

Fluor-BWXT Portsmouth LLC P. O. Box 548 Piketon, Ohio 45661 740-897-5994

FBP-17-0217 March 6, 2017

Ms. Janet Barth, Manager Ohio EPA Division of Drinking and Ground Waters Southeast District Office 2195 Front Street Logan, Ohio 43138

Subject: Contract No. DE-AC30-10CC40017: Lead Service Line and Fixture Mapping Project Response-Fluor-BWXT Portsmouth LLC PWS ID OH6632414

Reference: Ohio EPA Letter Dated 1/17/17 from Michael Baker to Fluor B&W Portsmouth, Lead Service Line and Fixture Mapping Project-Required by all Community and Nontransient Noncommunity PWSs by March 9, 2017

Dear Ms. Barth:

This letter is in response to the Ohio Environmental Protection Agency letter on lead service line and fixture mapping dated January 17, 2017, as required by Ohio House Bill (HB) 512.

The following are attached to this letter:

- Maps showing site lead and copper sampling locations (Attachment 1)
- Ohio EPA spreadsheet for lead and copper sample sites (Attachment 2)
- Construction specifications for gas centrifuge enrichment plant process facilities built in the early to mid-1980s (Attachment 3)
- Current site specifications for the installation of copper tubing in potable water systems (Attachment 4)
- Signed verification form for public water systems claiming no lead service lines (Attachment 5)

This material is also being supplied to the Ohio Department of Health and the Ohio Department of Jobs and Family Services, as required.

Tier 1 lead and copper sample sites were selected for our initial monitoring period in September 1993 from the gas centrifuge enrichment plant (GCEP) because those facilities were constructed in the same time frame as the Tier 1 definition, after 1982 with some of the buildings having copper plumbing. GCEP buildings XT-801, X-1000, X-3000, X-1007, X-7721, and X-3012 were all field verified to have copper plumbing installed after 1982, and therefore,

Ms. Janet Barth FBP-17-0217 March 6, 2017 Page 2 of 2

are Tier 1 sites. Please reference the enclosed maps, Plant Site Sanitary Fire Water Map X-230A-34-C and color-coded X-230A-34-C for the locations of buildings which are color-coded in yellow. The enclosed construction specification X-TS-15500-3000 Plumbing Piping Systems for the Gas Centrifuge Enrichment Plant Process Facilities also describes the usage of copper plumbing. Current sample monitoring points are identified in the enclosed spreadsheet for Lead and Copper Sample Sites.

There are no lead service lines on plant site. Please see the enclosed Verification Form for Public Water Systems Claiming No Lead Service Lines. The current Fluor-BWXT Portsmouth LLC construction specification for the installation of copper piping in potable and process water systems, FBP-CSPEC-15051F124 Rev 0, which requires that lead containing solder not be used, is also enclosed.

If additional information is required, please contact me at 740-897-5994.

Regards,

Wendell Jenkins, Utilities Engineer Operator of Record, WS3-1013543-80

Fluor-BWXT Portsmouth LLC

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Attachments:

- 1) X-230A-34-C, Site Maps Lead and Copper Sampling Locations
- 2) Ohio EPA Spreadsheet for Lead and Copper Sample Sites
- 3) Specification X-TS-15500-3000, ORO-Gas Centrifuge Enrichment Plant Process Facilities
- 4) FBP-CSPEC-15051F124 Rev 0, Sanitary (Potable) Water & Process Water (Copper Tubing)
- 5) Signed Verification Form For Community Public Water Systems Claiming No Lead Service Lines

cc: Joel Bradburne, DOE

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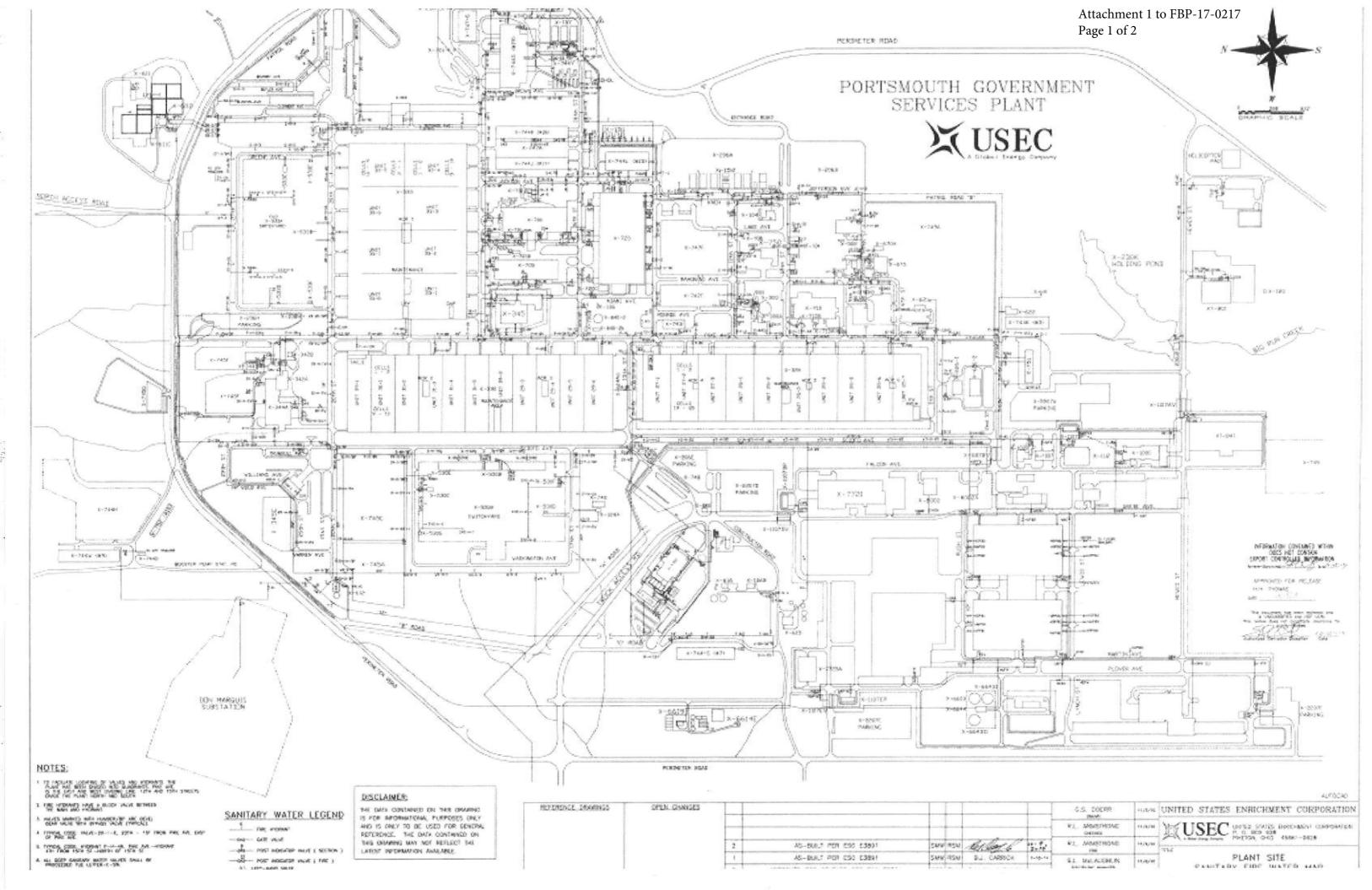
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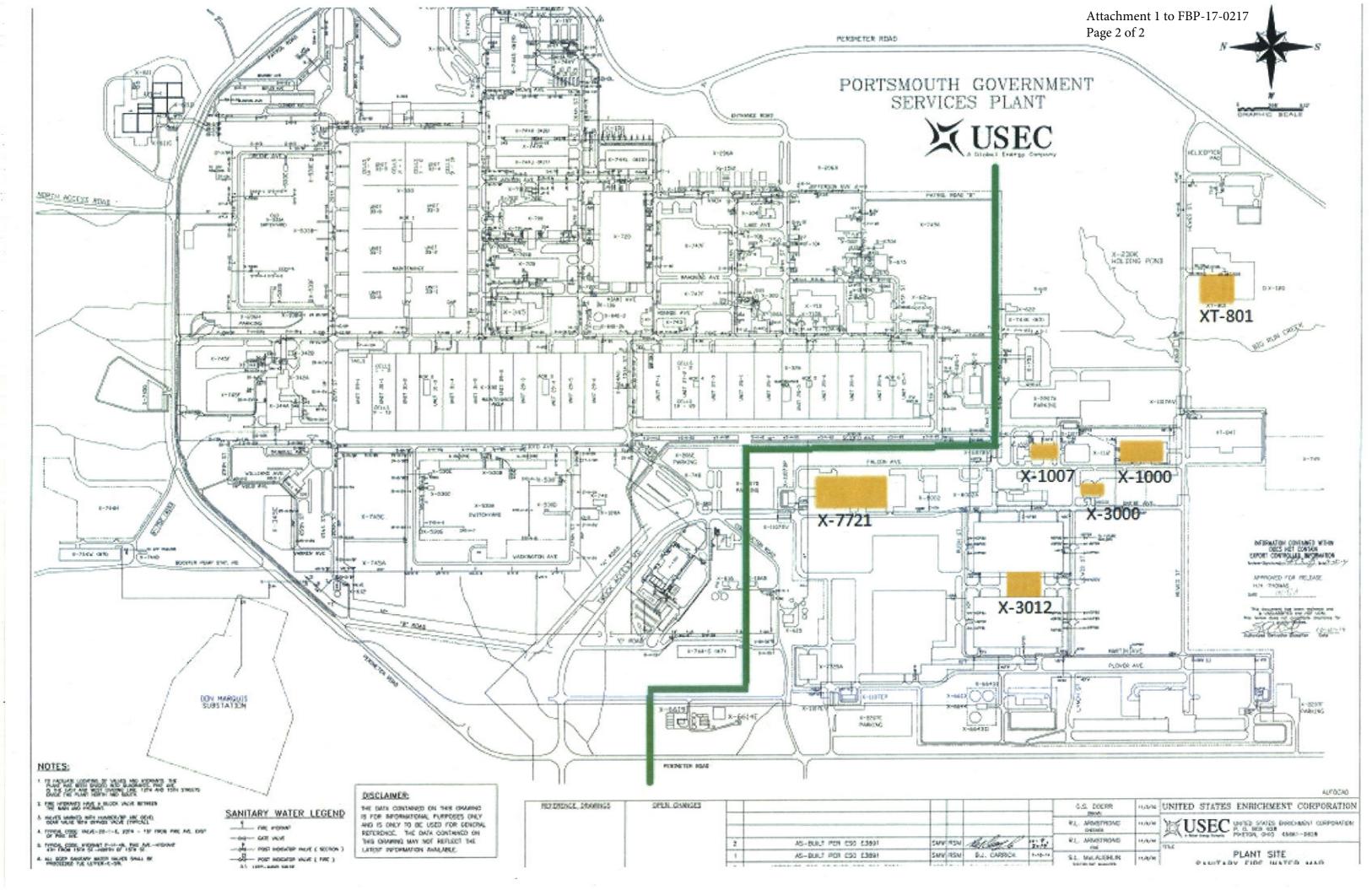
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Ohio Department of Job and Family Services (jeffery.vandeusen@jfs.ohio.gov)





ORO – GAS CENTRIFUGE ENRICHMENT PLANT PROCESS FACILITIES

X-3000

SPECIFICATION X -TS -15500 -3000-

REVISION NUMBER	DATE	APPROVED BY	DATE
o	5-18-81	Pluor: A. D. Seek	5-18-81
CFC		Checker: The Luncie	5-18-81
		Lead Engineer: Can Diso Chin	5-18-81
		Engineering Manager: 124 8 Brooks	5-17-8
		Project Director: III MANAGER	5-14-4
		Operating Objectors Project Office: 1 200 £	6-1-8
		Department of Energy: R. Phillips	6-1-8
		Fluor:	
1		Originator:	
1		Checker:	
		Lead Engineer:	
		Engineering Menager:	
		Project Director:	
		Operating Contractors Project Office:	
		Department of Energy:	***************************************
		Fluor:	
		Originator:	
		Checker:	
	12	Lead Engineer:	
		Engineering Manager:	
		Project Director:	The state of the s
		Operating Contractors Project Office:	
		Department of Energy:	

B13 FR27 024 488

U.S. DEPARTMENT OF ENERGY
Gas Centrifuge Enrichment Plant
Portsmouth, Ohio
DOE Contract DE-AC05-780R05629

FLUOR ENGINEERS AND CONSTRUCTORS, INC. Advanced Technology Division Fluor Contract 466604

X-TS-15500-3000 Revision 0

PLUMBING PIPING SYSTEMS

2.01 B. (Continued)

Symbol	Service	Condi PSIG	tions	Material Section	Remarks
FWD	Fire Protection Water (Under- ground)	130	150	F105	Carbon Steel Buttweld, Coated and
Ted see	1 8 8 9 1 12				Wrapped
SS,W,V RD,R,OW	Sanitary Sever (Underground & Aboveground)	Atm	dmå	F103	Cast Iron Soil Pipe with Rubber
	Waste, Vent & Roof Drainage (Underground) Recirculating Heating Water Drain & Oily Water Drain (Underground)	90. W0.			Joints
M&A	Waste and Vent (Aboveground)	Atm	dmA	F109	Carbon Steel with Screwed Joints
RD	Roof Drainage (Aboveground)	Atm	clmA	F110	Carbon Steel Buttweld
sw —	Sanitary (Potable) Water (Underground)	90	λmb	F123	Carbon Steel with Screwed Joints coated and Wrapped
SW	Sanitary (Potable) Water (Aboveground)	90	clm&	F124	Copper Tubing with solder Joints

Material Section F105 - Fire Protection Water

Item	Size	Specification		
Pipe 6"		Schedule 40 seamless or electric resistance welded steel, ASTN A53, Grade B and shall be coated and wrapped in accordance with X-TS-15076-3000.		
Fittings	6"	Standard weight seamless steel, butt-weld ends, ASTM A234, Grade WPB.		

U.S. DEPARTMENT OF ENERGY Gas Centrifuga Enrichment Plant Portsmouth, Ohio DOE Contract DE-AC05-780R05629 FLUOR ENGINEERS AND CONSTRUCTORS, INC.
Advanced Technology Division
Fluor Contract 466604

X-TS-15500-3000 Revision 0

PLUMBING PIPING SYSTEMS

2.01 B. (Continued)

Material Section F110 - Roof Drainage (Aboveground) (Continued)

Item	Size	Specification
Grooved Coupling	4"	Victaulic style 77 with malleable from housing conforming to ASTM A47, enamel coating and BUNA-N gasket.
Adapter Nipple	An 1-4/5, the en.	Victaulic No. 42 schedule 30 carbon steel conforming to ASTM A53 Type B or S Grade B with grooved X beveled ends.
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Material Section F123 - Sanitary Potable Water (Underground)

Item		Size		Specification
Pipe	2"	and	under	Steel, butt-welded pipe with threaded ends, galvanized, Schedule 40, conforming to ASTM A120 and coated and wrapped in accordance with X-TS-15076-3000.
Fittings	2"	and	under	Malleable iron galvanized, 150 lb., ASTM A197, screwed ends, ANSI B16.3.
Couplings	2"	and	under	Malleable iron galvanized, 300 lb., ASTM A197.
Unions	2"	and	under	Malleable iron galvanized, 150 lb., ASTM A197, screwed ends, brass to iron seats. Dimensions per manufacturer's standards.
Thread Tap	e			Permacel P-412 ribbon dope Teflon thread sealant

Material Section F124 - Sanitary Potable Water (Aboveground)

Item	Size	Specification
Tubing	1/2" to 2"	Copper, seamless water tube, hard drawn, ASTM B88, Type L.
Fittings	1/2" to 2"	Copper, seamless, wrought type, solder joint per ANSI B16.22.
Tape (for screen	wed joints)	Permacel P-412 ribbon dope Teflon thread sealant
Solder	18. D	50 tin/50 lead solid wire, conforming to ASTM B32, Grade 50-A

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U.S. DEPARTMENT OF ENERGY Gas Centrifuge Enrichment Plent Portsmouth, Ohio DOE Contract DE-AC05-780R05629 FLUOR ENGINEERS AND CONSTRUCTORS, INC.
Advanced Technology Division
Fluor Contract 466604

X-TS-15500-3000 Revision 0

PLUMBING PIPING SYSTEMS

3.03 (Continued)

C. Soldered .

- All bores and depths of soldered fittings shall conform to the dimensions in ANSI B16.18 and ANSI B16.22.
- All tubing shall be new, straight, uniformly round, free from all blisters, flats or dents, and all ends shall be reamed to full inside diameter after cutting and before erecting.
- 3. The average clearance between surfaces to be joined shall not be greater than 0.004 inches or a diametral clearance of 0.008 inches.
- 4. All piping shall be accurately cut to proper length with square ends using a tube cutter or hack saw and miter box, and the surfaces being joined shall be cleaned thoroughly down to bright bare metal before fluxing. Flux shall be applied sparingly, but sufficiently, to cover the surfaces, and heat shall be applied with due caution to prevent glazing of flux. All joints shall be made using 50 tin/50 lead solid wire solder meeting the requirements of ASTM B32, Grade 50-A and "Mo-Korode" non-corrosive solder flux.
- The joint shall be brought to soldering temperature in as short a time as possible to minimize oxidation without localized underheating or overheating.
- All valves to be soldered shall be disassembled prior to soldering and all packing removed. After soldering the valves shall be allowed to cool before reassembling.

D. Welded

All joints shall be made in accordance with X-TS-15920-3000.

3.04 INSULATION

Horizontal roof drainage piping above ceilings and aboveground potable hot and cold water piping, except chrome plated fixture supply lines shall be insulated. Insulation shall be applied in accordance with manufacturer's printed instructions over clean, dry pipe after all testing is completed.

3.05 SUPPORTS AND RESTRAINTS

A. Supports shall be designed and installed by the Contractor. Welding and non-destructive examination shall be in accordance with K-TS-15950-3000. X-T 801

DIVISION 15 - MECHANICAL

SECTION 15050 - PIPING WORK, PIPE, FITTING AND VALVES

1.01 SCOPE CF WORK

- A. See also Section 15010, "Supplementary Mechanical General Require-
- B. Vork required under this Section of Specifications includes all naterials, work, labor and services necessary to completely install all equipment and materials specified under this Section and as required to integrate work required under all other Sections of this DIVISION to assure complete furnishing and installing of all equipment, services, materials necessary to provide complete mechanical systems of Plumbing, Fire Protection, Heating, Ventilating and Air Conditioning. Extensions of existing systems only.
- C. Equipment, materials, work, labor, and services required to provide tomplete installation which are not covered in this Section will be found listed under other Sections of this DIVISION. All other Sections of this DIVISION are applicable to this Section insofar as they apply.

1.02 PIPING SYSTEMS - GENERAL

- A. Install valves in each riser, each main branch, at equipment and at other points specified, indicated or required for proper and safe operation of plant.
- B. Provide hose end drain valves at all low points, trapped sections and on equipment side of all branch valves to permit draining of all parts of liquid piping systems.
- C. Provide manual air vents at high points of closed circulating piping system and elsewhere as specified or required to assure elimination of air from system; install in such a way that water spillage may be caught. Fitch piping in closed circulating system upward in direction of flow.
- C. In water piping systems, connect branches flowing upward from a main or downward toward a main into top of main. Connect all other

- 2) Waste and vent piping 2-i/2" and smaller above ground and condensate waste piping from air conditioning unit drain pans: Schedule 40 galvanized steel pipe with galvanized cast iron recessed drainage fittings on waste piping and standard galvanized cast iron fittings on vent piping. See optional material for waste and vent piping noted above.
- 3) Sanitary and storm sewers below ground within building, where indicated on the drawings, and such piping outside building, where indicated to be furnished, installed under Mechanical DIVISION: first quality salt-glazed vitrified tile conforming to ASTM Specification No. C-200-55T where located below ground within building, and under paved areas or more than ten feet (10'-0") below grade outside building; conforming to ASTM Specification No. C-233-547 formal Lother exterior locations.
- 8. Underground domestic cold water service piping into building:
 centrifugally cast, ductile iron pipe, Class 4 wall thickness,
 cement lined to 1/8" thickness, complying with ANSI Specifications
 A21.50 and A21.51, respectively, fittings: gray iron, Class 250,
 1/8" thick cement lining, mechanical joint with cast iron glands,
 non-corrorive bolts and nuts, plain rubber gaskets, short body design, all complying with ANSI Specifications A21.11 and A21.10.
- C. Underground fire protection piping: same as underground domestic water service piping except unfined, consistent with all requirements noted above for domestic cold water service, as applicable.
- D. Domestic cold water piping 2-1/2" and larger within building:
 Schedule 40 galvanized steel pipe with grooved ends and compatible
 Victaulic or Gruvagrip fittings and couplings as recommended by
 the manufacturer with suitable gaskets for the specific pipe service requirements or standard malleable or cast iron, ga'vanized,
 screwed fittings or screw-on flanges: or Type L hard drawn copper
 piping with wrought copper r-cessed fittings.
- E. All other domestic cold water piping and all piping for domestic hot water supply, within building: Type L hard drawn cooper tubing with wrought copper recessed fittings.
- F. Fire protection piping withir building:
 - Schedule 40 black steel sipe. Fittings: 150 pound malleable iron or 125 pound cast iron screwed fittings; or standard

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SECTION 15051 F124

SANITARY (POTABLE) WATER & PROCESS WATER (COPPER TUBING)

	10/2 m				L'a	
				*		70
1					1.	
0	5/10/12	BASELINE SPECIFICATION	Shwa Hand	5/10/12	AABS.	Spoles
REV	DATE	REASON FOR REVISION	ENGINEER	DATE	DERIGN ENGR MGR	DATE

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APPROVED FOR RELEASE
H. H. Thomas
Date:

PART 1 - SCOPE

1.01 SERVICE RATING

Maximum Pressure: 150 psig Maximum Temperature: 130°F

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. The material list of this specification is comprehensive in nature. It is not intended that all materials listed will necessarily be required but that those required for the work shall be selected from this listing unless otherwise shown on the drawings. Design Requirements

1. Codes

Installation shall be in accordance with ANSI A40.8, National Plumbing Code, Uniform Plumbing Code, and applicable ASME Plumbing Standards.

2. Materials

<u>Item</u>	Size (incl.) (in)	Specification
Tubing	To 2 Nominal	Copper, seamless water tube, hard drawn, ASTM B-88, Type L
Fittings	To 2 Nominal	Copper, seamless, wrought type, solder joint, per ANSI BI6.22.
Dope		Rector seal No.5, Rectorseal Corp.; Key Tite, W.K.M. Valve Div., ACF Industries
		Tito Houte J. C. Whitlem Mfg. Co.: TEE
		Tyte Unyte, J. C. Whitlam Mfg. Co.; TFE Tape, Sepco Corp.

Valves

Provide valves of required size for service specified herein. Select values from manufacture and types listed under corresponding valve number in FBP-CSPEC-15120.

Service	Size (incl.) (in.)	Valve	Materials		Type of Ends
Service	Size (mei.) (m.)	Number	Body	Trim	Type of Ends
Shutoff					
Gate	1/4 to 2	V-1	Bronze	Bronze	Screwed
Gate	½ to 2	V-6134	Bronze	Bronze	Screwed

	01 (11) (1)	Valve	Mat	erials_	Type of Ends
Service	Size (incl.) (in.)	Number	Body	<u>Trim</u>	Type of Ends
Butterfly	1/2 to 2	V-6472	Bronze	Viton SS	Screwed
Control	5.400				
Globe	1/4 to 2	V-6036	Brass	No. 10 Disc	Screwed
Globe	3/8 to 2	V-6135	Bronze	No. 10 Disc	Soldered
Check					
Swing	1/4 to 2	V-1163	Bronze	Bronze	Soldered
Swing	3/8 to 2	V-201	Brass	Brass	Screwed

Pressure Relief and Reducing Valves

Pressure relief and reducing valves shall be of the type, size, and setting specified on the drawings. When required, lever operators for relief valves shall be specified on the drawings. Relief valves shall be turned over to the Buyer for test verification of pressure setting prior to installation.

Backflow Preventers

- a. Install backflow preventers or air gap separators between potable water and process water connections as shown on the drawings. Reduced pressure backflow preventers shall be Buyer approved and shall be of the type, size, and capacity specified.
- b. After installation, all backflow preventers shall be tested and approved by the Buyer prior to activation of the system.

Safety Valves

Safety valves shall be of the type, size, and setting specified on the drawings. All safety valves shall be National Board stamped and shall have lever operators (packed for indoor service when specified). Safety valves shall be turned over to the Buyer for set-pressure testing prior to installation.

FBP-CSPEC-15051F124 Rev 0

PART 3 - EXECUTION

3.01 TUBING FABRICATION AND INSTALLATION

A. All soldered joints shall be made using a solid wire solder and a noncorrosive flux. The solder mixture shall contain no lead. Valves to be soldered shall be disassembled prior to soldering and all packing should be removed. After soldering, the valves shall be allowed to cool before reassembling. Remove all excess flux and solder from the exterior surface of the joint. Other details of fabrication and installation shall be as specified in FBP-CSPEC-15056.

Note: It is mandatory that the solder mixture specified be used.

++ END OF SECTION ++

VERIFICATION FORM FOR COMMUNITY PUBLIC WATER SYSTEMS **CLAIMING NO LEAD SERVICE LINES**

The owner or operator of all community public water systems must identify and map areas of their distribution system that are known or are likely to contain lead service lines. Systems must submit a copy of the applicable map to the Ohio Department of Health and the Ohio Department of Job and Family Services. Systems must also submit a report to the director containing at least both of the following: (1) The applicable map with narrative, and (2) A list of sampling locations used to collect samples as required by Ohio Revised Code (ORC) Section 6109.121 and any rules adopted thereunder, including contact information for the owner and occupant of each sampling site.

Should a water system determine no lead service lines exist in their distribution system, they must provide information stating they reviewed, at the minimum, historical permit records and local ordinances, distribution maintenance records and information pertaining to installation dates or materials for all services lines. This information must be verified below.

I HEREBY CERTIFY THAT THE FOLLOWING METHOD(S) WERE USED TO DETERMINE NO LEAD SERVICE LINES EXIST IN THIS WATER SYSTEM'S DISTRIBUTION SYSTEM, AS REQUIRED BY ORC 6109.121(F):

LEAD SERVICE LINE VERIFICATION This PWS states they have no lead service lines and has reviewed the following information (select one or more of the following): ☐ Historical permit records and/or local ordinances Distribution maintenance records (i.e. meter replacement, waterline break repairs) M Information pertaining to installation dates for all service lines (i.e. after 1986 when lead services lines were banned) ☑ Service line material of all service lines is known (i.e. all service lines are known to be PVC)

We-dell Q . V.	March 1, 2017		
Signature of Responsible Person	Date	PWS NAME:	FLUOR B&W Portsmouth
Wendell Jenkins, Utilities Engineer, Opera	tor Of Record	PWS ID: COUNTY:	OH_6632414 Pike
Printed Name and Title of Responsible WS3-1013543-80	Person	COUNTY	TIKC
For Ohio EPA use only:			
Date Verification Rec'd:			

Lead Mapping Verification Form Revised 2/14/17