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ORIGINAL

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SECRETARY'S BUREAU

James J. McNulty, Secretary
PA Public Utility Commission
Commonwealth Keystone Bldg.
400 North Street
Harrisburg, PA 17120

RE: Spring Township v.
Pennsylvania American Water Company
Docket No. C-20054746

DOCUMENT FOLDER

Neil R Rahn and David Singerling v.
Pennsylvania-American Water Company
Docket No. C-20054919

Wilson School District v.
Pennsylvania American Water Company
Docket No. C-20055371

Dear Secretary McNulty:

Enclosed please find for filing an original and nine (9) copies of the Office of Consumer Advocate's Reply Brief in the above-captioned proceeding.

Copies have been served upon all parties of record as shown on the attached Certificate of Service.

Sincerely,

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Enclosures
cc: Hon. Wayne L. Weismandel, ALJ
All parties of record
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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Spring Township	:	
v.	:	Docket No. C-20054746
Pennsylvania American Water Company	:	
Neil R Rahn and David Singerling, et al.	:	
v.	:	Docket No. C-20054919
Pennsylvania-American Water Company	:	
Wilson School District	:	
v.	:	Docket No. C-20055371
Pennsylvania American Water Company	:	

REPLY BRIEF
OF THE
OFFICE OF CONSUMER ADVOCATE

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Dated: September 1, 2006

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I. INTRODUCTION

The Company's arguments in its Main Brief (M.B.) are largely unsupported by relevant case law or Commission precedent, as will be discussed fully below. In addition, many of PAWC's statements concerning the evidence of record are plainly wrong.

Contrary to the weight of the record evidence, PAWC argues that it has, at all relevant times, furnished and maintained adequate, efficient, safe and reasonable service. PAWC M.B. at 4-13. Not only is the argument unsupported by the facts, PAWC's legal discussion concerning Section 1501 of the Public Utility Code, 66 Pa.C.S. §1501, is general, vague and largely inapposite. PAWC has neither explained nor defended in any meaningful way its failure to meet its own internal standards for leak detection in the Sinking Springs area of its service territory. PAWC has neither explained nor defended its failure to comply with PUC regulations concerning notice to the PUC of the serious event on its distribution system that resulted in the destruction of a customer's house and as-yet-unknown other damage to the substrata beneath the Wagner Farms development. PAWC has neither explained nor defended its failure to investigate promptly or to keep records of the event in question, yet another aspect of its inadequate service. Section III of this Reply Brief will discuss PAWC's flawed legal and factual discussion relative to the Section 1501 violations.

Similarly, PAWC's discussion concerning the PUC's jurisdiction to order the relief sought by the Formal Complainants is cursory and unsupported by relevant Commission orders or applicable case law. PAWC M.B. at 14-17. In the final section of its Main Brief, PAWC repeats its initial argument that the Company has "at all relevant

times" provided reasonable and adequate service in locating the main break. The Company attempts to support the assertion largely with references to the testimony of John Rothwell and Brian Hassinger as-on-cross, elicited by OCA who subpoenaed the two witnesses when PAWC failed to call them. PAWC M.B. at 18-21. This attempt failed. "All relevant times" in the context of this quality of service proceeding comprises the years before, the weeks surrounding and the months after the main break.

The record demonstrates that, for many years before the February 2005 main break, PAWC and its predecessor, Citizens Utilities of Pennsylvania (Citizens), failed to meet their own internal standards with regard to systematic leak detection, repair and record-keeping in Sinking Springs. Had the utilities met their internal standards during that time, the leak in the Iroquois Avenue Main would have been discovered long before the February 2005 catastrophe. Moreover, documents would have been available to reveal the truth of the matters relevant to this case prior to and during the weeks surrounding the main break, and such documents are not available. Moreover, had PAWC been more vigilant regarding the tank levels and alarms during the weeks prior to the break, the leaking main would have been discovered before it fractured and caused extensive damage. Had PAWC created, maintained and preserved records associated with its monitoring tank levels and responding to alarms, documents would have been available to reveal the truth and such documents are not available.

Failing to require PAWC to study and to remediate any damage resulting from this main break would be to permit this utility to benefit by its inadequate service and its failure to create, maintain and preserve thorough records of the events. As discussed in the OCA's Main Brief, Commission precedent allows for adverse inferences to be drawn

from the failure to produce records that are or were in the possession of the respondent and were not produced. Such adverse inferences are appropriate in the instant case.

PAWC's statements to the effect that the relief requested by Complainants would be burdensome to the ratepayers should be given no weight. As will be discussed herein, the ratepayers already pay, through current rates, all insurance premiums as ordinary Operation and Maintenance expenses to protect against the risk of damage caused by operating a utility, such as in the instant case. Ratepayers also pay through the cost of equity allowance in current rates to cover the risk of damage that may not be covered by insurance.

The OCA urges the Commission protect the interest of the public and to grant the relief requested by the customer Formal Complainants, the Township of Spring and the Wilson School District in this case. Failure to require PAWC to study and to remediate any damage resulting from this main break would constitute a failure to protect the customers, PAWC employees and members of the public that may come in contact with its system or areas damaged by its failure to operate its system in a safe, adequate, reasonable and efficient manner, in violation of the Public Utility Code.

II. ARGUMENT

A. Formal Complainants Have Met The Burden of Proving That PAWC Failed To Provide Safe, Adequate, Reasonable and Efficient Service Before, During and After the Iroquois Avenue Main Break.

As discussed in the OCA's Main Brief, Complainants have not placed primary reliance on the doctrine of *res ipsa loquitur*, which allows finders of fact to rely upon circumstantial rather than direct evidence. OCA M.B. at 28-29. The OCA and the Complainants have submitted ample *direct* evidence of PAWC's failure to meet its own internal service quality standards and its failure to exercise sufficient vigilance over its distribution system in the weeks prior to the catastrophic main break. OCA M.B. at 31-45; App. A. But for these failures, PAWC would have been able it to act timely to detect and repair the main and to prevent the catastrophic damage that occurred here. Id.

Nonetheless, the Commission may also rely for guidance upon the doctrine of *res ipsa*, which civil and appellate courts have applied to allow consideration of circumstantial evidence, as opposed to direct evidence, to prove civil liability for damages in cases involving water main breaks. OCA M.B. at 26-30. In addition to the cases cited in OCA's Main Brief, the Commission Order in Mastroianni v. PECO Energy, 99 PAPUC 183 (2004) is also instructive. The Complainant's electric meter was pulled from its backing on the Complainant's residence and he sought a PUC Order requiring PECO to repair it. Id. at 184. The Commission found that the only cause of the damage was that PECO had provided an insufficient length of service line to allow for settling of the underground line. The Commission noted that no other cause for such damage was identified by PECO, *e.g.*, that the developer failed to properly excavate or backfill. Id. at 186. So, while not using the Latin phrase *res ipsa loquitur*, the Commission did apply an

element of the doctrine by concluding that "[t]here are no facts to suggest that any other circumstance exists which would relieve Respondent from its obligation to properly provide the service line to Complainant's meter." Id. The Commission thus held PECO liable for the damage and required the utility, at its sole cost and expense, to make the necessary repairs and improvements. Id.

An error in PAWC's *res ipsa* argument is the conclusion that Complainants have not met the elements. PAWC correctly sets forth the elements of *res ipsa* as enunciated by the Pennsylvania courts quoting from The Restatement (Second) of Torts, Section 328D. PAWC then sets forth four reasons why the principle cannot apply in the instant case, but all of them are wrong.

First, PAWC argues that *res ipsa* "has no place" in administrative law where the issue is inadequate service, not negligence.[1] As noted above, the Commission has recognized the principle of *res ipsa* without using the Latin phrase. Moreover, as the OCA stated in Main Brief, the PUC may look to the civil courts for guidance and that is all that should be done here – civil tort cases are not controlling precedent for the PUC. OCA M.B. at 26-27. PAWC goes on to make an entirely nonsensical argument, however, that Section 1501 is not "self-executing" when it comes to civil penalties.

[1] At the same time, PAWC itself argues principles that have no place in administrative law, such as the notion that PAWC should not be held responsible for the main break and its consequences because "there has been no evidence presented of any sort of successor liability imposed on them." PAWC M.B. at 7. No case law or Commission Order is cited to support this statement and for good reason. If acquiring companies could never be held responsible for damage that results from the operation of an acquired system, Section 1501 of the Code would be rendered virtually meaningless, since the vast majority of the PAWC system was acquired at some point during the last two decades. An acquiring company, when granted a Certificate of Public Convenience and Necessity pursuant to Chapter 11 of the Code, takes full and complete responsibility for all aspects of the operation of the acquired system, without reservations, conditions or indemnification. In many cases, the prior entity ceases to exist.

PAWC M.B. at 11. The Company disregards the fact that the Public Utility Code has its own separate civil and criminal penalty provisions in Chapter 33 of the Code, 66 Pa.C.S. §3301 *et seq.*, that can apply to any regulatory or code violation, including Section 1501.

The precedent cited for this argument, Hershman v. George W. Weaver & Son, Inc., 95 Dauph. 323 (1973), is a Dauphin County case. The precise issue was whether the judge erred in failing to instruct the jury on Section 1501 of the Public Utility Code (then Section 1172 of the Public Service Law).[2] Not only is this County level case less likely than all others to be given *any* weight by the PUC, the failure to instruct the jury on Section 1501 was found to have been harmless error. The Company relies on *obiter dictum* from an order that is lowest on the judicial "food chain" for the point it tries to make, a completely irrelevant point at that.

The second reason PAWC gives for the inapplicability of *res ipsa* is that "Complainants are not able to establish...that this water main break would not have occurred in the absence of negligence. It is undisputed among all of the experts for all of the parties that this main break was caused by a sinkhole." PAWC M.B. at 11. This argument is clearly wrong for two reasons. First, in order to invoke *res ipsa*, Complainants do not have to establish that the *particular* water main break in question would not have occurred in the absence of negligence, as PAWC asserts. Complainants need only show that "the event is of a kind which ordinarily does not occur in the absence of negligence." The Restatement (Second) of Torts, §328D(1)(a). As PAWC itself points out, the Restatement's Illustration No. 6 recognizes that the doctrine is particularly applicable in utility and common carrier cases. PAWC M.B. at 10-11.

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[2] The language of Section 1501 and its predecessor statute were substantially the same. *See* Duquesne Light Co. v. Upper St. Clair Twp., 377 Pa. 323, 331, 105 A.2d 287, 291 (1954)

PAWC's third reason for disputing the applicability of the doctrine is that "Complainants are unable to eliminate any other potentially responsible causes." PAWC M.B. at 12. This is not a correct statement. As discussed in Main Brief, Complainants have disputed and disproved each and every other theory put forth by Company witnesses as to the cause of the main break and have shown that no other source of water mentioned generally by PAWC's witness Kanaskie was present or would have flowed under sufficient pressure to wash away the pipe's supporting material. OCA M.B. at 45-51.

The fourth and final reason that PAWC gives for rejecting Complainants *res ipsa* argument is that Complainants have not shown that PAWC had "exclusive control" of the item in question. According to the Section 328D of the Restatement (Second) of Torts, a complaining party need not demonstrate that a water main was at all times under the "exclusive control" of a respondent; "exclusive control" is not listed as an element. Moreover, the Pennsylvania Supreme Court abrogated the doctrine of "exclusive control" in favor of the Restatement standard in Gilbert v. Korvette, Inc., 457 Pa. 602, 327 A.2d 94 (1974); *see also* Pa. Liquor Control Board v. City of Philadelphia, 17 Pa. Commw. 627, 333 A.2d 497 (1975).

All of PAWC's arguments that *res ipsa* should not be considered, therefore, lack merit and should be rejected. This Commission may look to civil precedent for guidance in its decisionmaking and the Formal Complainants have demonstrated all elements of the *res ipsa* doctrine set forth in Section 328(D) of the Restatement (Second) of Torts.

B. Contrary to PAWC's Assertions, the PUC Has Jurisdiction to Order the Relief Complainants Seek.

The PUC has jurisdiction to order the geophysical study sought by Complainants and to order remediation if additional voids are found. OCA M.B. at 20-26. As noted

therein, where issues of the safety of a community arise, the power of the Commission to order corrective action is irrefutable. Re Consolidated Rail Corp., Docket No. A-00104132, 1982 Pa. PUC LEXIS 31, *12 (May 25, 1993).

PAWC presents only a cursory discussion of PUC jurisdiction in an attempt to argue that the Commission has no authority to order the testing and remediation sought. PAWC M.B. at 14-16. PAWC first cites Borough of Moosic v. Pa. P.U.C., 59 Pa. Commw. 338, 429 A.2d 1237 (1981), a case in which the primary issue was whether Article I, §27 of the Pennsylvania Constitution was self-executing. The general principle for which PAWC cites the case is that the PUC *has* the power to issue orders and regulations to assure that each public utility provides service and maintains facilities necessary or proper for the safety and convenience of the public – a principle upon which Complainants rely. And, while we agree generally with the principle that the PUC is not to "interfere with the management of the utility," as PAWC argues (citing Lower Chichester Township v. Pa. P.U.C., 180 Pa. Super. 503, 119 A.2d 674 (1956)), it is clearly the PUC's business to take action where utility management, as here, has failed to operate the system in a manner that is safe for its customers, employees and the public.[3]

PAWC errs in arguing that the authority and power of the Commission is "circumscribed" by Section 1501. PAWC M.B. at 15-16. To the contrary, the PUC's authority to regulate utilities pursuant to Section 1501, 1505 and the definitions of "facilities" and "service" are broad, as argued by the OCA. OCA M.B. at 20-25.

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[3] PAWC has also cited Leveto v. National Fuel Gas Distribution Corp., 243 Pa. Super. 510, 366 A.2d 270 (1976) for the principle that the PUC has no power to decide private contractual disputes between a citizen and a utility. PAWC M.B. at 15. The OCA fails to see any relevance of this case whatsoever to the issues presented in the instant proceeding. The present case does not revolve in any way over a contractual dispute between the Complainants and the Company.

PAWC's arguments that the PUC has no jurisdiction to order the remedies sought by the Complainants should be rejected.

C. Ratepayers Are Already Paying Through Rates to Insure the Company Against Risks Associated with the Negligent Operation of the System.

PAWC argues that the ultimate cost of the geophysical testing and remediation efforts sought by the Complainants "would be borne by the utility users, the rate payers". PAWC M.B. at 16. PAWC cites Colonial Products Company v. PA PUC, 146 A.2d 657 (Pa. Super. 1958), for the principle that ordinarily, the costs of repairs and improvements in a utility system are to be borne by the utility, but under special circumstances the utility may require contributions of a customer in need of special service to avoid an unreasonable burden on the rest of the ratepayers. Id. This rationale is inapplicable here.

All PAWC customers are already paying 100% of this utility's liability insurance premiums through current rates. The cost of insurance of all types for a utility is a routine claim included in Operation and Maintenance expense as a part of the utility's cost of service. This is an above-the-line expense included in every rate case filing.[4] Therefore, in the most recent rate filing, PAWC included an amount that approximated the annual total liability insurance premiums in the cost of service total that was used to establish rates prospectively.

In a Common Pleas case involving the proper interpretation of an indemnity clause, the City's water main had leaked, eroding the supporting material of a gas main, causing it to break and cause explosions. City of Philadelphia v. Philadelphia Gas

[4] Regulations require, as a part of every rate filing, that the water utility provide "the most recent insurance premiums for each type of insurance coverage, both employee benefit and those purchased for the company, reflected in the company's filing" as well as "estimated premiums for the subsequent calendar year" if available. 52 Pa. Code §53.53, Exh. D, III 23.

Works, 49 Pa. D&C 314 (1943)("City"). Several people lost their lives; others sustained injuries and property damage. In deciding whether the City's indemnity agreement with PGW could be interpreted to indemnify it against its own negligence, the Court noted:

> Experience has shown that an extensive utility business cannot be carried on without accidents due to the negligence of the employes of the corporation. Accident expense is as much an expense of the business as any other expense and the cost of meeting the liability for damages is universally recognized as an item of cost which must be reflected in the rates charged....

City, at 331. The OCA would also note the case of Lubin v. City of Iowa City, 257 Iowa 383, 131 N.W.2d 765 (1964), in which the Supreme Court of Iowa stated:

> It is neither just nor reasonable that the city engaged in a proprietary activity can deliberately and intentionally plan to leave a water main underground beyond inspection and maintenance until a break occurs and escape liability. A city or corporation so operating knows that eventually a break will occur, water will escape and in all probability flow onto the premises of another with resulting damage. We do not ordinarily think of water mains as being extra-hazardous but when such a practice is followed they become "inherently dangerous and likely to damage his neighbor's property" within the meaning of Pumphrey v. J. A. Jones Construction Co., supra. The risks from such a method of operation should be borne by the water supplier who is in a position to spread the cost among the consumers who are in fact the true beneficiaries of this practice and of the resulting savings in inspection and maintenance costs. When the expected and inevitable occurs, they should bear the loss and not the unfortunate individual whose property is damaged without fault of his own.

Id., 257 Iowa at 391, 131 N.W.2d at 770.

The Iowa Supreme Court's discussion is pertinent here. Complainants have shown that PAWC failed to inspect the mains in Sinking Springs in accord with its own policies and it was inevitable that a break would occur. It is PAWC that should bear any uninsured losses associated with this event and the utility should not be able to pass the costs of remedying the damage on to its customers.

The PAWC ratepayers, including those in the Wagner Farms development affected by this main break, are *already paying* within the rates they are currently

charged for the type of risk presented by the operation of a water utility. Moreover, when the PUC sets a cost of equity for water utilities, that too is designed to reflect a level of both financial and business risk that may not be covered by other cost of service claims. So, to the extent that its present insurance policies may not cover 100% of the cost of the GPR study and remediation, the risk of such unanticipated or uncovered cost would be reflected in the cost of equity allowance established in the most recent base rate proceeding. It would be error to conclude based upon the PAWC's arguments, that the estimated $29,000 to perform the GPR study would somehow be imposed upon ratepayers in a future case as a separate item of expense.

D. PAWC's Arguments Are Inconsistent with the Evidentiary Record in Numerous Respects.

First, PAWC mischaracterizes the testimony of Mr. Hassinger in support of its argument that "PAWC surveys certain areas at a time, and in the Sinking Spring area, it sounds the entire hydrant system and all service line control valves as part of its leak detection program." PAWC M.B. at 18. The transcript shows that Mr. Hassinger testified regarding the standards for leak detection that he believed were PAWC policy, but he had little or no knowledge about whether Mr. Rothwell carried out those specific policies in the Penn Water District. Tr. 516-21. In fact, all indications are that PAWC's stated policies for leak detection were never adhered to by Mr. Rothwell or other PAWC employees in Sinking Springs. PAWC was unable to provide *any* documentation that a systematic, routine leak detection process was in place in the Penn Water District. OCA MB at 39-41 & Appendix A (Proposed Findings of Fact 55-57); OCA St. 1S at 3-4, 11-14. The statement that PAWC "sounds the entire hydrants system and all service line

control valves as part of its leak detection program" is therefore completely unfounded as to the Sinking Springs area.

PAWC incorrectly claims that "[t]he first customer complaints PAWC received regarding this problem were not made until Sunday morning, from property owners on Shelley Drive . . ." PAWC MB at 20. In fact, according to Mr. Rothwell's testimony, PAWC's Illinois customer service center had received calls of "no pressure" and "no water" the day before. Mr. Rothwell testified as well that the complaints to the customer service center around 10:45 p.m. on Saturday, February 5, 2005, are what first alerted him to the problems and the main break. Tr. 630-31. Moreover, PAWC customer Mr. Creveling testified that his wife had contacted PAWC around 10:30 p.m. on Saturday night about low water pressure. Tr. 16.

PAWC mischaracterizes the evidence when it states that "[e]ven the testimony of the property owners establishes that PAWC's response was timely and all-encompassing under these unusual circumstances. The residents awoke that Sunday morning with no water, but they all consistently testified that their water service was restored between 2:00 and 3:00 Sunday afternoon, six to eight hours later." PAWC MB at 20. The evidentiary record simply does not support that PAWC's response was "timely and all-encompassing." PAWC is wrong in stating that residents consistently testified that they had service restored by Sunday afternoon, and second, PAWC mischaracterizes the amount of time the residents were without water.

Mr. Alan King testified that he was without water all day on Sunday, February 6, 2006, and possibly had no water on Monday, February 7, 2006. Tr. 356. Mr. Bortz of the Wilson School District also testified that school had to close on Monday, February 7,

2006 due to the main break, and when it reopened on February 8, 2006, PAWC provided it with bottled water because it was still unknown whether the water was potable. Tr. 216-19; OCA M.B. at 33. Also, PAWC's implication that residents were inconvenienced from having no water for only six to eight hours must not be accepted. Mr. Singerling testified that around 3:00 a.m. to 4:00 a.m. on Sunday, he discovered that he had no water, which necessitated a trip to the 24-hour grocery store to buy water at 4:00 a.m. Tr. 47-48. Other customers were similarly inconvenienced, as Mr. Singerling testified to meeting other people who were also purchasing water in those early morning hours. Tr. 48. Clearly, the 500 customers whose service was interrupted suffered the inconvenience of being without water necessary for sanitary, health, drinking and other purposes, for far more than just six to eight hours. Normal water service was interrupted for a period of 3 to 4 days. OCA M.B. at 32-33.

Lastly, PAWC's argument confuses leak detection procedures that would have avoided the main break with the process of locating the main break. PAWC argues that "the use of the permalog on February 5, 2005 would not have sped up the leak detection process, because probably every one of the 40 permalogs would not have been able to isolate the source of the leak any faster."[5] PAWC M.B. at 19. To clarify, the Complainants' argument is that earlier installation of Permalogs would have allowed PAWC to detect the leak in the Iroquois main for days to months before such a leak would have caused a main break of this magnitude. OCA M.B. at 37-43; Twp. M.B. at 18; Tr. 681-82 (Permalogs listen for leaks once a day); OCA St. 1S at 12-13 (Penn Water

[5] Permalogs are mini computers with a strong magnet that sit on top of the valve. Tr. 681. In the quiet of 2:00 a.m. to 2:15 a.m. each day, these devices listen for noise that could indicate leaks. Id.

District water usage was drastically reduced when comparing February 2005 data after the main repair and data from January 2005, one month prior).

PAWC mischaracterizes the OCA and Complainants' testimony when it states that "[i]t is undisputed among all of the experts for all of the parties that this main break was caused by a sinkhole." PAWC MB at 11. The OCA submits that its testimony and briefs all assert, based upon the expert opinions of its expert witnesses, that the leak in PAWC's Iroquois main, not a collapsed sinkhole, caused the washing away of the pipe's support and deflection of the pipe to the point of fracture. OCA M.B. at 11-12, 47; OCA St. 1 at 9, 17; OCA St. 1S at 15; OCA St. 2 at 8 (water from leaking pipe caused main to lose support and break), *See also* Becthel Exh. 1S at 3-6 and Diesinger Exh. 1 at 15-16 (no soil disturbance beneath pipe except from excavating equipment). A statement associating a collapsed sinkhole with the main break must not be construed as stating that "a sinkhole caused the main break," as PAWC asserts, for they are two different things. OCA St. 2S at 8.

PAWC also mischaracterizes Mr. Fought's conclusion by stating that, "Complainants' witness, Terry L. Fought, even agrees that the water main break was caused by a sinkhole that could have been either underneath or immediately adjacent to the pipe. (NT 6/28/06 at 294)." PAWC M.B. at 10. In redirect, however, Mr. Fought clarified that the voids near the main were adjacent to the main, and not under the main. Tr. 294. Upon questioning from ALJ Weismandel, Mr. Fought reaffirmed that "***there has been no evidence of a sinkhole underneath the pipe.*** So I think that the material had to be undermined by water leaking from the water main that had some pressure to it. Any surface water that would have come in from the grassed areas next to the road or any

minor leakage through the road, cracking roads or adjacent to the curb of the road would not have had sufficient pressure to wash that much dirt away." Tr. 300 (emphasis added); *see also* OCA St. 1 at 17; OCA St. 1S at 9, 15. PAWC's portrayal of Mr. Fought's testimony is incorrect and must be rejected.

PAWC is incorrect in stating that PAWC witness Clauser's testimony is uncontradicted because Mr. Clauser is the only expert who is a metallurgist and who performed a failure analysis of the pipe that was excavated. PAWC MB at 8. While it is true that Mr. Clauser is the only metallurgist to testify, his testimony and analysis are not uncontradicted.

PAWC states that Mr. Clauser concluded that there was no leakage from the Iroquois main, and that Mr. Clauser based that conclusion on the absence of seeing (1) any distorted or torn gasket or (2) evidence that the pipe had not been fully seated in the spigot. PAWC M.B. at 8. Regarding the gaskets that Mr. Clauser examined, those gaskets are rubber, not metal, and one need not be a metallurgist to determine whether they failed. Tr. 437 (gaskets are neoprene rubber). Mr. Clauser's examination was nothing more complex than photographing, touching, and looking at the gaskets. Tr. 435-36. He admitted, "I did not test these gaskets." Tr. 437.

Moreover, in answering questions of PAWC counsel, Mr. Clauser divulged that he was asked to do no more than a metallurgical analysis of the failure of the pipe. Tr. 440. Any conclusion concerning possible leakage at the pipe joint and neoprene gaskets was beyond the scope of Mr. Clauser's expertise as a metallurgist and beyond the scope of the task which Mr. Clauser was asked to perform. Therefore, the testimony of Mr.

Fought in his engineering capacity on whether the rubber gaskets contributed to a main leak do contradict Mr. Clauser's testimony and should be given more weight.

Mr. Fought, on the other hand, demonstrated that continuous leakage existed in the system prior to PAWC's repair of the Iroquois main break. OCA St. 1S at 12. Mr. Fought's analysis noted that PAWC's Penn Water District "average daily water supplied drastically reduced after the water main break was repaired in early February 2005." OCA St. 1S at 12. He noted that the reduction was in the amount of 224,068 gallons per day, or 155.6 gallons per minute. OCA St. 1S at 12-13. "If all other factors remain nearly the same, this supports the conclusion that some continuous pipe leakage was eliminated after the repair of the water main break." OCA St. 1S at 13.

The ALJ should find that the testimony of OCA witness Fought, who analyzed the output of the system both before and after the break, is more credible and outweighs the evidence provided by PAWC witness Clauser on the issue of whether continuous leakage in the Iroquois main caused the break.

Additionally, the Company erroneously claims that, "[n]ot one expert witness for the Complainants testified in any unequivocal way or with any degree of certainty in his or her field of expertise that the main break was in fact caused by leakage from the piping. None of them actually performed any sort of metallurgical and/or engineering analysis of the actual portions of pipeline that were excavated from the site. . ." PAWC MB at 5. These statements are wrong in several ways.

PAWC's statement that no engineering analysis was performed on the excavated pipe is incorrect. Mr. Fought's testimony and investigation for the OCA in this case as a professional engineer constitutes an engineering analysis. OCA St. 1 at 1; tr. 288.

Further, Mr. Fought has experience specifically relevant to this case because he has had experience designing water mains in areas with karst or limestone geology. OCA St. 1 at 1, 5. Mr. Fought offered testimony on behalf of the OCA in which he analyzed the cause of PAWC's main break, basing his conclusion in part upon an on-site visit to view the broken pipeline that was excavated from the site. OCA St. 1 at 1-2, 14, Exh. TLF 6 (Mr. Fought's photographs of the pipe that he inspected).

To the extent that PAWC's statement that part of the excavated pipe was not examined is a criticism of Mr. Fought, the OCA would note that the same was also true of Mr. Clauser. Tr. 433-34; OCA St. 1 at 1, 14. The fact that none of the expert witnesses for any party were able to examine the entire length of pipe is due only to Mr. Rothwell's unilateral decision to scrap 77 feet of excavated pipe before it could be examined by any expert witness. Tr. 741-42; OCA M.B. at 37.

PAWC is also incorrect in claiming that no expert witness for the Complainants testified with any degree of certainty in his or her field of expertise that the main break was in fact caused by leakage from the piping. PAWC MB at 5. Mr. Fought unequivocally concluded from his engineering analysis that "[i]t is my opinion that leakage from the water main both prior to and after the main break caused the collapse of the karst structures in the areas adjacent to the main and the resulting damages to customers' properties." OCA St. 1S at 9. *See also* id. at 10-15. As noted above, Mr. Fought demonstrated that continuous leakage existed before the main break, because water usage dramatically decreased after PAWC repaired the Iroquois main. OCA St. 1S at 12-13. Mr. Fought further stated that the only source of water with sufficient quantity and pressure to wash away the material supporting the Iroquois pipe was leakage from

the water main itself. Id. at 15. Mr. Fought addressed each of PAWC witness Kanakie's arguments attempting to show that water from sources other than the Iroquois main, could have caused damages to property of which Complainants complain. *Compare* OCA St. 1S at 4-9 with PAWC MB at 9 & 12 (citing PAWC Exh. 2 at 8).

Cross-examination of Mr. Kanaskie also contradicted or at least cast serious doubt upon Mr. Kanaskie's contention that water sources other than PAWC's Iroquois main contributed to recent sinkhole activity in Stonegate. *See* tr. 454-57, 462-64. Contrary to PAWC's claim, Mr. Kanaskie was unable to provide any specific locations, sites or actual flow data for water from manholes, valve boxes, gas valves, or springs, and his testimony and PAWC's arguments on these topics is all supposition. Expert witness Dr. Hoskins also reached the same conclusion as Mr. Fought, in his capacity as professional geologist, contrary to PAWC's assertion that no expert witnesses had determined that a leak caused the Iroquois main break. OCA St. 2 at 8; OCA M.B. at 11, 13. *See also* Becthel Exh. 2 at 3-4 (water main leak can cause sinkholes and preventative efforts should have been made in a limestone area); Bechtel Exh. 1 at 40, 43 and Bechtel Exh. 2 at 4-5 (eliminating water sources other than the water main as the cause of the damage to the Creveling household).

The ALJ should further find that PAWC mischaracterizes the expert testimony when it later implies that Dr. Hoskins had not eliminated "all other possible sources of water as a cause for the erosion of the material underlying the piping." PAWC M.B. at 7 (citing Tr. 308-309). In fact, the transcript pages that PAWC cites to support its claim actually show the opposite. Dr. Hoskins orally confirmed his written testimony when he said that, in reaching his conclusion as to the cause of PAWC's pipe leaking, "I have

eliminated all sources of water, other than the leaking of the pipe." Tr. 308-309; *see also* OCA St. 2 at 8 ("Since the pipeline is located beneath impervious pavement, and there are no other known sources of water to erode the material supporting the pipeline, the material from beneath the pipeline was most likely removed by water leakage from the pipeline itself."); OCA St. 2S at 1-3 (criticizing Mr. Kanaskie's testimony that other water sources contributed to the main break as speculation unsupported by any data).

PAWC again makes the argument that "Complainants cannot rule out these other sources of water, and certainly cannot in any way isolate any claimed leakage from the pipe as the source of water at issue herein." PAWC MB at 10. For the reasons explained above, PAWC's argument is without merit. *See* OCA St. 1 at 8-9; OCA St. 1S at 4-10; OCA St. 2 at 8; OCA St. 2S at 1-3.

PAWC also mischaracterizes the facts supporting Complainants' request for relief when the Company states that geologic tests would not be useful to distinguish thousand-year-old sinkholes from sinkhole formations caused by the main break. PAWC M.B. at 4. The preponderance of the evidence shows that collapsed, unstable sinkholes in Stonegate are a recent development that has occurred within months of, and as a result of, PAWC's leaking Iroquois main and the main break. OCA MB at 10; tr. 34, 66, 73, 77, 174 (Complainants unaware of any previous sinkhole activity); tr. 184 (no sinkholes in development when plans approved); tr. 250 & 258-61 (Ms. Diesinger's review of subdivision plans, Wilson school records). Dr. Hoskins testified that no karst-related surface features, such as closed depressions that are indicators of sinkholes, existed before Wagner Farms was developed. OCA MB at 14, 52; OCA St. 2S at 3-4; OCA St. 2 at 6 (closed depressions are an indicator of sinkholes in the bedrock below the land

surface). The testimonies of Mr. Vaughn, regarding the approval of the subdivision plans, and Ms. Diesinger regarding her record of historic sinkholes and review of historic sinkhole activity by aerial map, supports Dr. Hoskins' conclusion. OCA MB at 53; tr. 183-84, 258-61. If there were sinkholes in the bedrock at the time Wagner Farms was developed, they were stabilized. *See* id.; OCA St. 2S at 3-4; OCA MB at 52. PAWC's own testimony included an exhibit demonstrating that virtually all of the sinkholes recorded in the Stonegate development occurred after the main break of February 5, 2005, corroborating Dr. Hoskin's testimony and supporting Complainants' claims that sinkholes in Stonegate are a recent development due to the main break. PAWC Exh. 2 at Kanaskie Exh. 4; tr. 458-61 (interpreting Kanaskie Exh. 4).

Further, Dr. Hoskins' recommendation for geophysical testing should not be incorrectly construed by PAWC as a recommendation that "sinkhole formations" such as superficial surface sinkhole depressions be identified. Dr. Hoskins' recommendation was that newly formed *voids* resulting from the main break should be identified. OCA St. 2S at 3. This distinction is important because Dr. Hoskins' recommendation is based upon the purpose of protecting the welfare of the community affected by the main break. OCA St. 2S at 4. Identifying sinkhole depressions does not go far enough. Rather, a geophysical study should be conducted to determine whether there now exist new "[v]oids into which the surface soil could collapse," which before the main break were "absent in the Development." OCA St. 2S at 4.

III. CONCLUSION

For all of the above reasons and those set forth in the OCA's Main Brief, the Commission should adopted the Proposed Findings of Fact, Conclusions of Law and

Proposed Ordering Paragraphs, as set forth in Appendices A and B to this Reply Brief. In short, the Commission should require PAWC to remediate the damage known to have been caused by the main break resulting from the Company's unsafe, inadequate, unreasonable and inefficient service, and to conduct a geophysical study to determine whether any additional voids were created in the substrata as a result of the flow of high-pressure water from the main break and, if discovered, those to remediate those voids as well. The Commission should also specifically require PAWC to meet its own internal systematic leak detection, repair and record-keeping standards in the Sinking Springs, PA area and to provide copies of such records to the PUC for a two-year period, in order to demonstrate a commitment to a sound water resource management plan in that area of its service territory.

Respectfully Submitted,

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APPENDIX A

Proposed Findings of Material Fact
Revised 8/28/06

Proposed Findings of Material Fact
(Rev. 8/28/06)

BACKGROUND

1. Pennsylvania-American Water Company (PAWC) is a certified public utility serving, among other areas, Sinking Springs, Spring Township, Berks County, Pennsylvania, and the service area in question in the present case is the Stonegate Neighborhood Development known as Wagner Farms and the Wilson Southern Junior High School/Cornwall Terrace Elementary Complex (School). Tr. at 14, 46, 214.

2. PAWC began servicing the Sinking Springs area in 2001 upon the acquisition of Citizens Water Company, who formerly provided water service to the area. Tr. at 5,12.

3. Spring Township, Berks County is known as a sinkhole prone area. OCA St. 1 at 5; Tr. at 538.

4. The PAWC system includes an 8-inch cast iron water main located beneath Iroquois Avenue in Spring Township. This main serves Wagner Farms and the School. The 8-inch main connects to a 10-inch ductile iron pipe on Iroquois Avenue, which connects to a 12-inch ductile iron pipe on Martins Road. OCA St. 1 at 7.

5. On February 5, 2005 the 8-inch water main in Iroquois Avenue broke releasing 1.5 million gallons of water into the earth. OCA St. 1 at 12.

6. The release of the large amount of pressurized water caused sinkholes to form in the area surrounding the water main break, resulting in severe damage to homes and property in the vicinity. The main break also led to the activation of sump pumps as far away as two blocks from the main break. OCA St. 1.

7. The failure of PAWC to incorporate company-wide leak detection policies in the Spring Township area and the failure to respond to the SCADA warning devices, intended to alert the company to large amount of water drainage, resulted in the massive amount of water being released into a known sinkhole prone area. Tr. at 301, 516-20, 720.

8. The Formal Complainants who began this case are current customers of PAWC who reside in the Sinking Springs area of the system. Tr. at 14, 46.

PROPOSED FINDINGS BASED UPON CUSTOMERS' TESTIMONY,

9. On February 5, 2005 between 10:00 p.m. and midnight, the residents of Wagner Farms began experiencing low water pressure. Tr. at 15, 47, 81, 105, 354.

10. At approximately 10:00 p.m. on February 5, 2005 the Crevelings, who reside in Wagner Farms at 3123 Wagner Circle, began hearing creaks and popping noises in the walls. Tr. at 15.

11. The following morning February 6, 2005 before 7:00 a.m. the residents of Wagner Farms found that there was no running water in their homes. Tr. at 16, 69-70, 47-8, 81, 106, 149, 354.

12. On the morning of February 6, 2005, the Crevelings found that a crack had formed above the basement door. Tr. at 17.

13. The morning of February 6, 2005 many residents of Wagner Farms went to stores to buy water and noticed others doing the same. Tr. at 48, 356.

14. Residents' sump pumps activated the morning of February 6, 2005 and continued to run until the following morning. Tr. at 18, 70, 106, 353, 355, 360, 578.

15. At 12:30 p.m. on February 6, 2005 the Crevelings were approached by representatives from PAWC at their home. The PAWC representative accompanied Creveling through his home where water was found in the basement, cracks were found in the stairway and doorway, and trees on the property had sunken into the ground. Tr. at 18-9.

16 Ms. Rose Ann Ruggiero and Mr. Neil Rahn received a phone call from the Crevelings on February 6, 2005 around 1:00 p.m. explaining that there was water in the basement of the Creveling home and asking if Ms. Ruggiero and Mr. Rahn would come to the Creveling home and help to watch the children. Tr. at 82, 106-7.

17. Ms. Ruggiero went to the Crevelings home the afternoon of February 6, 2005 where she entered the basement and saw cracks in the basement floor and water squirting and seeping through the cracks. Tr. at 83, 106-7.

18. From 12:30 p.m. until 4:00 p.m., water continued to enter the basement and cracks continued to form throughout the Crevelings house. The fence and trees in the Crevelings' yard had sunken into the ground and there was a hole forming in the yard. Tr. at 20, 83, 86, 107

19. At 5:00 p.m. or February 6, 2005 the Crevelings were told by PAWC to vacate their house. PAWC paid for the Creveling family to stay in a hotel. Tr. at 20, 83, 530.

20 By 2:00 p.m. February 6, 2005 the water pressure had returned to the residents' homes. Tr. at 74, 86.

21. PAWC was unable to locate the break for at least twelve hours from the evening of February 5, 2005 when they began searching until the afternoon of February 6, 2005 when the break was discovered. Tr. at 81, 154-5, 576, 689.

22. Approximately 2:45 p.m. on February 6, 2005, Wagner Farms residents went to the site of the excavation of the pipe on Iroquois Avenue where they were told by John Rockwell, a PAWC employee, that main breaks were common at this time of the year and that PAWC had already repaired twelve breaks. Tr. at 85.

23. Township employees also went to the excavation site. It appeared that there was no depth below the pipe and that the ground underneath was solid. Tr. at 198-9, 164-5, 279, 285.

24. After the February 6, 2005 incident PAWC made test holes on the school parking lot. Tr. at 219-20, 227, 561-2.

25. The Creveling property suffered a total of six sinkholes on the property that engulfed trees and a fence. Additionally, it appeared that the foundation of the house had risen or the ground had depressed. Tr. at 22-3, 89-90, 157, 162.

26. On April 6, 2005 a sinkhole appeared on the property of Ms. Ruggiero and Mr. Neil Rahn located at 3119 South Wagner Circle. The sinkhole was repaired by the township. Tr. at 97, 112, 175.

27. On April 8, 2005 a sinkhole formed under the sidewalk and curb of Mr. Singerling's property located at 3128 South Wagner Circle. Mr. Singerling paid for the reparations of the sinkhole. Tr. at 50-1, 113, 175.

28. On September 4, 2005 a sinkhole formed under a fire hydrant in Wagner Farms. Tr. at 113, 115, 175.

29. There are three sinkholes located behind the Cornwall Terrace Southern Junior High School that formed within fourteen months of a leaking storm sewer that was installed by the school. Tr. at 235-6.

30. The residents of Wagner Farms received no information from PAWC concerning this event. When they called the company, customers received a prerecorded message explaining that the company was aware of the problem and was in the process of fixing it. There was no opportunity to leave a message with PAWC. Tr. at 29, 48, 70-1, 105.

31. At a meeting on April 20, 2005 representatives from PAWC informed residents of Wagner Farms, including Mr. Singerling, that the company would do nothing further for any of residents of Wagner Farms affected by the main break except for the Crevelings. Tr. at 54, 57-8.

32. For the most part, residents of Wagner Farms were unaware of sinkhole activity in Berks County prior to the February 6, 2005 incident. Only after the incident did they become aware of a sinkhole on a neighbor, Anne Farina's, property. Tr. at 34, 63-4, 76, 173-5.

33. Township records for Wagner Farms for the last ten years revealed no records of repaired sinkholes. Tr. at 144-5, 186-7, 199.

PROPOSED FINDINGS OF FACT BASED UPON EXPERT TESTIMONY

34. Sinking Spring Borough is an area of carbonate geology and karst topography. Carbonate geology is characterized by soluble carbonate bedrock such as limestone. Karst topography is the result of erosion in the carbonate bedrock occurring over time. OCA St. 2 at 6; Diesinger St. 1 at 9; Twp. St. 2 at 34.

35. Sinkholes are depressions in a karst area, or a hole in the underlying bedrock that is not visible at the land surface. Closed depressions are indicators of sinkholes below the land surface. A sinkhole becomes visible when the land surface above it has collapsed. OCA St. 1 at 5-6.

36. There were no closed depressions on the 1975 and 1988 maps of the area affected by the main break: South Wagner Circle, Nash Road, and Shelley Drive. OCA St. 2 at 2, 6.

37. Based on aerial photography, there were no closed depressions, or other karst related surface features, at the time that Wagner Farms was developed. There were no voids or uncollapsed sinkholes. If sinkholes existed in the development at this time, they were stabilized. OCA St 1S at 4.

38. Sinkholes occur when water dissolves the carbonate bedrock causing cavities and channels to open up underground. A collapsed sinkhole or soil piping occurs

when water washes the soil covering the bedrock down into the cavity of the sinkhole. A solution channel is an opening in the bedrock that can transfer water from one location to another. OCA St. 1 at 8; OCA St. 2 at 5; Bechtel Exh. 1 at 34.

39. Sinkholes are formed in karst areas by the force of fluid flow and dissolution of limestone over time, characterized by the localized, gradual, or rapid sinking of the land surface. OCA St. 1 at 5, 8; OCA St 2 at 6-7; Diesinger Exh. 1 at 9.

40. Sinkholes are common along public transportation routes because water mains and other service piping generally run along the same route. OCA St 2 at 6-7.

41. The PAWC Iroquois Avenue water main broke as a result of gradual incremental removal of supporting material by a water source. OCA St. 2 at 8; OCA St. 1 16-17; Tr. at 299, 313-4

42. An estimated 1.5 million gallons of water was released by PAWC's broken main. OCA St. 1 at 12.

43. Because the water released by the Iroquois Avenue main break never surfaced at the site of the break, it must have entered an existing solution channel and was able to travel for some distance along the Wagner Circle water main. OCA St. 1 at 13, 17.

44. Water from the main break surfaced approximately 300 to 400 feet away from the site of the break. OCA St. 1 at 13.

45. Water from the Iroquois Avenue main flowed into the Wagner Farms subdivision. Some water followed a portion of the water main installed in South Wagner Circle and caused a fire hydrant and the connecting pipeline the hydrant to sink. Pipeline settling under an impervious paved road must have been caused by leakage from the water main. OCA St. 1 at 13, 17.

46. The direction of the water flow from the main break was initially west south westerly along controlled subsurface channels and flowed toward Wagner Farms development. The water eroded the stabilized infilling material. OCA St. 2S at 3.

47. Free/thaw cycles would not cause the pipe to move, lose support, and break, because the Iroquois Avenue main is buried 5 feet deep, below the area's extreme depth of frost penetration level of 1 meter, or 3.28 feet. OCA St. 1S at 2-3 and Exh. TLF-9.

48. The 1.5 million gallons of water from the main break was released at high pressure, causing nearby uncollapsed sinkholes to collapse. The water from the main break enhances the occurrence of additional sinkholes to collapse throughout the area of Wagner Farms. OCA St. 1 at 17; OCA St 2S at 3.

49. The water main break caused the damage to the Creveling home and property at 3123 South Wagner Circle. OCA St. 1 at Exh. TLF-8; Tr. 467.

50. The sinkhole activity in the Wagner Farms subdivision is attributable to the main break because 1.5 million gallons of pressurized water were released into the area, resulting in the scouring of bedrock and an overburdened substructure, which activated the subsequent sinkhole development Additionally, it was only after the main break that there was an increase in the level of sinkhole activity. OCA St. 1 at 17; OCA St. 2 at 9; Diesinger Exh. 1 at 23; Bechtel Exh. 1 at 43; Tr. at 458-9, 469.

51. A geophysical survey by a geotechnical investigation firm with experience in identifying and mapping karst topography and identifying open cavities is necessary to determine the if the land structures has been compromised by the main break and resulting release of high pressure water and the location and extent of other sinkholes in the area. It should delineate potential areas where surface collapse may occur. OCA St. 1 at 17 and Exh. TLF-8; OCA St. 2 at 8-0; OCA St. 2S at 3; Twp. St. 1 at 23-24.

52. The geophysical survey should encompass the area along South Wagner Circle, Nash Road, and Shelly Drive. OCA St. 2 at 10.

53. The Sinking Springs area contains limestone solution features that have little inherent strength and is easily eroded by water flow. OCA St. 2 at 8.

54. Water mains are not 100% tight, even at the time of initial installation. OCA ST. 2 at 3.

55. PAWC had not performed any leak detection tests in the vicinity of the Iroquois Avenue main break. OCA St. 1S at 3-4 and Exh. TLF-4.

56. PAWC experienced at least seven different main breaks within a three and a half week period. OCA St. 1S at 14.

57. Routine leak detection would have allowed for early detection of leaks before they caused greater problems such as the main break. OCA St. 1S at 3-4 and Exh. TLF-4.

58. Since the main was located beneath an impervious paved road, the only source of water which could have eroded the supporting material was water leaking from the main itself. OCA St. 1 at 16-17; OCA St. 1S at 4-7; OCA St. 2 at 8; OCA St. 2S at 2-3; Tr. at 308-309.

59. The lack of supporting material caused bending stresses on the main, which in turn caused the main to break as a result of wedge splitting. Wedge splitting occurs when a wedge of the pipe at the bell is split off to relieve bending stresses. OCA St. 1 at 14-15; Tr. at 299-300.

60. Cast iron pipe is more prone to wedge splitting than ductile iron. Ductile iron is approximately twice the strength as cast iron pipe in tensile, beam, and ring bending tests and many times the strength of cast iron pipe in elongation. Cast iron has not been manufactured for use as water mains since the mid 19070's. The PAWC main which broke was made of cast iron. After the break, PAWC used ductile iron pipe to replace the cast iron pipe in the broken main. Ductile iron pipe was available when the Iroquois Avenue main was laid in the 1970s, and has been available and accepted in Pennsylvania since 1965. OCA St. 1 at 13-15 and Exhs.TLF-5, TLF-6, TLF-7; Tr. at 522-3, 595-96, 692.

61. PAWC's Iroquois Avenue cast iron main broke due to "wedge splitting" where a wedge of the pipe at the bell is split off to relieve bending stresses. The wedge splitting occurred when the deflection of the pipe exceeded the allowable bending stress of the cast iron material. OCA St. 1 at 14-15 and Exh. TLF-6

62. Supporting material was removed from beneath the Iroquois Avenue main due to a leak in the main that washed supporting material away. OCA St. 1 at 16.

63. A portion of PAWC's broken water main that PAWC removed and replaced was never inspected by Mr. Clauser, the Company's metallurgist. Mr. Clauser only inspected 48 feet of pipe while 125 feet of pipe was removed and replaced. Tr. 433.

64 Water could leak from improper joint formation or from a deflected joint when the pipe is not laid in a straight line. Leaking water could have been detected by PAWC if proper leak detection procedures were performed and records retained. OCA St. 1 at 9-11 and Exh. TLF-4;OCA St. 1S at 11-14; OCA St. 2 at 7.

65 Because the surface beneath the pipe, when excavated, was solid, the water from the leaking pipe must have run into the throat of a nearby sinkhole or laterally along a solution channel. Water washed away the material supporting the pipe into an existing but uncollapsed sinkhole. OCA St. 1 16-17, OCA St. 2 at 8; Twp. St. 1 at 14; Tr. at 294-95.

66. Failure of the water main had to have been associated with water leaking from the main because there are no other water sources that reasonably could have caused the break. OCA St. 1 at 16-17; OCA St. 1S at 4-9; OCA St. 1S at 3.

67. The bottom of the detention pond that abuts the Wagner Farms development is on ground that is lower in elevation than the Iroquois water main break location. OCA St. 1S at 7.

68. There was no evidence of a sinkhole forming beneath the pipeline to cause the main to break. Rather, the surface beneath the pipe appeared to be solid and intact. The only visible voids were along the side walls of the excavation site. OCA St. 1 16-17; OCA St. 2 at 8; Twp. St. 1 at 14-15; Tr. at 279, 285, 300.

69. PAWC's main pipeline distribution system that lies above limestone of Spring Township should be surveyed for leaks to determine potential areas of failure so that preventative measures can be designed, installed and maintained. The recurrence of the February 5, 2005 PAWC Iroquois main break should be prevented. OCA St. 2 at 10.

PROPOSED FINDINGS OF FACT BASED UPON PENNSYLVANIA-AMERICAN WATER RESOURCE MANAGEMENT POLICIES

70. At least since 1993 PAWC has had a team of Leak Detection Specialists who survey three or more miles of distribution main per day. OCA Exh. A Tab 2 pg. 7; OCA Exh. A Tab 6 pg. 5; OCA Exh. A Tab 8 pg. 5.

71. Witness Hassinger of PAWC was unable to confirm or deny whether three or more miles of distribution main are surveyed per day for leaks in the Penn District. Tr. at 516-7.

72. At least since 1993 PAWC has had a policy requiring that 100% of fire hydrants be sounded each year. OCA Exh. A Tab 1 pg. 4, OCA Exh. A Tab 2 pg. 7, OCA Exh. A Tab 6 pg. 5; OCA Exh. A Tab 7 pg.4; OCA Exh. A Tab 8 pg. 5.

73. Witness Hassinger of PAWC was unable to confirm or deny whether 100% of hydrants were sounded per year in the Penn District. Tr. at 517, 587.

74. At least since 1993 PAWC employs a Water Loss Audit Handbook within each of its operations to analyze all potential sources of water loss. OCA Exh. A Tab 1 pg. 4; OCA Exh. A Tab 8 pg. 63; OCA Exh. A Tab 6 pg.; 63.

75. Witness Hassinger of PAWC explained that though water loss audits are carried out, the Water Loss Handbook is not utilized in the Penn Water District. Tr. at 523.

76. Witness Rothwell of PAWC was unsure of what a water loss audit is. Tr. at 674.

77. At least since 1993 PAWC has had a policy requiring sounding for leaks on 20% of all system valves each year. OCA Exh. A Tab 2 pg. 7; OCA Exh. A Tab 6 pg. 5; OCA Exh. A Tab 8 pg. 5.

78. Witness Hassinger of PAWC was unable to confirm or deny whether 20% of system valves are sounded for leaks each year in the Penn Water District. Tr. at 518, 587.

79. At least since 1993 PAWC has had a policy requiring the sounding of 33% of all service line control valves annually. OCA Exh. A Tab 2 pg. 7, OCA Exh. A Tab 6 pg. 5; OCA Exh. A Tab 8 pg. 5.

80. Witness Hassinger of PAWC was unable to confirm or deny whether 33% of all service line control valves are sounded annually in the Penn District. Tr. at 518, 588.

81. At least since 1993 PAWC has represented that it was using high quality materials in its distribution system to minimize leakage potential. OCA Exh. A Tab 2 pg. 13; OCA Exh. A Tab 6 pg. 9; OCA Exh. A Tab 8 pg. 9.

82. Since 1993 PAWC has employed seven or more maintenance service employees who travel the state in state-of-the-art electronic leak detection vans to detect and locate problem transmission and distribution mains. OCA Exh. A Tab 6 pg. 4; OCA Exh. A Tab 5 pg. 5; OCA Exh. A Tab 7 pg.4.

83. Witness Hassinger of PAWC was unable to confirm or deny whether the PAWC leak detection team ever visited the Penn Water District. Tr. at 519-20.

84. At least since 1999, Citizens Utility Water Company of Pennsylvania, the predecessor to PAWC, employed a comparable leak detection and repair program comprised of sounding fire hydrants, valves, and curb stops OCA Exh. A Tab 9 at. 4.

PROPOSED ADVERSE FINDINGS BASED ON PHYSICAL EVIDENCE AND DOCUMENTS PAWC FAILED TO PRODUCE

86. The portions of pipe that were scrapped showed evidence of leakage at the joints which caused or contributed to the erosion of the pipe bed and the fracture.

87. The SCADA data for the months requested, January to March 2005, showed that tank alarms occurred repeatedly, which would have put PAWC on notice of a substantial leak in the distribution system.

88. The records from the gauges from which the tank level data were manually recorded in the Penn District Operator Log (Rothwell Exhibit 2) would have shown that PAWC was on notice that there were substantial leaks in the distribution system.

89. Witness statements of those present at the time of the excavation, when the fractured main was first visible, would confirm that no sinkhole appeared beneath the Iroquois Avenue main and that leakage from the main eroded the pipe bed, causing the main to break.

90. A video recording that included continuous footage of the excavation when the fractured main was first visible would show that no sinkhole appeared beneath the Iroquois Avenue main and that leakage from the main eroded the pipe bed, causing the main to break.

APPENDIX B

Proposed Conclusions of Law
Revised 8/28/06

PROPOSED CONCLUSIONS OF LAW

Rev. 8/28/06

1. The Commission has jurisdiction over the parties and the subject-matter of this proceeding.

2. Pursuant to 66 Pa.C.S. §332(a), the Formal Complainants and Intervenor OCA, as the proponents of a rule or order, have the burden of proof. 66 Pa.C.S. §332(a).

3. Formal Complainants and Intervenor OCA have borne their burden of proving that PAWC has failed to furnish and maintain adequate, efficient, safe and reasonable service and facilities to the customers of Sinking Springs, PA in contravention of Section 1501 of the Public Utility Code, 66 Pa.C.S. §1501. More specifically, Complainants and Intervenor have proved that PAWC was and is in violation of Section 1501 because of the following actions or inactions on the part of Company personnel:

a. PAWC failed to perform a prompt and thorough investigation of the events surrounding the main break. No statements were taken from those who were present when the area of the broken main was unearthed. No photos or videos were taken of the broken main at the time that it was excavated.

b. PAWC failed to retain records associated with the events surrounding the main break. Parts of the pipe that were removed in the area of the break were discarded. No chain of custody records associated with the part of the pipe that was removed were produced. The electronic SCADA records that would have shown the tank levels at 15 minute intervals and the issuance of tank alarm calls were allowed to be purged.

c. PAWC failed to report the main break and destruction of the residential structure adjacent to the main, an occurrence of an unusual nature, pursuant to 52 Pa. Code. §65.2.

4. It would be unjust and inequitable to allow PAWC to permit Respondent PAWC to reap any benefit from its failure to comply with pertinent provisions of the Public Utility Code and relevant regulations.

5. Pursuant to Section 1504, 66 Pa.C.S. §§1504, the Commission has authority, after notice and hearing upon complaints, to prescribe as to service and facilities, just and reasonable standards and practices to be imposed, observed and followed by a public utility.

PROPOSED ORDERING PARAGRAPHS

WHEREFORE, Pennsylvania-American Water Company is HEREBY ORDERED to take the following actions consistent with Sections 1504 and 1505 of the Public Utility Code, 66 Pa.C.S. §1504-1505:

a. Within thirty (30) days of this Order, begin the process of remediating the subsurface damage and the damage to the former Creveling residence, located at 1323 South Wagner Circle, Sinking Springs, PA;

b. PAWC shall provide monthly status reports to the parties, the PUC's Bureau of Fixed Utility Services[1] and the Bureau of Safety and Compliance;

c. Within one year, PAWC shall have completed the remediation of the damage done to the residence at 1323 Wagner Circle, Sinking Springs, PA and shall provide a full report to the parties and to the Commission;

d. Within thirty (30) days of this Order, PAWC shall cause a Ground Penetrating Radar (GPR) test to be performed, at a minimum, in the areas of 3115 to and including 3122 South Wagner Circle; 300 to 305 & 307 Shelly Drive, and 3201, 3203, 3205 and 3207 Nash Road to determine the existence of any voids that may put the residents, their homes, the streets and PAWC's infrastructure in jeopardy of damage or collapse;

e. Upon completion of the GPR test by a competent geophysical engineering firm, PAWC shall provide the documentary results of the test, together with a proposed timetable and remediation plan to deal with any voids discovered through the GPR testing, to the parties, the parties' consultants, the PUC's Bureau of Fixed Utility Services and the Bureau of Safety and Compliance,

f. For a period of two years, ten days following the end of each quarter, PAWC shall provide to the OCA, its engineering experts and to the Commission's BFUS, leak detection reports and records to demonstrate that all areas of its service territory are maintained consistent with PAWC's longstanding leak detection and repair policy as set forth in OCA Exhibit A and with the PUC's Water Conservation Policy Statement, codified in 52 Pa. Code §53.20. These records will consist of the following:

1. PAWC's Water Audit Master Plan;

2. Records of water audits and annual updates to the audits;

3. Records of compliance with Chapter 65 of the Pennsylvania Code and the American Water Works Service Operations Manual;

4. An Action Plan, consistent with PAWC's Water Resource Management Program, to detect leaks and control non-revenue water specifically in the Penn Water District that encompasses Sinking Springs, PA.

5. Monthly records that demonstrate that the Action Plan is being carried out.

[1] The OCA has been requested by a representative of the BFUS to include the Commission's BFUS as an entity to be served with any documentation of compliance with a Commission Order

APPENDIX C

Pa. Public Utility Commission Order
Joint Application of Pennsylvania
American Water Co. and Citizens
Utilities Water Co.
Docket Nos. A-212285F0074
And A-211070F2000

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA. 17105-3265

Public Meeting held January 24, 2001

Commissioners Present:

John M. Quain, Chairman
Robert K. Bloom, Vice Chairman
Nora Mead Brownell
Aaron Wilson, Jr.
Terrance J. Fitzpatrick

Docket Numbers:
A-212285 F0074
A-211070 F2000

Joint Application of Pennsylvania American Water Company (PA America) and Citizens Utilities Water Company of Pennsylvania (Citizens) for the approval of the commencement by PA American of water service in the certificated territory of Citizens; the transfer by sale of substantially all the water utility property of Citizens to PA American; the abandonment by Citizens of water service to the public; and certain additional regulatory approvals.

ORDER

BY THE COMMISSION:

On April 11, 2000, Pennsylvania American Water Company (PA American) and Citizens Utilities Water Company of Pennsylvania (Citizens) filed a Joint Application seeking a Certificate of Public Convenience pursuant to Sections 1102(a)(1)(i) and (3) of the Public Utility Code, 66 Pa. C.S. §1102(a)(1)(i) and (3) seeking Commission approval of the commencement by PA American of water service in the certificated territory of Citizens; the transfer by sale of substantially all the water utility property of Citizens to PA American; the abandonment by Citizens of water service to the public; and certain additional regulatory approvals. PA American and Citizens are current on their assessments and have no outstanding fines.

Philadelphia Suburban Water Company and the Office of Consumer Advocate filed Petitions for Intervention in the foregoing proceeding. However, the Petitions were later withdrawn and ALJ Cohen's November 27, 2000 Interim Order referred the proceedings back to the Bureau of Fixed Utility Services for appropriate action.

PA American, a wholly-owned subsidiary of American Water Works Company, Inc. (AWW) currently furnishes public water service to nearly 498,630 residential customers in portions of 31 counties across the Commonwealth. Citizens, a wholly-owned subsidiary of Citizens Utility Company (CUC) furnishes public water service to nearly 33,550 customers in Eastern and Southcentral Pennsylvania.

During the third quarter of 1999, CUC adopted a plan to divest all its water, wastewater, gas and electric assets and operations to focus on its telecommunications business. Accordingly, on October 15, 1999, CUC announced an agreement to sell all its water and wastewater assets to AWW and AWW's designated subsidiaries.

To implement the proposed sale of Pennsylvania operations, Citizens and CUC entered into an Asset Purchase Agreement (Agreement). Pursuant to the Agreement, all of Citizens water utility property and rights will be purchased and acquired by PA American. Additionally, PA American and AWW agreed to assume three series of Industrial Development Revenue Bonds (IDRBs). As of the date of the Agreement, the aggregate unpaid amount of IDRBs was $52,900,000.

The total purchase price, $152,280,000 as of the date of the Agreement, consists of the assumption of the outstanding IDRBs and a $98,380,000 cash payment for the balance. As of December 31, 1999, the balance sheet value of Citizen's assets was $111,679,223. The purchase price will be adjusted to reflect changes occurring between the date of the Agreement and date of closing in the recorded value of Citizen's assets and the outstanding balance of IDRBs.

PA American will finance the cash purchase price to be paid for Citizen's assets through the issuance of debt. PA American states it will request by separate filings all necessary Commission approvals under Chapters 19 and 21 of the Public Utility Code.

Pursuant to the Agreement, Citizens will transfer to PA American, or to an affiliated financing corporation, unamortized debt expenses related to the IDRBs and will transfer to PA American other deferred capital costs and other deferred charges attributable to Citizens' assets as delineated in Exhibit "P" of the instant application. PA American is requesting for approval to record, after closing, the deferred expenses and costs set forth in Exhibit "P" of the instant application, as regulatory assets. We agree with this treatment for accounting purposes, but not for ratemaking purposes.

Prior to closing on the proposed sale of Citizens assets, Citizens may have one or more applications, other than the instant Application, pending before this Commission. Accordingly, PA American is requesting approval to succeed to the interests of Citizens in and under such applications, to declare PA American to be the real party in interest thereunder and to authorize and direct the amendment of such applications to reflect PA American as the applicant therein effective upon the date of closing of the transactions under the Agreement. We require that if Citizens has any

pending application as of the date of closing, PA American file an amendment letter to reflect the change in applicant.

The proposed transaction will have no immediate adverse effect on the rates of customers of Citizens. PA American will file a tariff supplement adopting the rates contained in Citizen's tariff in effect on the date of closing.

Approval of the transfer is requested due to the following reasons:

(A) Focus on water service – CUC is divesting all non-telecommunications assets. PA American's primary focus is water service.

(B) Reduced exposure to unrelated businesses – PA American's acquisition will reduce financial and market risks associated with CUC's electric, gas and wastewater operations.

(C) Size and financing capability – Citizen's customers will be served by a large and financially sound company with the capability to finance any necessary capital additions. As of December 31, 1999, PA American's total permanent capitalization was $1.1 billion.

(D) Economies of scale and scope – given its size and association with AWW, PA American enjoys significant economies of scale and scope.

(E) Enhanced customer service – Citizen's customers will benefit from enhanced customer services such as more payment options and longer customer service and call center hours.

(F) Excellent geographic fit – the geographic proximity facilitates integration of Citizen's properties into existing operations and creates opportunities for functional and operational consolidation.

These advantages ensure that the proposed transfer of control provides an affirmative public benefit and satisfies the standard set by City of York v. Pa. P.U.C., 449 Pa. 136, 295 A.2d 825 (1972).

Upon full consideration of all matters of record, we find that approval of this Joint Application is necessary and proper for the service, accommodation and convenience of the public; **THEREFORE,**

IT IS ORDERED:

1. That the commencement by Pennsylvania American Water Company of water service in the certificated territory of Citizens Utilities Water Company of Pennsylvania is hereby approved.

2. That the transfer by sale of substantially all the water utility property of Citizens Utilities Water Company of Pennsylvania to Pennsylvania American Water Company is hereby approved.

3. That the abandonment by Citizens Utilities Water Company of Pennsylvania of water service to the public is hereby approved.

4. That the transfer by Citizens Utilities Water Company of Pennsylvania to Pennsylvania American Water Company, or to an affiliated financing corporation, of unamortized debt expenses related to the IDRBs, and other deferred

capital costs and other deferred charges attributable to Citizens Utilities Water Company of Pennsylvania's assets as delineated in Appendix "P" of the instant application, be recorded after closing as regulatory assets for accounting purposes, but not for ratemaking purposes.

5. That if as of the date of closing of the proposed transaction, Citizens Utilities Water Company of Pennsylvania has any pending applications, Pennsylvania American Water Company file with the Secretary's Bureau an amendment letter pertaining to each Citizens Utilities Water Company of Pennsylvania pending application to reflect the change in applicant as referred to in paragraph 27 of the instant application within five days after closing.

6. That within 30 days of the consummation of the transaction approved in Ordering Paragraph No 2, above, Pennsylvania American Water Company file with this Commission: (a) notice of such consummation, (b) a tariff adoption supplement effective on 1-day's notice incorporating the tariff of Citizens Utilities Water Company of Pennsylvania, and (c) a summary of the final financial terms of the sale and any related accounting entries.

7. That upon receipt of the tariff adoption supplement as required under Ordering Paragraph No. 6, above, a certificate of public convenience be issued evidencing the approvals granted in Ordering Paragraphs 1, 2 and 3, above.

8. That upon receipt of the tariff adoption supplement as required under Ordering Paragraph No. 6, above, the Secretary's Bureau shall remove the tariff of Citizens Utilities Water Company of Pennsylvania from the active utility list and mark closed all records with respect to Citizens Utilities Water Company of Pennsylvania, and the Assessment Section of the Bureau of Administrative Services

shall delete Citizens Utilities Water Company of Pennsylvania from the active utility list.

9. That if the parties determine that the proposed merger will not take place, Citizens Utilities Water Company of Pennsylvania so notify this Commission promptly.

BY THE COMMISSION

James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: January 24, 2001

ORDER ENTERED: JAN 24 2001

CERTIFICATE OF SERVICE

Re:	Spring Township	:	
	v.	:	Docket No. C-20054746
	Pennsylvania American Water Company	:	
	Neil R Rahn and David Singerling, et al.	:	
	v.	:	Docket No. C-20054919
	Pennsylvania-American Water Company	:	
	Wilson School District	:	
	v.	:	Docket No. C-20055371
	Pennsylvania American Water Company	:	

I hereby certify that I have this day served a true copy of the foregoing document, Office of Consumer Advocate's Reply Brief, upon parties of record in this proceeding in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant), in the manner and upon the persons listed below:

Dated this 1st day of September, 2006.

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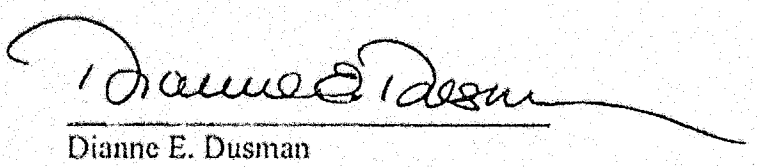

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