New Authorisations Structure table/Volume validation

Environment Agency

		Primary Information required for volume validation											
	Units	Crump weir	Broad crested weir	Natural bed weir	Flume	Rectangular thin plate weir	V notch	Circular weir/ Partially full orifice	Pipe (partially full)	Pipe (full)/ Siphon: (River level above top of pipe)	Sluice/ Penstock	Orifice (rectangular)	Orifice (circular)
Breadth (B)	metres												
Angle (Θ)	Θ												
Sluice Opening (Y)	metres												
Diameter (D) of pipe/orifice or Depth (D) of rectangular orifice	metres												
Depth of water (H) above weir crest, upstream pipe invert or sluice.	metres												
Bed condition/type: Smooth/Earth/Grass/Gravel or Stone													
Height from upstream water surface to centre of orifice (h)	metres												
Invert Height of structure above river bed	metres												
Pipe length	metres												
Water Head/Pipe invert differential (ΔH)	metres												
Slope	metres/ metres												
Internal pipe material (i.e. plastic)	unitless												
Roughness coefficient (Manning's)	unitless												

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Maximum number of hours abstraction per day	hours												
Maximum number of days abstraction per year	days												
Max instantaneous flow rate	litres per second												
Max Flow auto calculated	m^3 hour												
Max Flow auto calculated	m^3 day												
Max Flow auto calculated	m^3 year												

Parameters	Description of parameters – Applicant can request guidance document from Environment Agency for further details and diagrams to help with their application
Breadth (B)	Breadth (or width) of structure from edge to edge where water is flowing. Not required for circular structures.
Angle (Θ)	Angle of V notch weir, e.g. 90°
Sluice opening (Y)	Width of sluice gate opening
Diameter (D) of pipe/orifice or Depth (D) of rectangular orifice	For a circular orifice, provide diameter. For rectangular orifice, measure depth of orifice opening.
Depth of water (H)	Depth of water (H) above weir crest, upstream pipe invert or sluice
Bed condition/type	Earth, grass, gravel, stone. For natural bed only.
Height from upstream water surface to centre of orifice (h)	As described
Invert height of structure above river bed	Height between lowest point of structure above river bed. If abstraction occurs during all river flows, put zero.
Pipe length	Length of pipe from intake point to discharge point
Water head differential/Pipe invert difference (ΔH)	Pipe Full: Level difference between upstream and downstream water level
	Partially full pipe: Level difference between upstream and downstream inverts
	For sluice, provide only if DOWNSTREAM levels is drowning out aperture (see guidance)
Slope	Pipe length ÷ difference of upstream and downstream pipe inverts
Internal pipe material	For example, plastic, copper, brick etc.
Roughness coefficient	Manning's roughness coefficient (or friction)
Max instantaneous flow rate	Maximum rate of flow of the intake structure. This will need to be calculated by the applicant and will be validated by the Environment Agency (see guidance).