



## WaterSense® Draft Specification for Flushometer-Valve Water Closets Public Meeting Summary

January 15, 2015, 1:00 to 2:00 p.m. Eastern, Webinar

### Meeting Participants

Daniel Bartz, Kohler Co.  
John Bertrand, Moen, Inc.  
Cathleen Brennan, Coastside County Water District  
Maribel Campos, International Code Council—Evaluation Service (ICC-ES) Plumbing,  
Mechanical and Fuel Gas (PMG)  
Daniel Danowski, Zurn Industries—Commercial Brass Operations  
Shirley Dewi, IAPMO Research & Testing (R&T)  
Richard Farrington, Tynan Plumbing Fixtures  
Mark Fish, Zurn Industries, LLC  
Daniel Gleiberman, Sloan Valve Co.  
Larry Himmelblau, Chicago Faucet  
Joy Hinkle, Southface  
Peter Jahrling, Sloan Valve Co.  
Maja Jankov, Duravit USA, Inc.  
Ronn Jefferson, Geberit  
Kevin Kennedy, Niagara Conservation Corp.  
John Koeller, Koeller & Company  
Thomas Kramer, Kohler Co.  
Louis Ku, Foremost Groups, Inc.  
Ziwei Liu, Environmental Protection Agency (EPA)  
Beth Livingston, EPA  
Mariana Nicolae, Sloan Valve Co.  
Pierre Pare, Masco Canada, Ltd.  
Robert Pickering, Eastern Research Group, Inc. (ERG)  
Pennie Portie, SSOE Group  
David Schwartzkopf, Willoughby Industries, Inc.  
Ken Sensel, Betco Corp.  
Richa Sharma, EPA  
Morgan Shimabuku, Center for ReSource Conservation  
Roy Sieber, ERG  
Matt Sigler, Plumbing Manufacturers International (PMI)  
Shawn Sosa, City of Santa Rosa, California  
Victoria Sowell, FDEP  
Stephanie Tanner, EPA  
Jonathan Vann, IAPMO  
Kim Wagoner, ERG  
Laura Wetzel, ERG  
Marlisa Wilson, Seattle Marriott Waterfront  
Yelena Zhernovskiy, Betco, Inc.

## Meeting Summary

Stephanie Tanner (EPA's WaterSense program) welcomed everyone to the meeting and reviewed the meeting agenda. Agenda items included an introduction to WaterSense; flushometer-valve water closets background and the specification development process; a review of the *WaterSense Draft Specification for Flushometer-Valve Water Closets*; product certification and labeling; and next steps prior to developing the final specification. Ms. Tanner reminded everyone that the purpose of the call was to field questions and provide clarifications to assist stakeholders in developing written comments. All written comments are due by March 20, 2015. [Note: The comment deadline discussed during the webinar was originally February 20, 2015. Based on a request to extend the comment period, the deadline was changed to March 20, 2015]. PowerPoint slides from this presentation can be reviewed on the WaterSense website at [www.epa.gov/watersense/products/flushometer-valve-toilets.html](http://www.epa.gov/watersense/products/flushometer-valve-toilets.html). The presentation discussion and participant questions and comments are summarized below.

### 1. Introduction and Flushometer-Valve Toilet Background

Ms. Tanner provided an overview of the WaterSense program and shared background information on flushometer-valve water closets. WaterSense is a voluntary partnership and labeling program launched by EPA in 2006 designed to reduce municipal water use across the country. WaterSense tries to provide a simple way for consumers to identify products that use 20 percent less water *and* perform well. WaterSense aims to increase the adoption of water-efficient products and services by consumers and organizations. A WaterSense label is a label with integrity—third-party certified for water efficiency and performance

WaterSense uses several factors in determining which products to label. Products must: offer equivalent or superior performance; be about 20 percent more water-efficient than standard models; realize water savings on a national level; provide measurable results; achieve water efficiency through several technological options; be effectively differentiated by the WaterSense label; and be independently certified.

Flushometer-valve water closets (i.e., flushometer-valve toilets) are tankless fixtures comprised of a wall- or floor-mounted fixture attached to a flushometer valve. They are typically found in commercial, industrial, and other public restrooms. WaterSense already has a specification that labels tank-type toilets; therefore, they are not included in this specification. There are approximately 27 million flushometer-valve toilets installed in the United States. The Energy Policy Act (EPAAct) of 1992 set a maximum flush volume of 1.6 gallons per flush (gpf) or 6.0 liters per flush (Lpf) for flushometer-valve toilets. However, many older, pre-EPAAct models can use between 3.0 and 7.0 gpf. High-efficiency flushometer-valve toilets use 1.28 gpf (4.8 Lpf) or less. Americans could save approximately 41 billion gallons of water annually by replacing all inefficient, flushometer-valve toilets with WaterSense labeled models.

Flushometer-valve water closets are made up of a flushometer valve and water closet fixture (e.g., bowl). Both play an integral role in ensuring water efficiency and performance. Neither the receiving bowl nor the flushometer valve separately constitutes a complete, fully functioning flushometer-valve water closet.

WaterSense waited to hear about the results of the November 2012 Plumbing Efficiency Research Coalition (PERC) drainline carry study before beginning this specification. The PERC study investigated waste transport through drainline lengths up to 135 feet for flush volumes varying from 0.8 gallons to 1.6 gallons. It also investigated whether the media successfully cleared from the drainline apparatus for all 1.28-gallon test runs. The PERC study supports the WaterSense specification for flushometer-valve water closets in that media was cleared from all drain runs at a maximum flush volume of 1.28 gpf.

WaterSense published a Notice of Intent (NOI) for flushometer-valve water closets in August 2013 outlining potential requirements and outstanding issues for a draft specification. WaterSense held a public meeting on September 12, 2013, to discuss feedback on the NOI and has evaluated public feedback and resolved outstanding issues since then. WaterSense published the draft specification in December 2014. In two weeks, Robert Pickering (ERG, contractor to EPA's WaterSense program) will be attending the ASME A112/CSA Standards committee meeting on plumbing material and equipment to talk with the ASME/CSA committee about this specification and other projects that WaterSense has with the plumbing standard community. The comment period for this specification closes on March 20, 2015.

## 2. Scope and Water Efficiency Criteria

Robert Pickering (ERG) discussed the content of the *WaterSense Draft Specification for Flushometer-Valve Water Closets*. The draft specification criteria for high-efficiency flushometer-valve water closets applies to: water closet fixtures (e.g., bowls) receiving liquid and solid waste and use water from a flushometer valve to convey the waste through a trap seal into a gravity drainage system; single- and dual-flush flushometer valves; any other flushometer-valve-type technology meeting the specification criteria. The draft specification does not apply to: tank-type toilets; blowout toilets; retrofit or aftermarket devices or systems (e.g., flushometer-valve handles).

Manufacturers must specify a "rated" flush volume for the flushometer valve or water closet fixture, which must be equal to or less than 1.28 gpf. The 1.28 gpf requirement reduces flush volume by 20 percent over the federal maximum and is consistent with a widely accepted definition of high-efficiency toilet. In addition, it is currently available in many makes and models of both flushometer-valves and fixtures. For flushometer valves with dual-flush capabilities, the 1.28-gpf maximum flush volume established by the specification applies to the full-flush mode. WaterSense chose to set the maximum full-flush volume at 1.28 gpf to guarantee 20 percent water savings from dual-flush toilets. Water savings for dual-flush toilets in commercial settings are typically based on user behavior and can be influenced by lack of education, as well as design considerations. Furthermore, dual-flush toilets are mainly limited to women's restrooms, as men's restrooms typically have urinals for liquid waste. WaterSense hopes to drive the market to offer more options with even greater water efficiency.

Flush volume for the flushometer-valve water closets shall be tested in accordance with the applicable ANSI Standards: *ASME A112.19.2/CSA B45.1 Ceramic Plumbing Fixtures*; *ASME A112.19.3/CSA B45.4 Stainless Steel Plumbing Fixtures*; and *IAPMO/ANSI Z124.4 Plastic Plumbing Fixtures*. The water consumption, determined through testing, is compared to the rated flush volume to determine compliance. The maximum flush volume identified through

testing shall not exceed the manufacturer specified flush volume when evaluated in accordance with 10 CFR 429.30.

Matt Sigler (PMI) asked if it was premature to make 1.28 gpf a requirement before the results of PERC II were known. Ms. Tanner explained that WaterSense waited for results of PERC I to be finished, and that those results were an indication that WaterSense could start developing a specification for WaterSense commercial toilets because there were no problems at the 1.28 gpf level. She explained that at this point, most high-efficiency commercial toilets are used at that level, and WaterSense is fine with that.

Mr. Sigler asked what percentage of dual-flush water closets can meet the full-flush mode requirement of 1.28 gpf. Ms. Tanner explained that currently, not many dual-flush water closets can meet 1.28 gpf for the full-flush maximum. She was unsure of an exact percentage of the marketplace, but she knew there were not many of those dual-flush toilets out there. Mr. Pickering commented that there are models available.

Mr. Sigler also asked why an effective flush volume of 1.28 gpf is acceptable for tank-type toilets but not for flushometer-valve toilets. Ms. Tanner explained that it is because toilets have different use patterns. Tank-type toilets are used in the home where people make a conscious decision to choose to have that kind of toilet and use the lower flush volume. That decision is taken out of the hands of people using toilets in a commercial facility. In facilities where they have them, people tend to use the downward flush most of the time. WaterSense is trying to eliminate, where possible, instances where efficiency is dependent upon behavior. By eliminating the 1.6 gpf level for dual-flush toilets, it will be assuring that people get the 20 percent savings independent of bathroom user behaviors.

Daniel Gleiberman (Sloan Valve Co.) asked for clarification on the public comment period, and whether all comments were resolved or still open. Ms. Tanner explained that the public comment period for the draft specification goes until March 20, 2015. Stakeholders commented on the NOI, providing their points of view on various questions they had on the NOI. WaterSense evaluated all of those perspectives, looked into the information, and based on that came out with the draft specification. WaterSense did not take everyone's advice and, therefore, there are some differences between the comments and what was written in the draft specification. People can submit those comments again with more data, and WaterSense will evaluate them again in the draft specification.

David Schwartzkopf (Willoughby Industries, Inc.) asked for confirmation on whether or not blowout toilets were excluded from the draft specification. Ms. Tanner confirmed that they are excluded from the draft specification.

John Bertand (Moen, Inc.) asked if the PERC study evaluated performance with extra test media, such as those included in the draft specification. Ms. Tanner said no, it did not.

Daniel Danowski (Zurn Industries) asked if there was a reason why blowout fixtures were excluded from the draft specification. Mr. Pickering explained that they are covered under a different maximum volume standard than the EPA Act 1992 requires for tank-type and flushometer-valve toilets. The EPA Act still allows that their flush volumes go up to 3.5 gpf, so

WaterSense is not prepared to cover blowout fixtures at this point. Blowout fixtures are also a different technology from the flushometer valve.

### 3. Water Closet Fixture and Flushometer-Valve Requirements

Mr. Pickering explained that for the water closet fixture, WaterSense established general requirements to include, except as otherwise indicated, that water closet fixtures must conform to the applicable requirements in *ASME A112.19.2/CSA B45.1*, *ASME A112.19.3/CSA B45.4*, or *IAPMO/ANSI Z124.4*. Testing shall be conducted with representative flushometer valves from three different manufacturers with the same rated flush volume. The rated flush volume, for the purposes of testing, should fall within the consumption range marked on the product. However, the tested rated flush volume cannot exceed 1.28 gpf. For water closet fixtures marked with a dual-consumption or consumption range marking, the fixture shall also be tested at the lowest flush volume marked on the water closet. WaterSense's intent with both of these requirements is to make sure that the bowl will work with flushometer valves at the maximum WaterSense level of 1.28 gpf, as well as the minimum flush volume marked on the bowl.

For general flushometer-valve requirements, except as otherwise indicated in the specification, flushometer valves must conform to *ASSE 1037/ASME 112.1037/CSA B125.37* (upon its release) and must also: have a non-hold-open actuator; not be adjustable beyond 10 percent of its rated flush volume; and be designed not to intentionally accept replacement or maintenance parts that would override the rated flush volume. The last requirement requires manufacturer attestation, as well as documentation that identify specifically which replacement parts are needed to maintain the flush volume of the valve. Manufacturers cannot advertise replacement parts that would change the flush volume. These additional requirements for flushometer valves are consistent with requirements included in the *WaterSense Specification for Flushing Urinals*.

Regarding flush performance criteria for single-flush water closets, flush performance testing shall be conducted according to the waste extraction test protocol in Section 7.10 of *ASME A112.19.2/CSA B45.1*. WaterSense has added additional test media and procedural steps to address the use of seat covers: an unwaxed toilet seat cover shall be used in addition to soy paste and toilet paper indicated in the standard; the seat cover should be added to the fixture immediately following addition of the toilet paper; and following addition of the seat cover, the water closet shall be flushed. Inclusion of a seat cover is a likely and normal occurrence for commercial toilets.

The full-flush mode of a dual-flush toilet shall be tested in accordance with the modified waste extraction test protocol, with the inclusion of the seat cover, as described for single-flush water closets. The reduced-flush mode shall be tested in accordance with the toilet paper test protocol in *ASME A112.19.14*, with additional test media and procedural steps to address the use of seat covers: an unwaxed toilet seat cover shall be used in addition to toilet paper indicated in the standard; the seat cover should be added to the fixture immediately following addition of toilet paper; and following addition of the seat cover, the water closet shall be flushed using reduced-flush mode.

Peter Jahrling (Sloan Valve Co.) noted that it had been stated that flushometer handles were not included in this specification. He asked if that meant dual-flush handles were not going to be

included in the specification. Mr. Pickering explained that dual-flush flushometer valves will be included, but if there are retrofit devices on the market that would change your existing single-flush flushometer valve into a dual-flush flushometer valve, that would not be included. Kim Wagoner (ERG) added that the handle itself is not something that is labeled on a single- or dual-flush flushometer valve; it is the actual entire valve that is eligible for the label.

Mr. Gleiberman asked how a non-hold-open actuator is defined. Mr. Pickering explained that the non-hold-open actuator requirement indicates that if the valve actuator fails, it fails closed and not in any open position, which will prevent constant flow from the valve. Ms. Wagoner noted that it is defined in Section 4.2 of the draft specification, which says, “The flushometer valve must not exceed the rated flush volume of water specified in Section 2.1.1, even if the primary actuator is maintained in the flush position (i.e., device’s primary actuator must be a non-hold-open design).”

Mr. Gleiberman also asked if all NOI comments are available to the public for review. Ms. Tanner explained that the summary of the public meeting is available on the website. Mr. Pickering noted, however, that specific NOI comments are not available on the website. The summary of the draft specification comments and the resolutions will be posted, but not for the NOI.

Mr. Sigler asked since there are not many fixtures available to meet the full-flush mode, if there will be a delayed implementation of the specification to give manufacturers a chance to produce new products. Ms. Tanner explained that she does not believe so because part of the point of the program is to move innovation and push the marketplace forward. There are a lot of single-flush toilets at this point in time that meet the requirements of the specification, and there are a few dual-flush toilets that meet the specification. The specification will go into effect later this year at the earliest, after it is finalized. Therefore, there is time for manufacturers to decide whether or not they want to meet that specific criterion of the specification.

Mr. Gleiberman asked if the last requirement regarding attestation was determined by WaterSense or the third-party certifiers. Ms. Tanner explained that it is determined by the third-party certifier.

Mr. Gleiberman also commented that the draft uses the term “freely drop,” but that it is not as specific as the toilet paper and solid waste procedures. Ms. Tanner explained that if people feel that there is better language that can be used, WaterSense would be happy to try to refine it to make it clearer on how the procedure should be done. WaterSense is open to suggestions on the proposed testing protocols.

#### **4. Product Marking Requirements**

Mr. Pickering explained that water closet fixtures shall be marked in accordance with ASME *A112.19.2/CSA B45.1*, with one exception: fixtures cannot be marked with the words “or less.” Fixtures intended to be used with various flush volumes shall be marked with a dual-consumption or consumption range marking. The rated flush volume for the water closet, which must be equal to or less than 1.28 gpf, must fall within this range/dual-consumption marking. Examples: 1.1 to 1.6 gpf; or 1.1, 1.28, and 1.6 gpf. With this labeling mechanism, WaterSense

does not intend to limit the ability to sell fixtures that can work at a variety of flush volumes, even fixtures compatible with flush volumes greater than the WaterSense specification allows. The intent is to ensure that the product will perform and has been tested to perform at the maximum flush volume allowable to earn the label and the lowest flush volume marked on the product.

Flushometer valves shall be marked in accordance with *ASSE 1037/ASME A112.1037/CSA B125.37* (upon its release). Flushometer valves shall not be packaged, marked, or provided with instructions directing the user to an alternative flush volume setting that would override the rated flush volume. In addition, product documentation shall clearly identify specific maintenance and replacement parts to maintain the rated flush volume.

Mr. Schwartzkopf commented that *CSA B45.1* does include blowout toilets. He asked where in the proposed WaterSense specification is blow out toilets excluded. Ms. Tanner explained that because they are excluded under EPAAct from the 1.6 gpf maximum, they were excluded in this specification. However, that does not mean blowout toilets need to remain excluded, and WaterSense would be happy to include them if there is a good reason to and if someone provides a comment to that extent.

Mr. Schwartzkopf also asked if blowout toilets have any means of obtaining WaterSense certification. Ms. Tanner explained that since it does not say in the specification that blowout toilets are excluded, blowout toilets could be submitted, thus making the case that it could be certified. She encouraged the submission of comments voicing why blowout toilets should be included in this specification so that WaterSense can look into whether or not blowout toilets are capable of meeting the specification requirements.

Mr. Schwartzkopf commented that he comes from a market that primarily delivers to prisons, and blowout toilets are about 99 percent of the toilets that they supply. Therefore, it would be confusing in the marketplace if blowout toilets were excluded because there are a number of facilities that are being built green with those mandates, and the exclusion would complicate matters. Ms. Tanner encouraged Mr. Schwartzkopf to submit comments so that WaterSense can see if all the tests apply.

Mr. Gleiberman asked to go back to the slide that showed the 1.6 gpf markings because it was not clear what the slide was stating. He wanted to know if it was acceptable to have markings that show a range from 1.1 to 1.6 gpf. Mr. Pickering explained that it is acceptable because the way that WaterSense is doing the actual fixture testing is that they are only testing it at 1.28 gpf and at whatever minimum flush volume that is labeled. In this example (1.1 to 1.6 gpf), it would be tested at 1.1 and 1.28 gpf assuming that the manufacturer picked 1.28 gpf as its rated flush volume. *ASME A112.19.2/CSA B45.1* would then cover the 1.6 gpf testing. WaterSense is not testing for that flush volume, but they are allowing 1.6 gpf to be labeled for instances where a fixture is marketed as compatible with more flushometer valves rather than are covered by the WaterSense specification.

Mr. Gleiberman also commented that a variety of stakeholders, not just manufacturers, were concerned with capping the maximum rated flush volume for dual-flush flushometer valves at 1.28 gpf. He stated that everyone who is familiar with PERC has recognized that there is no behavioral difference between 1.6 gpf and 1.28 gpf when it comes to drainline carry and that

anything under 1.28 gpf was still under review and PERC cautioned that there may be drainline issues. His concern was that if WaterSense was trying to push innovation on specifically the dual-flush issue, but was limiting the flush volume at 1.28 gpf, WaterSense could actually be going too low too quickly and in fact encouraging the levels at which PERC cautioned against. Ms. Wagoner explained that WaterSense has performance requirements for the dual-flush and the reduced-flush mode that are a little more stringent than the standard ones. These requirements might help alleviate some of the really low-flush ones that might be down near the flush volumes of concern. Ms. Tanner included that, in their search of the marketplace a few months ago, WaterSense did not see any dual-flush commercial toilets that flushed less than 1.0 gpf in the reduced-flush level. At this point, since 1.28 gpf was okay with PERC, and WaterSense did not see anything below 1.0 gpf (not even as low as 0.8 gpf for commercial dual-flush), WaterSense feels that they are on comfortable grounds. PERC said that WaterSense was okay to go ahead with 1.28 gpf for toilets in a commercial setting. In addition, WaterSense is here to move the market, and they have the performance requirements set in place so that people still have to work to clear waste and what is typically found in the reduced flush. This helps the rated flush volume from going too low or where it cannot perform any more and that protects the integrity of the label. Mr. Pickering also added that if you think anecdotally about a men's restroom versus a women's restroom, for dual-flush toilets, even if a manufacturer comes out with a reduced-flush model that flushes at 0.8 gpf, this flush volume is still greater than a significant number of urinals that are out there. If the combination of a urinal flush and maximum flush of 1.28 gpf does not have issues, then it should not have any issues for a women's restroom where you only use the toilet fixture. In addition, just as there were manufacturers who opposed setting the maximum at 1.28 gpf, WaterSense also received comments from manufacturers and other stakeholders during the NOI comment period that were in favor of setting the 1.28 gpf maximum. While all comments were considered, WaterSense had to pursue the direction that is best for the WaterSense program and the marketplace.

Thomas Kramer (Kohler Co.) asked if the 1.6 gpf range marking is the same marking that is allowed for urinals. Ms. Tanner explained that this is basically the same marking that WaterSense allows for tank-type bowls. Manufacturers make water closet bowls that function from 1.6 gpf down to whatever their minimum level is and is marked accordingly. WaterSense is not trying to have a separate set of bowls for WaterSense toilets that are different from everything else in the marketplace. The toilets work at all different levels and manufacturers can mark them that way as long as it is clear what the range is on the bowl. Ms. Wagoner added that this is something that needs revisiting for urinals at some point in the future to align the marking requirements with those for toilets and the recent revision to *ASME A112.19.2/CSA B45.1*.

Mr. Kramer asked if they have a urinal with the range on it down to 0.125 gpf, if they could test it at 0.125 gpf and allow that urinal to be marked as WaterSense. Ms. Wagoner said yes, and that they would just need to specify that the 0.125 gpf is the rated flush volume, and it would be needed to be tested at that flush volume. Mr. Kramer asked if this applies even if there is a range on the marking from 0.125 to 1.0 gpf. Ms. Tanner explained that the urinal marking requirements included in the specification for flushing urinals have not caught up with changes to toilet marking since 2013 and the updated *ASME A112.19.2/CSA B45.1* standard.



## 5. Certification and Labeling

Ms. Tanner explained that water closet fixtures and flushometer valves can be labeled as separate parts or a complete system. If labeled separately, the manufacturer must clearly indicate on product documentation that the fixture or flushometer-valve must be used with a corresponding WaterSense labeled counterpart that has a compatible flush volume.

Manufacturers must sign a partnership agreement with EPA in order to have their products labeled. All products must be certified by an EPA-licensed certifying body. An approved list of licensed certifying bodies will be posted on the WaterSense website with the release of the final specification. Manufacturers will then apply to a licensed certifying body of their choice. Licensed certifying bodies will certify a product in accordance with the WaterSense specification and authorize manufacturers to use the WaterSense label. Licensed certifying bodies will then provide manufacturers with the graphic artwork of the label. Use of the WaterSense label on product packaging is required.

## 6. Next Steps

Ms. Tanner explained the deadline to submit written comments to [watersense-products@erg.com](mailto:watersense-products@erg.com) is March 20, 2015. Submit data claimed as CBI to:

Eastern Research Group, Inc.  
Attn: WaterSense Helpline  
2300 Wilson Boulevard, Suite 350  
Arlington, VA 22201

EPA will make public the comments received during the comment period. The final specification will be issued after an evaluation of the public comments. The final specification is anticipated in summer or fall 2015.

Larry Himmelblau (Chicago Faucet) asked if with the implementation of the flushometer specification, it will be allowed for the flushing device to be certified separately from the fixture. If this was allowed, will this be allowed for gravity flush devices in the future? Mr. Pickering explained that it is correct that this specification would allow the flushing device to be certified separately; however, this will not impact the current tank-type toilet specification. In the commercial marketplace, there is a bit more mixing and matching going on, and things are often sold as separate pieces, whereas for residential, tank-types are usually sold as a package.

Mr. Schwartzkopf asked if a valve and fixture are certified as a system, whether testing will still require bringing three of each item from other manufacturers to be certified. Ms. Wagoner explained that would only be the case if you were to sell the valve or the bowl also independently. As long as it is only sold as a combination, that would not be required. Mr. Pickering added that *ASME 1037* does still require that the valve is tested with three fixtures, so it is not an additional requirement.

Mr. Schwartzkopf commented that the draft would mandate them to go out and get two other flushometer valves to go with their fixtures that are not intended to go with it. Ms. Tanner asked

if his bowl is sold as a separate device. Mr. Schwartzkopf explained that 99 percent of the time, the valves come from one manufacturer and the bowls are from them so they would have to do testing that is not implemented or used in typical sales. Ms. Tanner encouraged him to submit his whole set of questions and concerns so that WaterSense can have a conversation about the situation with this product and others similar to it. Because Mr. Schwartzkopf is in a niche market for blowout toilets, Ms. Tanner indicated that this product area is a new marketplace that WaterSense has not typically considered. They are more than happy to put the label on more products, but they want to make sure that they can consider all the details in his comments before getting back to him.

Mr. Jahrling commented that WaterSense places a lot of credence on the PERC I study as it relates 1.28 gpf as a “safe” primary flush, and if the study is examined, it never utilized any flushometer valve for commercial fixtures. He added that it seems a bit incongruous as much as WaterSense has rightfully adopted this as a system of fixture and fitting. Ms. Tanner explained that the PERC I study used a device to mimic the different ways that a commercial flushometer-valve would function without having to use somebody’s individual flushometer valve. That was the study as it was designed by industry and the purpose of that study was to see whether or not there would be problems with drainline carry with the use of water-efficient fixtures. Since it was a study done by a group of utilities, manufacturers, and other groups (e.g., officials), that is why they give it the credence they do because that was the proper test method to use. The conclusions that were drawn from that were something that WaterSense could use as a basis for developing this specification.

Mr. Jahrling explained his concern is that these are not necessarily the conditions in which you would experience in the field whether by new construction or by the popular construction that is going on now: renovation. Once you hook on a flushometer valve to a fixture, you would have reduced energy to propel waste. That is why it is somewhat dangerous to conclude many decisions based upon the PERC I study from the standpoint that it was meant to be a building block into other studies about what happens to the waste after it passes into the weir. Ms. Tanner asked if he had suggestions for other data that WaterSense could use that he viewed as more appropriate. Mr. Jahrling explained that he knew PERC had references to other data studies as well, but those studies are older. The concern here is that people trying to go after the reduced water savings and specifying the WaterSense label will unwittingly be putting this into plumbing systems that cannot handle the transport. He added that as long as the surge pump from the PERC I study would be valid, but as soon as you start introducing other elements in the delivery line, the pressure drops go down and the available energy to propel is reduced. Mr. Jahrling said he understands the water savings, but feels once you put the water closet (i.e., flushometer and fixture) onto the plumbing system, you are at the mercy of the existing system that’s there that might not work. The PERC study is based on very good results, but manufacturers are concerned that it is not a universal gold standard. Consumers will run into installations where even though they want to have the 1.28 gpf, they cannot without additional intervention in the system.

Mr. Sigler commented that Mr. Jahrling’s concern is part of the reason why PERC II is being conducted.



Ms. Tanner adjourned the meeting and provided a summary of next steps. She asked for written comment submissions to be emailed to [watersense-products@erg.com](mailto:watersense-products@erg.com). All the materials for the draft are available on the EPA WaterSense website at [www.epa.gov/watersense/partners/fvtoilets\\_draft.html](http://www.epa.gov/watersense/partners/fvtoilets_draft.html) and if people have any further questions, they can call or email the WaterSense Helpline at [watersense@epa.gov](mailto:watersense@epa.gov). WaterSense will aim to have a final specification by the fall of 2015.