

Cleaning Our Nations Most Cherished Monuments



Power washing companies from across the nation joined together on August 21st and 22nd to donate their services to the Power Washers of North America (PWNA) "Clean Across America" campaign (CAA). Working in a partnership with the Department of the Interior's "Take Pride in America" initiative, a group of 16 power wash contractors and suppliers joined together to clean sections of the Lincoln and Jefferson memorials in our nation's capital. This volunteer project was complicated by a series of special obstacles to overcome, including the use of environmentally-compliant cleaning methods and specialized equipment to meet all the requirements of the Clean Water Act.

The power washers used in this project required approximately 45 gallons of water per minute to restore the monuments with hot water under very low pressure. At the same time, the contractors had to prevent this water from entering the city's storm drain system or flow into the Potomac River or Tidal Basin. Another consideration faced by the volunteers was the age of the monuments. "These structures are a part of our nation's history and heritage reaching back almost 100 years in time" states Henry Bockman. "The use of pressure below 600 PSI was imperative. Anything above that amount could have caused irreparable damage to the structures."

The most common misconception about power washing is that all contractors "blast" surfaces clean. The art of effective power washing is so much more than just spraying with high pressure water. Combining education and experience to get professional results, PWNA members are experienced at using the exact pressure to get the job done without causing damage. "Anyone can purchase a high-powered machine to clean their home's siding or deck and, unfortunately, without the necessary understanding of the proper procedures these poor folks usually cause considerable damage to their property" stated Everett Abrams, The Power Washers of North America Vice President. "That's one of PWNA's prime objectives, providing education for all contractors."

PWNA offers rigorous training and educational programs to certify companies in the specialty fields of Wood Restoration, Kitchen Exhaust Cleaning and also Environmental Cleaning. Many of the contractors involved in this project have used their PWNA training and certification to tackle projects like this one. "These PWNA certifications don't just give us an edge over other companies" states Henry Bockman, "they enable us to take on larger or more sensitive projects. We have learned the proper way to do everything from the cleaning of these monuments to the cleaning of a customer's home or driveway. We can do specialty jobs that other companies may not wish to pursue."

The annual Clean Across America charity effort, and this project in particular, was the brainchild of Henry Bockman of Henry's Housework Inc. in Germantown, MD. The contractors came together from all over the country to restore the beauty of over 135,000 square feet of the Danby Imperial Marble, Colorado Yule Marble and Indiana Limestone that was used to build the monuments. Each monument was cleaned in less than 8 hours, taking care to minimize the disruption of thousands of visitors to the memorials. Normally it takes five days for each monument to be cleaned but this group of professionals was able (through their years of experience) to streamline the process into a matter of hours.

"Cleaning a National Monument is a rewarding experience for everyone involved but it takes careful planning and preparation to take on a project of this size." Bockman said. The power washing of the Jefferson and Lincoln memorials is the largest and most high profile community service project ever taken on by the Power Washers of North America. Local contractors from Montgomery County and other nearby communities worked together for over a year to find a suitable project of this stature.

Meeting Environmental Cleaning And Water Reclamation Requirements



Areas were swept off and blown off before any work was started to minimize unnecessary dirt from adding to the challenge of cleaning the used wash water generated by this project. Once the area was cleaned off, sand snakes, drain guards and other water reclamation equipment donated by Sun Brite Supply and www.PressureWasher.Net were used to direct the flow of all used wash water exactly where it had to go. The water was contained in a small pool to prepare for proper treatment procedures. Any hydrocarbons and other contaminants were filtered and removed from the used wash water before it was disposed of - either on site through bio-remediation or hauled off-site. All storm drains and other drainage systems in the work areas were covered to ensure that runoff would not enter the drains. In most cases the drainage systems were inoperable but were sealed anyway to prevent any possible off-site discharge of contaminants. A state-of-the-art

Sirocco vacuum was used to pick up the used wash water and filter it one last time before disposal. As much as 50,000 gallons of water was used to complete the cleaning of these national treasures, and the extensive power and efficiency of the Sirocco equipment was just what was needed to process that kind of volume over such a short period of time.

How Do You Clean 135,000 Square Feet of Steps and Walkways With 600 PSI?



When planning out the actual cleaning process for the monuments we knew that both speed and low-pressure efficiency were critical to the result. We had to either create unique tools or find ways to modify existing ones to work under these conditions. After contacting a few manufacturers we found one that was eager to take on this challenge. Hydromotion stepped forward with their SideWinder surface cleaners and offered to modify and donate 6 surface cleaners for the project. These amazingly well-built wall and flat surface cleaners were modified by the manufacturer to meet the government's rigorous specifications for cleaning the limestone and marble on the monuments. The National Park Service specified a maximum pressure of 600 PSI to ensure that no damage was done to these historic monuments. Most surface cleaners require 2000 PSI to operate, so that was our challenge. It's not easy to modify a surface cleaner to operate at 600 PSI but Hydromotion was able to make it happen in record time. HydraMotion Cleaning Systems engineering group customized six SideWinders for use at the CAA event. To accommodate this severe low pressure specification and still achieve optimum cleaning, the high pressure swivels along with the spray bar and nozzles' impingement angles were modified on the SideWinder and MiniWinder. These adjustments allowed us to achieve a proper RPM target thereby eliminating zebra striping and minimal disruption to the spray pattern to achieve optimal cleaning results. When cleaning over 135,000 square feet of flat surfaces, a surface cleaner is an absolute necessity in order to accomplish a clean, uniform appearance with out leaving any stripes. The Sidewinder's durability was tested constantly as they were bounced from step to step during the cleaning process and their capability of operating for extended periods of time at 215 degrees really helped get the jobs done quickly.

Where Do You Get Half a Mile of High Pressure Hose?



One of the earliest challenges faced on these projects was the extreme distance from the parked vehicles up to the top of the areas to be cleaned. With approximately 50' of rise and hundreds of feet separating the areas to be washed we needed a serious solution! The Goodyear Tire and Rubber company volunteered all of their resources as soon as they heard about the

projects. Recognizing the additional burden of capturing the used wash water, Goodyear donated 2,500 feet of their new SpiraFlow hose. The SpiraFlow hose is engineered with a unique, non-pooling spiral groove that allows the water to flow past the hose without damming up. This allowed the used wash water and loosened grime to flow under and past the hose and drain toward our capture point. Goodyear's advice and their SpiraFlow hoses were instrumental in helping us meet the stiff regulations we were operating under.

Another issue we ran into during the planning stages of this event was calculating the loss of pressure through 400' of hose on each machine and the final true pressure at the guns. Starting with an average PSI rating of 3,000 PSI, then factoring in the 1 PSI drop per foot of hose, and then the elevation of approximately 35' from the machines to the areas to be cleaned isn't something that's normally done by a contractor but it was imperative when facing a working pressure limit of 600 PSI. We also calculated the temperature of the hot water delivered to the guns.

How Do You Supply Enough Water For Six Power Washers?



Since the Monuments were built almost 100 years ago many of the water supply systems available were not up to the task of providing enough water volume for the job. Upon investigation we found some older fire hose supply bibs but they had outdated connection fittings and were fairly inaccessible from where the machines would be staged. By using hoses from a variety of locations we were able to run one fire hose line to the staging area. Then we needed to design a way for it to supply water consistently to 6 different power washers. Brian Caudle of Red Fall Contracting was given this problem to solve and by working with Atlantic Pressure Wash he was able to have them create a special fitting to meet our needs. This unique design was essential in meeting the high water volume demands needed on each site.

How To Clean Limestone And Marble

Cleaning historic Danby Imperial Marble, Colorado Yule Marble and Indiana Limestone is not something you can use just any chemical or pressure on. Marble is a metamorphic rock formed by alteration of limestone or dolomite, often irregularly colored by impurities, and used especially in architecture and sculpture. This was one of the most time consuming issues that had to be worked on. One of the leading experts in the country Lynn Peden was called in from Eaco Chem for his expert opinion on the restoration of these monuments. Lynn was able to give us some excellent guidelines to use for cleaning these types of stone that any contractor should follow when performing stone restoration. Here is a breakdown of the guidelines that we used for the projects.

1. THESE STONES ARE SOFT

- A) Do not use zero degree, 15 degree or rotating zero nozzles.
- B) Great results can be accomplished with smaller equipment, lower GPM and PSI.
- C) Chemistry is able to solubilize and float away almost all staining or residue. Allow it time to work properly.
- D) Abrasion through mechanical cleaning and high pressure roughens the surface quickly.

2) ALWAYS TEST. IF YOU DON'T KNOW HOW, LEARN FIRST

- A) Testing allows you to collect a wide variety of information before the project starts, including:
 - * The right product and process for removing the stain—different chemistry may provide different levels of success.
 - * Any problems that may occur with nearby substrates that the chemistry may come into contact with during the cleaning process.
 - * Whether or not there are any 'hidden elements,' such as coatings or sealants that may inhibit a product's performance.
 - * The appropriate dilution levels and dwell times necessary for maximum effectiveness.
 - * How much product will be needed to complete the project.
 - * Test different areas of the structure, some products work better in different areas than others might.

B) Don't believe that a chemical used on other substrates is appropriate on these. For instance, d limonene will leave orange stains. HF and ammonium bifluoride or fluoride salts burn people by attacking calcium in their bones. These stones are made of calcium.

C) Do your homework. Use chemistry that people competing for dominance in cleaning on these substrates have declared is appropriate. Look for people who are trying to build long term business in the specialty market.

3) DON'T TAKE EVERYTHING YOU HEAR FOR GRANTED

A) Do your own testing, ask questions, read label instructions and follow them. Don't believe that everyone who says he has a great product has thoroughly documented its use on a wide range of these materials. Believe me when I say we have been forced to jump through many hoops to get to this level. Inspect, detect and reject casual proposals of just give it a try.' During the testing and evaluation phase we tested a variety of products to see how they would perform in different situations.

Many of them gave us an almost "brand new" appearance and are currently under consideration for future projects when more time is available for in depth studies and core sample testing.

4) PAY ATTENTION AND DOCUMENT

- A) Thoroughly examine each job before you start.
- B) Note roughened, deglazed areas for possible problems.
- C) Take pictures before and after. Not only are these great for marketing, but they are your record of what the surface was like before you started.

Lynn Peden is president of EaCo Chem Inc., a leader in developing safe, highly effective and powerful brushless cleaning solutions for the masonry, restoration, construction and transportation industries. For more information, call 1-800-313-8505 or visit www.eacochem.com

Manufacturer and Vendor Support

The list of PWNA member manufacturers and vendors supporting this project is also impressive when considering the thousands of dollars in equipment these companies donated. Goodyear Tire and Rubber Company helped immensely by donating the additional high pressure lines that were needed for the projects. Sun Brite Supply provided donated equipment and the miscellaneous parts and accessories that were needed for the project. www.PressureWasher.net sent a Sirocco vacuum and lots of accessories for the occasion. The Sun Brite Supply location in Gaithersburg, MD. was used as the staging area for over 2,000 lbs of equipment, donated hoses, and the parts and accessories needed to modify the pressure output of the machines. Sun Brite Supply of Maryland was also instrumental in fine-tuning things and making last minute tests and adjustments to some of the equipment (at 2:00 am on the morning of the project!) to ensure everything would run smoothly once the sun came up. Tracy Handl, from the Atlanta location of Sun Brite Supply, was our reclamation engineer when he wasn't busy on the business end of a wand.



Pressure Washing Contractors



The planning and direction of both projects were undertaken by Henry Bockman from Henry's Housework, the creator and chairman of the PWNA's Clean Across America, and a local businessman from Montgomery County Maryland. The "DC Dream Team" of volunteer power washers carries a large variety of experience, combined with some of the leading companies in the power washing industry to make these projects possible. Some of these contractors traveled from as far away as Massachusetts and New Jersey but the majority were local based power washing companies from Baltimore, Frederick and Montgomery County Maryland.

Here is a list of all of the members of the DC Dream Team and the companies they represented:

PWNA Members that donated equipment for the project:

[Hydramotion Cleaning Systems](#) in Bridgeport, PA loaned the use of four specially designed Side Winder surface cleaning systems.

[Sun Brite Supply](#) in Atlanta, GA donated the use of high pressure hoses and equipment.

[www.PressureWasher.net](#) in El Cajon, CA donated a Sirocco water reclamation system

[Sun Brite Supply of Maryland](#), Gaithersburg, MD donated the use of high pressure hoses, pressure gauges and equipment.

[The Goodyear Tire & Rubber Company](#) and [Barens, Inc.](#) donated 2,500 linear feet of their specially designed SpiraFlow hose. This hose is designed to allow water to flow under the hose lines, and to assist the water reclamation equipment.

On-site PWNA member participants involved in the power washing project consist of:

Henry Bockman, [Henry's Housework Inc.](#) of Germantown, MD.

Ray Freolo, [Henry's Housework Inc.](#) of Germantown, MD.

Hank Bockman, [Henry's Housework Inc.](#) of Germantown, MD.

James Merrill, [Under Pressure Inc](#) of Baltimore, MD. John Ryan, Deck Protectors of Gaithersburg, MD

Brian Caudle, [Red Fall Contracting](#) of Odenton, MD

Jay Schlessinger, [South Jersey Power Washing and Restoration Services](#) LLC of Williamstown, NJ

Chris Evans, [South Jersey Power Washing and Restoration Services](#) LLC of Williamstown, NJ

Tracy Handl, [Sun Brite Supply of Atlanta](#), GA.

James Foley, [Diamond Jim's Cleaning](#) of Waterbury CT.

Daniel Steele, [Clean Again Pressure Washing](#) of Crofton, MD

Everett Abrams, [Deck Restorations Plus](#) of Shamong, NJ

Tim Brassell, Aqua Marines Inc of Baltimore, MD

Steve Brassell, Aqua Marines Inc of Baltimore, MD

Dan Galvin, East Coast Powerwashing of Buzzards Bay, MA

Todd Perri, East Coast Powerwashing of Buzzards Bay, MA

Bruce Tassone of [Hydramotion Cleaning Systems](#) in Bridgeport, PA

Jason Kubecki of Deck Medics in Rockville, MD

Derrick Adili of Deck Medics in Rockville, MD