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UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

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| UNITED STATES, THE STATES OF CALIFORNIA, DELAWARE, FLORIDA, ILLINOIS, INDIANA, NEVADA, NEW MEXICO, NEW YORK, and TENNESSEE, THE COMMONWEALTHS OF MASSACHUSETTS AND VIRGINIA, and THE DISTRICT OF COLUMBIA ex rel. [UNDER SEAL]<br><br>Plaintiffs,<br><br>vs.<br><br>[UNDER SEAL]<br><br>Defendants. | Case No.: ED CV06-0055-GW<br><br>SECOND AMENDED COMPLAINT FOR VIOLATION OF FEDERAL AND STATE FALSE CLAIMS ACTS<br><br>JURY TRIAL DEMANDED<br><br>**FILED IN CAMERA & UNDER SEAL (AS REQUIRED BY 31 U.S.C. § 3730(b)(2))** |

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| UNITED STATES, THE STATES OF CALIFORNIA, DELAWARE, FLORIDA, ILLINOIS, INDIANA, NEVADA, NEW MEXICO, NEW YORK, and TENNESSEE, THE COMMONWEALTHS OF MASSACHUSETTS AND VIRGINIA, and THE DISTRICT OF COLUMBIA ex rel. JOHN HENDRIX,<br><br>Plaintiffs,<br><br>vs.<br><br>J-M MANUFACTURING COMPANY, INC., d/b/a JM Eagle, a Delaware corporation, and FORMOSA PLASTICS CORPORATION, U.S.A., a Delaware corporation,<br><br>Defendants. | Case No.: ED CV06-0055-GW<br><br>SECOND AMENDED COMPLAINT FOR VIOLATION OF FEDERAL AND STATE FALSE CLAIMS ACTS<br><br>JURY TRIAL DEMANDED<br><br>**FILED IN CAMERA & UNDER SEAL (AS REQUIRED BY 31 U.S.C. § 3730(b)(2))** |

# I. INTRODUCTION

1. This action is based on a massive fraud defendants perpetrated for well over a decade on the federal, state, and local governments to whom they sold polyvinyl chloride ("PVC") pipe. This fraud, described in detail herein, constitutes a violation of the federal False Claims Act ("FCA") and the various False Claims Acts of the states included in this Second Amended Complaint (the "Complaint"). This fraud has caused federal, state, and local governments to purchase and install PVC pipe that has only a fraction of the strength and endurance defendants represented it to have. This, in turn, has caused failures of the PVC pipe in the field and has resulted in PVC pipe in the ground that will need to be replaced in a fraction of the time that defendants represented it would last, and that the federal, state, and local governments, relying on those representations, expected it to last. Defendants perpetrated this fraud through the following actions, among others:

a) using poor quality materials in the recipe of the PVC pipe, substituting those cheaper materials for better materials that were used previously;

b) running the manufacturing process, called extrusion, at speeds that damaged the quality of the PVC pipe while failing to properly maintain the manufacturing equipment;

c) cherry-picking, rather than randomly selecting, PVC pipe for testing, thus ensuring that the test provided no result representative of the quality and strength of the PVC pipe sold to the federal, state, and local governments;

d) consistently misrepresenting the quality and strength of the PVC pipe on the pipe itself, as well as in corporate and sales literature;

e) presenting and causing their distributors to present false claims to the federal, state, and local governments herein.

2. This action seeks to recover damages and civil penalties on behalf of the United States, the States of California, Delaware, Florida, Illinois, Indiana, Nevada, New Mexico, New York, and Tennessee, the Commonwealths of Massachusetts and Virginia, the District of Columbia, and numerous political subdivisions and public water and sewer agencies located within these States/Commonwealths/District (collectively the "real parties in interest" or "Real Parties") arising from false statements and claims made, and caused to be made, by defendant J-M Manufacturing Company, Inc. ("J-M"), currently doing business as JM Eagle™, and Formosa

Plastics Corporation, U.S.A. ("Formosa") in violation of the Federal False Claims Act, 31 U.S.C. §§ 3729 *et seq.*, and the following State False Claims Acts: California False Claims Act, Cal. Gov't Code §§ 12650 *et seq.*, Delaware False Claims And Reporting Act, 6 Del. C. §§ 1201 *et seq.*, District of Columbia False Claims Act, D.C. Code §§ 2-308.13 *et seq.*, Florida False Claims Act, Fla. Stat. Ann. §§ 68.081 *et seq.*, Illinois Whistleblower Reward and Protection Act, 740 Ill. Comp. Stat. Ann. §§ 175/1 *et seq.*, Indiana False Claims and Whistleblower Protection Act, Ind. Code Ann. §§ 5-11-5.5-1 *et seq.*, Massachusetts False Claims Law, Mass. Gen. Laws Ch. 12 §§ 5A *et seq.*, Nevada False Claims Act, Nev. Rev. Stat. Ann. §§ 357.010 *et seq.*, New Mexico Fraud Against Taxpayers Act, N.M. Stat. Ann. §§ 44-9-1 *et seq.*, New York False Claims Act, N.Y. State Fin. §§ 187 *et seq.*, Tennessee False Claims Act, Tenn. Code Ann. §§ 4-18-101 *et seq.*, and Virginia Fraud Against Taxpayers Act, Va. Code Ann. §§ 8.01-216.1 *et seq.* (collectively the "Acts"). The Real Parties defrauded by Defendants J-M and Formosa include, without limitation, the United States, the States of California, Delaware, Florida, Illinois, Indiana, Nevada, New Mexico, New York, and Tennessee, the Commonwealths of Massachusetts and Virginia, the District of Columbia, the political subdivisions and public water and sewer agencies set forth in Exhibit 1 (incorporated herein), and all other political subdivisions and public water and sewer agencies within the States of California, Delaware, Illinois, Indiana, Nevada, New Mexico, New York, and Tennessee, the Commonwealths of Massachusetts and Virginia, and the District of Columbia that purchased J-M's PVC pipe between January 18, 1996 and the present.

3. For the past 25 years, J-M has been in the business of manufacturing and selling PVC pipe for the transmission and distribution of water (potable and reclaimed) and for use in sewer systems. Federal military bases, State Roads and Highway Projects, cities, public water distribution, and sewer collection agencies are the primary purchasers of J-M's PVC pipe. J-M sells to these entities by enlisting distributors to act as middlemen between J-M and its customers. J-M's PVC pipe products are designed almost exclusively for use in water or sewer transport systems so that even parts sold to distributors are eventually installed in these systems. J-M's PVC water pipe products are used primarily in the "water main," the artery that typically runs down the middle of the street and carries water to the service laterals that branch off from the main

and supply the individual homes and businesses, and the "transmission line," the trunk line that transports water from the water treatment plant to the water mains. PVC pipe for use in water mains is between four and 12 inches in diameter, whereas PVC pipe for use in the transmission line is between 14 and 48 inches in diameter. J-M's PVC pressure pipe products for "reclaimed water" applications are used primarily to transport untreated water to or from water treatment plants. Unlike J-M's potable water pipe, which is blue in color, reclaimed water pipe is generally purple in color. J-M's PVC sewer pipe, which is green in color, is sold in a similar range of sizes to the range for water pipe. J-M sells two general types of sewer pipe: "forced-sewer" pipe designed for use in pressurized applications, and "gravity" sewer pipe for gravity-flow transport of wastewater.

4. To encourage and enable Real Parties to purchase J-M pipe, J-M provided Real Parties with copies of J-M's catalogs describing J-M's PVC pipe products. J-M's outside salespeople visited Real Parties regularly and brought new catalogs or updates to existing catalogs. J-M also provided Real Parties with copies of "new product bulletins" and other sales literature describing J-M's products. J-M also provided copies of its catalogs and sales literature to distributors, who in turn provided these materials to end-users, including Real Parties, to enable them to order J-M products through the distributor. In each of its sales documents, J-M made repeated representations that its PVC pipe products conform to applicable industry standards for PVC pipe.

5. Real Parties purchased, were deeded, or otherwise acquired ownership of J-M pipe in a variety of ways. For example, Real Parties acquired J-M pipe through direct transactions with J-M. Real Parties also acquired J-M pipe through transactions involving contractors who installed J-M pipe for the Real Parties, and distributors who sold J-M pipe. In each of these instances, defendants' false representations caused the submission of false claims and caused contractors, distributors, and/or Real Parties' engineers to falsely represent to Real Parties that the pipe acquired by Real Parties conformed to Real Parties' specifications. As a result, Real Parties were deprived of money, property, or services that are recoverable under the applicable False Claims Acts alleged herein.

6. In addition to the transactions described above, Real Parties often acquire PVC pipe when they accept a newly constructed subdivision or other private project built by a private developer ("Developer" and "Private Developer Transactions"). Private Developer Transactions enable developers to complete subdivisions or other private projects without having to wait for Real Parties to install the necessary PVC pipes. Frequently, private contracting companies install the PVC parts in these subdivisions or private projects.

7. Although the PVC pipe is installed by Developers, the installation is strictly regulated by the Real Parties because the PVC pipe is ultimately deeded to Real Parties. These regulations dictate, among other requirements, which pipe manufacturers, and which products from those manufacturers, may be used in the subdivision or private project.

8. In addition to strict compliance with Real Parties' parts specifications, Real Parties also require Developers to provide a performance bond, in the amount of 100% of the projected cost of the overall project, to ensure that funds will be available to correct any failure by the Developer to complete the subdivision or private project in accordance with Real Parties' specifications.

9. Only upon receiving certification that the development or private project was completed in accordance with Real Parties' specifications will the subdivision or private project be accepted, the performance bond released, and water and water maintenance services be provided to the subdivision or other private project built by a Developer.

10. Upon the release of the performance bond, some Real Parties additionally require that Developers post a warrant bond, normally in the amount of 5% to 10% of the performance bond, to be released after one year.

11. Defendants' false representations caused Developers, their contractors, and/or Real Parties' engineers to falsely represent to Real Parties that newly constructed subdivisions and other private projects were equipped with PVC pipe conforming to Real Parties' specifications. As a result, Real Parties were deprived of money, property, or services that are recoverable under the applicable False Claims Acts as alleged herein.

12. Starting in at least 1997, J-M began knowingly to manufacture substandard PVC

pipes, selling them through distributors to military bases, State Roads and Highway Projects, and public agencies, as well as to contractors installing portions of the water distribution and sewer systems. J-M falsely represented to its customers, including Real Parties, that the PVC pipe products sold to them conformed to applicable industry standards when in fact the products were made using inferior materials, processing, and tooling that resulted in their having substandard tensile strength, as measured by various tests. In making its false representations to its distributors, contractors, and ultimate end-users, J-M intended that its false representations be used to induce Real Parties to purchase its products. As a result, Real Parties have suffered, and will continue to suffer, substantial damage. Starting in at least 1997, a substantial percentage of the PVC pipe J-M supplied had tensile strengths below the minimum required by applicable industry standards and Real Parties' contracts and specifications. As a result of the diminished tensile strength, J-M's PVC pipe will have a shorter life span, be more likely to swell and leak, and need to be replaced more quickly than pipe manufactured to specification.

13. The Federal and State False Claims Acts provide that any person who knowingly submits or causes to be submitted a false or fraudulent claim to a governmental entity for payment or approval is liable for a civil penalty of up to $12,000 for each such claim, plus three times the amount of the damages sustained by the government. The Acts allow any person having information regarding a false or fraudulent claim against the government to bring an action on behalf of himself (the "qui tam plaintiff" or "relator") and the government and to share in any recovery.

14. Based on these provisions, qui tam plaintiff John Hendrix ("Hendrix") seeks to recover damages and civil penalties arising from defendants' actions in presenting, or causing to be presented, false claims, and defendants' actions in presenting, or causing to be presented, false records and statements to federal, state, and local governmental entities to get false claims paid.

## II. PARTIES

15. Qui tam plaintiff Hendrix ("Relator") is a resident of Clifton, New Jersey. After graduating from college in December 2001, Relator began working for Defendant J-M on July 8, 2002, in its corporate headquarters in Livingston, New Jersey, as an engineer in J-M's Product

Assurance Division. Throughout his employment at J-M, the majority of Relator's job duties involved advising J-M on the technical aspects of claims brought by J-M's customers for failing or non-conforming product. To a lesser degree, Relator's job also involved sales and customer service work, including advising current and prospective customers (primarily fellow engineers) on technical aspects of J-M's products. On November 9, 2005, a little over a week after Relator wrote a memo to J-M management highlighting the fact that the tensile strength of J-M's PVC pipe was below that required by Underwriters Laboratories ("UL") to qualify for the UL Mark stamped on its pipes, J-M terminated Relator's employment.

16. Real Parties, on whose behalf Relator brings this suit, are the United States, the States of California, Delaware, Florida, Illinois, Indiana, Nevada, New Mexico, New York, and Tennessee, the Commonwealths of Massachusetts and Virginia, the District of Columbia, the political subdivisions and public water and sewer agencies set forth in Exhibit 1, and all other political subdivisions and public water and sewer agencies within the States of California, Delaware, Illinois, Indiana, Nevada, New Mexico, New York, and Tennessee, the Commonwealths of Massachusetts and Virginia, and the District of Columbia, that purchased, or were deeded or acquired from others, between January 18, 1996 and the present, certain types of J-M's PVC pipe at issue in this litigation, as described more fully herein. Exhibit 1, incorporated herein, identifies by name, without limitation, some examples of the Real Parties that purchased, were deeded, or otherwise acquired J-M's PVC pipe between at least 1996 and the present. Exhibit 2, incorporated herein, sets forth examples of federal projects for which the United States of America purchased, was deeded, or acquired J-M PVC pipe during that same period. Exhibits 3(a) through 3(l), incorporated herein, set forth examples of the purchase, deeding, or acquiring of J-M PVC pipe by Real Parties other than the United States of America.

17. Defendant Formosa Plastics Corporation, U.S.A. ("Formosa"), was formed in 1978 as a Delaware corporation, having its headquarters at 9 Peach Tree Hill Road, Livingston, New Jersey. At all times relevant to this Complaint, Formosa was a privately held foreign for-profit corporation and a subsidiary of the Taiwan-based Formosa Plastics Group ("FPG").

18. Formosa is largely controlled by the Wang family of Taiwan. Yung-ching Wang,

known as "Y.C. Wang," was FPG's Founder and former Chairman of the Board. He passed away on October 15, 2008. Each of Y.C. Wang's ten children has served as an executive at either FPG or one of its subsidiaries. Walter Wang, Y.C. Wang's youngest son, is the President and current CEO of defendant J-M and has been since 1990.

19. One of Formosa's core business functions is to produce plastic resins. Formosa required J-M to use its resin in J-M's production of PVC pipe, including most of the PVC pipe at issue in this case. During the relevant period, Formosa had annual revenues exceeding $4 billion.

20. In 1982, Formosa formed J-M. Until at least November 1, 2005, J-M was a wholly owned subsidiary of Formosa, although some industry publications referred to J-M as a unit or operating division of Formosa. At all times relevant to this Complaint, J-M was a Delaware corporation headquartered at 9 Peach Tree Hill Road in Livingston, New Jersey, where Formosa was also headquartered.

21. During the relevant period, J-M manufactured its PVC pipe in at least 11 plants, including the following locations: Fontana and Stockton, California; Pueblo, Colorado; Adel, Georgia; Wilton, Iowa; Batchelor, Louisiana; Winnebago, Minnesota; Butner, North Carolina; McNary, Oregon; Meadville, Pennsylvania; and Wharton, Texas.

22. In or about November 2005, Walter Wang purchased J-M from Formosa for approximately $100 million. Thereafter, as of June 22, 2007, J-M completed the acquisition of PW Eagle Inc., North America's second largest producer of PVC pipe, for approximately $400 million. The new company has operated under the trade name JM Eagle™ since the merger. (References to J-M herein after June 2007 are intended to and should be deemed to refer to JM Eagle as appropriate.) With at least $1 billion in annual sales, J-M was the largest manufacturer of PVC pipe in the United States and the world at all times relevant hereto.

## III. JURISDICTION AND VENUE

23. This Court has jurisdiction over the subject matter of the Federal False Claims Act action pursuant to 28 U.S.C. § 1331 and 31 U.S.C. § 3732(a), which specifically confers jurisdiction on this Court for actions brought pursuant to 31 U.S.C. §§ 3729 and 3730. This Court has jurisdiction over the subject matter of the State False Claims actions pursuant to 28 U.S.C. §

1367 and 31 U.S.C. § 3732(b), because the State False Claims actions arise from the same transactions or occurrences as the Federal False Claims Act action.

24. This Court has personal jurisdiction over Defendants J-M and Formosa pursuant to 31 U.S.C. §3732(a), which provides that "[a]ny action under section 3730 may be brought in any judicial district in which the defendant, or in the case of multiple defendants, any one defendant can be found, resides, transacts business or in which any act proscribed by section 3729 occurred." Section 3732(a) also authorizes nationwide service of process. During the relevant period, J-M operated a foundry in Fontana, California, at which many of the fraudulent practices occurred, and thereby transacted business in the Central District of California.

25. Venue is proper in this district pursuant to 31 U.S.C. §3732(a), because J-M can be found in, resides in, and/or transacts business in the Central District of California and because many of the violations of 31 U.S.C. §3729 described herein occurred within this judicial district.

## IV. FRAUD AGAINST REAL PARTIES

### A. Turnover in J-M's Upper Management

26. J-M was founded in 1982 when Formosa acquired the Pipe Division of Johns-Manville Corporation and created J-M. For its first 10 years, J-M's management consisted largely of former Johns-Manville employees. However, by the mid 1990s, most of the old Johns-Manville employees had either retired or left. In 1990, J-M's parent company, Formosa, installed Walter Wang, the son of Formosa's Founder and Chairman of the Board, Y.C. Wang, as J-M's President. At the time he assumed this post, Walter Wang was only 25 years old. Having just graduated from college, he had little to no practical experience in managing a company, let alone the world's largest manufacturer of PVC pipe. Shortly after naming Walter Wang as president, J-M moved its corporate headquarters from Stockton, California to Livingston, New Jersey, where until approximately October 2008 it occupied the same office building in which Formosa and several other Formosa subsidiaries also have corporate offices.

27. Under Walter Wang's leadership, J-M implemented a series of cost-cutting measures that undermined the quality of J-M's PVC pipe products. At Walter Wang's direction, the outgoing former Johns-Manville managers were replaced by individuals with significantly less

experience and fewer credentials. For instance, the Director of Production, who formerly had been a senior engineer, was replaced by Barry Lin ("Lin"), an accountant from Formosa's management center in Taiwan with no engineering background. The new Director of Engineering, Kaider Liao, did not have an engineering degree. The new Quality Control Manager, Jack Hwang ("Hwang"), was an electrical engineer with no experience or formal training in failure analysis. After Hwang left the Quality Control Manager post in 2004, the position was later filled in 2005 by a recent college graduate.

28. In filling these and other supervisory positions, J-M drew almost exclusively from two sources of recruits – Taiwanese nationals and recent college graduates (like Relator) – both of whom garnered smaller salaries. Until approximately 2003, Formosa owned and operated a boarding house near its Livingston, New Jersey headquarters to accommodate the large number of Taiwanese employees at J-M and its other subsidiaries who could not otherwise afford to live in the greater New York Metropolitan area on their modest J-M salaries.

29. Backed by this new crop of inexperienced managers, Walter Wang shifted J-M's focus away from product quality to a single-minded mission of gaining market share and improving the bottom line without regard to quality.

30. Consistent with this cost-cutting governing principle, Walter Wang micro-managed J-M. For example, all claims valued over $15,000 had to be cleared by him personally, and certain employees' hotel upgrades had to be reviewed by him as well.

31. Under the direction of Walter Wang and his new managers, J-M implemented three cost-cutting measures that have seriously compromised the tensile strength of the majority of its PVC pipe.

**B. Formosa and J-M Substituted Inferior Ingredients in their PVC Compound**

32. As a cost-saving measure, J-M and Formosa began to substitute cheaper and lower-quality ingredients in its PVC compound. While most PVC pipe manufacturers used a pre-prepared stock formula, published by the Plastic Pipe Institute, for their PVC compounds, Formosa and J-M created a proprietary, less expensive compound called "J-M 90." Developing their own compound allowed Formosa and J-M to control the type and quality, and therefore the

cost, of ingredients that make up the compound.

33. J-M and Formosa replaced two primary classes of ingredients in J-M 90 – resin and additives (such as wax and stabilizers) – with cheaper, inferior-grade brands. Specifically, they replaced the more expensive, higher viscosity resin (which had a viscosity rating of 0.92), with a lower-grade resin (which had a viscosity rating of 0.88). Formosa required J-M to use Formosa as its primary supplier of resin, and most of the resin at issue was produced by Formosa. In addition to supplying the resin, which is a vital ingredient in J-M 90, Formosa was responsible for mixing and preparing the J-M 90 compound, as well as shipping it, to numerous J-M plants where it could be formed into pipe.

34. In addition to being cheaper to make and purchase, the use of a lower-viscosity resin allowed pipe to be manufactured more quickly and with less processing, thereby allowing J-M to increase its production rates and output.

35. Switching the other additives, such as waxes and stabilizers, to lower-grade brands similarly decreased tensile strength in pipe made with J-M 90.

36. The poor quality of the ingredients used in the J-M 90 compound, including the resin produced by Formosa, has resulted in the J-M 90 compound having a decreased overall tensile strength. This is exemplified by testing conducted by NSF International ("NSF") (formerly known as the National Sanitation Foundation) in 2003 at the McNary, Oregon Plant. As set forth in more detail below, see section VI, on or about September 25, 2003, NSF required that J-M pipe be subjected to hydrostatic design basis ("HDB") testing for the pipe to maintain its NSF certification. NSF observed that the Product Sample Form for the one-inch pipe being tested showed that it contained Formosa resin. This pipe failed HDB testing with an long-term hydrostatic strength ("LTHS") of 3608, meaning that it had less than a 20% useful life when compared to pipe that passed HDB testing.

37. The corresponding increase in production rates resulting from the switch to a lower-viscosity resin further contributed to pipe made with the J-M 90 compound having a decreased overall tensile strength. Because the lower-viscosity resin was a more ductile material, it required more processing to achieve the required tensile strength. Instead of slowing its

production rates to account for the lower-viscosity resin, J-M increased its production rates to increase its output of PVC pipe.

38. Both Formosa and J-M were aware that the switch in ingredients in the J-M 90 formula would result in an inferior quality pipe. On May 23, 2002, an internal memorandum sent from William Fassler ("Fassler"), a former employee and senior engineer in the Research and Development Department in J-M's Stockton, California plant, to David Chen ("Chen") (Stockton Plant Manager), K.C. Yang ("Yang") (J-M's Corporate Quality Control Supervisor), Lenor Jang, Angela Yen, and Steven Rios detailed a conversation Fassler had with representatives of Formosa. Fassler's memo explained that he told Formosa of problems with the pipe created with this new formulation. Specifically, the memo noted that because the new resin had a lower inherent viscosity, it might result in pipe having decreased strength. The memorandum further noted concerns of burning and problematic pipe as a result of the introduction of Formosa F622 resin in the production process. As the memo explained, the subsequent modification of particle size distribution, as a result of the resin, also equates with extrusion problems.

39. With regard to the inferior pipe quality that resulted from the switch in ingredients:

a) Brian Wang, former manager of three plants, has acknowledged that in order to increase profits, J-M management began using cheaper compound ingredients, including wax lubricants, stabilizers, and resin.

b) Yang has acknowledged that in order to increase profits, defendants' management ordered the use of compound ingredients from a company called Luxco. These ingredients were inferior, and shortly after the changeover to Luxco, pipe manufactured by J-M could no longer meet the UL Standard 1285 ("UL 1285") requirement of 7000 psi. Yang has further acknowledged that defendants' management refused to allow him to pursue the Luxco quality issue.

c) John Negode ("Negode"), former Quality Control Supervisor at the McNary, Oregon Plant, has acknowledged that changes in the quality of the compound being used by J-M caused test failures on a regular basis. Negode has acknowledged that the compound ingredients were changed because J-M management did everything on the cheap.

d) Fassler has acknowledged that in order to reduce the cost of material it used, J-M switched from paraffin wax to multi-wax. The multi-wax had extreme variations and inconsistencies. Eventually the company had to switch back because of the serious quality problems with these ingredients.

e) Fassler has further acknowledged that, in the year 2000, J-M switched to a lower viscosity resin and that this decision was made by J-M senior management in order to save money. Fassler strongly opposed the change-over because the reduced viscosity reduced tensile strength, but the change was made nonetheless.

f) In a memorandum to Chen created on May 23, 2002, Fassler stated: "Lower IV means lower physical strength (lower tensile strength, lower hoop stress, lower impact resistance). For JM90 the safety factor for tensile strength and hoop stress is already small. For electrical conduit, well casing, and foam core DWV the impact resistance test is already critical. Lower IV resin would decrease the safety factor for these products." Exhibit 53, incorporated herein.

**C. Accelerating Production Rates**

40. In addition to degrading the ingredients that make up its J-M 90 compound, J-M began to make changes to its manufacturing process that further eroded the tensile strength and caused the finished PVC pipe to be out-of-specification.

41. PVC pipe is manufactured by extrusion. Broadly described, extrusion involves the following steps. The ingredients that make up the PVC compound (*e.g.*, base resin and additives like paraffin wax and calcium stearate) are weight-measured out of silos and poured into a hopper where they are mixed. The mixed PVC compound is then poured into the extruder, where it is melted and formed by being forced (by a barrel and screw acting as an auger) through an orifice known as the die that creates the shape and dimensions of a pipe. Once out of the extruder and die, the hot PVC pipe is then cooled in a series of water cooling tanks.

42. To meet an ever-increasing demand for PVC pipe, J-M began to increase production rates in each of its 11 plants that produced PVC pipe. Instead of investing in more extruders, replacing outdated extruders, or building more plants, J-M started running its existing

extruders (many of which were over 30 years old) at speeds that exceed the extruders' rated capacity. Each extruder has a recommended maximum output measured typically in pounds per hour, and J-M began running its extruders at 20 percent above the rated capacity.

43. As a result of the increased speed of J-M's production line, more torque and higher temperatures were needed to melt the J-M 90 compound and, once melted, the PVC material received less processing time in the extruder and die as it was being formed into pipe. The temperature of the water being sprayed on the pipe in the cooling baths had to be lowered to counteract both the increased temperature of the pipe emerging from the extruder and the fact that the pipe was spending less time in the cooling baths. To adjust the temperature of the cooling baths, the number of sprayers was increased or decreased. (Since the cooling baths occupy a fixed distance on the production line, the increased production rates had the pipe moving more quickly over this and all other parts of the production line.)

44. Not surprisingly, the effect of this accelerated manufacturing process (in addition to increased output) was to further decrease the tensile strength of J-M's PVC pipe. Like a cake baked for eight minutes at 800 degrees and then quickly cooled in a freezer, the PVC pipe being produced at the accelerated production rate was not as strong as pipe that was afforded proper processing time and conditions. Having been subjected to a quick burst of cooling, the surface of the outside of the pipe was hard, whereas the portion of pipe below the surface, not having had adequate time to cool and form, was soft. The accelerated manufacturing process also created huge variations in the temperatures of the inside and outside diameter of the pipe and the rate at which each cooled. The effect of these differential temperatures and cooling rates was to further weaken the pipe and create locked-in stresses in the pipe that increase the likelihood the pipe will catastrophically rupture when it is tapped.

45. With regard to the accelerated production process described above:

a) Brian Wang has acknowledged that Barry Lin and Walter Wang repeatedly increased production quotas in order to maximize profits. The increase forced plant managers to speed up the extruders, which put stress on them.

b) Yang has acknowledged that J-M management constantly increased production

quotas, causing plants to ramp up the speed at which the extruders were run.

c) Negode has acknowledged that extruders at J-M's plants were always run at faster than rated capacity, resulting in non-conforming pipe, including non-conforming tensile strength.

d) Fassler has acknowledged that, over time, extrusion goals were increased significantly. This caused plant managers to increase the speed at which the extruders were run. This in turn made it more difficult to keep the manufactured pipe within specification.

**D. Improper Tooling and Maintenance of Extruders**

46. During the relevant time period, with the exception of its newer plants in Adel, Georgia, and Meadville, Pennsylvania, in each of its remaining PVC plants, J-M had many extruders that were over 30 years old. Rather than invest in new extruders, J-M placed a new, high-output die on the end of the older extruders to keep up with the accelerated production schedule set by Walter Wang. However, because J-M's lower-quality PVC compound required more processing time and the older extruders were not able to work the PVC compound enough for the high-output die, the tensile strength of the pipe produced by the combination of older extruder and high-output die was further diminished.

47. In late 2004, J-M began receiving complaints from customers regarding a certain type of PVC pipe (IPS white pipe) produced at its plant in Stockton, California. The combination of increased production rates, higher temperatures, and high-output dies on older extruders had caused the pipe to burn, turning it yellow in color, instead of the white color characteristic of this particular type of pipe. To remedy the problem, Yang instructed the Stockton plant to use a regular die for this product. In an email dated January 4, 2005, Yang instructed Stockton's Superintendent of Production, Jim Reichert, that: "PST [Plant Stockton] should use regular die for IPS white products when high-output die cause burning. If necessary, PST should request new IPS die." See Exhibit 4, incorporated herein.

48. By increasing its production rates to speeds exceeding the extruders' rated capacity, J-M accelerated the wear on its extruders. Moving parts like the extruders' screw and barrel were most affected by the added wear. However, rather than increase the amount of maintenance to

account for more wear, J-M abandoned its former practice of regularly monitoring and replacing the screw and barrel unit when it fell below a certain tolerance and decided instead to amortize the unit over a given time period (such as one year) and replace it only at the end of that time period.

49. J-M managers like Fassler began to observe that, under the increased production rates, the screw and barrel unit was exceeding the old tolerances and needing replacement after only six months. Nevertheless, under its new amortization policy, J-M continued to use the screw and barrel unit for another six months before it was replaced. Experienced J-M engineers like Fassler were well aware that the PVC material extruded in the second half of the unit's amortized life with the underperforming screw and barrel unit had reduced tensile strength. See Exhibit 5 (Relator's notes dated 11/3/05), incorporated herein.

50. In a discussion with Relator on November 3, 2005, Fassler explained that the reason for the decrease in tensile strength stems from the proximity of the screw and barrel to each other. For instance, a new screw and barrel unit, which fits closely together, will generate more shear and yield better mechanical properties in the finished pipe. See Exhibit 5. However, as the unit wears, the fit loosens and the shear decreases, which compromises the processing and decreases the tensile strength of the PVC material. Id. Despite this knowledge, J-M failed to replace its underperforming screw and barrel units after the first six months of use and allowed them to be used for an additional six months in spite of the detrimental effect on the pipe's tensile strength.

51. The combined effect of J-M's substitution of inferior ingredients, increased production rates, and improper tooling and maintenance of its extruders caused J-M to produce PVC pipe that failed to meet the tensile strength requirements set forth by UL, the American Water Works Association ("AWWA"), ASTM International ("ASTM") (originally known as the American Society for Testing and Materials), and FM Approvals, a division of FM Global (formerly Factory Mutual) ("FM").

52. With regard to the improper tooling and extruder issue:

a) Brian Wang has acknowledged that the increased speed of the extruders caused the screw and barrel units to wear out faster, but maintenance and replacement schedules were

not modified to take increased wear and tear into account.

b) Yang has acknowledged that J-M's screw and barrel units were constantly wearing out because of the high extruder speeds, and J-M did not replace them often enough. This contributed significantly to producing non-conforming pipe. Yang further acknowledged that J-M far exceeded the screw and barrel life expectancy, and J-M management would not allow replacement often enough.

c) Fassler has acknowledged that the screw and barrel units were replaced according to an amortization schedule. This was an improper approach and led to the use of worn screw and barrel units. In fact, J-M far exceeded the life expectancy of the units; J-M management overruled plant managers who tried to replace the units.

## V. J-M SELLS SUBSTANDARD PVC PIPE BEARING UL MARK DESPITE KNOWLEDGE THAT THE PIPE DOES NOT QUALIFY FOR UL LISTING

### A. J-M PVC Pipe Does Not Meet UL's Longitudinal Tensile-Strength Requirement

53. UL is a not-for-profit corporation that tests and certifies a wide range of products for public safety. Once a product is tested and found to conform to UL's safety requirements, that product becomes UL certified and is eligible to bear the UL Mark. A product bearing a UL Mark is universally accepted as being safe.

54. UL has promulgated a safety standard governing PVC pipe for use in underground, fire service systems. UL 1285 lists a variety of requirements that must be met for PVC pipe to be UL certified and bear the UL Mark. Specifically, UL 1285 requires that "[r]epresentative samples of each class, pressure rating and size of PVC pipe . . . shall be subjected to the tests described in Sections 11 – 20." Exhibit 6, incorporated herein. One of those tests, Section 17, is the Longitudinal Tensile-Strength ("LTS") Test, which provides that "[m]achined specimens from the pipe shall have a minimum tensile strength of 7,000 psi." Id.

55. J-M has undergone only two rounds of LTS Tests for UL on its PVC pipe products. The first round was on its founding in 1982 when J-M had to initially qualify its PVC pipe products for UL listing. The second round was in the mid-1990s when J-M sought to change its PVC pipe compound and begin making pipe out of its newly created J-M 90 compound. J-M

passed both of these tests and received UL listing for its PVC pipe products.

56. Once it has certified a product, UL does not require that the product undergo the Performance Tests listed in Sections 11 through 20 of UL 1285, including the LTS Test, unless and until there has been a material change in the product's materials, design, or processing. While UL requires manufacturers to "conduct the necessary production control, inspection, and tests" as they produce the pipe, these routine Manufacturing Tests are much less stringent than the Performance Tests UL 1285 requires to initially qualify the PVC pipe. Exhibit 6.

57. UL operates on an honor system. Once a product is UL listed, UL relies on manufacturers to notify it of any material changes to the product's materials, design, or processing. By requiring "***representative*** samples of each type of PVC pipe" for qualification testing, UL conditions its ongoing certification of the product on the understanding that all future pipe will be made in a manner that is not materially different from the samples submitted to UL to qualify the pipe. Exhibit 6 (emphasis added). In the Foreword, UL 1285 specifically states that "[t]he observance of the requirements of this Standard by a manufacturer is one of the conditions of the continued coverage of the manufacturer's product." Id.

58. By at least 1997, J-M's cost-cutting practices of substituting inferior ingredients in its compound, accelerating production rates, and improperly tooling its extruders were well-established and had seriously degraded the tensile strength of J-M's PVC pipe. By this time, J-M had begun to receive LTS Test results (from J-M's internal testing and testing performed by customers in connection with claims for failing pipe) showing that more than 50 percent of the time J-M's PVC pipe failed to meet the minimum LTS requirements set forth in UL 1285.

**1. Results of Internal LTS Testing Trouble Relator**

59. Fassler ordered all of the LTS Tests that J-M requested from 1996 through 2005. Based on his review of these test results, Fassler estimated that J-M's PVC pipe failed LTS requirements 70 percent of the time.

60. In 2002, while working on two large claims against J-M for failed PVC pipe, Relator was asked to review the results of all internal LTS Tests J-M had performed on PVC pipe manufactured between 1998 and 1999, the time period when the failed pipe was produced. In so

doing, Relator was able to review the results from six LTS Tests that had been performed on J-M's PVC pipe. Of the six tests, Relator observed that four failed the LTS requirements and only two passed.

61. At various times, together and separately, Fassler, Yang, and Relator each have expressed concern to Lin about the large percentage of failing LTS Test results on J-M's PVC pipe. Lin has responded by saying that the failures were "an acceptable risk to meet company goals," failures were normal, and not every piece of pipe would always meet specification. Exhibit 7 (Relator's notes dated 9/12/05), incorporated herein.

62. After seeing a subset of the results of J-M's LTS testing in which 60 percent of the samples failed and after learning from Fassler that the collective results of the past nine years showed an overall failure rate of 70 percent, Relator was no longer comfortable signing his name to customer certifications and letters to claimants representing that J-M's pipe complied with the UL Standard. On August 23, 2005, Relator told Lin about his concerns and said he would not sign any more letters without first seeing copies of all of the results of J-M's LTS testing.

63. Lin refused to provide Relator with the LTS Test results. Instead, he simply assured Relator that J-M's UL-listed products met all the requirements of UL and directed him to continue to certify this to J-M's customers. Exhibit 8, incorporated herein, is a copy of Relator's August 25, 2005, email to Lin asking him to acknowledge in writing his statements regarding J-M's compliance with the UL tensile-strength requirement despite internal test results to the contrary. After having similar conversations with Yang, Kai Cheng ("Cheng"), J-M's Director of Product Assurance, and Mai Huynh, J-M's Product Assurance Manager, Relator sent similar emails to each of them. See id. None of the recipients provided a written acknowledgment to Relator.

**2. Results of Testing Performed in Conjunction with Claims Against J-M**

64. By at least 1997, J-M had received test results showing failing longitudinal tensile strength from its Product Assurance Department. J-M's Product Assurance Department handles all claims and complaints brought by J-M customers for failing pipe. Because LTS testing can be performed only by a certified independent laboratory and is expensive ($2,500 per specimen for

the series of tests with which this test is packaged), it is typically requested only in the case of larger claims involving significant damages.

65. During Relator's three years in J-M's Product Assurance Department, LTS testing was performed in connection with only 14 of the claims. Of those 14 claims, Relator saw 12 instances in which the longitudinal tensile strength of J-M's PVC pipe was below the 7,000 psi minimum requirement and only two instances in which the PVC pipe met LTS requirements. By contrast, LTS testing of pipe manufactured by J-M's predecessor, Johns-Manville, ranged from 7,560 – 8,765 psi and always exceeded the desired level of 7,150 psi. Exhibit 9, incorporated herein, contains copies of some of the test results documenting the following failing longitudinal tensile strengths measured in pipe from four of the 14 claims:

//

| Number & Name of Claim | Longitudinal Tensile Strength Required by UL 1285 | Longitudinal Tensile Strength Measured in Sample of J-M PVC Pipe | Independent Laboratory That Performed the Test | Test Date |
|---|---|---|---|---|
| Q00-H-41 Ferguson Cities Supply Brigman Construction | 7,000 psi | Hobbs B: 6,600 psi | Law Engineering and Environmental Services, Inc. | 09/28/00 |
| Q00-H-14 Tec Utilities | 7,000 psi | Sample 2: 6,680 psi<br>Sample 3: 6,750 psi<br>Sample 4: 6,940 psi | Modern Industries, Inc. | 10/31/00 |
| Q02-J-40 Westgate Resorts | 7,000 psi | 6,833 psi | Bodycote Broutman, Inc. | 10/01/02 |
| Q05-C-08 Sheldon | 7,000 psi | Sample 1: 6,777 psi<br>Sample 2: 6,775 psi | CRT Laboratories | 6/9/05 |

66. In his Internal Recommendation and/or Authorization ("IRA") advising J-M on how it should handle the Sheldon claim referenced in the chart above, Relator noted that: "CRT conducted testing on the pipe and found that the tensile strength of the pipe was below that

required by the UL Listing Mark on the pipe on all samples tested." Exhibit 10, incorporated herein. Because of the pipe's substandard longitudinal tensile strength, Relator recommended that J-M offer the customer a settlement of $30,000. Id.

67. Cheng disagreed with Relator's recommendation and instructed Relator to "find a way to deny the claim and follow his thoughts, that J-M is not responsible even if we fail the test, and offer alternative theories as to the cause of failure for this case." Exhibit 11 (Relator's notes dated 11/1/05), incorporated herein. In his conversation with Relator, Cheng also stated that he "knew that probably half of our pipe did not meet this requirement of UL [UL 1285 longitudinal tensile strength] and for all of our pipe to meet the standard we would have to be perfect in production and we could not always do that." Id.

**3. Results of Internal LTS Testing of J-M's 30- and 36-Inch Big Blue Pipe**

68. Beginning in approximately 1999 with the opening of its new plant in Adel, Georgia, J-M added two new products to its Big Blue PVC pipe product line. J-M began manufacturing Big Blue PVC pipe with a pressure rating of 165 psi in both the thirty- and thirty-six-inch sizes in its Adel, Georgia and Fontana, California plants. Shortly after starting to manufacture these two products, J-M sent specimens from both pipes to an outside laboratory for LTS testing to see if they could qualify for UL listing. However, all of the specimens failed to meet the minimum longitudinal tensile strength of 7,000 psi required by UL 1285.

69. Once it established a customer base for these two products, J-M introduced a second pressure class – one with a pressure rating of 125 psi – in both its thirty- and thirty-six-inch Big Blue PVC pipe. Again, J-M subjected samples from these two new products to LTS testing at an outside laboratory, and all of the samples had tensile strengths below 7,000 psi. Thereafter, J-M continued to test the LTS of its thirty- and thirty-six-inch Big Blue PVC pipe and received failing results. Without a passing result, J-M was unable to approach UL about qualifying these products, and they did not have a UL Mark until after the acquisition of PW Eagle.

70. Since J-M's thirty- and thirty-six-inch Big Blue PVC pipe is made using the same materials, equipment, and processing as all of J-M's UL-listed Big Blue and Blue Brute pipe, the substandard longitudinal tensile strengths reported on the thirty- and thirty-six-inch Big Blue pipes

are representative of the longitudinal tensile strengths of all J-M UL-listed pipe. Like the results of other J-M internal LTS testing and its claims testing, the failing results for its thirty- and thirty-six-inch Big Blue pipe are further proof that J-M's cost-cutting measures of substituting inferior ingredients in its J-M 90 compound, accelerating its production rates, and improperly tooling its extruders have reduced the longitudinal tensile strength of its PVC pipe.

**B. J-M PVC Pipe Does Not Meet UL's Radial Tensile Strength Requirement, as Demonstrated by the "No Thickened Section" Project**

71. In August 2003, Relator proposed a change to the bell design of J-M's Blue Brute and Big Blue PVC pipe. The two ends on a length of PVC pipe are called alternately the barrel end and the bell end. Under J-M's existing design, the bell end had a greater wall thickness than the remainder of the pipe. To make the bell walls, the extruder had to be slowed down and additional material added to increase the wall thickness. Under Relator's proposal, dubbed the "No Thickened Section" Project, the bell wall would not be thickened and would have the same dimensions as the remainder of the pipe, thereby allowing the extruder to run at a nearly continuous speed, increasing output and reducing the amount of material needed per length of pipe.

72. Relator found support for his proposed design change in the AWWA standards governing PVC Pipe for Water Transmission and Distribution, AWWA C900 and C905. Under Section 4.3.2.2 of both AWWA C900 and C905, the pipe's bell end must meet one of two requirements. It must have the same wall thickness ratio as the barrel of the pipe, or it must be tested to ensure that the joint assembly qualifies for a HDB category of 4,000 psi. See Exhibit 12, incorporated herein. Whereas longitudinal tensile-strength testing measures the tensile strength of the lengthwise portion of the pipe from end to end, HDB testing is one of several ways of measuring the tensile strength of the radial, circular, or hoop section of the pipe. Based on this Section, Relator concluded that the thickened bell could be omitted from the pipe design so long as a joint manufactured from the thinner bell could meet the required HDB category of 4,000 psi.

73. In his Project Initiation Form dated October 28, 2003, Relator estimated that by omitting the thickened bell section of its two most popular products, Blue Brute and Big Blue, J-M

would save $3,000,000 a year in materials costs alone, not to mention the additional efficiencies to be gained from not having to slow down its extruders and running them at a continuous speed. See Exhibit 13, incorporated herein. Other managers, including Fassler, extolled the potential benefits of a "No Thickened Section" pipe. In an email to Hwang dated September 3, 2003, Fassler wrote: "The potential benefits are large: significantly reduced material usage; greatly reduced bell-end forming scrap; easier bell-end forming; better bell-end appearance." Exhibit 14, incorporated herein. On December 8, 2003, Walter Wang approved the "No Thickened Section" Project with a budget of $65,000 to cover the costs of designing and developing the new bell end and performing the various tests needed to gain UL listing. See Exhibit 13.

74. Since the thinner bell wall involved only a change in the pipe's design, as opposed to its materials or processing, J-M did not have to undergo many of the Performance Tests in UL 1285, including the LTS Test, to qualify the newly designed pipe for UL listing. Instead, to qualify the new design, UL required J-M to pass the following three strength tests, each of which measures the radial tensile strength of the newly designed bell end of the pipe: (1) a shortened HDB Test (2,000 hour test); (2) Sustained Pressure Test (1,000 hour test); and (3) Quick Burst Test (60 second test).

75. Since the newly designed, no-thickened-section pipe was made from the same materials and process as the existing thickened-section pipe, J-M experienced many of the same problems with the new pipe as it had with the existing pipe. For instance, J-M's three cost-cutting practices (substitution of inferior materials, accelerated production rates, and improper maintenance and tooling of its extruders), which caused J-M's existing pipe to fail the LTS Tests a majority of the time, also caused J-M to fail many of the above-referenced radial strength tests on the newly designed, no-thickened-section pipe.

76. In January 2006, after beginning production on no-thickened-section pipe, J-M tested at least one sample of current production pipe (four-inch Dimension Ratio ["DR"] 18 and four-inch DR 25 pipe) from all of its plants. The results ranged from 6,670 – 7,060 psi for the DR 18 pipe and 6,660 – 6,680 psi for the DR 25 pipe. Fassler concluded that: "The apparent longitudinal tensile strength of four-inch DR 18 & DR 25 pipe at all facilities is below the desired

level of 7,150 psi." Exhibit 54, incorporated herein. In July 2006, J-M tested three runs of its 4" DR 25 pipe from Fontana. Each of the three runs failed LTS, with results ranging between 6,550 psi and 6,680 psi.

77. These failures, arising from the degrading of the manufacturing materials process, have resulted in a vastly different product than that manufactured by J-M's predecessor company, Johns-Manville. In 1974, LTS testing of Johns-Manville's pipe ranged from 7,560 – 8,765 psi, and always exceeded the desired level of 7,150 psi. By contrast, tests by J-M show results ranging from 6,349 – 7,060, nearly always below the desired level.

78. To gain UL listing for the new pipe design in the face of such failures, J-M resorted to a number of fraudulent practices, including without limitation:

(1) specially producing the UL specimens using higher quality ingredients and reduced production rates that are not representative of J-M's actual materials and process, including:

(a) changes to the extrusion process, such as: (i) increasing the shear/torque on the extruder to work the compound more thoroughly, (ii) slowing down the extruder speeds, and (iii) replacing used screw and barrel with new ones;

(b) changes to specimen preparation, including: (i) changing the directional cut from tangential to radial, and (ii) changing the dimensions to equal the thickness of the pipe wall; and

(c) changes to compound, including: (i) using JM-90R compound instead of JM-90, (ii) eliminating the use of Luxco brand multi-wax, and (iii) using single-batch compounding instead of double-batch;

(2) concealing failing test results from UL;

(3) where early results indicated a specimen ultimately would fail, stopping long-term tests before they were completed and substituting new specimens; and

(4) making multiple specimens from one lot, and testing a subset of the specimens in advance to ensure that when the remaining specimens were tested for UL, they would pass the tests.

**1. HDB Testing**

79. As discussed above, the two AWWA standards governing PVC pressure pipe – AWWA C900 and AWWA C905 – both state at Section 4.3.2.2(b) that the joint assemblies of the pipe's bell must "qualify for a hydrostatic design basis (HDB) category of 4,000 psi (2,758 MPa) when tested in accordance with ASTM D2837 as modified in ASTM D3139." Exhibit 12. ASTM D2837, in turn, provides the test method for obtaining the pipe's HDB. See Exhibit 15, incorporated herein.

80. The purpose of HDB testing is to determine the long-term radial strength characteristics of PVC pipe. Broadly described, HDB testing is performed by placing 10 specimens under varying degrees of pressure and recording the point in time, up to a maximum of 2,000 hours, when the joint fails. In a November 14, 2003, email to Hwang, Fassler described the HDB test as "the most stringent test of PVC pressure pipe quality." Exhibit 16, incorporated herein. Because HDB testing lasts 83.3 days and requires special equipment, it must be performed at an independent, certified testing laboratory. Given the length of the test, UL does not require that a UL representative be present to observe the testing.

81. Once the testing is complete, Section 5.4 of ASTM D2837 requires that the following three calculations be performed to determine a pipe's HDB: (1) the hydrostatic strength at 100,000 hours; (2) the hydrostatic strength at 50 years; and (3) the percent of circumferential expansion. Each of these calculations measures the pipe's long-term hydrostatic strength. To obtain an HDB category of 4,000 psi, the smallest of these three values must have a long-term hydrostatic strength between 3,830 and 4,800 psi. Exhibit 15 (at Table 1). However, in Note 7, ASTM D2837 notes that the expansion measurement is not required in North America because expansion strengths taken from North American stress-rated PVC materials have not been found to be "the limiting factor," *i.e.*, the lowest of the three values described above.

82. From the beginning of the "No Thickened Section" Project, many of J-M's Quality Control managers expressed concern about the ability of J-M's pipe, thickened or not, to pass the required HDB category of 4,000 psi. In a November 14, 2003 email to Hwang, among the challenges J-M needed to overcome for the Project to succeed, Fassler listed first J-M's

"[i]ncreasing failure rates in long-term pressure tests." Exhibit 16, incorporated herein. Fassler also cited three other obstacles: (1) the recent failure of J-M's pipe to pass sustained pressure tests at NSF, which provides product testing and certification services for products in contact with potable water, (2) failing HDB testing, and (3) numerous joint specimen failures "where the pipe burst before the joint leaked." Id.

83. Given its history of problems with the tensile strength of its PVC pipe, J-M was dubious that no-thickened-section pipe produced at random on the same machinery using the same materials and process as its existing pipe would pass the HDB testing. To increase its odds of passing, J-M directed the Plant Managers preparing the no-thickened-section specimens to monitor the results of the daily Quick Burst Tests being performed on its existing pipe and only produce the specimens when those results were favorable.

84. In a December 9, 2003 email, Fassler, who was heading up specimen preparation for the Project, informed Stephen Yang, the Plant Manager at J-M's Fontana, California plant, that the Quick Burst Test data "is very useful in identifying pipe that has an elevated chance of failing HDB." Exhibit 17, incorporated herein. Fassler instructed Stephen Yang to consult that data in choosing when to produce the specimens. Id. ("We need to test the pipe before testing the joint because the pipe will limit the strength of the joint.") Similarly, in another email of the same date, Hwang notified Stephen Yang that: "We have to have a good test result within J-M before we send out for HDB test." Id.

85. Once the initial specimens were produced (using the Quick Burst data to increase its odds of passing HDB), J-M sent specimens of its no-thickened-section Blue Brute pipe (in size four-inch DR 18) to Charles Stanley, the Director of UL in Garland, Texas, for preliminary testing. Before incurring the cost of 2,000 hours of testing as required by full-scale HDB testing, J-M instructed Mr. Stanley to first subject 10 specimens to a shortened HDB test of only 100 hours to give J-M a preview of how the pipe would likely perform.

86. The results of this testing, which J-M managers dubbed "Accelerated HDB Testing," were mixed. Approximately half of the 10 specimens had hydrostatic strengths that were well below the confidence limit and caused the entire lot to fail the HDB test. Exhibit 18,

incorporated herein, is a copy of the notes Relator took as Mr. Stanley reported on the results of the HDB testing. Under item number three, Relator notes that the Blue Brute specimen in size four-inch DR 18 failed the confidence limit under the Accelerated HDB testing. Id.

87. Notwithstanding these results, J-M instructed Mr. Stanley to begin the full-scale HDB testing. Early in the testing, J-M began to receive reports from Mr. Stanley that many of the specimens were exhibiting excessive swelling. While ASTM D2837 allows specimens to expand a maximum of five percent during HDB testing, several of J-M's specimens had swelled by as much as 33 percent. Having never seen such swelling before, Mr. Stanley sent several of the swollen specimens to Fassler and Relator for their review. (At the time Relator left J-M in November 2005, one of the swollen pipe specimens – a Blue Brute pipe in size four-inch DR 18 – was still in J-M's literature room.)

88. Despite the fact that these specimens clearly showed a serious problem with excessive swelling, J-M continued to rely on Note 7 of ASTM D2837 (which provides that the expansion measurement is not required where the five percent expansion strengths are not the limiting factor) and refused to consider the expansion measurement in determining HDB. From the degree of swelling, J-M was aware that if UL had calculated it, the expansion measurement would have been the lowest value of the three calculations for determining long-term hydrostatic strength and would have caused the pipe to fail HDB. Instead, J-M continued to take only the lower of the first two calculations (hydrostatic strength at 100,000 hours and hydrostatic strength at 50 years) when calculating HDB.

89. Even with the advantage gained by omitting the expansion measurement, J-M repeatedly failed the HDB test when using the lower of the hydrostatic strength at 100,000 hours and at 50 years. Relator recalls four instances in which Blue Brute specimens failed HDB testing. Of the four sets of failing specimens, two were in size eight-inch DR 18, one was four-inch DR 18, and one was eight-inch DR 14. See Exhibit 18. J-M had no reports documenting the failing results because it had instructed Mr. Stanley to prepare reports only for the passing results and to report the failing results orally. Relator recorded many of these failing results on a piece of paper as Mr. Stanley reported them to him. Id.

90. As discussed above, per ASTM D2837 (as modified by ASTM D3139), HDB testing is performed using 10 specimens that are subjected to varying pressures for varying lengths of time up to 2,000 hours. During its HDB testing at UL, J-M asked Mr. Stanley to notify it when early indications revealed that one or more of the 10 specimens, if tested to completion, would cause the overall HDB test to fail. In such instances, J-M instructed Mr. Stanley to stop the testing of those particular specimens (in order to avoid getting any bad data points) and substitute in a new specimen for the continuation of the HDB testing.

91. If the substitutions were unable to produce a passing result and the 10 specimens produced a failing HDB, J-M instructed its managers at the plants preparing the specimens to destroy all other specimens made from the failing lot. As was the case with the initial set of specimens, J-M had its Quality Control staff, including Fassler and Armondo Martinez ("Martinez"), Quality Control Supervisor at the Fontana, California Plant, oversee the production of additional specimens. To increase the odds of getting a passing result, J-M slowed its regular production rates and adjusted its typical temperatures and torque to allow for optimum processing of the specimens. To reduce the excessive swelling, J-M replaced the lower grade multiwax ordinarily used in its J-M 90 compound with a high-quality calcium stearate.

92. On July 5, 2004, after seven months of testing, J-M got its first passing result for HDB with tests performed on Blue Brute specimens in size eight-inch DR 18. However, one month later on August 31, Fassler wrote an email to Relator stating that: "The HDB testing so far has revealed material issues (excessive swelling) and workmanship issues (mid-wall void). The chances of two consecutive samplings passing HDB appear to be less than 50%." Exhibit 19, incorporated herein. As of August 2004, seven of eight samplings of no-thickened pipe had failed HDB testing. There were at least two more failures between December 2004 and December 2005. According to Fassler, the pipe failed testing seven times in a row and passed on the eighth try only due to luck of the draw. Eight months later, in an IRA recommending that J-M proceed with the production of no-thickened-section pipe, Fassler summarized the HDB testing as follows: "J-M submitted DR 14 & DR 18 joint samplings to Universal Laboratory for HDB tests per ASTM D3139-98. Some early samplings failed. Later submittals passed – confirming that with suitable

materials and workmanship the design meets the requirements." Exhibit 20, incorporated herein.

93. By January 2005, after many intermittent failures, J-M had achieved passing HDB results in all three pipe sizes that UL required for its qualification of the new pipe design. J-M provided the passing results to UL. In so doing, however, J-M concealed from UL the following material facts: (1) J-M had conducted other HDB tests on each of these pipe sizes, all of which had failed; and (2) to achieve the passing results, J-M had consulted Quick Burst Test results in deciding when to produce the specimens, altered its regular materials and process, and prematurely stopped testing of specimens that would have produced failing results and substituted new specimens in their place.

**2. Sustained Pressure Test**

94. Another test that measures the long-term radial tensile strength of PVC pipe is the "Sustained Pressure Test" or "1,000 Hour Test." Unlike HDB testing which measures 10 specimens at varying pressures for varying lengths of time up to 2,000 hours, the Sustained Pressure Test measures five specimens at the same test pressure for 1,000 hours. To pass, the specimens must not "rupture, permanently distort, or weep" when subjected to the specified pressure for 1,000 hours. Exhibit 6. This test is far less onerous than the HDB test and provides little to no information about the radial tensile strength of the product being tested.

95. As described above, Sustained Pressure Testing is one of the three strength tests UL required J-M to perform to qualify its no-thickened-section pipe for UL listing. The requirements for Sustained Pressure Testing appear in Section 18 of UL 1285. Like LTS Testing, Sustained Pressure Testing is one of UL's Performance Tests and UL requires that the specimens tested must be representative of the manufacturer's materials, design, and processing. Like HDB Testing, Sustained Pressure Testing requires special equipment and is typically performed by an independent, certified laboratory.

96. In outlining its requirements for qualifying the no-thickened-section pipe, UL informed J-M that it would observe J-M's Sustained Pressure Testing. Because of the length of the test, which lasts 1,000 hours/41.6 days, UL only required a UL observer to be present at the beginning, middle, and end of the testing.

97. Because UL would be observing portions of the Sustained Pressure Tests, J-M wanted to ensure that the specimens it sent Charles Stanley at UL for testing would actually pass the test. To accomplish this, J-M made multiple specimens from each 20-foot section of no-thickened-section pipe it specially produced. J-M subjected the first 10 specimens from each lot to the HDB testing described above. If the specimens produced a passing HDB result, J-M would then send other specimens from that same lot to UL for the Sustained Pressure Testing. Since the specimens had passed HDB testing, which is the most demanding test of pipe quality, J-M could be confident that other specimens from that lot would also pass the less onerous Sustained Pressure Testing.

98. Once it had passed HDB Testing for a particular size of non-thickened-section pipe, J-M sent to UL for Sustained Pressure Testing additional specimens from the same lot as the passing HDB specimens. In that way, J-M was able to pass all of the Sustained Pressure Tests witnessed by UL observers for the two pipe sizes UL required – Blue Brute four-inch DR 14 and four-inch DR 18.

99. At no time during the course of these Sustained Pressure Tests did J-M disclose to the UL observer that J-M had specially produced each of the test specimens using materials and processing that were not representative of J-M's actual manufacturing process. J-M also concealed from UL the fact that the test specimens had not been chosen at random but instead were selected from lots that had produced passing HDB test results.

**3. Quick Burst Test**

100. The third and final strength test that UL required for J-M to qualify its no-thickened-section pipe was the Quick Burst Test. The Quick Burst Test is designed to measure the short-term radial strength characteristics of the pipe. The requirements for the Quick Burst Test are contained in Section 4.3.3.2 of the AWWA C900 Standard. Broadly described, Section 4.3.3.2 provides that a pipe specimen must be able to attain a hydrostatic stress of 6,400 psi within 60 to 70 seconds of being pressurized. See Exhibit 12.

101. The Quick Burst Test is a routine quality control test that J-M is required to perform daily at each of its plants at the start-up of the extruder, every eight hours, and following

any change in operating conditions. Given the frequency with which this test is required to be performed, J-M has test equipment in each of its plants and performs the tests itself.

102. In outlining the requirements needed to qualify J-M's no-thickened-section pipe, UL informed J-M that it would come to J-M's plant to observe each of the Quick Burst Tests on the various sizes of its Blue Brute DR 14 and DR 18 no-thickened-section pipe. Because a UL representative would be observing the tests, J-M again took steps to try and ensure that the specimens would pass while UL was watching.

103. Because the Quick Burst Tests were the last of the three strength tests required for UL listing, at the time it performed the Quick Burst Tests, J-M had already received passing results in both the HDB and Sustained Pressure Testing. In choosing specimens for the Quick Burst Testing, J-M selected specimens from the same lots as the specimens that had produced the passing results on the HDB and Sustained Pressure Tests.

104. For added insurance, J-M also ran some internal Quick Burst Tests on a few of the specimens from the selected lots to be doubly certain that the specimens would pass while UL watched. J-M admitted pre-screening for 7,200+ psi Quick Burst results, despite having lowered its internal requirement to 6,400 psi for normal production pipe. There was extensive R&D involvement in preparing the sample pipe for these preliminary tests. Moreover, J-M manipulated the testing by replacing test specimens, terminating failing tests early, and stockpiling pre-screened lots. Using this approach, J-M eventually passed the Quick Burst Tests for all but one of the sizes of its Blue Brute DR 14 and DR 18 no-thickened-section pipe. In the case of the Blue Brute specimens in size twelve-inch DR 14, however, J-M failed four consecutive Quick Burst Tests while UL observed before ultimately getting a passing result. On October 26, 2005, Fassler told Relator that J-M had obtained the passing result only by using a thickened-, instead of a no-thickened-, section pipe. See Exhibit 21, incorporated herein. According to Fassler, the pipe was measured "while UL wasn't really paying attention and the test pressure calc[ulation] wasn't properly computed on the accurate measurements." Id.

105. In short, J-M gained UL listing for the new design in size twelve-inch DR 14 using a specimen from the old design. For the HDB testing of no-thickened-section pipe (18 total tests),

the passing rate of the test samples was no greater than 64% and more accurately 50% at best. UL did not see results for all sizes, but only three JM-selected passing results. J-M did not conduct quality testing or investigation in light of the high number of failures. It took six months for J-M to obtain passing Quick Burst results on all of its no-thickened-section pipe. Of 19 total tests witnessed by UL, J-M failed nine (at the 6,400 psi AWWA requirement). Against J-M R&D personnel recommendations, Walter Wang ordered all plants to produce no-thickened-section pipe in all sizes of DR 18 at a time when the HDB pass rate was 46% and the Quick Burst pass rate was 60%. J-M did not maintain any improved processes utilized to make no-thickened-section pipe that passed HDB.

106. To prevent UL from investigating the real source of these four failures (*i.e.*, the various cost-cutting measures and their negative effect on tensile strength), J-M blamed the four failures on illusory problems with the test equipment. Specifically, J-M attributed the failures to the end caps that are inserted into either end of the specimen to create a seal so it can be pressurized. J-M told Jerry Kirkpatrick, UL's representative observing the tests, that the end caps had not sealed properly, were too old, and were not good for the new pipe design. All of these statements were false.

107. At no time during the Quick Burst testing did J-M inform UL's Jerry Kirkpatrick that it had prepared the specimens using materials and production rates that are not representative of J-M's manufacturing process or that it had not chosen the specimens at random but had instead selected them based on the fact that they came from lots that had already passed the HDB Test and Sustained Pressure Testing. Nor did J-M inform UL that it passed the fifth test only by using the original thickened-section pipe design (and an improperly calculated test pressure) as opposed to the new design. J-M also concealed from UL the real reason for the four tensile-strength failures, *i.e.*, that J-M's cost-cutting measures had decreased the tensile strength of its pipe.

**4. <u>J-M Authorizes Production of No-Thickened-Section Pipe</u>**

108. In early 2005, shortly after he began raising concerns with J-M management about the excessive swelling and failing HDB test results of the no-thickened-section pipe and expressed doubts about the tensile strength of J-M's existing PVC pipe (which was made with the same

process and compound), Relator was removed from the No-Thickened-Section Project. Over the intervening year before the Project was completed, Fassler and Yang continued to keep Relator apprised of the status of the Project, including the results of all of the testing performed after Relator was removed.

109. In the Spring of 2005, upon learning that J-M managers were about to recommend that J-M start to produce the no-thickened-section pipe in spite of all the failing results, Relator raised a series of objections to J-M management. Among other things, Relator cautioned several J-M managers that, at a minimum, the newly designed pipe should be produced only at the two plants that produced the passing results for UL and those two plants should use the same slow production rates and higher quality materials that they had used to specially produce the passing samples. Relator also insisted that, once it was produced and before it shipped, the new pipe must be subjected to a series of quality control tests to ensure its conformance to the tensile strength requirements. Given the force and strength of Relator's objections, some of Relator's managers ultimately were persuaded to include Relator's precautions in their recommendations for the production of the new no-thickened-section pipe.

110. On April 29, 2005, Fassler prepared an IRA recommending that J-M begin preparations to produce the no-thickened-section pipe starting on May 16. See Exhibit 20. By April 29, UL had given J-M oral approval to start producing on May 16 the no-thickened-section pipe in all sizes of Blue Brute DR 14 and DR 18, except for twelve-inch DR 14. Because J-M had received so many failing test results in the process of obtaining the UL listing, Fassler was careful to point out that the no-thickened-section pipe passed the tests only because of "suitable materials and workmanship" and implied that those same materials and level of workmanship should be used as J-M began to produce the newly designed pipe.

111. Lin and Kaushal Rao ("Rao"), J-M's Director and Assistant Director of Production, were equally cautious in their approvals of the new pipe. Both men gave their approval on the condition that J-M take certain precautions to protect against the tensile strength failures that the UL qualification testing had revealed. In the block provided on the IRA for his authorization and signature, Lin wrote: "In consideration of several test failures to non-thick-section project do

propose to have PWI [J-M's Wilton, Iowa plant] & PFO [J-M's Fontana, California plant] to produce non-thick-section product first. After both plants successfully produce C-900 product, then do will apply to all plants." Exhibit 20. Similarly, in his signature/authorization block, Rao wrote: "R&D should also concentrate on one plant & test the pipe produced under different conditions such as regrind material used in prod.; various speeds & production rates for production & test the pipe on a continuous basis." Id.

112. On May 16, 2005, ignoring the reservations expressed by the three managers, J-M's President Walter Wang authorized production of no-thickened-section pipe for J-M's Blue Brute PVC pipe in size DR 18 at all of J-M's 11 PVC-producing plants starting June 1, 2005. See Exhibit 20. Despite explicit advice from Fassler, Lin, and Rao, Walter Wang did not limit the production to the two plants that had successfully produced the passing specimens. Nor did he seek to ensure that the pipe would be produced using the same materials and processing that J-M had used in producing the qualifying specimens or make any provision for testing the new pipe to monitor quality as it was being produced. Despite the fact that its new pipe had failed many of the qualifying tensile strength tests, J-M began manufacturing the new pipe without implementing a single safeguard. No-thickened-section pipe manufactured and tested after Luxco-multiwax was phased out failed nine of 19 UL-witnessed Quick Burst Tests. Post-Luxco multiwax experienced at least two HDB failures in seven tests. J-M did not discontinue Luxco multiwax in IPS/ASTM D2241 pipe despite J-M's concerns with its use in the identically produced AWWA pipe.

**5. UL's Qualification of J-M's No-Thickened-Section Pipe**

113. On May 19, 2005, UL issued J-M its formal written "Notice of Authorization to Apply the UL Mark." Exhibit 22, incorporated herein. In this authorization, UL expressly states that its authorization to apply the UL Listing Mark extends only to those products that are constructed in a manner "identical to the subject models, which were submitted to UL for this investigation." Id. The letter goes on to say: "Products that bear the UL Mark shall be identical to those that were evaluated by UL and found to comply with UL's requirements. If changes in construction are discovered, appropriate action will be taken for products not in conformance with UL's requirements and continued use of the UL Mark may be withdrawn." Id.

114. J-M began producing its Blue Brute DR 18 pipe on June 1, 2005. Although UL also had authorized J-M to apply the UL Mark to its Blue Brute PVC pipe in all sizes of DR 14 except for twelve-inch, J-M decided to wait until it received UL authorization for the remaining size before it commenced production of any DR 14 pipe. In October 2005, UL provided J-M with its authorization for twelve-inch DR 14 pipe and J-M began producing all sizes of no-thickened-section DR 14 pipe immediately thereafter.

115. Having refused to adopt any of the precautions recommended by its managers, J-M began producing the new pipe using the same cost-cutting measures it had employed with its existing pipe. As the various test results revealed, pipe created using inferior ingredients, accelerated production rates, and improper tooling fails tensile strength testing a substantial percentage of the time. Had it been aware of the failing test results and J-M's tampering with the testing, UL would not have given the pipe UL listing in the first place. Similarly, UL would have withdrawn any UL listing had it known that the precautions that had been taken to produce the passing results (slowing production rates and substituting higher quality ingredients) were not being taken with the daily production of the pipe.

**C. J-M's False Representations Regarding UL Listing and UL Compliance**

116. Despite its knowledge (beginning at least in 1997) that a substantial percentage of its PVC pipe failed to meet the LTS requirements of UL 1285 and its knowledge (as of at least June 1, 2005) that its new no-thickened-section pipe had a similar failure rate, J-M continued to represent to its distributors and customers, including Real Parties, that its PVC pipe met the requirements of UL 1285. In its catalogs, J-M stated for both its Blue Brute and Big Blue PVC Pipe that it "is Underwriters Laboratories Listed" and has a tensile strength of 7,000 psi. Exhibit 23, incorporated herein. In one version of its website (dated 9/8/05), J-M stated that all classes of both its Blue Brute and Big Blue pressure pipe "are UL listed for water mains." Exhibit 24, incorporated herein. Except for those pipes painted purple for Reclaimed Water or green for Sewer, J-M continued to mark the outside surface of each length of its Blue Brute and Big Blue pipe with the UL Mark. See Exhibit 25, incorporated herein.

117. J-M also continued to provide certifications to its individual customers that its Blue

Brute and Big Blue PVC pipe had been manufactured in accordance with the requirements of UL 1285. Exhibit 26, incorporated herein, contains examples of certification letters J-M provided its customers regarding Blue Brute's and Big Blue's compliance with the UL Standard and listing. At all times relevant to this Complaint, Real Parties, like other governmental entities and water distribution systems, have required that all pipes for use in underground fire service systems be UL 1285 listed. Exhibit 27, incorporated herein, contains examples of specifications from various government entities in which UL listing is required for pipe used in fire services. In addition to requiring UL listing for PVC pipe used in fire services, many of the Real Parties, like other governmental entities and water distribution systems, also require that all PVC pipe for use in their water distribution mains or water transmission lines shall be approved by UL and marked with the UL logo. Exhibit 28, incorporated herein, contains examples of specifications from governmental entities, including some Real Parties, for UL listing of PVC pipe used in water mains and transmission lines. Governmental entities, including Real Parties, often require UL listing of J-M PVC pipe by requiring projects to comply with National Fire Protection Association ("NFPA") Standard 24, excerpts of which are attached hereto and incorporated herein as Exhibit 43. For example, the federal Department of Defense global specifications for Fire Protection Engineering for Facilities require that water distribution systems be designed in accordance with "NFPA 24, Installation of Private Fire Service Mains and Their Appurtenances." Exhibit 44 (Unified Facilities Criteria (UFC): Fire Protection Engineering For Facilities, Sept. 26, 2006, Section 3-7, "Water Distribution Systems," paragraph 3-7.1, "Distribution Mains"). NFPA 24 applies to "combined service mains used to carry water for fire service and other uses." Exhibit 43 (NFPA 24 at § 1.1.2.). NFPA 24 requires that PVC pipe be "listed" for fire protection service and comply with certain standards, such as AWWA C900. See Exhibit 43, NFPA 24 at § 3.2.4, § 10.1.1 & Annex A § A.10.1.1. The requirement to be "listed" in this context means that the pipe must be inspected and tested by UL and FM for fire protection. See Exhibit 43, NFPA 24 at § 3.2.4 & Annex A § A.3.2.4; Exhibit 6, UL 1285 § 10.1 & § 21.1; Exhibit 49, FM 1612 §§ 1.1.1 & 1.1.2. Many cities and governmental localities, including Real Parties, require NFPA 24 compliance for fire protection service. See, e.g., Exhibits 27 & 52. The only means by which J-M can claim

compliance with NFPA 24's "fire listing" requirement are through its claims of UL listing and/or FM approval (discussed *infra* ¶ 288).

## VI. J-M SELLS SUBSTANDARD PVC PIPE THAT IT IMPROPERLY CERTIFIES AS MEETING CERTAIN NSF STANDARDS

118. NSF is a not-for-profit, non-governmental organization engaged in standards development, product certification, education, and risk-management for public health and safety.

119. To obtain certification under an NSF standard, the applicant must manufacture the pipe to be tested according to a defined formulation. The pipe is then tested according to the particular standard at issue. If the results are satisfactory, NSF authorizes use of that defined formulation to manufacture pipe that can be certified as complying with the particular standard. NSF also maintains a list of entities that have been authorized to designate their products as meeting NSF standards and uses that list to respond to inquiries regarding whether a manufacturer is NSF-compliant.

120. NSF Standard 14 is a performance standard that applies to both pressurized and non-pressurized pipe. NSF Standard 61 is a toxicology standard that applies to potable water pipe. NSF-PW is a designation J-M applied to its pipe that purported to satisfy both NSF Standard 61 for toxicology and NSF Standard 14 for performance.

121. Pursuant to NSF Standard 14, the pipes, couplings, and gaskets are all subject to testing. Specifically, in additional to other strength tests, tested pipe must pass an HDB Test component by achieving the HDB category of 4,000 psi. To achieve the HDB category of 4,000 psi, tested pipe must produce an LTHS of at least 3,830 psi.

122. Once NSF authorizes a manufacturer to designate a product as complying with a particular NSF standard, the manufacturer may designate a commercial product as complying with that standard only if the commercial product is manufactured using the same formulation and the same process that was used to produce the tested samples.

123. Among other types of pipe, J-M manufactured PVC pipe of two different types: C900 and ASTM D2241.

124. J-M certified that its C900 pipe complied with NSF Standard 61.

125. J-M certified that its ASTM D2241 pipe complied with both NSF Standard 61 and NSF Standard 14.

126. Following successful testing of the J-M 90 compound pipe pursuant to NSF Standard 61, NSF authorized J-M to designate that product, formulated with or without the use of A28 paraffin wax ("A28"), as complying with NSF Standard 61.

127. Following successful testing of the J-M 90 compound pipe pursuant to NSF Standard 14, NSF authorized J-M to designate that product, which was not formulated with A28, as complying with NSF Standard 14.

128. A28 was not a preapproved substitute ingredient for NSF 14 performance testing. In order to use A28 in NSF 14 certified products, a manufacturer must undergo testing at NSF to establish qualification. J-M never submitted ASTM D2241 pipe samples containing A28 to NSF for testing pursuant to NSF Standard 14, so NSF never authorized J-M to certify its ASTM D2241 pipe formulated with A28 as compliant with NSF Standard 14.

129. J-M nevertheless certified its ASTM D2241 pipe as complying with NSF Standard 14 by stamping the pipe with either an "NSF 14" or an "NSF PW" designation.

130. On August 4, 2003, an inspection conducted by NSF auditors at J-M's McNary, Oregon Plant ("McNary") uncovered J-M's unauthorized use of A28 in the formulation of certain of its JM-90 PVC pipe that was certified to be "NSF 14" compliant.

131. As a result, NSF ordered J-M not to release approximately four million pounds of production pipe, which had been manufactured using A28 and was being stored at J-M's McNary warehouse (the "NSF Held Pipe").

**A. J-M's Responded to NSF Putting Four Million Pounds of Production Pipe on Hold at McNary by Releasing Non-Compliant Pipe and Cherry-Picking Samples to Secure NSF Certification by Fraudulent Means**

132. As J-M is aware, PVC pipe specimens provided to NSF for certification testing must be "representative" of the production pipe to be manufactured. To be "representative," pipe specimens must be: (1) made using the same materials as in the actual pipe production; (2) produced in the same quantities as in the actual pipe production; and (3) formed using the same

process as the manufacture of the actual pipe production. Offering pipe to NSF for certification testing that is not representative of the actual pipe production violates both the NSF guidelines generally and NSF Standard 14 specifically.

133. The purpose of the "representative" requirement is to prevent companies that manufacture PVC pipe, such as J-M, from manipulating the ingredients, formulae, or process when they manufacture specimen pipes for certification testing. In addition, these companies, including J-M, are also expressly prohibited from cherry-picking pipe specimens for testing by NSF when the companies know such test specimens are not representative of the production pipe they manufacture.

134. Only pipe that has the same ingredients, the same formula, and has been made using the same manufacturing process as specimen pipe certified by NSF as meeting the NSF Standard 14 requirements may be marked and sold as NSF Standard 14 pipe.

135. After NSF learned from its audit that A28 was being used as an ingredient in J-M pipe, the NSF auditor selected a one-inch ASTM D2241 pipe specimen for testing from J-M's McNary plant. On information and belief, this one-inch pipe specimen was production pipe manufactured at McNary in the normal course of its production operations.

136. On August 18, 2003, NSF representative Nasrin Kashefi ("Kashefi") emailed Hwang and Yang, noting the sample data for the one-inch pipe did "not look good at all." Exhibit 55, incorporated herein.

137. On August 20, 2003, Kashefi emailed Hwang and Yang, noting the sample data for the one-inch pipe "still [did] not look good." Exhibit 56, incorporated herein.

138. On August 29, 2003, Kashefi emailed Hwang and Yang, noting the sample data produced by the ongoing HDB test indicated that the one-inch pipe would not meet the requirements to pass the HDB test.

139. An email sent on September 15, 2003 from Kashefi to Yang noted that the results for the one-inch pipe were still not favorable.

140. As of September 15, 2003, data provided by NSF to J-M representatives indicated that the one-inch pipe had an LTHS of 3,631 psi, and was thus unlikely to reach the requisite

LTHS rate of 3,830 psi upon completion of the HDB test.

141. On September 22, 2003, J-M attempted to stop NSF testing of the one-inch pipe by advising NSF that there was "foreign material" in the pipe being tested. J-M requested that NSF permit J-M to submit a different sample of one-inch pipe for testing. NSF apparently denied this request.

142. On September 23, 2003, NSF issued a report on the one-inch representative sample selected by the NSF auditor. The report concluded that the one-inch pipe sample had an LTHS of 3,608 psi, and therefore had failed to meet the requirements of NSF Standard 14.

143. As a result of the obvious financial implications of not being able to sell four million pounds of pipe, J-M had a strong incentive to convince NSF that the NSF Held Pipe sitting in its warehouse did in fact meet the NSF Standard 14 requirements, and J-M promptly undertook steps to try to make this happen.

144. Upon learning of the hold implemented by NSF, J-M immediately dispatched Fassler to McNary to conduct an investigation.

145. Fassler reported to senior management of J-M that, among other things, the C900 pipe made with A28, though not subject to NSF Standard 14, was not compliant with manufacturing standards, but it had, nonetheless, been placed in the "shippable" inventory at McNary.

146. Fassler went on to report that he was unable to locate all of the rejected units of pipe made with A28.

147. On information and belief, the rejected pipe that Fassler was unable to locate in the warehouse had been shipped to customers.

148. Fassler reported to senior management that all production pipe – both C900 and ASTM D2241 varieties – at McNary was failing very basic sustained pressure tests and, further, that production pipe showed defects in the form of pipe burning and non-conforming bell-ends.

149. Despite Fassler's report setting forth numerous, severe problems in the production of pipe at McNary, on August 6, 2003, Hwang sent an email to Kashefi requesting the release of all C900 production pipe sitting in the McNary warehouse – approximately 1-1.5 million pounds

of pipe. J-M told Kashefi that because C900 pipe was not governed by NSF Standard 14, NSF had no basis to restrict its sale.

150. Though technically accurate, C900 pipe is still required to achieve the HDB category of 4,000 psi by producing an LTHS of at least 3,830 psi in compliance with NSF Standard 61. NSF Standard 61, in contrast to NSF Standard 14, does not require additional testing to ensure the HDB category was satisfied despite the introduction of A28 to the pipe formulation.

151. As a result, on August 7, 2003, with NSF's approval, J-M released 1.5 million pounds of the C900 pipe for sale, despite knowing from Fassler's investigation and J-M's own Quick Burst testing that the C900 pipe did not conform to basic industry standards.

152. Even after the release of the C900 pipe, there still remained 2.5 million pounds of ASTM D2441 pipe subject to NSF regulation (the "Remaining NSF Held Pipe").

153. On information and belief, to this day, not one entity that purchased C900 pipe from J-M has been informed by J-M that: (1) Fassler's report found that production pipe produced at McNary was of inferior quality; (2) test results from the one-inch pipe selected by NSF failed HDB testing; or (3) J-M attempted to cherry-pick pipe in an attempt to get the Remaining NSF Held Pipe released, as set forth in more detail below.

154. In addition to the reports J-M received from NSF and Fassler in the beginning of August as set forth in paragraphs 145-148, *supra*, J-M received additional reports from Fassler in late August that McNary's Quick Burst Test equipment was failing to properly identify pipe with compromised integrity – a point that Hwang acknowledged, stating that test equipment at McNary had needed to be upgraded "for a long time," and that the plant had lacked a meaningful quality control test "for a long time." Exhibit 57, incorporated herein.

155. Despite receiving the aforementioned updates and reports from NSF about the failing test specimen, and despite Fassler's reports and Hwang's acknowledgement of serious problems with the production pipe at McNary, on September 2, 2003, Yang emailed NSF representative Kashefi, copying Hwang, and sought the release of the Remaining NSF Held Pipe, stating that J-M would take "full responsibility" for its release. Exhibit 58, incorporated herein.

156. NSF refused to authorize the release of the Remaining NSF Held Pipe and made

clear that J-M would need to pass certification tests on the pipe before NSF would lift its hold.

**1. Unable to Convince NSF to Release the Hold Absent Passing Test Results, J-M Conspires to Supply NSF with Cherry-Picked Samples of the Remaining ASTM D2241 Pipe**

157. Recognizing that NSF would not permit J-M to release the Remaining NSF Held Pipe without passing test results, J-M focused its efforts on attempting to locate pipe that would pass. In order to do this, J-M senior managers decided that they would pre-test pipe before sending it to NSF for certification testing. J-M implemented a policy under which only those samples that passed J-M's pre-tests would be sent to NSF for testing.

158. Internal correspondence at J-M dated September 26, 2003, explained that the "fix" was to never send out a sample produced on a change-over day and, in the future, to cherry-pick samples and pre-test them to ensure that they will pass NSF's HDB test.

159. J-M pre-tested the pipe by subjecting samples to the Quick Burst Test – a test that can also be used to predict a pipe's ability to pass HDB testing. If a J-M pipe failed to reach a Quick Burst result significantly higher than 6,400 psi, the likelihood that it would fail HDB testing (which required 7,200 psi on Quick Burst for J-M pipe to pass HDB testing) increased dramatically.

160. J-M engaged in this practice of cherry-picking pipe despite knowing that doing so violated NSF Standard 14. At all times relevant to the Complaint, J-M knew that pipe undergoing certification testing had to be "representative" of production pipe and that J-M was not permitted to pre-test pipe.

161. In an effort to find pipe that might pass NSF certification testing, in late September, 2003, J-M sent Yang, at that time head of Research and Development at J-M, to McNary to identify and test samples of pipe.

162. During his visit, Yang observed pipe of such poor quality that he could not, and did not, recommend a single pipe specimen for pre-testing.

163. J-M senior management displayed no concern for the poor quality of the pipe being manufactured at McNary. Instead, they demanded an immediate resolution to "this A28 issue," a resolution that would permit J-M to sell the Remaining NSF Held Pipe and continue to

manufacture substandard pipe.

164. In late September 2003, Yang traveled to McNary to select and monitor Quick Burst testing on J-M three-quarter-inch, one-inch, and one-and-one-half-inch PVC pipe samples prior to sending them to NSF.

165. On September 25, 2003, internal J-M Quick Burst test results of Yang's hand-selected pipe were produced. Based on these results, J-M sent samples of J-M's three-quarter-inch and one-and-one-half-inch PVC pipe to NSF.

166. J-M did not send a sample of the one-inch PVC pipe to NSF because the Quick Burst Test results indicated a strong likelihood that the sample would not pass NSF testing.

167. On October 14, 2003, preliminary NSF laboratory results of the HDB testing for both the three-quarter-inch and one-and-one-half-inch PVC pipe samples selected by Yang were produced. Both the three-quarter-inch and one-and-one-half-inch PVC pipe showed a likelihood of failing the HDB test, with an initial LTHS of 3,621 psi and 3,784 psi, respectively.

168. Despite these initial October 14, 2003 test results, J-M continued to press NSF to release the Remaining NSF Held Pipe in its warehouse.

169. NSF conveyed to J-M that all sizes of the Remaining NSF Held Pipe had to pass HDB testing, as provided by NSF Standard 14, before the pipe could be released.

170. Ultimately, in an October 20, 2003 email, Kashefi confirmed to Hwang that both the three-quarter-inch and one-and-one-half-inch PVC pipe samples selected by Yang produced failing HDB testing results with an LTHS of 3,672 psi and 3,792 psi, respectively.

171. Following Kashefi's email confirming the final test results for the three-quarter-inch and one-and-one-half-inch PVC pipe samples, Yang wrote an email to Hwang, dated October 21, 2003, questioning J-M's pipe quality in general. He wondered whether the source of the failures was a quality control problem limited to McNary, a "general problem all over J-M," or "a problem with A28 in [J-M's] formulation." Exhibit 59, incorporated herein.

172. Additionally, since the one-and-one-half-inch PVC pipe was close to meeting the HDB threshold of an LTHS of 3,830 psi, J-M sent an additional pre-screened sample of this size pipe to NSF, hoping that it would reach an LTHS of 3,830 psi.

173. While the one-and-one-half-inch pipe sample was being tested by NSF, J-M sent a second sample of the same size pipe from the same lot to UL.

174. J-M pressed NSF to accept an alternative result from UL in the event that the one-and-one-half-inch pipe sample failed at NSF but the sample at UL passed.

175. In an email dated December 21, 2003, Kashefi told Yang that the one-and-one-half-inch pipe would likely pass the HDB Test, indicating that J-M's cherry-picking had finally paid off.

176. Kashefi further stated that the release would apply only to the one-and-one-half-inch pipe. She explained that the remainder must either be destroyed or J-M must submit a sample "for each size" for the HDB test.

177. Meanwhile, the one-and-one-half-inch pipe sample sent to UL, despite being from the same lot as the sample sent to NSF, was on track to fail the HDB testing as of January 16, 2004.

178. Once NSF said that the one-and-one-half-inch pipe sample tested was on track to pass HDB testing, Lin confirmed that the anticipated release by NSF for that pipe size applied to all classes of one-and-one-half-inch pipe – not just the class of the passing samples.

179. The ASTM D2241 pipe being subjected to NSF testing came in different classes based on the relative strength of the pipe. Each class must meet the established HDB testing requirement.

180. J-M's anticipated release of the one-and-one-half-inch pipe applied to all the different classes of that size pipe, even though only one class had been subjected to NSF testing.

181. On March 5, 2004, NSF authorized the release of all one-and-one-half-inch pipe and four-inch pipe being held at McNary.

182. Ten days later, on March 15, 2004, UL sent a letter to J-M, noting that the one-and-one-half-inch pipe sample had failed, with a result of 3,436 psi. J-M did not inform NSF of this failing result from the same lot that was being tested by NSF.

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**2. Impatient for the Release of Pipe, J-M Management Continued to Cherry-pick Samples for NSF Testing Throughout the Fall and Winter of 2003-2004.**

183. By December 2003, J-M had sent pipe specimens of one-inch pipe, three-quarter-inch pipe, and one-and-one-half-inch pipe from McNary to NSF, all of which had failed NSF testing despite J-M's efforts to cherry-pick samples. Faced with approximately 2.5 million pounds of pipe in McNary's warehouse, J-M was desperate to find a way to release that pipe for sale, despite knowing from its own testing, and that of NSF, that much of the pipe was substandard and of poor quality.

184. On December 13, 2003, Lin emailed Yang and Hwang, pushing them to get NSF to release the Remaining NSF Held Pipe at McNary without regard to the integrity of the pipe subject to the hold.

185. Between December 27 and December 31, 2003, Yang went to McNary specifically to cherry-pick samples that could be pre-tested in private laboratories to determine whether they would pass NSF certification tests.

186. J-M concentrated its cherry-picking and pre-testing of samples on those pipe sizes affected most by NSF's hold, in order to gain the release of as much pipe as possible.

187. In trying to locate suitable samples that might eventually pass NSF testing, Yang determined that most of the PVC pipe that was four inches and larger might not be worth saving "since they [we]re out-of-spec" and/or had "low hoop stress."

188. As a result, Yang recommended that J-M McNary's six-inch, eight-inch, and ten-inch pipe should be scrapped, as should the four-inch pipe if that size did not pass pre-testing.

189. Yang's observations regarding the questionable pipe quality were passed on to Eric Dirks by Hwang. Hwang noted that J-M did not want to take the chance of having another pipe sample that was sent to NSF fail the HDB test.

190. With J-M's management seeking the immediate release of the Remaining NSF Held Pipe, Fassler again visited McNary from February 9 through February 11, 2004, to observe pipe production and testing.

191. In his report to senior management, Fassler noted that with regard to the pipe

production process, a "few defects ran for several hours, without correction," that "15% of pipe inventory measured had thin walls," and that there was a need to modify extrusion operating conditions to address the wall thickness issue – a problem that applied to several lines of production. Exhibit 60, incorporated herein.

192. Fassler further reported that Quick Burst testing machines had not been updated to compliance with ASTM D1599-99, another regulatory standard governing JM-90 PVC pipe, despite his express directive several months earlier that this be done.

193. Concerned only with the bottom-line, on February 12, 2004, J-M's President, Walter Wang, emailed Lin wanting to know why McNary had so much non-shippable pipe.

194. Lin forwarded Walter Wang's email to Hwang and Yang, and directed them to develop a timeline for resolving the pipe hold at McNary, expressing no concern for the integrity of the pipe J-M sought to reintroduce to commerce.

195. Four days later, on February 16, 2004, J-M received pre-test results from the pipes that it had selected for pre-testing at McNary. On this occasion, J-M had tested several size pipes, including three-quarter-inch, one-inch, three-inch, four-inch, six-inch, eight-inch, and ten-inch pipe. Of all these pipe samples pre-tested by J-M, only the four-inch sample was likely to be in compliance with NSF Standard 14 for HDB strength.

196. That same day, in response to the pre-testing results and concerned about the quality of the pipe at McNary, Hwang recommended that J-M senior management scrap all McNary pipe, with the exception of the one-and-one-half-inch and four-inch sizes.

197. Given the internal results of J-M's pre-testing, only the hand-picked sample of four-inch PVC pipe was sent to NSF for testing.

198. The pre-tested four-inch PVC pipe was able to pass NSF's HDB test. As a result, NSF released the hold on that size pipe. As of this time, NSF had authorized the release of only the one-and-one-half-inch and four-inch PVC pipe.

199. J-M persisted with cherry-picking and pre-screening other sizes of J-M PVC pipe to try to obtain the release of additional pipe sizes from NSF.

200. For example, in early March 2004, J-M again pre-tested various sizes of J-M pipe

at McNary with the hope of identifying samples it could send to NSF for additional testing. Of all the sizes tested, J-M found that only the one-half-inch, the one-and-one-quarter-inch, and the two-and-one-half-inch pipes passed J-M's internal standard of 7200 psi for the Quick Burst test.

201. This Quick Bust testing resulted in multiple samples of three-inch, six-inch, and eight-inch pipe failing to meet the internal standards, as well as one sample of size ten-inch pipe that failed to meet internal standards.

202. Given the results of the pre-testing, in a last ditch effort to secure the release of the pipe at McNary, in late March 2004, Yang directed plant personnel to send the "best" sizes of six-inch and eight-inch pipe and to send one-half-inch, one-and-one-quarter-inch, two-and-one-half-inch, and three-inch pipe to NSF for certification testing. Yang told also plant personnel to resample the two-inch and ten-inch pipe.

203. In April 2004, NSF reported to J-M that the three-quarter-inch pipe passed the HDB testing. However, this passing result was accomplished only by excluding certain data points. Had NSF included all the data points, the pipe would have failed.

204. Also in April of 2004, Quick Burst Test results for various samples of two-inch pipe from McNary were reported to Yang. Of those five samples, only one of the two-inch pipe samples tested met J-M's Quick Burst Test standard of 7,200 psi.

205. Based on this data, Yang instructed McNary personnel that the one sample that had met the J-M Quick Burst standard should be the one to be sent to NSF for testing.

206. Also in April of 2004, J-M performed internal testing on pre-selected ten-inch PVC pipe.

207. Though the average result for this test was only 6,806 psi, a sample of this pipe was also sent by J-M to NSF for testing.

208. Ultimately, in June 2004, NSF confirmed that the two-inch pipe failed to pass the HDB testing requirement with an LTHS of 3,559 psi. This test result indicates that the pipe would have less than 12% useful life as compared to a pipe that satisfied the NSF standard.

209. Also in June 2004, NSF confirmed that a three-inch pipe sample sent by J-M to NSF in March failed with an LTHS of 3,753 psi.

210. On July 30, 2004, J-M's ten-inch pipe sample failed NSF testing with an LTHS 3,472 psi. This test result indicates that the pipe would have less than 7% useful life as compared to a pipe that satisfied the NSF standard.

211. On May 27, 2004, NSF informed J-M that the eight-inch sample provided to NSF by J-M in March of that year had passed the HDB testing. J-M subsequently released this pipe.

212. In June of 2004, NSF authorized the release of the six-inch pipe provided to NSF by J-M in March of that year.

213. Also in June 2004, NSF confirmed the release of one-and-one-quarter-inch and two-and-one-half-inch pipe, based on samples that J-M had pre-tested and sent to NSF for subsequent testing in March 2004.

214. In July 2004, NSF testing results for the one-half-inch pipe that had been selected and pre-tested by J-M in March 2004 showed an LTHS of an abysmal 422 psi.

215. J-M pre-screened another pipe sample of this size, and sent another sample in September 2004. In October 2004, NSF indicated to J-M that this later-provided sample of one-half-inch pipe passed NSF testing.

216. An IRA dated November 18, 2004 suggested scrapping all ten-inch pipe. There is no indication that this was done. To the contrary, J-M continued to have a problem with "missing" rejected pipe, suggesting J-M continued to sell pipe that failed to meet NSF standards.

**B. J-M's Problems at McNary were Well-Documented and Not Isolated**

217. J-M was on notice of significant pipe production problems at McNary since at least 2000.

218. Through reports sent to senior J-M management dating back to September 30, 2000, J-M was aware that: (a) there was little to no quality control testing being done at McNary on the initial days of production; (b) there were unstable extrusion conditions in the pipe production process; and (c) there was poor monitoring of the pipe production process overall.

219. J-M was also aware as early as September 2000 that pipe classified as "shippable" inventory at McNary was not in fact suitable for sale.

220. J-M senior management were well aware of specific concerns raised by plant

management at McNary that the hiring of inexperienced staff there in order to reduce labor costs was contributing to the poor pipe quality being manufactured at that plant.

221. J-M's reaction to McNary management's pleas for more experienced workers was to instruct plant management to push the employees harder and/or "write them up."

### C. J-M's Conduct with Respect to the A28 Issue is Consistent with J-M's Corporate Culture

222. Yang has stated that J-M management tactics included attempts to block any investigation of the cause of pipe non-conformity, including withholding test results from company personnel.

223. Lin and Rao told J-M personnel to ignore all failing test results for pipe in the quality assurance tests.

224. Yang was told by J-M management, Rao and Lin, to falsify his analysis of claims by customers so as to make it look as though J-M was not at fault. Lin and Rao would then sign off on his reports, aware that they were falsified.

225. Employees who brought issues of pipe quality to management's attention were labeled as "trouble-makers."

226. Yang quit his position at J-M because management would not let him do his job properly and cared only about profit and not whether the pipe that was shipped was NSF compliant.

227. J-M had a practice of re-introducing rejected product into the shippable inventory.

## VII. J-M'S SALE OF SUBSTANDARD PVC PIPE THAT DOES NOT MEET AWWA AND ASTM D2241 REQUIREMENTS

228. AWWA, an organization of which J-M has always been a member, has promulgated standards governing the physical and chemical properties, including required tensile strength, of PVC pressure pipe for water (potable and reclaimed) and forced-sewer transport. AWWA Standard C900 applies to four-inch through twelve-inch diameter PVC pressure pipe for distribution, and AWWA C905 applies to fourteen-inch through forty-eight-inch diameter PVC Pressure Pipe used for transmission and distribution. See Exhibit 12.

229. Before AWWA standards for modern urban projects came into prominence, the prevailing industry standard governing PVC pressure pipe was ASTM D2241. See Exhibit 45, incorporated herein. ASTM is one of the largest standards organizations in the world. ASTM's mission statement includes the development of standards to "promote public health and safety" and to "contribute to the reliability of materials, products, systems and services." ASTM standards are widely used and incorporated into other industry standards as well as government contracts and specifications. Many manufacturers, including J-M, represent that their products have been manufactured and tested in conformance with ASTM standards by so indicating on the product itself, or in marketing or other labeling materials. J-M markets and sells its ASTM D2241 pipe both as "IPS" pipe (IPS refers to Iron Pipe Size), and "PIP" pipe (referring to Plastic Irrigation Pipe). This Complaint refers to IPS pipe (which includes potable water, reclaimed water, and forced-sewer IPS pipe) and PIP pipe collectively as "ASTM D2241 pipe." Although AWWA controls most new urban piping installations, ASTM D2241 pipe continues to be used in substantial amounts, especially in rural applications.

230. Like AWWA C900, ASTM D2241 sets minimal requirements for the physical and chemical properties of PVC pressure pipe for water transport (potable and reclaimed) and for forced-sewer applications. For all purposes relevant to this Complaint, ASTM D2241 pipe is made with the same ingredients and processed in the same manner and on the same equipment as AWWA C900/C905 pipe. Moreover, the pertinent requirements of ASTM D2241 are substantively the same as the requirements of AWWA C900/C905, as further shown below. Therefore, the various J-M manufacturing practices that resulted in its failure to meet standards requirements apply equally to both AWWA C900/C905 and ASTM D2241 pipe. Relator has knowledge of J-M pipe manufacturing failures both in the field and in the laboratory for ASTM D2241 pipe as well as AWWA pipe.

231. At all times relevant to this Complaint, Real Parties, like other governmental entities with water and sewer systems, have required that PVC pressure pipe for use in their systems comply with or exceed the standards described in AWWA Standards C900/C905 or ASTM Standard D2241. See Exhibits 28, 29 & 51, incorporated herein. AWWA and ASTM

D2241 Standards are the universal standards applied in the PVC pressure pipe industry. The standards organizations UL and FM (discussed *infra*) do not cover sewer and reclaimed-water pipe. J-M, therefore, does not mark its forced-sewer or reclaimed water pipe with UL or FM marks, but it does mark such pipe as compliant with AWWA C900, AWWA C905, or ASTM D2241. Compliance with the requirements of AWWA or ASTM D2241 is so consistent and widespread in this country that the requirement of compliance is understood by domestic purchasers and sellers of water works products regardless of whether it is stated expressly.

232. Relator is unaware of any domestic PVC pipe manufacturer or distributor who openly offers to sell PVC pressure pipe in the DRs (dimension ratios) and standard dimension ratios ("SDRs") offered by J-M that does not claim to comply with AWWA Standards C900 or C905 or ASTM Standard D2241. Nor is Relator aware of any domestic water or forced-sewer system that knowingly permits the purchase of PVC pipe that does not comply with the tensile strength requirements of AWWA C900/C905 or ASTM D2241. Real Parties would never have knowingly purchased PVC pressure pipe for use in their water and sewer systems that did not comply with AWWA or ASTM D2241 standards.

233. To be compliant with the standards, PVC pressure pipe must satisfy certain strength and extrusion-quality tests set forth in AWWA C900/C905 and ASTM D2241, including without limitation: (1) Cell Class Testing, (2) HDB Testing, (3) Sustained Pressure Testing, (4) Quick Burst Testing, and (5) Acetone-Immersion Testing. For all purposes relevant to this Complaint, the requirements of these tests are substantively identical for both AWWA C900/C905 and ASTM D2241. Broadly described, the purpose of these tests is to ensure PVC pipe will withstand varying pressures over both short and long periods without leaking. These tests are also meant to ensure that J-M's production pipe is representative of the pipe that originally qualified for the standards, as mandated within the requirements of AWWA C900/905 and ASTM D2241. However, because of its cost-cutting and productivity measures described in section IV above, J-M repeatedly failed each of these tensile strength tests beginning in at least 1997.

**A. <u>Cell Class Testing</u>**

234. PVC compounds are identified by a numerical classification system in which each

number corresponds to a cell in a Table that identifies the particular property and the minimum required value for that property. AWWA C900/C905 and ASTM D2241 require that the compound from which PVC pipe is made shall equal or exceed "cell class 12454" as defined in ASTM D1784. Exhibits 12 & 45. In describing the classification system, ASTM D1784 states that the third number in the designation corresponds to the compound's tensile strength requirements. See Exhibit 30, incorporated herein. For cell class 12454, the third number of the designation is 4, which translates to a required tensile strength of 7,000 psi. Id.

235. In addition to providing the physical properties that each cell class must have, ASTM D1784 also prescribes the method by which the specimens for testing compliance with these requirements shall be prepared. Until February 1997, ASTM D1784 only provided one way of preparing the specimens and that was by compression molding. See Exhibit 31, incorporated herein. To prepare a sample by compression molding, separate sheets of PVC compound or pipe are pressed together between two metal drums to form a laminate.

236. However, beginning in February 1997, ASTM D1784 was revised to include two additional specimen preparation methods. Instead of just compression-molded specimens, ASTM D1784 provided that compliance with the cell classification requirements "shall be determined with compression-molded, extruded, or injection-molded test specimens for . . . tensile strength." Exhibit 32 at Section 10, incorporated herein.

237. In the Spring of 1997, Doug Boitz ("Boitz"), J-M's former Product Assurance Manager, contacted members of ASTM D20.15, the Committee responsible for amending ASTM D1784, for guidance regarding the proper interpretation of the amendments to Section 10, the section on specimen preparation. Following his consultation with the Committee members, Boitz wrote an internal memorandum to Lin, discussing what he had learned. See Exhibit 33, incorporated herein.

238. In this memo, dated May 5, 1997, Boitz states that the Committee's intent for the change is "to create the ability for manufacturers of extruded or injection molded products to have samples of materials for testing that are representative of the products, which they are producing." Exhibit 33. In other words, the Committee intended that manufacturers of extruded products use

an extruded sample for testing, while manufacturers of compression-molded products use a compression-molded test sample. The Committee's reasoning, Boitz said, was "that the processing can greatly affect the properties and quality of the material or compound." Id. Since J-M produces its PVC pipe by extrusion, Boitz concluded that ASTM D1784 now required J-M to prepare its specimens by extrusion as well "so that the results obtained from finished products are not significantly different than the tested specimens." Id. At the end of the memo, Boitz recommends to Lin that J-M's Research and Development Department be notified of this issue so that it can amend J-M's sample preparation methods to include extruded samples. Id.

239. Despite this clear statement from the ASTM Committee Members that J-M, as a manufacturer of extruded pipe, must use extruded specimens for purposes of cell class testing, Relator has information and believes that J-M continued to use compression molding as one of the primary means of sample preparation for its cell class testing from and after February 1997. The reason for J-M's allegiance to the compression-molded specimens is that its J-M 90 compound performs better and yields higher tensile strength results under the compression-molding process than can be obtained via extrusion. With the use of compression-molded samples, J-M was able to artificially boost its tensile strength results and thereby conceal the fact that its actual tensile strengths were below the minimum 7,000 psi required by AWWA C900/C905 and by ASTM D2241.

240. Two third-party certifiers, International Association of Plumbing and Mechanical Officials ("IAPMO") and NSF, require J-M to submit to annual cell class testing, which includes tests to confirm that J-M's PVC pipe meets a minimum tensile strength of 7,000 psi. By contrast, AWWA and ASTM, which operate on an honor system, do not require manufacturers to submit to testing or audits. Relying on the good faith of the manufacturers, AWWA and ASTM operate on the assumption that a manufacturer that represents its parts as being compliant will have regularly performed the necessary tests listed in the standards to ensure that its parts comply and will only sell compliant products.

241. In preparing its samples for the annual IAPMO and NSF cell class testing, J-M followed many of the same practices it had used in preparing samples for UL qualification of its

no-thickened-section pipe. That is, J-M followed a manufacturing process that was not representative of the actual conditions under which its PVC pipe is ordinarily made. J-M had Fassler specially prepare the samples using compression molding, as opposed to extrusion, with an extraordinary degree of care and precision. As with its UL qualification testing of the no-thickened-section pipe, J-M prepared multiple specimens from each lot and sent a subset of these samples to outside laboratories to confirm that when IAPMO or NSF tested the other samples they would meet the required minimum tensile strength of 7,000 psi.

242. Even with the advantages gained by special preparation and use of compression-molded samples, J-M only barely met the minimum requirement of 7,000 psi in the 2005 annual cell class test performed for IAMPO, and failed tensile strength in prior years' annual IAMPO and NSF testing. Exhibit 34, incorporated herein, is a copy of a test report from CRT Laboratories, Inc. describing cell class testing performed for IAPMO in June 2005 on J-M compression-molded samples. While the samples were found to meet the minimum cell class requirements of cell class 12464, the tensile strength results of 7,081 psi were only slightly above the minimum requirement of 7,000 psi. See Exhibit 34.

243. On multiple occasions, including on September 13, 2005, Yang told Relator that, without the benefit of compression molding and special preparation, J-M's PVC pipe compound actually has a maximum tensile strength of approximately 6,700 psi. Yang cited "extrusion conditions" (*i.e.*, J-M's accelerated production rate and improper tooling and maintenance of its extruders) as the reason for J-M's inability to satisfy the tensile strength requirements of cell class 12454. Exhibit 36 (Relator's notes dated 9/13/05), incorporated herein.

**B. HDB Testing**

244. As set forth in sections V.B. and V.B.1. (see ¶¶ 71-78), to qualify J-M's new, no-thickened-section pipe for UL listing, UL required J-M to satisfy the HDB requirements specified in Section 4.3.2.2(b) of AWWA C900 and C905. As described herein at section V.B.1. (¶¶ 71-93) and section V.B.4 (¶¶ 108-112), J-M began producing no-thickened-section pipe on June 1, 2005 despite the fact that it had test results showing that the pipe failed the HDB testing required by AWWA C900 and C905 more than 50 percent of the time. As a result, it is more likely than not

purchasers of J-M's no-thickened-section Blue Brute PVC pipe, including Real Parties, received pipe that fails to comply with the HDB requirements of AWWA C900 and C905.

245. As applied to J-M's PVC pressure pipe, AWWA C900/C905 and ASTM D2241 contain the same HDB requirement: that the pipe be manufactured to meet an HDB category of 4,000 psi. See Exhibit 45. J-M's difficulties with satisfying the HDB requirements predate the production of its no-thickened-section AWWA C900 pipe. J-M also had difficulty satisfying the HDB requirements under J-M's original pipe design (*i.e.*, J-M's thickened-section Blue Brute and Big Blue PVC pipe) and the HDB requirement of its ASTM D2241 pipe. For instance, as discussed in paragraph 82, on November 14, 2003, Fassler cited as one of the impediments to the success of the No-Thickened-Section Project the fact that J-M had been experiencing failures in the HDB testing on its existing pipe. See Exhibit 16. Relator has information and believes that despite these failing test results, J-M did not reject or scrap a PVC pipe for having failed HDB testing.

246. In the 1980s, the Plastic Pipe Section of Johns-Manville, the predecessor company to J-M, promulgated a series of product specifications, many of which were more stringent than applicable industry standards and customer specifications. Johns-Manville included assurances of adherence to these company specifications in its express warranty. When it was founded in 1982, J-M continued to maintain the company specifications Johns-Manville had created and included them in its warranty.

247. One of these product specifications, J-M Specification No. PL-25 for four-inch through twelve-inch PVC Plastic Blue Brute pipe, required the pipe to meet a minimum quick burst stress of 7,200 psi, which was significantly higher than AWWA C900's requirement of 6,400 psi. J-M had the same requirement -- a minimum quick burst stress of 7,200 psi -- for its ASTM D2241 pipe. One of the primary reasons for the more stringent requirement was to ensure that J-M's PVC pipe would meet the required HDB tensile strength category. In other words, if the PVC pipe withstood a stress of 7,200 psi during the 60-second Quick Burst Test, it would be more likely to pass the required HDB category of 4,000 psi during the subsequent HDB testing. Conversely, if the PVC pipe failed below 7,200 psi during the Quick Burst Test, it would be at risk

of failing to meet the HDB category of 4,000 psi. If the pipe failed below 7,000 psi during the Quick Burst Test, it probably would not meet the HDB category of 4,000 psi. As described in paragraphs 83-84 above, because the Quick Burst testing always precedes the HDB testing, the Quick Burst results can provide an early indication of whether the pipe will pass HDB.

248. In a December 11, 2001 email to Hwang, Fassler stated: "Historically, JM90 pipe that fails ASTM D1599 at less than 7200 psi hoop stress is questionable. JM90 pipe that fails ASTM D1599 at less than 7000 psi hoop stress is BAD PIPE." Exhibit 61, incorporated herein.

249. J-M normal production pipe typically ranges from 6,400 to 6,800 psi.

250. J-M considers anything below 7200 as a "fail." JM-90 pipe falling below a hoop stress of less than 7200 psi is at higher risk of failing long-term pressure testing.

251. In an April 17, 2002 memorandum to Chen, Fassler stated: "The data on hand at R&D shows that sustained pressure & HDB test failures become likely in pipe giving QB hoop stresses below 7000 psi." Exhibit 62, incorporated herein.

252. Fassler's PowerPoint Presentation on HDB at the November 11, 2004 Quality Assurance Meeting states: "When providing pipe samples to R&D and/or submitting the same to any outside agencies for testing: (c) Prepare specimens from pipe with a short-term burst pressure test result of 7200 psi or higher." Exhibit 63, incorporated herein.

253. In a memorandum to Hwang regarding the "Benefits of Quick-Burst Testing to 7200 psi Hoop Stress" dated January 25, 2002, Fassler stated: "Bad pipe will almost always exceed 6400 psi hoop stress on the quick-burst test." Also, "PVC pipe that fails at less than 7200 psi hoop stress is poorly extruded. All the sustained pressure test failures and all the HDB (Hydrostatic Design Basis) test failures in recent years involved pipe that gave quick-burst test results of less than 7200 psi hoop stress. For the above reasons, I suggest that a quick-burst hoop stress result of 7200 psi hoop stress be set as the minimum acceptable level for J-M PVC pressure pipe. The outside agency standard minimums (typically based on 6400 psi hoop stress) can still be used to defend the Company against customer complaints. Deviations can be granted for pipe exceeding 6400 psi hoop stress." Exhibit 64, incorporated herein.

254. However, on November 19, 2004, J-M revised Specification No. PL-25 to lower

the short-term quick-burst pressure requirement to the 6,400 psi required by AWWA C900 because it could no longer meet the higher J-M pressure requirement of 7,200 psi. Exhibit 35, incorporated herein, is a red-lined copy of Specification No. PL-25 reflecting the revision to the lower 6,400 psi requirement. J-M also revised its quick-burst pressure requirement for ASTM D2241 pipe. J-M made this revision knowing that, by lowering the quick burst pressure requirement, it would no longer be able to meet the HDB test requirements of AWWA C900/C905 and ASTM D2241. Despite this knowledge, before making this revision, J-M did not perform any testing to determine its effect on HDB.

**C. Sustained Pressure Testing**

255. As described herein at section V.B.2. (¶¶ 94-99), to qualify J-M's new, no-thickened-section pipe for UL listing, UL required J-M to demonstrate the pipe could pass the Sustained Pressure Test specified in Section 18 of UL 1285. As further described in section V.B.2. ((¶¶ 94-99), J-M was only able to pass this test by resorting to the following fraudulent practices: (1) preparing its samples using materials and processing conditions that were vastly superior to those J-M actually used in its day-to-day manufacturing of pipe; (2) cherry-picking samples from lots that had produced passing HDB test results to increase the likelihood they would pass in front of UL; and (3) concealing these facts from UL, other standards and certifying organizations, and J-M's distributors and customers. Despite the fact it had improperly manipulated the test materials and conditions of the Sustained Pressure Testing to mask the underlying tensile strength problems with the pipe, J-M began producing no-thickened-section pipe on June 1, 2005.

256. The Sustained Pressure Test contained in Section 18 of UL 1285 is substantively identical to the Sustained Pressure Test required by sections 4.3.3.1 and 5.1.3 of AWWA C900. See Exhibits 6 & 12. Accordingly, in addition to violating UL 1285, J-M also violated AWWA C900 when it engaged in the three fraudulent practices described above while performing the Sustained Pressure Test on its new, no-thickened-section pipe. As a result of these practices, since June 1, 2005 (the date J-M began producing no-thickened-section pipe), it is more likely than not purchasers of J-M's no-thickened-section Blue Brute PVC pipe, including Real Parties, received

pipe that (when tested properly with representative samples) fails to comply with the Sustained Pressure Test requirements of AWWA C900.

257. Over a year before it performed the Sustained Pressure Tests described above on its no-thickened-section pipe, J-M had received reports of its existing PVC pipe failing Sustained Pressure Testing performed for NSF. NSF's and AWWA's C900/C905 Sustained Pressure Test requirement is substantively identical to the Sustained Pressure Test required by sections 6.2 and 8.4 of ASTM D2241. As discussed in paragraph 82, on November 14, 2003, Fassler cited as one of the impediments to the success of the No-Thickened-Section Project the fact that "[r]ecently, pipe from some facilities has failed sustained pressure testing at NSF." Exhibit 16. Relator has information and believes that despite these failing test results, J-M has never rejected or scrapped a PVC pipe for having failed Sustained Pressure Testing.

**D. Quick Burst Testing**

258. As described herein at section V.B.3. (¶¶ 100-107), to qualify J-M's new, no-thickened-section pipe for UL listing, UL required J-M to demonstrate the pipe could pass the Quick Burst Test specified in Section 4.3.3.2 of AWWA C900, which is substantively the same as Section 8.5 of ASTM D2241. As further described in section V.B.2. ((¶¶ 94-99), J-M failed several of the Quick Burst Tests and ultimately was only able to pass this test by resorting to the following fraudulent practices: (1) preparing its samples using materials and processing conditions that were vastly superior to those J-M actually used in its day-to-day manufacturing of pipe; (2) cherry-picking samples from lots that had produced passing HDB and Sustained Pressure Testing Test results to increase the likelihood they would pass in front of UL; and (3) concealing these facts from UL, other standards and certifying organizations, and J-M's distributors and customers. Despite the fact it had improperly manipulated the test materials and conditions of the Quick Burst Test to mask the underlying tensile-strength problems with the pipe, J-M began producing no-thickened-section pipe on June 1, 2005. As a result, it is more likely than not purchasers of J-M's no-thickened-section Blue Brute PVC pipe, including Real Parties, have received pipe that fails to comply with the Quick Burst requirements of AWWA C900.

259. Well over a year before it performed the Quick Burst Tests described above on its

no-thickened-section pipe, J-M had knowledge that its existing PVC pipe was failing the Quick Burst Tests performed daily for purposes of AWWA C900 and ASTM D2241 at each of its 11 PVC pipe plants. By at least early 2004, Relator, Yang, and Fassler began to receive word from the Quality Control Supervisors at J-M's 11 Plants producing PVC pipe that their respective Plant Managers were overriding reject tags and sending out PVC pipe that the Quality Control Supervisors had rejected for failing the daily Quick Burst Tests. Relator personally had received three such complaints from Michael Henderson, the Quality Control Supervisor at the Butner, North Carolina Plant, Armondo Martinez, the Quality Control Supervisor at the Fontana, California Plant, and Joe Soliz, the Quality Control Supervisor at the Wharton, Texas Plant.

260. To try and address this and other burgeoning quality-control problems, Yang, at that time J-M's newly appointed Corporate Quality Control Supervisor, called a meeting of all of the Quality Control Supervisors from each of J-M's 11 PVC-pipe Plants. In addition to Yang and the 11 Quality Control Supervisors, the other attendees were Relator, Rao, Fassler, and Beryl Nadia and Lenor Chang, both of whom worked for Fassler. At this meeting, which was held at J-M's Pueblo, Colorado Plant in the Spring of 2004, the Quality Control Supervisors told stories of having rejected PVC pipe for failing daily Quick Burst Tests and then being instructed by their respective Plant Managers to continue to test the pipe until they got a passing result. Since a pipe's tensile strength and other properties gradually increase or stabilize as it is allowed to cool and harden, it often took the Quality Control Supervisors several days and repeated testing to achieve a passing result. However, such repeated testing of individual samples is expressly prohibited by Section 5.1.3 of AWWA C900, which provides that specimens are to be tested "at the beginning of production of each specific material and each size" and thereafter every 24 hours. Exhibit 12. ASTM D2241 permits certain retesting only by agreement between the purchaser and seller of the pipe. Exhibit 45 at Section 9.1.

261. Once a passing result was obtained, the Quality Control Supervisors said the Plant Managers would instruct them to release and ship the pipe despite the fact that it may have failed four out of five Quick Burst Tests. J-M Plant Managers, whose bonuses are based on the amount of pipe the plant produces, were loath to reject pipe since rejected pipe cannot be included in the

plant's production figures and thereby had the effect of taking money out of their pockets.

262. At the Pueblo meeting, Yang and Frank Padilla ("Padilla"), Quality Control Supervisor at the Pueblo, Colorado Plant, provided the Quality Control Supervisors with a review of the proper test methods to be followed when performing the daily Quick Burst Test contained in standards AWWA C900 and ASTM D2241. (The standards, in turn, state that the testing must be performed in accordance with ASTM D1599.) This presentation focused on the method prescribed in ASTM D1599 for determining the amount of test pressure to apply to the pipe sample in order to achieve the required 6,400 psi of quick-burst stress in the pipe wall (hereafter "Calculated Test Pressure"). To determine the Calculated Test Pressure, Yang emphasized that ASTM D1599 required the Quality Control Supervisors to measure the minimum wall thickness of the actual pipe sample. See Exhibit 37, incorporated herein.

263. After setting forth these requirements, Yang quickly learned that except for Padilla, the Quality Control Supervisors at the remaining 10 Plants were all doing the calculation wrong. Instead of measuring the wall thickness of the actual pipe sample, the Quality Control Supervisors at the other 10 plants were simply relying on the minimum wall thicknesses listed in Table 1 of AWWA C900 and Table 2 of ASTM D2241 (collectively, "the Tables") for a generic pipe of the same size and pressure class as the sample. However, the wall of the pipe J-M produces invariably is thicker than that of a generic pipe listed in the Tables. Therefore, by relying on the measurement supplied in the Tables instead of actually measuring the wall thickness of the pipe sample, the Quality Control Supervisors of the 10 plants were subjecting the samples to a smaller Calculated Test Pressure than what is required by ASTM D1599.

264. When Yang informed the Quality Control Supervisors that they could no longer rely on the minimum wall thicknesses supplied in the Tables and had to measure the actual pipe samples being tested, they strenuously objected. The Quality Control Supervisors admitted they had enough trouble achieving the required 6,400 psi of stress in the pipe wall even with the benefit gained from the smaller Calculated Test Pressure. If they performed the tests correctly (*i.e.*, measured the minimum wall thickness of the actual pipe samples), the Quality Control Supervisors complained, they would stand little to no chance of achieving 6,400 psi and passing

the Quick Burst Tests. As the comments of the Quality Control Supervisors make clear, J-M routinely caused PVC pipe to be shipped to its customers, including Real Parties, that failed to meet the requirements of the Quick Burst testing specified in AWWA C900 and ASTM D2241.

265. Following this meeting, Yang sought to change the management structure to have the Quality Control Supervisors report to the Corporate Quality Control Supervisor instead of their respective Plant Managers. By so doing, Yang hoped to make it less likely that the Plant Managers would be able to override decisions by the Quality Control Supervisors to reject non-conforming pipe. Yang's request was denied. Despite the considerable problems raised by the Quality Control Supervisors at the Pueblo meeting regarding the short-term tensile strength of its PVC pipe, J-M did not take any steps to address the root cause of the problem and curb the cost-cutting measures described herein at section IV. Yang left J-M in October 2005 out of frustration for repeatedly being stymied in his efforts to improve the quality of J-M's products.

**E. Acetone-Immersion Testing**

266. AWWA C900/C905 and ASTM D2241 require manufacturers to subject their PVC pipe to routine acetone-immersion testing as specified in ASTM D2152. Exhibits 12 & 45. Broadly described, Acetone-Immersion Testing measures "extrusion quality," *i.e.*, how well the extruder processed the PVC compound in forming the pipe. Id. Under ASTM D2152, the pipe sample is required to be immersed in acetone that is at least 99.8 percent pure. See Exhibit 38, incorporated herein. If the sample has been processed well, the acetone will not attack it. However, if the sample has been processed poorly, the acetone will cause it to flake. A sample that shows at least 50 percent attack of the inside, outside, or mid-wall surface of the sample or at least 10 percent attack on more than one surface of the sample has failed the test. Id.

267. Because it rapidly absorbs moisture from the air, acetone can quickly become diluted if it is left out in an unsealed container and exposed to air. As acetone is diluted, its ability to attack pipe samples decreases. ASTM D2152 requires that the acetone used for testing contain no more than 0.2 percent water by mass. Exhibit 38. If a particular container of acetone has more than 0.2 percent water, the excess water can be removed with a drying agent.

268. J-M did not take adequate safeguards to ensure the integrity of the acetone used in

its routine Acetone-Immersion Tests. For instance, J-M regularly stored its acetone in drums with the lids off. Instead of having no more than two percent water, the acetone J-M regularly used for its testing contained an excessive percentage of water. Although J-M easily could have used a drying agent to remove the excess water, the Plant Managers typically did not want to spend the money for such reagents. Instead, by testing with diluted acetone, J-M was able to obtain passing test results for specimens that would have failed had they been tested using undiluted acetone.

269. Even with the benefit gained by using diluted acetone, J-M routinely failed its Acetone-Immersion Tests. At the Pueblo meeting described above, many of the Quality Control Supervisors reported repeated instances of their Plant Managers overriding reject tags and sending out PVC pipe that the Quality Control Supervisors had rejected for failing the routine Acetone-Immersion Tests required by the standards. Relator has information and believes that despite these failing test results, J-M did not reject or scrap a PVC pipe for having failed Acetone Immersion Testing.

**F. J-M's False Representations Regarding AWWA and ASTM D2241 Compliance**

270. As the world's leading supplier of PVC pipe, J-M is acutely aware of the importance of AWWA and ASTM D2241 compliance to its customers, including Real Parties. In its product catalogs, sales literature, and on its website, J-M repeatedly describes its PVC pipe as meeting AWWA and ASTM D2241 requirements and a LTS of 7,000 psi. For example, in the section of its catalog dedicated to its Blue Brute PVC pipe, J-M references Blue Brute's compliance with AWWA C900 four times. On the cover page for this section, beside the words Blue Brute, J-M stated "Meets AWWA C900." Exhibit 23. The first line of the first page states "J-M's Blue Brute Pipe conforms to the AWWA C900 specification . . ." Id. That same page has a box that prominently states "MEETS AWWA C900." Finally, in a table entitled "Typical Physical and Chemical Properties and Capacities," J-M cited AWWA C900 as the standard governing its Blue Brute PVC Pipe and notes AWWA C900's tensile strength requirement of 7,000 psi. The section of J-M's catalog relating to its Big Blue PVC pipe follows an identical format to Blue Brute's, except that it references Big Blue's conformance with AWWA C905 as opposed to C900.

271. Similarly, in its catalogs for PVC IPS Pressure Rated Pipe, J-M references its claimed compliance with ASTM D2241 several times. On the cover page for this pipe, beside the words "I.P.S. Pressure," J-M states "MEETS ASTM D2241." Exhibit 46. The first line of the first page describing the pipe states "J-M Manufacturing's (J-MM) I.P.S. Pressure PVC Pipe conforms to ASTM D 2241." Id. In the catalog's Short Form Specification, J-M again states that the "pipe shall meet the requirements of ATSM D 2241." Id. In a table entitled "Typical Physical and Chemical Properties and Capacities," J-M cites ASTM D2241 as the government standard and notes the tensile strength requirement of 7,000 psi. Id. J-M's catalog for Irrigation PIP Pipe makes similar representations, including claimed compliance with ASTM D2241 and the 7,000 psi tensile strength requirement. Exhibit 47.

272. As alleged in detail above, the statements in J-M's catalogs, websites, and sales literature regarding compliance with AWWA and ASTM D2241 standards and the tensile strength requirement of 7,000 psi were patently false. At no time did J-M ever distribute a catalog or sales or advertising literature that revealed its substandard tensile strength results in over half of the tensile strength tests performed since 1997. Nor did J-M otherwise inform its customers, including Real Parties, of its substandard tensile strength.

## VIII. J-M'S SALE OF SUBSTANDARD PVC PIPE BEARING FM MARK DESPITE KNOWLEDGE THAT PIPE DOES NOT QUALIFY FOR FM LISTING

273. FM certifies a range of products that meet its approval standards for, *inter alia*, fire protection and loss prevention. Once a product is tested and found to conform to FM's requirements, FM issues the "FM APPROVED" mark for the product, signifying that it meets certain performance requirements. Entities that use FM-approved goods rely on the representation that the products and manufacturing practices conform to the standards and specification-testing required.

274. FM has promulgated a standard governing PVC pipe for use in underground fire service water mains. Until 1999, the pertinent FM Standard was FM 1610. Exhibit 48. In 1999, FM updated the applicable standard, providing more detail and segregation of the various standards for underground plastic pipe; the updated standard was renumbered FM 1612. Exhibit

49. Because the pertinent requirements are substantially the same, FM 1610 and FM 1612 will be referred to collectively as "FM 1612." FM Standard 1612 (effective date April 30, 2000 for full compliance), "Approval Standard for Polyvinyl Chloride (PVC) Pipe and Fittings for Underground Fire Protection Service," governs FM approval and listing of PVC pipe for fire service.

275. FM 1612 lists a variety of requirements that must be met for PVC pipe to be FM Approved, including initial qualification testing and ongoing manufacturing testing. Its requirements are categorized as General Requirements, Performance Requirements, and Operations Requirements. The standard requires that "[a]ll FM Approval testing is to be conducted on production samples," and "[i]t is the manufacturer's responsibility to submit samples representative of production." Exhibit 49 at Sections 1.2.3 & 2.3; see also Section 3.2.8 ("Testing shall use production pipe and fittings assembled according to the manufacturer's published instructions.").

276. One of FM's Performance Requirements is that the product meet the criteria of any other standards the product purports to satisfy, whether in "design, manufacture, or performance." Exhibit 49 at Section 4.2.1. A manufacturer must "submit to FM Approvals a copy of the relevant standard(s), along with drawings, specifications, and other documents necessary to confirm compliance [with the other standard(s)]. FM Approvals shall verify that all requirements of that standard are met." Exhibit 49 at Section 4.2.2. FM explains that "[t]he intent of the requirement is that PVC pipe and fittings conform to any recognized standard to which they are manufactured." Id. at Section 4.2.1. In this way, FM incorporates the pertinent requirements of AWWA, UL, and ASTM, and J-M's failures and deceptions with respect to those standards also constitute failures and deceptions with respect to FM. In addition to failing to comply with FM requirements through its other industry standard failures, J-M independently failed the substantive requirements of FM, as discussed below. During time periods pertinent to this Complaint, J-M represented that certain of its AWWA C900 and C905 pipe were legitimately FM Approved (as further detailed below).

277. FM's Operations Requirements include a demonstrated Quality Control Program

and Manufacturing and Production Tests that must be run at manufacturing sites. Exhibit 49 at Sections 5, 5.1, & 5.4. The manufacturer is also required to "notify FM Approvals of changes in product construction, design, components, raw materials, physical characteristics, coatings, component formulation or quality assurance procedures prior to implementation of such changes." Exhibit 49 at Section 5.3. Three of the quality-control manufacturing tests that FM requires are Extrusion Quality, Quick Burst, and Sustained Pressure, which are substantively identical to the tests described elsewhere in this Complaint. Id. at Sections 5.4.4, 5.4.5 & 5.4.6.

**A. Cell Class Testing**

278. Among the "General Requirements" for PVC pipe to be FM Approved is the requirement that the pipe "be Class 12454 A or B as defined in ASTM D1784." Exhibit 49 at Section 3.2.4. Class 12454 as so defined imposes a tensile strength requirement of 7,000 psi, as more fully described herein at paragraph 234. As fully described herein at Sections V.A. through V.A.3. (see ¶¶ 53-70) and VII.A. (¶¶ 234-243), J-M's manufacturing practices were such that its actual tensile strengths were below the minimum 7,000 psi required to qualify as Class 12454 and required to comply with UL 1285 (which requirements are incorporated into FM 1612), therefore violating FM 1612. Despite its knowledge of these manufacturing failures, J-M continued to produce its pipe under these conditions.

**B. HDB Testing**

279. Another FM 1612 General Requirement is that the pipe be assigned a certain HDB value as derived from tests conducted per ASTM D1598, and evaluated per ASTM D2837. Exhibit 49 at Section 3.2.3. FM's HDB requirements incorporate the HDB requirements contained in Section 4.3.2.2(b) of AWWA C900 and C905, described herein at Section V.B.1. (¶¶79-81). Exhibit 49 at Sections 1.2.3 & 4.2. As described fully herein at Section VII.B (¶¶ 244-254), J-M's manufacturing practices resulted in numerous repeated failures of HDB testing. Relator has information about the failed HDB testing, including knowledge of failures during the time period in which J-M was attempting to obtain FM Approval, and believes that despite these failing test results, J-M continued to release its pipe for sale and distribution.

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**C. Sustained Pressure Testing**

280. FM requires the Sustained Pressure Test to be run on C900 products, per ASTM D1598, at pressures substantively identical to both UL's Sustained Pressure Test requirements (Section 18 of UL 1285) and AWWA's requirements (Sections 4.3.3.1 and 5.1.3 of AWWA C900). See Exhibits 6, 12 & 49 at Section 5.4.6. As explained more fully herein at Sections V.B.2 (¶¶ 94-99) and VII.C. (¶¶ 255-257), J-M was able to pass the Sustained Pressure Test to meet AWWA and UL requirements only by resorting to fraudulent practices such as using materials and processes vastly superior to their day-to-day manufacturing counterparts, cherry-picking samples from certain pre-tested production lots, and concealing these facts from standards organizations, distributors and other customers. See ¶ 256, herein. Thus, in addition to violating UL 1285 and AWWA C900, J-M also violated FM 1612 when engaging in these fraudulent practices while performing the Sustained Pressure Test on its new, no-thickened-section pipe. See ¶ 257, herein. J-M also failed the Sustained Pressure Test for its earlier, thickened-section pipe, but as described herein at paragraph 255, despite these failing test results, J-M did not reject or scrap a PVC pipe for having failed Sustained Pressure Testing.

**D. Quick Burst Testing**

281. FM 1612's Performance Requirements include the Quick-Burst Strength Test. FM's Quick Burst Strength Test (described in Section 4.3 of Exhibit 49) for AWWA C900 product is substantively identical to the Quick Burst Test requirements contained in AWWA's C900 Standard, Section 4.3.3.2. J-M had knowledge at least since 1997 or 1998 that its pipe (both pre- and post-No Thickened Section Project) was regularly failing the daily Quick Burst Tests required by AWWA C900 and FM 1612.

282. As described herein at Section V.B.3 (¶¶ 100-107), well after it knew of the continuing failures to pass the daily Quick Burst Tests, J-M resorted to fraudulent acts to manipulate a passing Quick Burst Test under UL observation for its no-thickened-section pipe. Such acts included substituting thicker pipe for the test, manipulating test pressure, pre-testing pipe, and selecting pipe from lots that had already passed other strength tests. Those lots, however, had produced passing results on other tests only because J-M fashioned "special run"

conditions for optimal processing: slowing regular production rates and adjusting typical temperatures and torque. See *supra* ¶¶ 91, 97, 103. J-M engaged in similar activity to "pass" FM's Quick Burst Tests from approximately 1997 through November 2000, when FM withdrew approval of J-M products.

283. FM 1612 also has a stand-alone Quick Burst Test for C905 pipe, which is larger in diameter than C900. The test for C905 pipe is very similar to the test for C900 pipe, but adjusts the hydrostatic pressure values required during the 60 to 70 seconds of the test. Exhibit 49 at Section 4.3.1 (Table 4.3.2b). J-M C905 pipe could not withstand the pressures required by the FM Quick Burst Test. For example, during the time J-M employed Relator, AWWA standards required J-M pipe to pass certain pressure tests on its C905 pipe joints per ASTM 3139, including subjecting the joints to pressures at the "quick burst" levels reflected in Table 4.3.2b of the FM requirements. Exhibit 49 at Section 4.3.1. The C905 joints shattered at these quick burst levels at least two times before J-M was able to obtain a passing result, which it obtained only through deviating production variables (extrusion conditions, materials), as fully explained above. The manufacturing problems that pertain to J-M's C900 product are even more pronounced in its larger-diameter C905 products. The larger diameter products require thicker walls, and the thicker the pipe, the more difficult it is to form the melted PVC compound and cool the pipe in the water tanks. As more fully described herein at Section IV.C. (¶¶ 40-45), J-M's accelerated production rates resulted in less processing time in the extruder and die while the pipe was hot, and inappropriate duration in the cooling baths to form and strengthen. The result, in combination with J-M's additional cost-cutting measures (see ¶¶ 32-39), was to further weaken the pipe and create locked-in stresses. See ¶ 44 herein. Whereas these processing deficiencies resulted in substandard C900 product, they resulted even more so in substandard C905 product.

284. Additionally, FM's quality control testing requirements demand the Quick Burst Test to be conducted per ASTM D1599 on AWWA C900 pipe, including the bell, at the beginning of production of each size and class of pipe, and thereafter every 24 hours. Exhibit 49 at Section 5.4.5. As described more fully herein at Sections V.B.3 (¶¶ 100-107) and VII.D. (¶¶ 260-265), rather than adjust manufacturing practices to meet the Quick Burst Test requirements, J-M

violated the standards by, *inter alia*, knowingly continuing to miscalculate the test pressure required, repeatedly testing the same product over time, or overriding reject tags and releasing the non-conforming pipe (¶¶ 260-265). J-M regularly failed to properly administer the routine Quick Burst Tests, had knowledge of such failures, and nonetheless released such product for sale.

**E. Acetone-Immersion Testing**

285. FM 1612's Extrusion Quality test is the acetone-immersion test that must be conducted as specified in ASTM D2152. FM requires this test to be run at the beginning of production of each size and class of pipe, and thereafter every 8 hours. Exhibit 49 at Section 5.4.4. For the reasons stated fully herein at Section VI.E. (¶¶ 267-269), J-M inadequately safeguarded the integrity of the acetone and regularly tested its C900 and C905 products with diluted acetone. J-M was thus able to "pass" specimens that would have failed had they been tested using undiluted acetone. See ¶ 269 herein. Even with diluted acetone, J-M routinely failed the acetone-immersion (Extrusion Quality) tests, overrode reject tags, and sent out the non-conforming pipe. See ¶ 270 herein.

286. For these reasons, J-M violated various FM 1612's manufacturing requirements for both AWWA C900 and C905 products. Despite its knowledge of the repeated manufacturing failures resulting in these violations, J-M continued to release such product for sale and distribution.

**F. J-M's False Representations Regarding FM Listing and FM Compliance**

287. Despite its knowledge (beginning at least in 1997) that much of its PVC pipe regularly failed to meet the various requirements of FM 1612, and its knowledge (as of at least June 1, 2005) that its new no-thickened-section pipe had a similar failure rate, J-M represented to its distributors and other customers, including Real Parties, that its PVC pipe met FM requirements. J-M represented that its AWWA C900 pipe (DR 14 and DR 18) and C905 pipe (fourteen- and sixteen-inch DR 18) met FM Approval standards from at least 1997 until November 2000, when J-M withdrew from the FM Approval listing for all of its PVC products. Further, in mid-2005, when its products were not listed as FM Approved, J-M represented on its website that some of its products were FM Approved; even after this misrepresentation was

brought to J-M management's attention, J-M knowingly continued this false representation. When J-M obtained reinstatement of FM Approval for some of its products in or around December 2006, J-M began again to represent that its AWWA C900 (DR 14) PVC pipe was legitimately FM-compliant. See Exhibit 50. J-M used the "FM APPROVED" mark on the pipe that it claimed complied with the FM standards. J-M also provided certifications to its individual customers that its Blue Brute and Big Blue PVC pipe has been manufactured in accordance with the requirements of FM 1612.

288. At times relevant to this Complaint, Real Parties, like other governmental entities and water distribution systems, have required that pipes for use in underground fire protection service systems be FM Approved pursuant to the requirements of FM 1610 (prior to 1999) and/or FM 1612 (from 1999 to present). Such government requirements include, but are not limited to, incorporation of FM requirements through NFPA 24's requirement of fire protection listing. See ¶ 117, incorporated herein. Thus, accuracy in FM listing representations is important because FM 1612 is one of the few standards approving pipe for fire protection. Many cities and governmental entities, including Real Parties, require NFPA 24 and/or FM 1612 compliance for fire protection service. See, e.g., Exhibits 27, 28 & 52. The only means by which J-M can claim compliance with NFPA 24's "fire listing" requirement are through its claims of UL listing and/or FM approval.

## IX. FORMOSA'S COMPLICITY IN THE FORMULATION, SALE, AND TESTING OF INFERIOR, NON-COMPLIANT PRODUCTS

### A. Formosa Was Directly Involved in the Formulation, Sale, and Testing of Inferior, Non-Compliant Products

289. Formosa is directly involved in the supply of materials to J-M that affected pipe quality. Formosa supplies J-M with PVC resin and PVC compound (a combination of resins and additives). Formosa requires J-M to purchase Formosa resin and materials for most of its plants. Formosa's resin and materials, however, often do not meet J-M's quality specifications, and Formosa knows from meetings and communications with J-M that its materials contribute to the deficiencies in J-M's pipe.

290. For example, on or around May 23, 2002, J-M R&D and plant personnel, including Fassler, met with Formosa to discuss problems with Formosa's F622 resin and its compliance with J-M's specifications. Specifically, J-M expressed concerns about Formosa's request to lower the resin's inherent viscosity range, permit more contamination, and modify the particle size distribution requirement, all of which would further degrade J-M pipe quality. In his memo about this meeting, Fassler wrote: "Lower IV [inherent viscosity] means lower physical strength (lower tensile strength, lower hoop stress, lower impact resistance). For J-M90 the safety factor for tensile strength and hoop stress is already small." Exhibit 53. Fassler also documented J-M's other concerns about Formosa's F622 resin, which concerns were also relayed to Formosa. Relator learned from J-M personnel, including Hwang and Fassler, that J-M acceded to Formosa's requests regarding J-M's use of its F622 resin, lowering its purchasing specifications to accommodate Formosa. As a result, J-M could no longer reject Formosa resin that previously J-M would have turned away as substandard. Throughout Relator's employment at J-M, the use of Formosa's F622 resin was a continuing problem for J-M pipe quality.

291. Further, Formosa purchases additives that were not produced to industry or J-M specifications. Such nonconforming materials are marketed to J-M and Formosa (as part of Formosa's PVC resin blends used by J-M) as "off-spec" or "wide-spec" products, available for a reduced cost. J-M repeatedly utilizes such off-spec materials for the purpose of cutting costs. Formosa is aware that the materials are not to specification because, among other things, they are expressly described in communications with Formosa and J-M as "off-spec" or "wide spec." J-M and Formosa know that use of such non-conforming materials violates industry standards and J-M manufacturing specifications, resulting in poor-quality pipe.

292. Formosa was also directly involved in the testing of non-conforming J-M pipe. In late 2004 or early 2005, J-M Quality Control and R&D personnel informed Relator that Formosa had tested J-M pipe when Formosa was experiencing problems with its compounds that included Luxco multi-wax. Formosa investigated several batches of multi-wax and found that they did not contain the amount of calcium stearate required by J-M's approved formula. Moreover, the proportion of calcium stearate was highly variable between batches. Formosa witnessed through

its direct testing that J-M pipe made with Luxco multi-wax had greatly varying physical properties, resulting in non-compliant pipe. This inconsistency, in part, contributed to the HDB failures prominent during the development of the no-thickened-section pipe. J-M used Luxco multi-wax for many years.

**B. Formosa Exercised Control Over J-M and Had First-Hand Knowledge that J-M Was Submitting False Claims to Real Parties**

293. In addition to being directly involved in the manufacturing and testing of non-conforming J-M pipe, Formosa knows that J-M has submitted or caused the submission of false claims to Real Parties. Because of the overlapping management and common executive personnel in both Formosa and J-M, Formosa knew at all times what J-M was doing with regard to the manufacture and sales of substandard pipe. Formosa and J-M's headquarters were located in the same building in Livingston, New Jersey until approximately October 2008. Prior to this time, senior J-M and Formosa Finance personnel met together at least two to three times per week. During time periods relevant to this Complaint, persons holding executive or management positions simultaneously in both Formosa (and/or Formosa's closely integrated state-affiliates) and J-M include the following:

(1) Y.C. Wang (Walter Wang's father), both Chairman of Formosa and Chairman of J-M. Y.C. Wang is sometimes listed in public filings as J-M's CEO.

(2) C.S. Wang, both Vice Chairman and a Director of Formosa, and a Director of J-M.

(3) Y.T. Wang (Y.C. Wang's brother and Walter Wang's uncle), an Executive Director/Director of Formosa, and Vice Chairman of J-M.

(4) C.T. Lee, an Executive Director/Director of Formosa, and a Director of J-M.

(5) Alice Hu Nightingale, Secretary of Formosa and Secretary of J-M.

(6) Walter Wang, reported to be on the executive board of the Formosa Plastics Group at the same time he was the President (and now CEO) of J-M.

294. In addition, during the relevant period, Formosa's finance department monitored and controlled risk and insurance matters for J-M. As an example, Formosa's knowledge and

control is evidenced in a March 21, 2006 email from Ken Nasto, J-M Director of Finance, to multiple J-M and Formosa personnel, about a new customer claim. In the email, Nasto states: "From what I can gather from the below emails, a section of our 10" DR18 pipe exploded resulting in one injury and undisclosed (as of yet) property damage. I am notifying Norberto Torres of this as well given the fact that at present our liabi[]lity coverage is still under the control of Formosa, at which point I am sure that a representative from our insurance carrier will be dispatched to monitor our liability . . . ." Exhibit 65, incorporated herein.

295. At least every quarter, J-M reported to Formosa's Finance and Risk Management department any open claims for failing pipe as to which J-M expected to pay over $5,000 or to litigate. Norberto Torres ("Torres") was the Director of Formosa's Finance and Risk Management department. Relator spoke regularly with Torres about these customer complaints as part of Relator's duties in J-M's Product Assurance Department. Relator repeatedly specifically informed Formosa's Finance Director about J-M's manufacturing deficiencies that resulted in substandard and non-conforming pipe. For example, in or around March 2003, Relator discussed with Torres a claim involving J-M pipe that exploded and caused serious personal injury to a person named Richard O'Barto. In the context of the O'Barto claim, Relator discussed with Torres the J-M-pipe defects due to substandard materials, insufficient tensile strength, other non-conformities with specifications, and excessive locked-in stresses. Formosa was further aware of J-M's common practices of failing to acknowledge non-conformities to complaining customers and of falsely denying claims that in fact involved defective product.

### C. Formosa Directly Benefitted from the Submission By J-M of False Claims to Real Parties

296. Formosa received the benefit of J-M's false claims to Real Parties. At the end of every business day, J-M transferred its profits to Formosa. This daily transfer did not include amounts retained for anticipated regular expenditures, but if J-M anticipated any extra expenditures above the regular amounts, it was required to obtain Formosa's approval for them. The daily funneling of J-M's profits to Formosa occurred until at least November 1, 2005, when Formosa's head (Y.C. Wang) reportedly transferred J-M ownership to his son (Walter Wang).

Thus, as the parent company of J-M, Formosa received the profits from J-M's sales of non-conforming pipe.

297. Having been a beneficiary of defendant J-M's false claims to Real Parties, defendant Formosa failed to disclose what it knew about J-M's false claims within a reasonable time after discovery of the false claims.

## X. EMPLOYMENT DISCRIMINATION FOR ACTS IN FURTHERANCE OF FALSE CLAIMS ACT ACTION

298. Relator began working for J-M on July 8, 2002 as an engineer in its Product Assurance Department with an annual salary of $45,000. From July 2002 until he started complaining to his superiors about the impropriety of the fraudulent practices described above, Relator was regularly commended by his superiors on his job performance and received regular pay raises and good performance reviews.

299. For instance, in the Summer and Fall of 2003, Relator received considerable praise and notice from his superiors, including J-M's President Walter Wang, for his work in proposing a design change to J-M's two most popular products, Blue Brute and Big Blue, that would save J-M $3,000,000 a year in materials costs and allow J-M to increase its efficiency and output. Throughout the early stages of his work on the design change, dubbed the "No Thickened Section Project," Relator's currency within J-M as a rising star continued to grow.

300. However, by 2004, as J-M received results from the first round of full-blown HDB testing on the no-thickened-section pipe, Relator began to raise concerns with his superiors about the pipe's excessive swelling and inability to pass the HDB testing more than 50 percent of the time. After questioning what these results meant for the tensile strength of J-M's thickened-section pipe, which was made from the same materials and process, Relator was removed from the Project in early 2005 and began to experience a dramatic change in his employment conditions. Where previously he had been treated as part of the team, Relator suddenly was being shunned by his co-workers. For instance, Relator's access to testing and other sensitive information was severely restricted. Lin instructed staff in J-M's Research and Development and Corporate Quality Control Departments not to provide Relator any documents without first getting approval

from Lin.

301. Over the intervening months, Relator became increasingly aware that J-M's tensile strength problems were not the result of inadvertence, but rather were part of a larger scheme to defraud its customers by implementing cost-cutting measures that decreased its pipe's tensile strength and then manipulating test methods, specimens, and data to conceal these strength problems from its customers and third-party certifiers and standards organizations like UL, NSF, FM, IAPMO, AWWA, and ASTM. Throughout this time, Relator continued to raise concerns with his superiors about the propriety of J-M's fraudulent practices. As the strength of his objections grew, Relator was met by J-M with increasingly adverse employment action.

302. For instance, in December 2004, at the same time Relator was raising concerns with his superiors about the tensile strength of J-M's UL-listed products, an opening became available in Relator's Department for the position of Product Assurance Manager. This position, which involved overseeing the handling of claims and lawsuits against J-M for non-conforming PVC pipe, had greater pay and responsibilities than Relator's current position. With a masters degree in structural engineering, associates and bachelors degrees in civil engineering, a bachelors degree in management and two years of experience handling PVC pipe claims and lawsuits for J-M, Relator was well-qualified for the job.

303. Relator was one of only two internal J-M candidates being considered for the job. The other candidate, Mai Huynh, had no engineering degrees or other formal training relevant to the job description and no experience with claims and lawsuits or PVC pipe. At the time he was being considered for the position, Huynh had worked only one year at J-M on tooling issues relating to J-M's high density polyethylene ("HDPE") pipe, the sales of which represent a small fraction of J-M's business. Despite his short tenure at J-M and complete lack of experience, J-M gave the position of Product Assurance Manager to Huynh.

304. In the summer of 2005, Relator objected strongly to his managers' instructions that he deny a claim brought by customer Sheldon Site Utilities ("Sheldon") for defective Blue Brute pipe that had pinhole leaks and failed when it was pressurized. After sending samples from the two problem pipes to CRT Laboratories for testing, Sheldon presented J-M with test results

showing that both samples had tensile strengths below the minimum requirement of 7,000 psi. See Exhibit 9. Despite Relator's recommendation that it should pay the Sheldon claim, Cheng and Lin instructed Relator to deny the claim on the grounds that the test results did not show that the pipe failed to comply with AWWA C900. Cheng and Lin argued that the CRT test results showing substandard tensile strengths were not valid because, as they interpreted it, AWWA C900 required that tensile strength testing be performed on specimens prepared from PVC compound, not finished PVC pipe, and the CRT testing had been performed on finished pipe. On July 19, 2005, Relator sent Sheldon a letter stating: "Since no manufacturing defect or non-conformance with the AWWA C900 standard was found within the samples sent to us or to CRT Labs we are regretfully denying your claim." Exhibit 39, incorporated herein.

305. Sheldon responded to J-M's denial by threatening to sue J-M for supplying defective product if it did not reconsider and agree to pay Sheldon's claim for $36,707.61. In discussing how to handle Sheldon's renewed claim, Cheng and Lin again sought to minimize J-M's responsibility by interpreting AWWA C900 as requiring that tensile strength testing be performed on samples prepared from PVC compound and declaring the CRT tests invalid because they were performed on finished PVC pipe. Stating that the CRT results were "not sufficient enough to conclude the failure of pipe sample reason to be 100% fall on J-M," Cheng recommended offering Sheldon a maximum of $10,000. See Exhibit 10.

306. Relator, however, recommended that J-M settle the claim for $30,000 based on the findings of CRT. Relator argued that even if Cheng and Lin's interpretation of AWWA C900 were correct, J-M could not ignore the fact that UL 1285 expressly states that tensile strength testing is to be performed on finished pipe. At a minimum, Relator concluded, the CRT test results show that J-M's Blue Brute pipe failed to meet the tensile strength requirements of UL 1285. In his IRA discussing his recommendation for how to handle the Sheldon claim, dated October 28, 2005, Relator listed as his basis for settling the claim for $30,000 that "CRT conducted testing on the pipe and found that the tensile strength of the pipe was below that required by the UL Listing Mark on the pipe on all samples tested." Exhibit 10.

307. On November 1, 2005, two business days after Relator distributed his IRA, Cheng

called Relator into his office and reprimanded Relator for portraying J-M's liability for the Sheldon claim in his IRA as being "black and white" instead of trying to find a way to deny the claim or pass the blame to Sheldon. See Exhibit 11. Cheng faulted Relator for not supporting Lin's argument that the CRT testing was invalid under AWWA C900 because it was performed on samples prepared from finished PVC pipe as opposed to PVC compound. Id. When Relator tried to defend his position, Cheng told Relator that if he "could not find a way to deny the claim and follow his [Cheng's] thoughts that J-M is not responsible even if we fail the test, and offer alternative theories as to the cause of failure for this case, then you need to find another position in J-M where you will listen and follow instructions given and not disagree." Id.

308. The next day, Cheng again called Relator into his office to follow up on the previous day's discussion. See Exhibit 40 (Relator's contemporaneous notes dated 11/2/05), incorporated herein. Cheng advised Relator that he needed to be "more political" and to try harder to make more friends at J-M "by avoiding sensitive issues where conflict may occur, such as [was] the case yesterday." Id. Cheng warned Relator that taking a close-minded position on issues, as he had done in the IRA on the Sheldon claim, was not appropriate and to be successful in J-M and in life Relator needed to "open [his] mind to all the possibilities, listen to the others in the company more, regardless if [he] think[s] they are right or wrong, and avoid conflicts by not questioning their judgments and actions." Id.

309. Two days later, on November 4, when Relator refused to follow Cheng's advice and change his recommendation on the Sheldon claim, Cheng informed Relator that J-M was conducting an investigation into purported allegations that Relator had accepted kickbacks from Billy Sheldon, the owner of Sheldon Site Utilities, in exchange for Relator's increasing the amount he recommended J-M should pay Sheldon for his claim. Cheng sent Relator home and instructed him not to report to work until the investigation was complete. That same day, in response to these charges, Relator provided J-M with a four-page statement denying his involvement in any such improprieties. See Exhibit 41, incorporated herein. However, three business days later, on November 9, J-M terminated Relator for the stated reason that it had concluded that the allegations against Relator were "credible, sustainable and substantiated."

Exhibit 42, incorporated herein.

310. As these circumstances clearly demonstrate, the reason J-M gave for terminating Relator – that Relator had increased the amount he recommended J-M pay to settle a claim as a result of having received a bribe from the claimant -- was a pretext. The real reason J-M fired Relator – as is demonstrated by the close proximity between Relator's IRA stating that the J-M PVC pipe involved in the Sheldon claim had a tensile strength below that required by the UL Listing Mark on the pipe and J-M's charges of Relator accepting bribes from a claimant – was in retaliation for his investigating and raising concerns about J-M's fraudulent practices of knowingly selling PVC pipe with substandard tensile strength while falsely representing that it complied with industry standards.

**COUNT I**
**Substantive Violations of Federal False Claims Act**
**31 U.S.C. §§3729(a)(1), (a)(2) and 3732(b)**
**(Against Defendant J-M)**

311. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 310 of this Complaint.

312. This is a claim for treble damages and forfeitures under the Federal False Claims Act, 31 U.S.C. §§ 3729 *et seq.*, as amended.

313. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to officers, employees, and/or members of the Armed Forces of the United States, including, without limitation, the federal military entities set forth in Exhibit 2 (collectively, the "United States"), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the United States and its contractors, grantees, and other recipients of its funds, including without limitation the payments made by the United States set forth in Exhibit 2.

314. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used and caused to be made and used false records and statements, which also omitted material facts, in order to induce the United States and its contractors and grantees to approve and pay false and fraudulent claims.

315. The United States was unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that it otherwise would not have paid, and was deprived of money or property, as a result of defendants' actions.

316. By reason of the payment made by the United States as a result of defendant J-M's fraud, the United States has suffered damages, and continues to be damaged, in an amount to be determined at trial.

**COUNT II**
**Substantive Violations of California False Claims Act**
**Cal. Gov't Code §§ 12651(a)(1) and (a)(2)**
**(Against Defendant J-M)**

317. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 316 of this Complaint.

318. This is a claim for treble damages and forfeitures under the California False Claims Act, Cal. Gov't Code §§ 12650 *et seq.*

319. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to officers and/or employees of the State of California and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the California political subdivisions and public water authorities set forth in Exhibit 1 (together with the State of California, the "California Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(a), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the California Real Parties and their contractors, grantees, and other recipients of their funds.

320. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the California Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

321. The California Real Parties were unaware of the falsity of the records, statements,

and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

322. By reason of the payment made by the California Real Parties as a result of defendant J-M's fraud, the California Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

323. The California Real Parties are entitled to the maximum penalty of $10,000 for each and every false or fraudulent claim made, used, presented or caused to be made used or presented by defendant J-M.

**COUNT III**
**Substantive Violations of California False Claims Act**
**Cal. Gov't Code § 12651(a)(8)**
**(Against Both Defendants)**

324. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 323 of this Complaint.

325. This is a claim for treble damages and forfeitures under the California False Claims Act, Cal. Gov't Code §§ 12650 *et seq.*

326. Through the acts described above, defendants J-M and Formosa, their agents, employees and co-conspirators became the beneficiaries of the inadvertent submission of false claims to the California Real Parties and subsequently discovered the falsity of the claims.

327. Defendants J-M and Formosa failed to disclose the false claims to the California Real Parties within a reasonable time after discovery that the claims were false.

328. By reason of defendants' failures to disclose the false claims to the California Real Parties, those Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

329. The California Real Parties are entitled to the maximum penalty of $10,000 for each and every false or fraudulent claim made, used, presented or caused to be made used or presented by defendants.

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**COUNT IV**
**Substantive Violations of Delaware False Claims And Reporting Act**
**6 Del. C. §§ 1201(a)(1) and (a)(2)**
**(Against Defendant J-M)**

330. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 329 of this Complaint.

331. This is a claim for treble damages and penalties under the Delaware False Claims And Reporting Act, 6 Del. C. §§ 1201 *et seq.*

332. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to officers and/or employees of the State of Delaware and any political subdivision thereof that purchased J-M PVC pipe between January 18, 2006 and the present, including, without limitation, the Delaware political subdivisions set forth in Exhibit 1 (together with the State of Delaware, the "Delaware Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(b), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Delaware Real Parties and their contractors, grantees, and other recipients of their funds.

333. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the Delaware Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

334. The Delaware Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

335. By reason of the payment made by the Delaware Real Parties as a result of defendant J-M's fraud, the Delaware Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

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336. The Delaware Real Parties are entitled to the maximum penalty of $11,000 for each and every violation of 6 Del. C. § 1201 alleged herein.

**COUNT V**
**Substantive Violations of District of Columbia False Claims Act**
**D.C. Code § 2-308.14(a)(1) and (a)(2)**
**(Against Defendant J-M)**

337. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 336 of this Complaint.

338. This is a claim for treble damages and penalties under the District of Columbia False Claims Act, D.C. Code §§ 2-308.13 *et seq.*

339. Through the acts described above, defendant J-M, its agents, employees, and co-conspirators, knowingly presented and caused to be presented to officers and/or employees of the District of Columbia and the District of Columbia Water and Sewer Authority that purchased J-M PVC pipe between 2001 and the present (together with the District of Columbia, the "District of Columbia Real Parties"), including without limitation those purchases set forth in Exhibit 3(c), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the District of Columbia Real Parties and their contractors, grantees, and other recipients of their funds.

340. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the District of Columbia Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

341. The District of Columbia Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

342. By reason of the payment made by the District of Columbia Real Parties as a result of J-M's fraud, the District of Columbia Real Parties have suffered damages, and continue to be

damaged, in an amount to be determined at trial.

343. The District of Columbia Real Parties are entitled to the maximum penalty of $10,000 for each and every false claim of D.C. Code § 2-308.14 alleged herein.

**COUNT VI**
**Substantive Violations of Florida False Claims Act**
**Fla. Stat. Ann. § 68.082(2)(a) and (2)(b)**
**(Against Defendant J-M)**

344. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 343 of this Complaint.

345. This is a claim for treble damages and penalties under the Florida False Claims Act, Fla. Stat. Ann. §§ 68.081 *et seq.*

346. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to officers, employees, and/or agencies of the Florida State Government, including officials, officers, commissions, boards, authorities, councils, committees, and/or departments of the executive branch of the Florida State Government, that purchased J-M PVC pipe between January 18, 2006 and the present (together with the State of Florida, the "Florida State Government"), and including, without limitation, the purchases set forth in Exhibit 3(d), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Florida State Government and its contractors, grantees, and other recipients of its funds.

347. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the Florida State Government and its contractors and grantees to approve and pay false and fraudulent claims.

348. The Florida State Government was unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that it otherwise would not have paid, and was deprived of money, property or services, as a result of defendants' actions.

349. By reason of the payment made by the Florida State Government as a result of defendant J-M's fraud, the Florida State Government has suffered damages, and continues to be damaged, in an amount to be determined at trial.

350. The Florida State Government is entitled to the maximum penalty of $11,000 for each and every violation of Fla. Stat. Ann. § 68.082 alleged herein.

**COUNT VII**
**Substantive Violations of Illinois Whistleblower and Reward and Protection Act**
**740 Ill. Comp. Stat. Ann. §§ 175/3(a)(1) and (a)(2)**
**(Against Defendant J-M)**

351. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 350 of this Complaint.

352. This is a claim for treble damages and penalties under the Illinois Whistleblower Reward and Protection Act, 740 Ill. Comp. Stat. Ann. §§ 175/1 *et seq.*

353. Through the acts described above, defendant J-M, its agents, employees, and co-conspirators, knowingly presented and caused to be presented to officers, employees, and/or members of the guard of the State of Illinois and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 2006 and the present, including, without limitation, the Illinois political subdivisions and public water agencies listed in Exhibit 1 (together with the State of Illinois, the "Illinois Real Parties"), and including without limitation those purchases set forth in Exhibit 3(e), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Illinois Real Parties and their contractors, grantees, and other recipients of their funds.

354. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the Illinois Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

355. The Illinois Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money

or property, as a result of defendants' actions.

356. By reason of the payment made by the Illinois Real Parties as a result of defendant J-M's fraud, the Illinois Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

357. The Illinois Real Parties are entitled to the maximum penalty of $11,000 for each and every violation of 740 Ill. Comp. Stat. Ann. § 175/3 alleged herein.

**COUNT VIII**
**Substantive Violations of Indiana False Claims and Whistleblower Protection Act**
**Ind. Code Ann. §§ 5-11-5.5-2(b)(1) and (b)(2)**
**(Against Defendant J-M)**

358. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 357 of this Complaint.

359. This is a claim for treble damages and penalties under the Indiana False Claims and Whistleblower Protection Act, Ind. Code Ann. §§ 5-11-5.5-1 *et seq.*

360. Through the acts described above, defendant J-M, its agents, employees, and co-conspirators, knowingly presented or caused to be presented to officers, employees, and/or agents of the State of Indiana and any agency of the state government that purchased J-M PVC pipe between 2005 and the present (together with the State of Indiana, the "Indiana Real Parties"), including, without limitation, the payments made by the Indiana Real Parties set forth in Exhibit 3(f), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Indiana Real Parties and their contractors, grantees, and other recipients of their funds.

361. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the Indiana Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

362. The Indiana Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a

result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

363. By reason of the payment made by the Indiana Real Parties as a result of defendant J-M's fraud, the Indiana Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

364. The Indiana Real Parties are entitled to a minimum penalty of $5,000 for each and every violation of Ind. Code Ann. § 5-11-5.5-2 alleged herein.

**COUNT IX**
**Substantive Violations of Massachusetts False Claims Act**
**Mass. Gen. Laws ch. 12 §§ 5B(1) and 5B(2)**
**(Against Defendant J-M)**

365. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 364 of this Complaint.

366. This is a claim for treble damages and penalties under the Massachusetts False Claims Law, Mass. Gen. Laws ch. 12 §§ 5A *et seq.*

367. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to the officers, employees, and/or agents of the Commonwealth of Massachusetts and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the Massachusetts political subdivisions and public water agencies set forth in Exhibit 1 (together with the Commonwealth of Massachusetts, the "Massachusetts Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(g), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Massachusetts Real Parties and their contractors, grantees, and other recipients of their funds.

368. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the Massachusetts Real Parties and their

contractors and grantees to approve and pay false and fraudulent claims.

369. The Massachusetts Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

370. By reason of the payment made by the Massachusetts Real Parties as a result of defendant J-M's fraud, the Massachusetts Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

371. The Massachusetts Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Mass. Gen. Laws ch. 12, § 5B alleged herein.

**COUNT X**
**Substantive Violations of Massachusetts False Claims Act**
**Mass. Gen. Laws ch. 12 § 5B(9)**
**(Against Both Defendants)**

372. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 371 of this Complaint.

373. This is a claim for treble damages and penalties under the Massachusetts False Claims Law, Mass. Gen. Laws ch. 12, §§ 5A *et seq.*

374. Through the acts described above, defendants J-M and Formosa, their agents, employees and co-conspirators became the beneficiaries of the inadvertent submission of false claims to the Massachusetts Real Parties and subsequently discovered the falsity of the claims.

375. Defendants J-M and Formosa failed to disclose the false claims to the Massachusetts Real Parties within a reasonable time after discovery that the claims were false.

376. By reason of defendants' failures to disclose the false claims to the Massachusetts Real Parties, the Massachusetts Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

377. The Massachusetts Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Mass. Gen. Laws ch. 12 § 5B alleged herein.

**COUNT XI**
**Substantive Violations of Nevada False Claims Act**
**Nev. Rev. Stat. Ann. §§ 357.040(1)(a) and (1)(b)**
**(Against Defendant J-M)**

378. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 377 of this Complaint.

379. This is a claim for treble damages and penalties under the Nevada False Claims Act, Nev. Rev. Stat. Ann. §§ 357.010 *et seq.*

380. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to officers, employees, and/or agents of the State of Nevada and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including without limitation the Nevada political subdivisions and public water agencies set forth in Exhibit 1 (together with the State of Nevada, the "Nevada Real Parties"), and including without limitation those purchases set forth in Exhibit 3(h), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Nevada Real Parties and their contractors, grantees, and other recipients of their funds.

381. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the Nevada Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

382. The Nevada Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

383. By reason of the payment made by the Nevada Real Parties as a result of defendant J-M's fraud, the Nevada Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

384. The Nevada Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Nev. Rev. Stat. Ann. § 357.040 alleged herein.

**COUNT XII**
**Substantive Violations of Nevada False Claims Act**
**Nev. Rev. Stat. Ann. § 357.040(1)(h)**
**(Against All Defendants)**

385. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 384 of this Complaint.

386. This is a claim for treble damages and penalties under the Nevada False Claims Act, Nev. Rev. Stat. Ann. §§ 357.010 *et seq.*

387. Through the acts described above, defendants J-M and Formosa, their agents, employees and co-conspirators became the beneficiaries of the inadvertent submission of false claims to the Nevada Real Parties and subsequently discovered the falsity of the claims

388. Defendants J-M and Formosa failed to disclose the false claims to the Nevada Real Parties within a reasonable time after discovery that the claims were false.

389. By reason of defendants' failures to disclose the false claims to the Nevada Real Parties, the Nevada Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

390. The Nevada Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Nev. Rev. Stat. Ann. § 357.040 alleged herein.

**COUNT XIII**
**Substantive Violations of New Mexico Fraud Against Taxpayers Act**
**§§ 44-9-3(A)(1) and (A)(2)**
**(Against Defendant J-M)**

391. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 390 of this Complaint.

392. This is a claim for treble damages and forfeitures under the New Mexico Fraud Against Taxpayers Act, N.M. Stat. Ann. §§ 44-9-1 *et seq.*

393. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to officers, employees, and/or agents of the State of New Mexico and any political subdivision thereof that purchased J-M PVC

pipe between January 18, 1996 and the present, including, without limitation, the New Mexico political subdivisions set forth in Exhibit 1 (together with the State of New Mexico, the "New Mexico Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(i), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the New Mexico Real Parties and their contractors, grantees, and other recipients of their funds.

394. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the New Mexico Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

395. The New Mexico Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

396. By reason of the payment made by the New Mexico Real Parties as a result of defendant J-M's fraud, the New Mexico Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

397. The New Mexico Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of N.M. Stat. Ann. § 44-9-3 alleged herein.

## COUNT XIV
## Substantive Violations of New Mexico Fraud Against Taxpayers Act
## N.M. Stat. Ann. § 44-9-3(A)(9)
## (Against Both Defendants)

398. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 397 of this Complaint.

399. This is a claim for treble damages and penalties under the New Mexico False Claims Law, N.M. Stat. Ann. §§ 44-9-1 *et seq.*

400. Through the acts described above, defendants J-M and Formosa, their agents, employees and co-conspirators became the beneficiaries of the inadvertent submission of false

claims to the New Mexico Real Parties and subsequently discovered the falsity of the claims.

401. Defendants J-M and Formosa failed to disclose the false claims to the New Mexico Real Parties within a reasonable time after discovery that the claims were false.

402. By reason of the defendants' failures to disclose the false claims to the Massachusetts Real Parties, the New Mexico Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

403. The New Mexico Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of N.M. Stat. Ann. § 44-9-3 alleged herein.

**COUNT XV**
**Substantive Violations of New York False Claims Act**
**N.Y. State Fin. §§ 189(1)(a) and (1)(b)**
**(Against Defendant J-M)**

404. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 403 of this Complaint.

405. This is a claim for treble damages and forfeitures under the New York False Claims Act, N.Y. State Fin. §§ 187 *et seq.*

406. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to officers, employees, and/or agents of the State of New York and any local government within the State of New York that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the New York local governments set forth in Exhibit 1 (together with the State of New York, the "New York Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(k), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the New York Real Parties and their contractors, grantees, and other recipients of their funds.

407. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the New York Real Parties and their

contractors and grantees to approve and pay false and fraudulent claims.

408. The New York Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

409. By reason of the payment made by the New York Real Parties as a result of defendant J-M's fraud, the New York Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

410. The New York Real Parties are entitled to the maximum penalty of $12,000 for each and every violation of N.Y. State Fin. § 189 alleged herein.

**COUNT XVI**
**Substantive Violations of Tennessee False Claims Act**
**Tenn. Code Ann. §§ 4-18-103(a)(1) and (a)(2)**
**(Against Defendant J-M)**

411. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 410 of this Complaint.

412. This is a claim for treble damages and penalties under the Tennessee False Claim Act, Tenn. Code Ann. §§ 4-18-101 *et seq.*

413. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to officers and/or employees of the State of Tennessee and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the Tennessee political subdivisions and public water authorities set forth in Exhibit 1 (together with the State of Tennessee, the "Tennessee Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(k), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Tennessee Real Parties and their contractors, grantees, and other recipients of their funds.

414. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements,

which also omitted material facts, in order to induce the Tennessee Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

415. The Tennessee Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

416. By reason of the payment made by the Tennessee Real Parties as a result of defendant J-M's fraud, the Tennessee Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

417. The Tennessee Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Tenn. Code. Ann. § 4-18-103 alleged herein.

**COUNT XVII**
**Substantive Violations of Tennessee False Claims Act**
**Tenn. Code Ann. 4-18-103(a)(8)**
**(Against Both Defendants)**

418. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 417 of this Complaint.

419. This is a claim for treble damages and penalties under the Tennessee False Claim Act, Tenn. Code Ann. §§ 4-18-101 *et seq.*

420. Through the acts described above, defendants J-M and Formosa, their agents, employees and co-conspirators became the beneficiaries of the inadvertent submission of false claims to the Tennessee Real Parties and subsequently discovered the falsity of the claims.

421. Defendants J-M and Formosa failed to disclose the false claims to the Tennessee Real Parties within a reasonable time after discovery that the claims were false.

422. By reason of defendants' failures to disclose the false claims to the Tennessee Real Parties, the Tennessee Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

423. The Tennessee Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Tenn. Code. Ann. § 4-18-103 alleged herein.

**COUNT XVIII**
**Substantive Violations of Virginia Fraud Against Taxpayers Act**
**Va. Code Ann. §§ 8.01-216.3(a)(1) and (a)(2)**
**(Against Defendant J-M)**

424. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 423 of this Complaint.

425. This is a claim for treble damages and penalties under the Virginia Fraud Against Taxpayers Act, Va. Code Ann. §§ 8.01-216.1 *et seq.*

426. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly presented and caused to be presented to officers and/or employees of the Commonwealth of Virginia and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the Virginia political subdivisions and public water authorities set forth in Exhibit 1 (together with the Commonwealth of Virginia, the "Virginia Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(l), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Virginia Real Parties and their contractors, grantees, and other recipients of their funds.

427. Through the acts described above, defendant J-M, its agents, employees and co-conspirators, knowingly made, used, and caused to be made and used false records and statements, which also omitted material facts, in order to induce the Virginia Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

428. The Virginia Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant J-M, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

429. By reason of the payment made by the Virginia Real Parties as a result of defendant J-M's fraud, the Virginia Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

430. The Virginia Real Parties are entitled to the maximum penalty of $10,000 for each

and every violation of Va. Code Ann § 8.01-216.3 alleged herein.

**COUNT XIX**
**Federal False Claims Act – Employment Discrimination**
**31 U.S.C. § 3730(h)**
**(Against Defendant J-M)**

431. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 430 of this Complaint.

432. This is a claim for damages under the Federal False Claims Act, 31 U.S.C. § 3730(h). Through the acts described above and otherwise, defendant J-M discriminated against Relator in the terms and conditions of his employment at J-M by, among other things, denying him a promotion and terminating his employment. Defendant J-M's stated reasons for terminating Relator regarding his accepting kickbacks from claimants were baseless and simply a pretext for the real reason for his termination – to retaliate against Relator for his investigation of defendant J-M's fraudulent practices in preparation for filing the above-captioned False Claims Act lawsuit.

433. By reason of defendant J-M's actions, Relator has been damaged in an amount to be determined at trial.

**COUNT XX**
**Substantive Violations of Federal False Claims Act**
**31 U.S.C. §§ 3729(a)(1), (a)(2) and 3732(b)**
**(Against Defendant Formosa)**

434. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 433 of this Complaint.

435. This is a claim for treble damages and forfeitures under the Federal False Claims Act, 31 U.S.C. §§ 3729 *et seq.*, as amended.

436. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to officers, employees, and/or members of the Armed Forces of the United States, including, without limitation, the federal military entities set forth in Exhibit 2 (collectively, the "United States"), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the United States and its contractors, grantees, and other recipients of its funds, including without limitation the

payments made by the United States set forth in Exhibit 2.

437. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the United States and its contractors and grantees to approve and pay false and fraudulent claims.

438. The United States was unaware of the falsity of the records, statements, and claims caused to be submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that it otherwise would not have paid, and was deprived of money or property, as a result of defendants' actions.

439. By reason of the payment made by the United States, as a result of defendant Formosa's fraud, the United States has suffered damages, and continues to be damaged, in an amount to be determined at trial.

**COUNT XXI**
**Substantive Violations of California False Claims Act**
**Cal. Gov't Code §§ 12651(a)(1) and (a)(2)**
**(Against Defendant Formosa)**

440. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 439 of this Complaint.

441. This is a claim for treble damages and forfeitures under the California False Claims Act, Cal. Gov't Code §§ 12650 *et seq.*

442. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to officers and/or employees of the State of California and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the California political subdivisions and public water authorities set forth in Exhibit 1 (together with the State of California, the "California Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(a), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the California Real Parties and their contractors, grantees, and other recipients of their funds.

443. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the California Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

444. The California Real Parties were unaware of the falsity of the records, statements, and claims caused to be submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

445. By reason of the payment made by the California Real Parties as a result of defendant Formosa's fraud, the California Real Parties have suffered in damages, and continue to be damaged, in an amount to be determined at trial.

446. The California Real Parties are entitled to the maximum penalty of $10,000 for each and every false or fraudulent claim caused to be made used or presented by defendant Formosa.

**COUNT XXII**
**Substantive Violations of Delaware False Claims And Reporting Act**
**6 Del. C. §§ 1201(a)(1) and (a)(2)**
**(Against Defendant Formosa)**

447. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 446 of this Complaint.

448. This is a claim for treble damages and penalties under the Delaware False Claims And Reporting Act, 6 Del. C. §§ 1201 *et seq.*

449. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to officers and/or employees of the State of Delaware and any political subdivision thereof that purchased J-M PVC pipe between January 18, 2006 and the present, including, without limitation, the Delaware political subdivisions set forth in Exhibit 1 (together with the State of Delaware, the "Delaware Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(b), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Delaware Real Parties and their contractors, grantees, and other recipients of their funds.

450. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the Delaware Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

451. The Delaware Real Parties were unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

452. By reason of the payment made by the Delaware Real Parties as a result of defendant Formosa's fraud, the Delaware Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

453. The Delaware Real Parties are entitled to the maximum penalty of $11,000 for each and every violation of 6 Del. C. § 1201 alleged herein.

**COUNT XXIII**
**Substantive Violations of District of Columbia False Claims Act**
**D.C. Code § 2-308.14(a)(1) and (a)(2)**
**(Against Defendant Formosa)**

454. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 453 of this Complaint.

455. This is a claim for treble damages and penalties under the District of Columbia False Claims Act, D.C. Code §§ 2-308.13 *et seq.*

456. Through the acts described above, defendant Formosa, its agents, employees, and co-conspirators, knowingly caused to be presented to officers and/or employees of the District of Columbia and the District of Columbia Water and Sewer Authority that purchased J-M PVC pipe between 2001 and the present (together with the District of Columbia, the "District of Columbia Real Parties"), including without limitation those purchases set forth in Exhibit 3(c), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the District of Columbia Real Parties and their contractors, grantees, and other recipients of their funds.

457. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the District of Columbia Real Parties and its contractors and grantees to approve and pay false and fraudulent claims.

458. The District of Columbia Real Parties were unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that it otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

459. By reason of the payment made by the District of Columbia Real Parties as a result of Formosa's fraud, the District of Columbia Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

460. The District of Columbia Real Parties are entitled to the maximum penalty of $10,000 for each and every false claim of D.C. Code § 2-308.14 alleged herein.

**COUNT XXIV**
**Substantive Violations of Florida False Claims Act**
**Fla. Stat. Ann. § 68.082(2)(a) and (2)(b)**
**(Against Defendant Formosa)**

461. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 460 of this Complaint.

462. This is a claim for treble damages and penalties under the Florida False Claims Act, Fla. Stat. Ann. §§ 68.081 *et seq.*

463. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to officers, employees, and/or agencies of the Florida State Government, including officials, officers, commissions, boards, authorities, councils, committees, and/or departments of the executive branch of the Florida State Government, that purchased J-M PVC pipe between January 18, 2006 and the present (together with the State of Florida, the "Florida State Government"), and including, without limitation, the purchases set forth in Exhibit 3(d), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Florida State Government and its contractors,

grantees, and other recipients of its funds.

464. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the Florida State Government and its contractors and grantees to approve and pay false and fraudulent claims.

465. The Florida State Government was unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that it otherwise would not have paid, and was deprived of money, property or services, as a result of defendants' actions.

466. By reason of the payment made by the Florida State Government as a result of defendant Formosa's fraud, the Florida State Government has suffered damages, and continues to be damaged, in an amount to be determined at trial.

467. The Florida State Government is entitled to the maximum penalty of $11,000 for each and every violation of Fla. Stat. Ann. § 68.082 alleged herein.

**COUNT XXV**
**Substantive Violations of Illinois Whistleblower and Reward and Protection Act**
**740 Ill. Comp. Stat. Ann. §§ 175/3(a)(1) and (a)(2)**
**(Against Defendant Formosa)**

468. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 467 of this Complaint.

469. This is a claim for treble damages and penalties under the Illinois Whistleblower Reward and Protection Act, 740 Ill. Comp. Stat. Ann. §§ 175/1 *et seq.*

470. Through the acts described above, defendant Formosa, its agents, employees, and co-conspirators, knowingly caused to be presented to officers, employees, and/or members of the guard of the State of Illinois and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 2006 and the present, including, without limitation, the Illinois political subdivisions and public water agencies listed in Exhibit 1 (together with the State of Illinois, the "Illinois Real Parties"), and including without limitation those purchases set forth in Exhibit 3(e), false and fraudulent claims, and knowingly failed to disclose material facts,

in order to obtain payment and approval from the Illinois Real Parties and their contractors, grantees, and other recipients of their funds.

471. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the Illinois Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

472. The Illinois Real Parties were unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

473. By reason of the payment made by the Illinois Real Parties as a result of defendant Formosa's fraud, the Illinois Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

474. The Illinois Real Parties are entitled to the maximum penalty of $11,000 for each and every violation of 740 Ill. Comp. Stat. Ann. § 175/3 alleged herein.

**COUNT XXVI**
**Substantive Violations of Indiana False Claims and Whistleblower Protection Act Ind. Code Ann. §§ 5-11-5.5-2(b)(1) and (b)(2)**
**(Against Defendant Formosa)**

475. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 474 of this Complaint.

476. This is a claim for treble damages and penalties under the Indiana False Claims and Whistleblower Protection Act, Ind. Code Ann. §§ 5-11-5.5-1 *et seq.*

477. Through the acts described above, defendant Formosa, its agents, employees, and co-conspirators, knowingly caused to be presented to officers, employees, and/or agents of the State of Indiana and any agency of the state government that purchased J-M PVC pipe between 2005 and the present (together with the State of Indiana, the "Indiana Real Parties"), including, without limitation, the payments made by the Indiana Real Parties set forth in Exhibit 3(f), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment

and approval from the Indiana Real Parties and their contractors, grantees, and other recipients of their funds.

478. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the Indiana Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

479. The Indiana Real Parties were unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

480. By reason of the payment made by the Indiana Real Parties as a result of defendant Formosa's fraud, the Indiana Real Parties, have suffered damages, and continue to be damaged, in an amount to be determined at trial.

481. The Indiana Real Parties are entitled to a minimum penalty of $5,000 for each and every violation of Ind. Code Ann. § 5-11-5.5-2 alleged herein.

**COUNT XXVII**
**Substantive Violations of Massachusetts False Claims Act**
**Mass. Gen. Laws ch. 12 §§ 5B(1) and 5B(2)**
**(Against Defendant Formosa)**

482. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 481 of this Complaint.

483. This is a claim for treble damages and penalties under the Massachusetts False Claims Law, Mass. Gen. Laws ch. 12 §§ 5A *et seq.*

484. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to the officers, employees, and/or agents of the Commonwealth of Massachusetts and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the Massachusetts political subdivisions and public water agencies set forth in Exhibit 1 (together with the Commonwealth of Massachusetts, the "Massachusetts Real Parties"), and

including, without limitation, those purchases set forth in Exhibit 3(g), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Massachusetts Real Parties and their contractors, grantees, and other recipients of their funds.

485. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the Massachusetts Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

486. The Massachusetts Real Parties were unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

487. By reason of the payment made by the Massachusetts Real Parties as a result of defendant Formosa's fraud, the Massachusetts Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

488. The Massachusetts Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Mass. Gen. Laws ch. 12, § 5B alleged herein.

**COUNT XXVIII**
**Substantive Violations of Nevada False Claims Act**
**Nev. Rev. Stat. Ann. §§ 357.040(1)(a) and (1)(b)**
**(Against Defendant Formosa)**

489. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 488 of this Complaint.

490. This is a claim for treble damages and penalties under the Nevada False Claims Act, Nev. Rev. Stat. Ann. §§ 357.010 *et seq.*

491. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to officers, employees, and/or agents of the State of Nevada and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including without limitation the Nevada political subdivisions and public water agencies set forth in Exhibit 1 (together with the State of

Nevada, the "Nevada Real Parties"), and including without limitation those purchases set forth in Exhibit 3(h), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Nevada Real Parties and their contractors, grantees, and other recipients of their funds.

492. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the Nevada Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

493. The Nevada Real Parties were unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

494. By reason of the payment made by the Nevada Real Parties as a result of defendant Formosa's fraud, the Nevada Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

495. The Nevada Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Nev. Rev. Stat. Ann. § 357.040 alleged herein.

**COUNT XXIX**
**Substantive Violations of New Mexico Fraud Against Taxpayers Act**
**§§ 44-9-3(A)(1) and (A)(2)**
**(Against Defendant Formosa)**

496. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 495 of this Complaint.

497. This is a claim for treble damages and forfeitures under the New Mexico Fraud Against Taxpayers Act, N.M. Stat. Ann. §§ 44-9-1 *et seq.*

498. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to officers, employees, and/or agents of the State of New Mexico and any political subdivision thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the New Mexico political

subdivisions set forth in Exhibit 1 (together with the State of New Mexico, the "New Mexico Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(i), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the New Mexico Real Parties and their contractors, grantees, and other recipients of their funds.

499. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the New Mexico Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

500. The New Mexico Real Parties were unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

501. By reason of the payment made by the New Mexico Real Parties as a result of defendant Formosa's fraud, the New Mexico Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

502. The New Mexico Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of N.M. Stat. Ann. § 44-9-3 alleged herein.

**COUNT XXX**
**Substantive Violations of New York False Claims Act**
**N.Y. State Fin. §§ 189(1)(a) and (1)(b)**
**(Against Defendant Formosa)**

503. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 502 of this Complaint.

504. This is a claim for treble damages and forfeitures under the New York False Claims Act, N.Y. State Fin. §§ 187 *et seq.*

505. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to officers, employees, and/or agents of the State of New York and any local government within the State of New York that purchased J-M

PVC pipe between January 18, 1996 and the present, including, without limitation, the New York local governments set forth in Exhibit 1 (together with the State of New York, the "New York Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(j), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the New York Real Parties and their contractors, grantees, and other recipients of their funds.

506. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the New York Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

507. The New York Real Parties were unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

508. By reason of the payment made by the New York Real Parties as a result of defendant Formosa's fraud, the New York Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

509. The New York Real Parties are entitled to the maximum penalty of $12,000 for each and every violation of N.Y. State Fin. § 189 alleged herein.

**COUNT XXXI**
**Substantive Violations of Tennessee False Claims Act**
**Tenn. Code Ann. §§ 4-18-103(a)(1) and (a)(2)**
**(Against Defendant Formosa)**

510. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 509 of this Complaint.

511. This is a claim for treble damages and penalties under the Tennessee False Claim Act, Tenn. Code Ann. §§ 4-18-101 *et seq.*

512. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to officers and/or employees of the State of

Tennessee and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the Tennessee political subdivisions and public water authorities set forth in Exhibit 1 (together with the State of Tennessee, the "Tennessee Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(k), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Tennessee Real Parties and their contractors, grantees, and other recipients of their funds.

513. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the Tennessee Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

514. The Tennessee Real Parties were unaware of the falsity of the records, statements, and claims made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money, property or services, as a result of defendants' actions.

515. By reason of the payment made by the Tennessee Real Parties as a result of defendant Formosa's fraud, the Tennessee Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

516. The Tennessee Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Tenn. Code. Ann. § 4-18-103 alleged herein.

**COUNT XXXII**
**Substantive Violations of Virginia Fraud Against Taxpayers Act**
**Va. Code Ann. §§ 8.01-216.3(a)(1) and (a)(2)**
**(Against Defendant Formosa)**

517. Relator realleges and incorporates by reference the allegations made in Paragraphs 1 through 516 of this Complaint.

518. This is a claim for treble damages and penalties under the Virginia Fraud Against Taxpayers Act, Va. Code Ann. §§ 8.01-216.1 *et seq.*

519. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be presented to officers and/or employees of the Commonwealth of Virginia and any political subdivision or public water authority thereof that purchased J-M PVC pipe between January 18, 1996 and the present, including, without limitation, the Virginia political subdivisions and public water authorities set forth in Exhibit 1 (together with the Commonwealth of Virginia, the "Virginia Real Parties"), and including, without limitation, those purchases set forth in Exhibit 3(l), false and fraudulent claims, and knowingly failed to disclose material facts, in order to obtain payment and approval from the Virginia Real Parties and their contractors, grantees, and other recipients of their funds.

520. Through the acts described above, defendant Formosa, its agents, employees and co-conspirators, knowingly caused to be made and used false records and statements, which also omitted material facts, in order to induce the Virginia Real Parties and their contractors and grantees to approve and pay false and fraudulent claims.

521. The Virginia Real Parties were unaware of the falsity of the records, statements, and claims caused to be made and submitted by defendant Formosa, its agents, employees, and co-conspirators, and as a result thereof, paid money that they otherwise would not have paid, and were deprived of money or property, as a result of defendants' actions.

522. By reason of the payment made by the Virginia Real Parties as a result of defendant Formosa's fraud, the Virginia Real Parties have suffered damages, and continue to be damaged, in an amount to be determined at trial.

523. The Virginia Real Parties are entitled to the maximum penalty of $10,000 for each and every violation of Va. Code Ann § 8.01-216.3 alleged herein.

**PRAYER**

WHEREFORE, Qui Tam Plaintiff/Relator John Hendrix prays for judgment against the defendants J-M and/or Formosa as follows:

1. That defendant J-M cease and desist from violating 31 U.S.C. §§ 3729 *et seq.* and the counterpart provisions of the state statutes set forth above;

2. That the Court enter judgment against defendant J-M in an amount equal to three

times the amount of damages the United States has sustained as a result of defendant J-M's actions in violation of the Federal False Claims Act, as well as a civil penalty of $11,000 for each violation of 31 U.S.C. § 3729;

3. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the California Real Parties as a result of defendant J-M's actions in violation of the California False Claims Act, as well as a civil penalty of $10,000 for each violation of Cal. Gov't Code § 12651;

4. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the Delaware Real Parties as a result of defendant J-M's actions in violation of the Delaware False Claims And Reporting Act, as well as a civil penalty of $11,000 for each violation of 6 Del. C. § 1201(a);

5. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the District of Columbia Real Parties as a result of defendant J-M's actions in violation of the District of Columbia False Claims Act, as well as a civil penalty of $10,000 for each violation of D.C. Code § 2-308.14;

6. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages the Florida State Government has sustained because of defendant J-M's actions in violation of the Florida False Claims Act, as well as a civil penalty of $11,000 for each violation of Fla. Stat. Ann. § 68.082(2);

7. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the Illinois Real Parties as a result of defendant J-M's actions in violation of the Illinois Whistleblower and Reward and Protection Act, as well as a civil penalty of $11,000 for each violation of 740 Ill. Comp. Stat. Ann. § 175/3;

8. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the Indiana Real Parties as a result of defendant J-M's actions in violation of the Indiana False Claims and Whistleblower Protection Act, as well as a civil penalty of $5,000 for each violation of Ind. Code. Ann. § 5-11-5.5-2;

9. That the Court enter judgment against defendant J-M in an amount equal to three

times the amount of damages sustained by the Massachusetts Real Parties as a result of defendant J-M's actions in violation of the Massachusetts False Claims Law, as well as a civil penalty of $10,000 for each violation of Mass. Gen. L. Ch. 12 § 5B;

10. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the Nevada Real Parties as a result of defendant J-M's actions in violation of the Nevada False Claims Act, as well as a civil penalty of $10,000 for each violation of Nev. Rev. Stat. Ann. § 357.040(1);

11. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the New Mexico Real Parties as a result of defendant J-M's actions in violation of the New Mexico Fraud Against Taxpayers Act, as well as a civil penalty of $10,000 for each violation of N.M. Stat. Ann. § 44-9-3;

12. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the New York Real Parties as a result of defendant J-M's actions in violation of the New York False Claims Act, as well as a civil penalty of $12,000 for each violation of N.Y. State Fin. § 189;

13. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the Tennessee Real Parties as a result of defendant J-M's actions in violation of the Tennessee False Claims Act, as well as a civil penalty of $10,000 for each violation of Tenn. Code Ann. § 4-18-103(a);

14. That the Court enter judgment against defendant J-M in an amount equal to three times the amount of damages sustained by the Virginia Real Parties as a result of defendant J-M's actions in violation of the Virginia Fraud Against Taxpayers Act, as well as a civil penalty of $10,000 for each violation of Va. Code Ann. § 8.01-216.3(a);

15. That defendant Formosa cease and desist from violating 31 U.S.C. §§ 3729 *et seq.* and the counterpart provisions of the state statutes set forth above;

16. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages the United States has sustained as a result of defendant Formosa's actions in violation of the Federal False Claims Act, as well as a civil penalty of

$11,000 for each violation of 31 U.S.C. § 3729;

17. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the California Real Parties as a result of defendant Formosa's actions in violation of the California False Claims Act, as well as a civil penalty of $10,000 for each violation of Cal. Gov't Code § 12651;

18. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the Delaware Real Parties as a result of defendant Formosa's actions in violation of the Delaware False Claims And Reporting Act, as well as a civil penalty of $11,000 for each violation of 6 Del. C. § 1201(a);

19. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the District of Columbia Real Parties as a result of defendant Formosa's actions in violation of the District of Columbia False Claims Act, as well as a civil penalty of $10,000 for each violation of D.C. Code § 2-308.14;

20. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages the Florida State Government has sustained because of defendant Formosa's actions in violation of the Florida False Claims Act, as well as a civil penalty of $11,000 for each violation of Fla. Stat. Ann. § 68.082(2);

21. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the Illinois Real Parties as a result of defendant Formosa's actions in violation of the Illinois Whistleblower and Reward and Protection Act, as well as a civil penalty of $11,000 for each violation of 740 Ill. Comp. Stat. Ann. § 175/3;

22. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the Indiana Real Parties as a result of defendant Formosa's actions in violation of the Indiana False Claims and Whistleblower Protection Act, as well as a civil penalty of $5,000 for each violation of Ind. Code. Ann. § 5-11-5.5-2;

23. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the Massachusetts Real Parties as a result of defendant Formosa's actions in violation of the Massachusetts False Claims Law, as well as a civil

penalty of $10,000 for each violation of Mass. Gen. L. Ch. 12, § 5B;

24. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the Nevada Real Parties as a result of defendant Formosa's actions in violation of the Nevada False Claims Act, as well as a civil penalty of $10,000 for each violation of Nev. Rev. Stat. Ann. § 357.040(1);

25. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the New Mexico Real Parties as a result of defendant Formosa's actions in violation of the New Mexico Fraud Against Taxpayers Act, as well as a civil penalty of $10,000 for each violation of N.M. Stat. Ann. § 44-9-3;

26. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the New York Real Parties as a result of defendant Formosa's actions in violation of the New York False Claims Act, as well as a civil penalty of $12,000 for each violation of N.Y. State Fin. § 189;

27. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the Tennessee Real Parties as a result of defendant Formosa's actions in violation of the Tennessee False Claims Act, as well as a civil penalty of $10,000 for each violation of Tenn. Code Ann. § 4-18-103(a);

28. That the Court enter judgment against defendant Formosa in an amount equal to three times the amount of damages sustained by the Virginia Real Parties as a result of defendant Formosa's actions in violation of the Virginia Fraud Against Taxpayers Act, as well as a civil penalty of $10,000 for each violation of Va. Code Ann. § 8.01-216.3(a);

29. That Relator be awarded the maximum amount allowed pursuant to 31 U.S.C. § 3730(d) of the Federal False Claims Act, and the equivalent provisions of the state statutes set forth above;

30. That the Court enter judgment against defendant J-M as a result of its actions in violation of 31 U.S.C. § 3730(h) as well as all relief necessary to make Relator whole, including reinstatement with the same seniority status Relator would have had but for the discrimination, not less than two times the amount of back pay, interest on back pay, and compensation for any

special damages sustained as a result of J-M's employment discrimination, including litigation costs and reasonable attorney's fees;

31. That Relator plaintiff be awarded all costs of this action, including attorneys' fees and expenses; and

32. That the Real Parties and Relator receive all such other relief as the Court deems just and proper.

**JURY DEMAND**

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Relator hereby demands trial by jury.

Dated: February 3, 2010

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*Pro hac vice* applications to be filed

# APPENDIX A

## PERSONS IDENTIFIED IN THE SECOND AMENDED COMPLAINT

| PERSON (FULL NAME AND SHORT FORM IF USED) | TITLE | ¶ WHERE FIRST NAMED |
|---|---|---|
| Boitz, Doug ("Boitz") | Product Assurance Manager, J-M Corporate | 237 |
| Chen, David ("Chen") | Plant Manager, Stockton CA Plant | 38 |
| Cheng, Kai ("Cheng") | Director of Product Assurance, J-M Corporate | 63 |
| Fassler, William ("Fassler") | Senior Engineer, Research & Development Division, J-M Corporate | 38 |
| Henderson, Michael | Quality Control Supervisor, Butner NC Plant | 259 |
| Hendrix, John ("Hendrix" or "Relator") | Engineer, Product Assurance Division, J-M Corporate | 14 |
| Huynh, Mai | Product Assurance Manager, J-M Corporate | 63 |
| Hwang, Jack ("Hwang") | Quality Control Manager, J-M Corporate | 27 |
| Kashefi, Nashri | Representative, NSF International | 136 |
| Liao, Kaider | Director of Engineering, J-M Corporate | 27 |
| Lin, Barry ("Lin") | Director of Production, J-M Corporate | 27 |
| Martinez, Armondo ("Martinez") | Quality Control Supervisor, Fontana CA Plant | 91 |
| Nasto, Ken | Director of Finance, J-M Corporate | 295 |
| Negode, John | Quality Control Supervisor, McNary OR Plant | 39(c) |
| Padilla, Frank ("Padilla") | Quality Control Supervisor, Pueblo CO Plant | 262 |
| Rao, Kaushal ("Rao") | Assistant Director of Production, J-M Corporate | 111 |
| Soliz, Joe | Quality Control Supervisor, Wharton TX Plant | 259 |
| Torres, Norberto ("Torres") | Director of Finance & Risk Management, Formosa | 295 |
| Wang, Brian | Plant Manager (3 plants) | 39(a) |
| Wang, Walter | President and CEO, J-M | 18 |
| Wang, Y.C. | Founder and Chairman, Formosa | 26 |
| Yang, K.C. ("Yang") | Quality Control Supervisor, J-M Corporate<br>Head, Research & Development Division | 38 |
| Yang, Stephen ("S. Yang") | Plant Manager, Fontana, California | 84 |