

WJA Tube, Pipe & Bundle Jetting Application Course Content

1 Registration & Introduction

2 Review Key Safety Awareness Issues (include only when presented as a 'Stand-Alone' Course)

Nozzles & jets - pumps & ancillaries – pressure controls – water jetting hose – hazards & injuries – PPE – operational procedures.

3 Applications & Machines

Scope of tube & pipe cleaning applications; differentiate between tubes & pipes. Range of cleaning requirements & standards. Range of jetting machines suitable for tube & pipe cleaning.

4 Jetting Equipment – Nozzles & Ancillaries

Review nozzle principles – fixed jet nozzles, rotating nozzles, life & wear characteristics, associated ancillary equipment including automatic & semi automatic.

5 Jetting Equipment – Water Jetting Hose

Hose used in tube & pipe cleaning applications, including flexi & semi rigid lances; damage & wear possibilities; hose ancillaries. Bore size & flow capabilities, in particular for flexi & semi rigid lances.

6 Jetting Equipment – Machines

Range of jetting machines used - engine controls & instruments. Pump pressure controls, review dump/dry shut & selector/fail safe types, auto engine speed control systems, pressure safety relief. Water supply/delivery features – filtration requirements, boost feed pumps, built-in anti freeze provisions.

7 Job Assessment & Planning

Information & assessment – site location, access to & layout of tube bundle / pipeline; base material & nature of contaminants – initial condition and required finished condition; water provision, waste disposal, hazards.

Selection of equipment & manning levels – jetting machine/nozzles/accessories, number and duties of operators; single person operation. Determine job method based on safe system of work.

8 Operational Procedures

Daily checks – manufacturers' instructions, other items requiring regular checks.

Setting up – permits/authorisations, barriers & warning signs, positioning of machine & equipment, team duties & signals, flushing, leaks check, tube preparation for entry.

Nozzle entry & removal, control & monitoring during cleaning – debris, waste containment, standard of finish.

Job completion – client inspection, waste removal, equipment decontamination, return site to safe condition.

9 Practical Exercises

Jetting machine & equipment – review features and demonstrate daily checks, start / run / stop.

Job assessment – review & discuss – site location & constraints, accessibility, screening requirements. Tube type & material, nature of contamination, standard of finish required. Water supply, effluent drainage.

Hazards & use of PPE. Discussion of options, agree job method.

Site preparation – setting up work area. Team talk – review job method, signals, set up team(s). Positioning of jetting machine, layout & check equipment.

Demonstrate all procedures to full group. For all teams, instruct each operator in each duty.

Trainees carry out exercise – each team following instructions to set up, flush, check for leaks, prep for nozzle entry, proceed with operation. Rotate team members through duties. Review at each rotation and final review.

Disconnect equipment & clear site.

10 Summary

Review of course content as above, with opportunity for further discussion prior to Questionnaire.