



## **HYDRO BLASTING SAFETY PROGRAM**

### **Purpose**

The purpose of this program is to provide safe guidelines for the operation and maintenance of hydro-blasting equipment and their related components.

### **Scope**

This program covers all employees involved in hydro-blasting jobs performed by Tate Engineering Systems Inc.

### **Technician Responsibilities**

Read all warning labels and safe and proper use manuals that come with or are posted on equipment.

Follow all warning and safety directives that are in manual or are posted on equipment.

Be aware of potentially hazardous conditions that may arise during the blasting process prior to starting any blasting job and take measures to protect client employees and co-workers.

Understand and follow any scheduled maintenance for continued safe operation of blast equipment.

Have knowledge of hazards associated with hydro-blasting.

A hydro-blasting JHA must be developed. The JHA shall include:

- Identify qualified personnel – those who have read manual/instructions/labels and understand how to follow instructions for safe and proper use
- Documentation of appropriate precautions taken to protect equipment being cleaned
- Documentation of precautions taken to protect electrical equipment, access to drain water and walkways blocked/barricaded from pedestrians passing into blast, or slip trip fall in wash
- Documentation of maximum operating pressure

### **Hydro-blasting Safe Work Procedures**

High pressure water can cut through boots, gloves, aprons and any other protective clothing in a fraction of a second. In spite of this hazard, hydro blasters can be operated safely if proper procedures are followed. The following minimum standards apply:

- At minimum the hydro-blasting team will consist of a pump operator and a nozzle operator.
- All hydro-blasting must be completed from a stable work surface.
- Ladders, step stools, benches, chairs etc., shall not be used for access when operating hydro-blasting equipment. Where elevation is required use only approved scaffolding or platforms as trained and authorized.
- Tate will ensure inspection of the high pressure unit prior to use. The operator shall inspect the high pressure unit and hoses for defects, proper fluid levels and filters and properly sized/rated end fittings prior to each use. Examine all hoses and fittings for defects frequently, and do not operate hydro blaster if worn or damaged. When laying hoses, place so that they do not create a trip hazard and will not be subject to crushing, pinching or sharp edges. Also, check each hose to



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be sure it is marked with the manufacturer's symbol, and the maximum operating pressure. Pad the hose at corners or suspend it where necessary.

- NEVER hold objects to be cleaned.
- NEVER point a lance at other employees or blast water in direction of other employees.
- Moleing device or lance shall require a minimum 2 feet end identification when a pipe flange is available. If no flange or other means to secure anti-reversal device is used, the hose/lance shall require a 2 feet end identification marking and a 4 feet end identification marking of a different color or different pattern.
- Only clean water should be used to operate blaster. Raw water may contain small quantities of nitrogen, ammonia, or chlorine which could be deadly if vaporized in a confined space.
- The system shall be shut down and depressurized any time the barricade is violated, the equipment malfunctions, repairs need to be made or the system is left unattended.

### Equipment Requirements

Tate requires the use of a properly sized anti-reversal device on hydroblasting equipment that is owned or rented for use on pipe cleaning. Properly sized anti-reversal device (stinger assembly attached to a nozzle to prevent it from turning around inside a pipe or large tube) shall be used throughout the task. The combined length of the hose connection, stinger, and nozzle shall be a minimum of 1.5 times the diameter of the pipe being cleaned unless the pipe being cleaned has a "T" then the combined length shall be 3 times the diameter of the largest pipe.

There is a minimum total length for hydro-blasting guns. The minimum total length of a hydro-blasting gun (hand operated control valve, lance and nozzle resembling a gun layout) shall be 66 inches from the shoulder pad to the nozzle. This is to keep the operator from pointing it at himself and increase the distance to the nozzle hazard.

TATE requires that blast cleaning nozzles shall be equipped with an operating valve (on the gun or foot pedal) which must be held open manually and always under the control of the operator. Dead man switches/triggers must never be taped, tied, or otherwise altered so the equipment stays in the "on" position. If the lance is dropped it will whip about wildly potentially causing serious and life-threatening injuries.

The hydro-blasting system shall not be operated above the lowest working pressure of any of its components.

### Housekeeping

During and completion of the job, it is the responsibility of the crew to maintain good housekeeping practices on the job site. This includes, but is not limited to, the elimination of slip, trip and fall hazards including proper hose placement; proper disposal of trash, contaminated PPE and chemical/product wastes generated from the cleaning service.

### Barricading and Boundaries

TATE requires the use of barricades when performing hydro-blasting work. Adequate barricades and signs shall be in place to protect personnel when approaching all ends of the equipment being cleaned.



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Barricading should be at a minimum of 10' (feet) to a maximum of 25' (feet).

All high pressure hoses should be routed and protected in a manner that prevents vehicular damage and personnel exposure to the hoses. When possible, walkways should be barricaded for vehicular and pedestrian traffic where high pressure hoses cross walkways.

All equipment being cleaned shall be shielded against flying debris/chemicals that could pose a potential injury or exposure to someone.

### **Use of Appropriate Personal Protective Equipment When Performing Hydro-blasting Work**

Employees performing hydro-blasting work will, at a minimum, wear eye protection, head protection including a full face shield, foot protection with steel/composite toe caps, appropriate hand protection and hearing protection. This applies to any other personnel working in the vicinity of blasting operations that could be exposed to related hazards.

### **Training**

Training shall occur prior to exposure of hydro-blasting related hazards or operation of equipment and shall include coworkers working in the immediate vicinity of the equipment that have the same exposure.

Employees will be trained on the hazards (including penetration of the skin by high pressure water), operating procedures, and maintenance of hydro-blasters prior to performing hydro-blasting work. Training includes a viewing a demonstration of the cutting action of the high pressure water.

If an accident should occur and high pressure water penetrates skin, medical attention must be given immediately.

Review of this program and procedure shall be documented. Use of hydro blasting equipment requires JSA to document qualified personnel – those who have read manual/instructions/labels and understand how to follow instructions for safe and proper use.