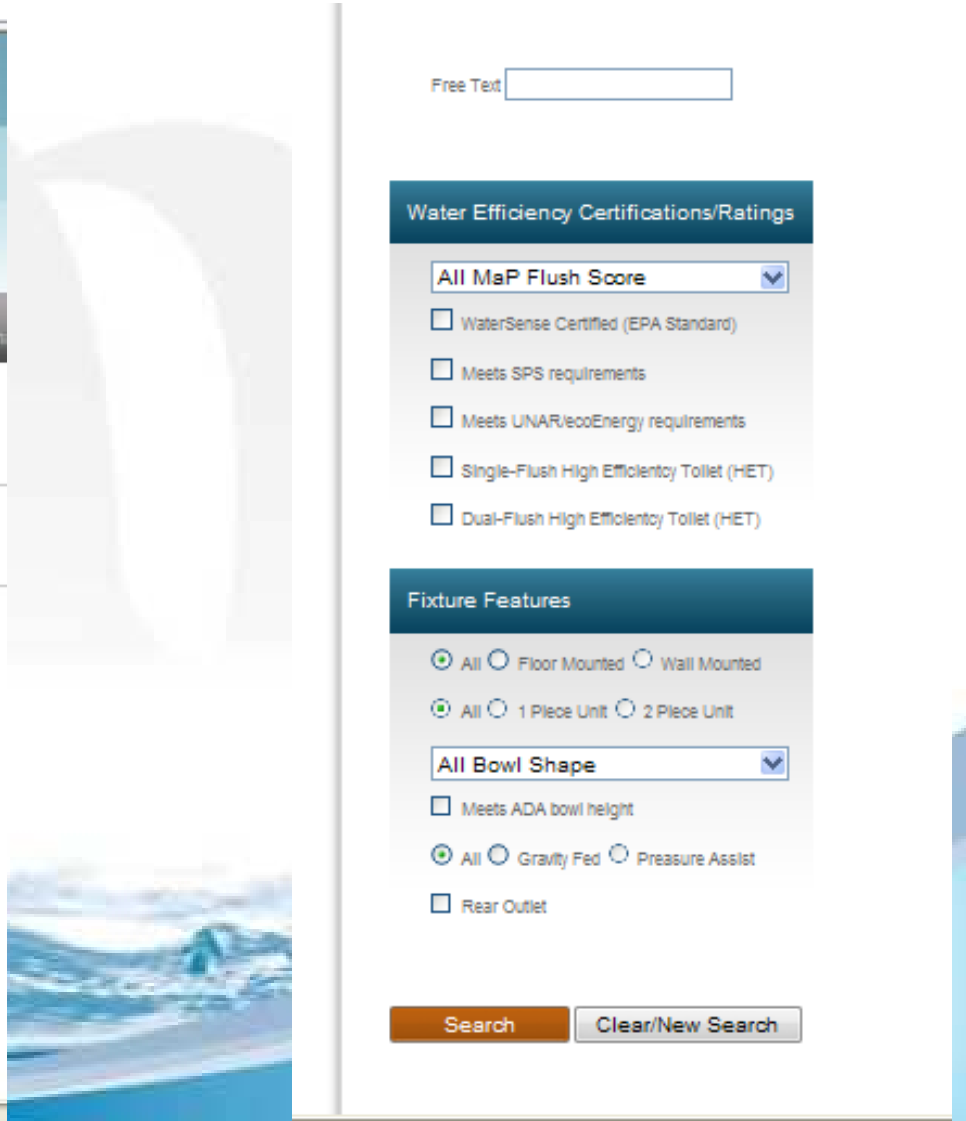
New MaP Website: www.map-testing.com



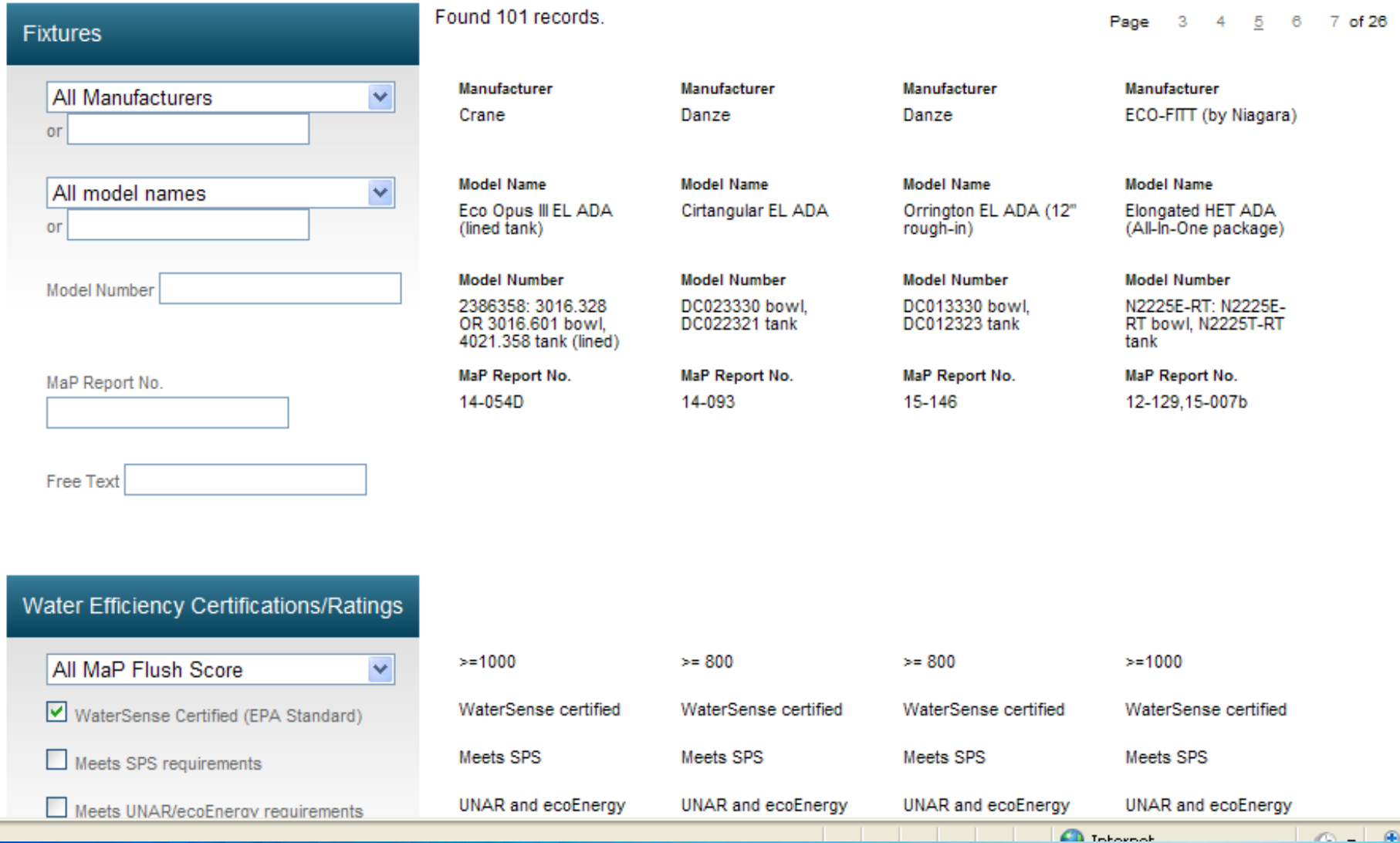
Search using selected criteria

- Currently, the test results are posted as an Excel file containing a few individual worksheets.
- Not everyone could “work” the search functions of the sheet.
- Didn’t perform like a “typical” website
- Now – much easier

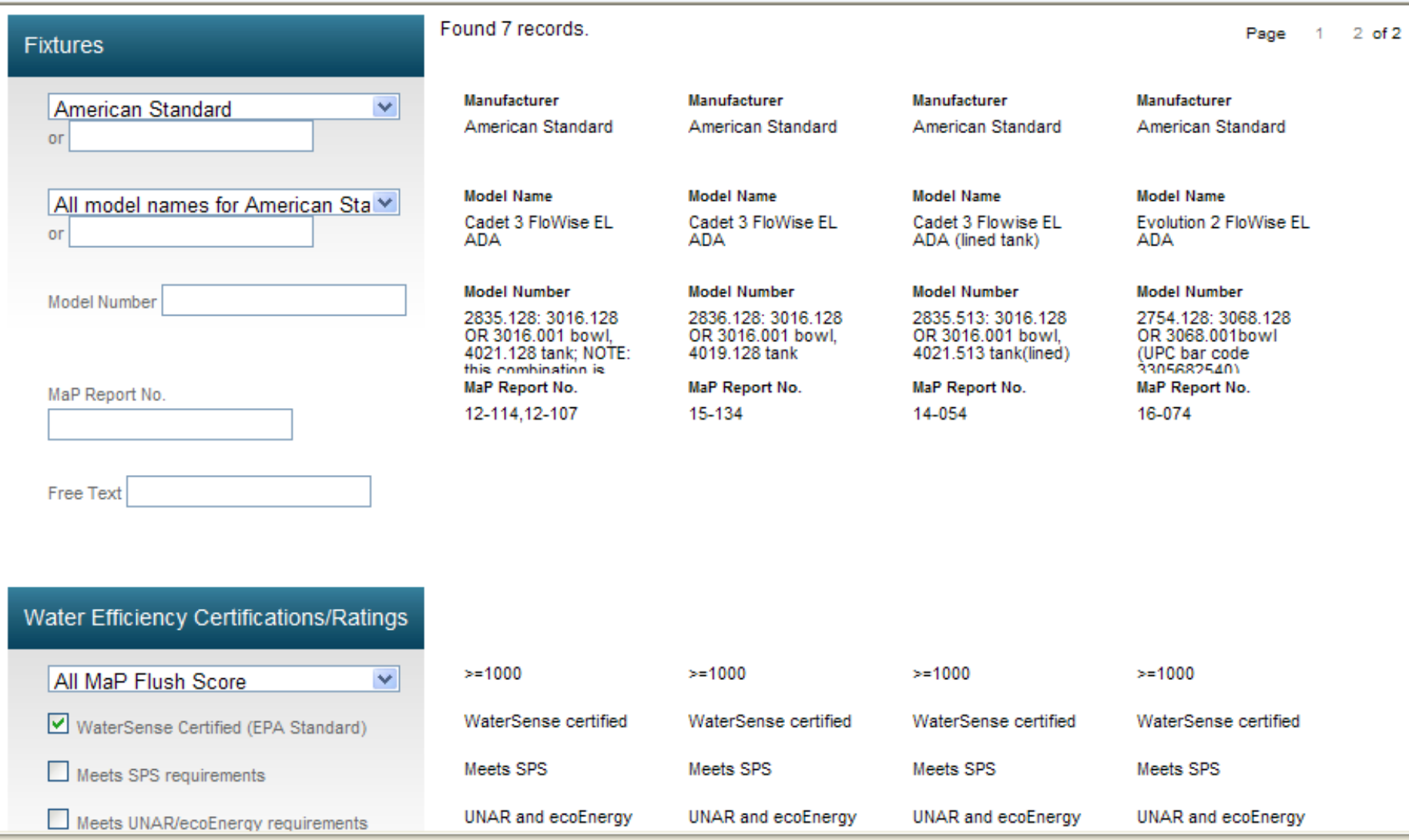

MaP
Maximum Performance
RESOURCES
About ▸
Maximum Performance (MaP)
Info for ▸
Consumers
Info for ▸
Plumbing Profession
MaP Search
Toilet Fixtures
Enter one or more of the following from each section to filter search.
Fixtures
All Manufacturers
or
All model names
or
Model Number
MaP Report No.
Free Text
No search performed.


Free Text
Water Efficiency Certifications/Ratings
All MaP Flush Score
WaterSense Certified (EPA Standard)
Meets SPS requirements
Meets UNAR/ecoEnergy requirements
Single-Flush High Efficiency Toilet (HET)
Dual-Flush High Efficiency Toilet (HET)
Fixture Features
All Floor Mounted Wall Mounted
All 1 Piece Unit 2 Piece Unit
All Bowl Shape
Meets ADA bowl height
All Gravity Fed Pressure Assist
Rear Outlet
Search
Clear/New Search

Water-Sense, single-flush HET, 2-pc, ADA, gravity… 101 records



Am. Std., Water-Sense, single-flush HET, 2-pc, ADA, gravity… 7 records



Also on website…

- Information for:
  - Consumers
  - Plumbing professionals
  - Design Engineers
  - Municipalities
  - Manufacturers
- Also various reports that deal with much more than toilets
- We may even post YOUR report!

Let’s get it right!

- We welcome input from others (including water agencies, labs, consumers, etc.) regarding;
  - How to improve the testing,
  - How to include other relevant tests,
  - Which tests should be changed or deleted,
  - What others products, appliances, etc. should be tested, etc.
  - The WEBSITE
- All advice is welcome!

GREEN JUICE COMICS

BY GEORGE SFARNAS AND GREENCE.COM

Thank you…

http://www.map-testing.com

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