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2010 PDCA PIPP – Industrial Exterior



Narrative: Rockland County Sewer District No. 1 Pipelines (Nanuet NY and Blauvelt, NY)

Rockland County Sewer District No. 1 had two (2) locations in New York where their buried sewer lines were exposed and crossed over waterways. Both locations had been insulated over 20+ years earlier. The existing insulation and jacket had suffered severe damage over time and had exposed the pipes to the elements. Considering these pipes were above water supply feeds to a reservoir, they did not want any damage to occur to these pipes.

The scope of work consisted of removing the existing aluminum jacket and insulation from four (4) pipes and the asbestos coating from the fifth pipe. Once that was completed the specifications called for SSPC SP7 abrasive blast at Naurashaun Brook and SSPC SP6 at the Hackensack River crossing. After consultation with several Coatings Manufacturers the surface preparation at Naurashaun and the specified paint systems for both pipes had major deficiencies. Because the pipes would be under insulation and stainless steel jacketing; the consensus was that the pipes had to be treated as immersion service. To quote our Carboline Representative, “under insulation corrosion protection resembles immersion service in that the service environment of the lining over ferrous substrate is constantly wet if there is any moisture infiltration, in essence there is no drying if the substrate temperature is below the boiling point of the condensate/moisture.”

Based on this information we immediately petitioned the customer to change the surface preparation at Naurashaun to an SSPC SP6 and to change the paint system to one that would avoid the atmospheric condition limits of coating in colder weather, as well as the potential immersion issues as per the manufacturer’s recommendations. The client agreed and we began mobilization.

The first site that we began working is called the Naurashaun Brook Siphon which is located on a dirt road approximately 3/4 of a mile into the woods in Nanuet, NY. At this site there are two (2) pipes that are 36” in diameter that span the Naurashaun Brook. The Naurashaun is a feeder brook to the United Water reservoir located in Blauvelt, NY. One of the pipes is approximately 55’ long and was previously coated with an asbestos coating. The second pipe is approximately 29’ long and was



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previously covered with insulation and an aluminum jacket. As previously mentioned, most of the insulation and jacket had fallen off over the 20+ years since they were installed and trees, poison ivy and other foliage were now growing out of the remaining insulation. (See Picture N1)

The second site is called the Hackensack River Siphon off of 5th Avenue in Blauvelt, NY. At this site there are three (3) pipes that are 30" in diameter. All 3 pipes run approximately 285' long and are approximately 60' above the Hackensack River where it feeds into the reservoir managed by United Water Company. These three (3) pipes were all covered with insulation and aluminum jacket. This site also had trees and bushes growing out of the insulation. It even had a family of raccoons living in one of the support columns of the structure. (See Picture H1)

Although we competitively bid the project in January 2008; we were not the low bidder on the job. The low bidder proposed hanging their scaffold from the pipelines in their submittals to Rockland County. Rockland County rejected this approach in fear that the weight of the scaffolding would compromise the pipeline structure. Having the sewer pipes break or crack over the feeds to the United Water reservoir was not a scenario Rockland County Sewer was willing to [risk](#). After several months of negotiation the low bidder walked away from the project. As next low bidder we were given the opportunity to complete the project.

After weeks of pre-construction meetings and design approaches, which not only included the customer (Rockland County Sewer District No.1) but also included United Water (the manager of the reservoir), we were given the go ahead to proceed. During this process Alpine had to assure both parties that we would take every precaution to eliminate all dangers to the drinking water supply.

The biggest drawback to the cumulative delays was that we were now heading into the winter months. We began work at the Naurashaun Brook site in mid October of 2008. Before work commenced we had to install water booms to protect the Naurashaun Brook which flowed beneath the pipes. This brook also feeds into the United Water reservoir located in Blauvelt.

Our scaffold subcontractor constructed the scaffolding by tying into the concrete abutment walls that support the pipes, as well as the shorelines on both sides of the brook. Strength was critical as the brook became a raging river after several rainfalls. They also provided full containment to prevent any materials from asbestos removal, surface preparation (abrasive blasting) and coating application from entering the brook below. (See Picture N2)

The project moved on to asbestos removal which was completed by a licensed asbestos abatement contractor which we brought in as a sub-contractor. Next, using 4 of our men, we abrasive blasted both pipes to an SSPC-SP6 finish. We had to manually remove the steel strapping that held the pipe to its supports one strap at a time. Each strap had to be power tool cleaned and painted before the next strap could be removed to eliminate any danger of shifting the pipes. (See Picture N3)



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The entire pipe lengths were coated with a full prime, intermediate coat and finish coat using Carboline products that were conducive to colder temperatures and addressed the immersion issues. The final step was to have the insulation sub-contractor brought back to begin reinsulating the pipes. He reinsulated the pipes using state of the art insulation (Trymer 2000 XP) with a new stainless steel jacket. (See Picture N4) The Naurashaun Brook site took 8 weeks to complete due to mud and snow delays.

We next moved to the Hackensack River site. It should be noted that while we were working on the Naurashaun site our scaffolders had to construct scaffolding approximately 300' long 20' wide and 60-80 feet over the Hackensack River. (See Picture H2) We had a minor setback when local youths threw a large quantity of the scaffolding into the river. Increased police patrols helped alleviate this problem. This site was also fully contained for the same reasons regarding non contamination of the waterway below. Water booms were also installed in the event something was able to escape the containment. (See Picture H3)

The process began with our insulation sub-contractor removing the old aluminum jacket and insulation. (See Picture H4) Once this was completed we began to abrasive blast the pipes to an SSPC-SP6 finish. (See Picture H5)

We used 4 [blasters](#) for several weeks to get the substrate to the specified condition. Immediately after blasting, the pipes were prime coated, again using the appropriate Carboline products, to prevent any rusting. We continued blasting and painting all three (3) pipes throughout December 2008 and January 2009 utilizing a One (1) million BTU heater to maintain climate control. During this time the weather turned extremely cold and the river began to freeze. To prevent any damage to our scaffolding, ice eaters had to be deployed in the river below the scaffold to prevent freezing. (See Picture H6) We didn't want the ice to damage the scaffolding which was resting on the riprap at the bottom of the river. The ice eaters were powered by portable generators on the banks of the river. These generators had to be diked to prevent any fluids (gas/oil) from seeping into the water supply (reservoir) which was approximately 100 feet from the pipeline. We also had several large snowstorms, during this time, and the scaffolders had to return to remove the snow buildup on the roof of the containment.

After we completed blasting and [painting](#) the pipes the client asked us to repair and coat the concrete supports at the tops of the steel supports. (See Pictures H7 & H8) This was done as a change order to the original contract. Weather continued to present problems when after a couple of warmer days it turned extremely cold and the spent abrasive froze in the containment. Air hammers and chisels had to be used to break it up in order to clean up the area before the containment could be removed. (See Picture H9)

As we moved down the structure blasting and coating the steel supports, the insulation sub-contractor was brought back to begin reinsulating the pipes. (See Picture H10) As at Naurashaun, he



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reinsulated the pipes using state of the art insulation (Trymer 2000 XP) with a new stainless steel jacket.

In order to blast and coat the steel support structure it too had to be fully contained. Our scaffold PE engineer was concerned, based on a site visit, that the combined wind load of all of the containment could be an issue. The fact that we were in a river valley, with the open reservoir area adjacent to our site created a scenario for strong winds. This presented a problem as we could not keep the containment above (around the pipes) and contain the support structure at the same time. The solution was to remove the containment above as we moved down the steel support structure. This solution forced our insulation subcontractor to work in the exposed elements. (See Picture H11)

We completed the project in early March 2009 which was 100 days less than required by the contract. (See Pictures H12-13-14-15) Prior to turning both sites back to the client we had to regrade the access roadways using our Bobcat. All of the equipment and trucks used at the sites had made deep ruts in the roads due to the rain and melting snow over the previous 6 months.

The client, Rockland County Sewer, was extremely pleased with the end results of our efforts. In fact, they strongly recommended us to perform the abrasive blasting and coating of their digester tanks which were being repaired by a separate General Contractor at their main office location. Based on the clients strong urging the General Contractor felt obligated to use Alpine Painting and awarded us the job.

Thank you for your time in considering our application. If you have any additional questions, please feel free to contact me at any time.



Sincerely,

Chet Zalusky
Chief Project Manager
Alpine Painting & Sandblasting

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