

CITY OF BELLEVILLE, ILLINOIS

WASTEWATER DIVISION

450 Environmental Drive
Belleville, IL 62220-3248
Office: (618) 233-7146
Fax: (618) 233-9389



CITY FLAG
DESIGNED BY
FREDRICK L LANGE
JULY 6th 1964



Ms. Heidi Allen

Infrastructure Financial Assistance Section, BOW
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794-9276

Re: American Iron and Steel Act Waiver Request – ARI Air Release Valves
City of Belleville LTCP Phase 3
L174909

Dear Ms. Allen:

Please accept this correspondence as the City's request for a waiver of the American Iron and Steel Act requirements for the following air release valves:

Two (2) – 2" Stainless Steel ARI Air Release Valve (Model D-020 ST)
Fourteen (14) – 6" Stainless Steel ARI Air Release Valve (Model D-026 STST)
Two (2) – 3" Stainless Steel ARI Air Release Valve (Model D-023 ST)

The design of the Phase 3 CSO Lift Station is one part of the Long-Term CSO Control Plan as detailed in the City's current NPDES permit of which several projects have already been completed. The forcemain piping for the Phase 3 project includes the installation of the eighteen (18) stainless steel air release valves, as detailed above. At the time the project was designed, ARI was specified as the manufacture of choice as the City has many of these valves installed at their treatment facility and at other lift stations. The original design was submitted to the IEPA in November 2012, before all the requirements regarding AIS were implemented.

The manufacturer of these valves states that these valves are manufactured overseas (Israel).

The City has utilized and standardized around this brand of air/vacuum valve. The valve has the advantage of a body shape with clearance between the float and the body to prevent grease buildup from capturing the float. The stainless steel construction eliminates the need to remove the valve for cleaning and re-coating. In contrast, cast iron valve construction corrodes over time in the high sulfide environment, which requires reconditioning and re-coating to restore functionality.

The following information is included for your consideration:

Unit of measure. The unit of measure is each.

Cost. The estimated cost of all valves is \$200,000.00. The construction cost for the total project is approximately \$21,000,000.00

Availability. Delivery will take approximately 3 to 6 weeks after a purchase order is issued.

Location. The project is located in St. Clair County, Belleville, Illinois.

← 10% cost

Supplier. HD Supply Waterworks
Steve Anderson
45 Northgate Industrial Drive
Granite City, IL 62040
Phone: 800-682-3091
Fax: 618-452-3189

Justification. The City has standardized on the ARI air release/vacuum valve and maintains spare parts and spare valves on hand for these valves. The City cites the following reasons for standardizing on these valves:



- The valves do not tend to clog as easily.
- The A.R.I. are lighter for installation on PVC type force mains and do not cause pipe deflection or breakage of the attachment point.
- With their lighter construction, repairs, and cleaning are much easier in that the valve can be disassembled within the manhole without a crane or lifting apparatus.
- The ARI valve is constructed so that in operation less debris or grease enters the valve providing protection against fouling of the relief mechanism.
- The lightweight stainless steel body does not experience rusting in the high hydrogen sulfide environment.

size and length force main

Please process this request and notify the City of the USEPA findings.

If you have any questions or need any additional information, please do not hesitate to contact me at (618) 233-7146.

Respectfully,

E. Royce Carlisle
E. Royce Carlisle
Director, Wastewater Division

Stainless Steel - fiber due to the project
ARI
out

Carlisle

Allen, Heidi

From: Royce Carlisle <rcarlisle@belleville.net>
Sent: Friday, December 18, 2015 10:50 AM
To: Conner.Timothy@epa.gov
Cc: Allen, Heidi; 'Todd Peek'; 'Randall W. Burk'; 'Vicki L. Wade'; 'Randy Smith'; 'Jay Godt'
Subject: American Iron and Steel Act Waiver Request - City of Belleville, Illinois

Dear Mr. Connor:

Thank you for your timely response regarding our request for an AIS waiver for the ARI valves. In addition to the information already provided, please also consider the following information:

The Phase 3 South Side Park Lift Station and forcemain project is part of a USEPA mandated project. This phase alone is the construction of a 90 MGD lift station and corresponding forcemain. In an effort to minimize the carbon footprint of the project, the engineers have designed the lift station to include 4 pumps (15,600 GPM at 48.46 FT. TDH, 280 Hp each) that pump to two (2) 48" force mains for a distance of over 6,600 feet. During the design process, careful consideration was given to the air release valve selection due to the amount of flow through the lines, possible air lock potential, maintenance of these valves, and the potential for environmental contamination should the valve fail.

The City has many of these valves installed and typically specifies this type of valve on projects. Our maintenance personnel are familiar with this valve and we have replacement parts and the necessary tools to work on them. We have not had much success with other brand valves and have replaced failing valves with the ARI valve.

Calculations show that the air flow potential in the forcemain may be as high as 1671 cubic feet per minute. The air valves are of great importance due to the potential of pipe bursting or collapsing and the engineers have worked with ARI to ensure that valve arrangement precludes any catastrophes of this nature. Should one or both of the force mains fail, the potential of millions of gallons of combined sewage could contaminate our communities waterways. Just one day of flow from one forcemain break would release 70 cubic feet per second of contaminated storm water in the Richland Creek basin, which is approximately 2.1 times the median flow rate of Richland creek.

Given our success with previous installations of these valves, our experience in maintaining and our ability to replace any malfunctioning parts in short periods of time should that be necessary, we respectfully request that our petition for a waiver be granted. Please let me know if you need any additional information.

E. Royce Carlisle, Director
Wastewater Treatment Plants and Sewer Lines
City of Belleville
450 Environmental Drive
Belleville, IL 62220
618-233-7146
618-233-9389 (fax)
rcarlisle@belleville.net

permit-3-9-15
Phase III - LTCP

This waiver request was submitted to the EPA by the state of Illinois. All supporting correspondence and/or documentation from contractors, suppliers or manufacturers included as a part of this waiver request was done so by the recipient to provide an appropriate level of detail and context for the submission. Some referenced attachments with project diagrams, schedules, and supplier correspondence are in formats that do not meet the Federal accessibility requirements for publication on the Agency's website. Hence, these exhibits have been omitted from this waiver publication. They are available upon request by emailing SRF_AIS@epa.gov.