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FABA Pressure Line System Upgrade Council Item 90

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Bureau of Environmental Services

January 27, 2016



**ENVIRONMENTAL SERVICES
CITY OF PORTLAND**

**NICK FISH, COMMISSIONER
MICHAEL JORDAN, DIRECTOR**

Project Vicinity Map



Background

- The approximately 7,000-ft long Garden Home Section of the FABA Pressure line System consists of two parallel 30-inch welded steel pressure lines, designated 'A' (Southerly line) & 'B' (Northerly line).
- Unique high pressure pumping application that has higher discharge pressures than typical sewage pump stations.
- Completed in 2010, the 'A' line was placed into service during the planning, permitting, and construction of the SW 86th Ave PS.



Background

- Original construction included the installation of 24-inch diameter access riser assemblies at about 500-ft intervals in both 'A' and 'B'.
- Leaks occurred at two locations in the 'A' line as a result of cracks that developed in and around the welds connecting the access risers to the mainline pipe.
- Surge tanks were not yet constructed (delayed due to permitting).

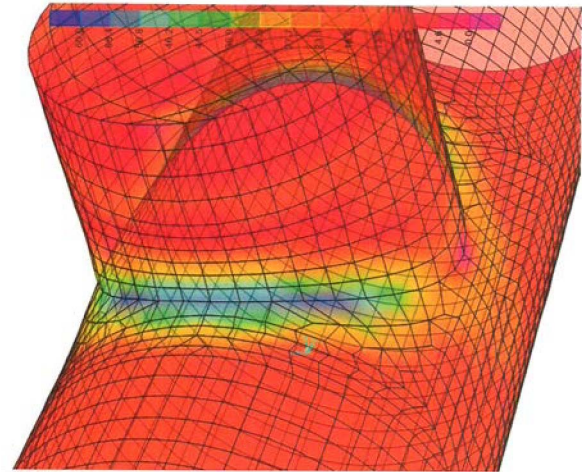


Background

- Subsequent investigations and analyses concluded that unanticipated stress concentration at welds was the likely cause of the cracks.



Crack Through Weld &
Pipeline



Stress Concentration
Modeling Graphic Results



Background & Subsequent Actions

- Operation of the FABA pressure line system was suspended until a temporary surge tank system could be designed and installed at the FABA PS. That work was completed in July 2013.
- In August 2013 the 'B' line was placed into service, protected by the temporary surge tank system. FABA PS has been in operation, with short outages since that time.



Project Elements

- This project will include the following elements:
 - Remove the remaining 18 access risers from both the 'A' and 'B' pressure lines
 - Install straight pipe steel spool sections to replace the risers that are removed
 - Upgrade an existing pressure monitoring station at SW 69th Ave & Railroad St., and connect that station to the BES fiber-optic system for real-time monitoring.





Proposed Construction Schedule & Cost

Milestone	Target Month
Advertise for Construction Bids	February 2016
Bid opening	March 2016
Issue Notice to Proceed (NTP)	June 2016
Construction Substantially Complete	November 2016
Final Construction Completion	December 2016

Estimated Construction Contract Cost \$ 1,173,000



Estimated Total Project Costs

Project Phases	Estimated Cost
Design Phase including: <ul style="list-style-type: none"> — Easements — Design — Permitting 	\$ 190,000
Advertise-NTP Phase	\$ 11,000
Construction Phase including: <ul style="list-style-type: none"> — Construction Contract — Construction Management — Inspection — Permit Compliance 	\$ 1,410,000
Startup/Closeout Phase	\$ 33,500
Estimated Total Project Cost	\$ 1,644,500



QUESTIONS?

**THANK YOU FOR
YOUR
CONSIDERATION**

