

*Géotechnique
et
assainissement à Namur*

**Hydro International
Storm King® with Swirl Cleanse™**

Keith Hutchings

Namur project History:

1998 – Project was opened at Hydro

2001 – First meeting held in Namur

2004 – Initial site trials carried out

2006 – Tendering process begins

2007 – CFE EcoTech, environmental department of CFE group, is one of the four members of the joint venture*

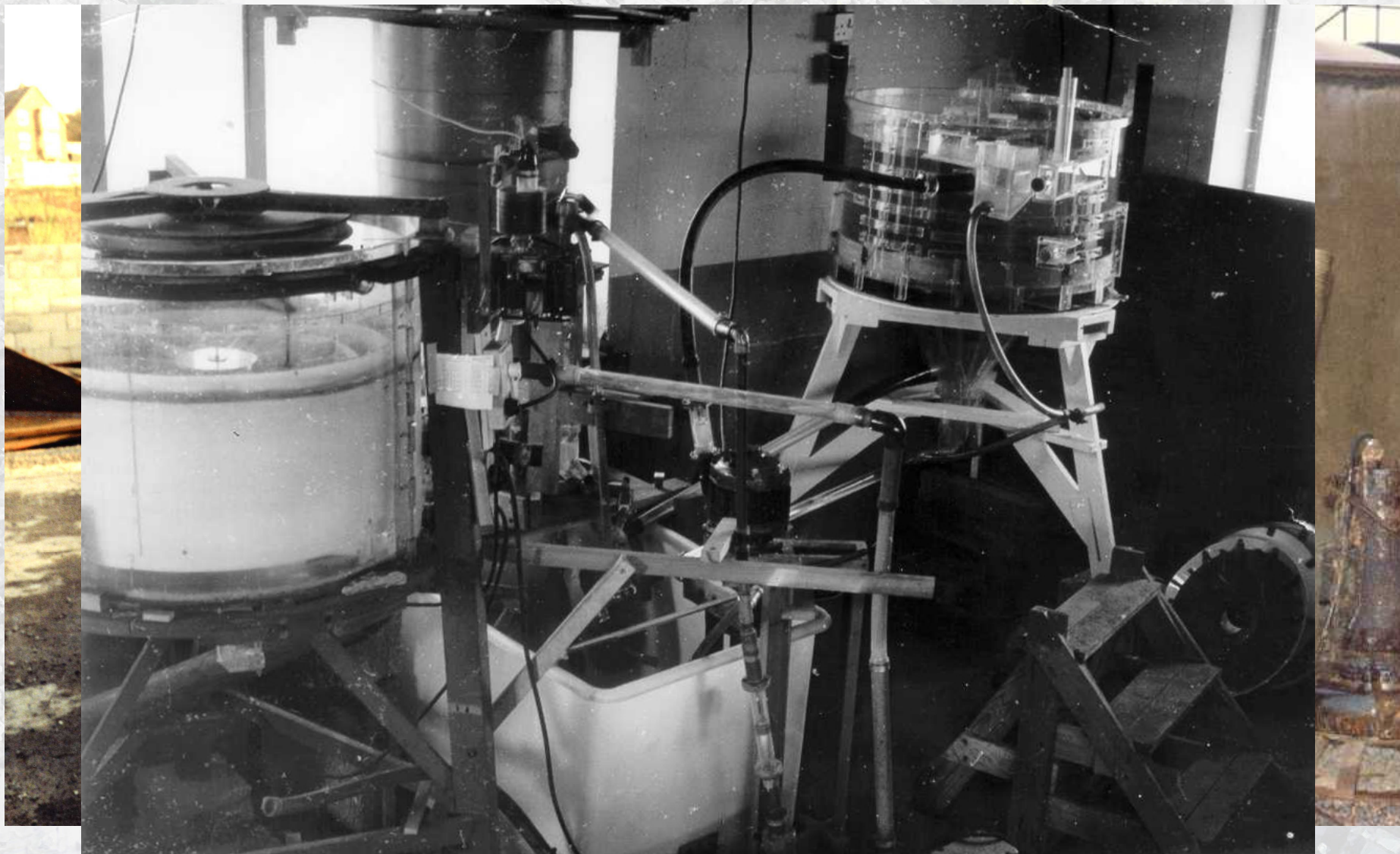
Hydro is appointed as a subcontractor of CFE EcoTech for the hydraulic design and Storm King® Swirl Cleanse™ manufacturing design.

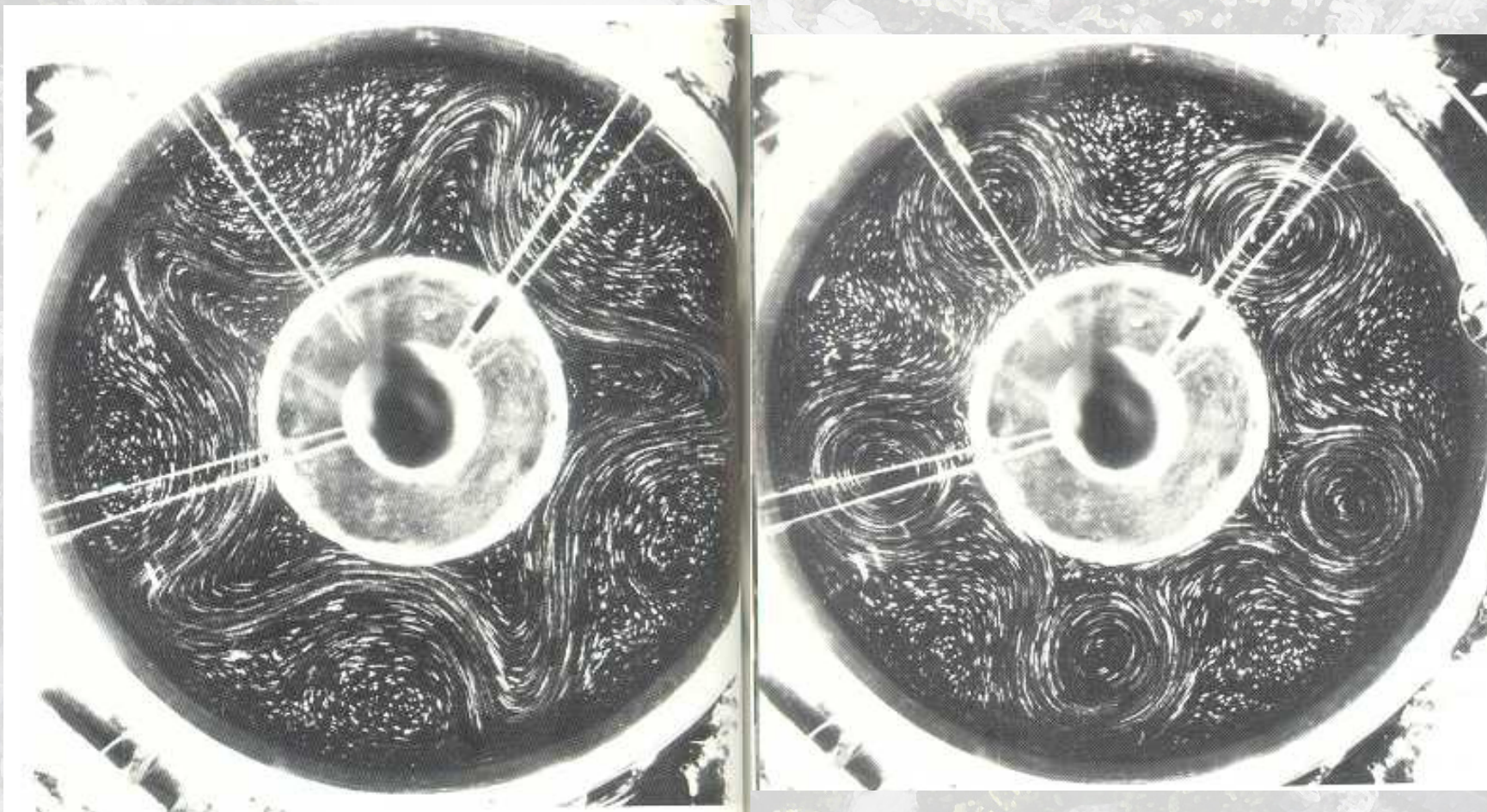
*CFE EcoTech are responsible for the civil design, the low pressure network (both process and hydraulics), design and detailed engineering of electromechanical equipment (including functional specifications). CFE EcoTech are licensed to manufacture some Storm King® with Swirl Cleanse™ components for the Namur project and responsible for installation and commissioning.



- Hydro – Background
- Development of the Hydro dynamic separator
- Storm King®
- Storm King® with Swirl cleanse™
- Namur Innovations
- Production

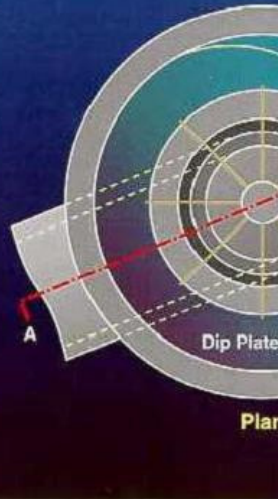






City of Bristol, England – Bernard Smisson’s Original Vortex Overflow Constructed in 1963

Whiteladies Road Overflow Chamber



EPA’s Swirl Concentrator



- Screening
 - No power
 - No moving parts
 - Automatic operation



Swirl Cleanse™



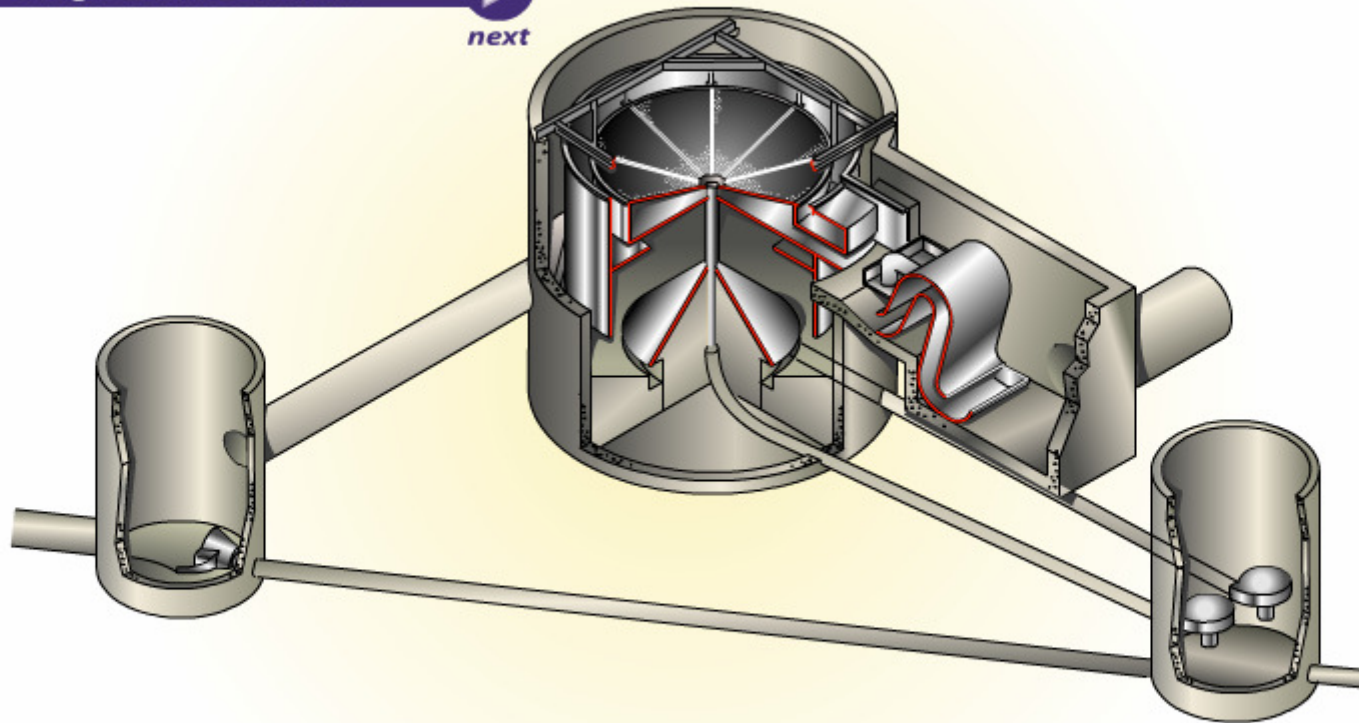
Storm King® Overflow with Swirl-Cleanse™ Screen

Stage 1 Static Condition



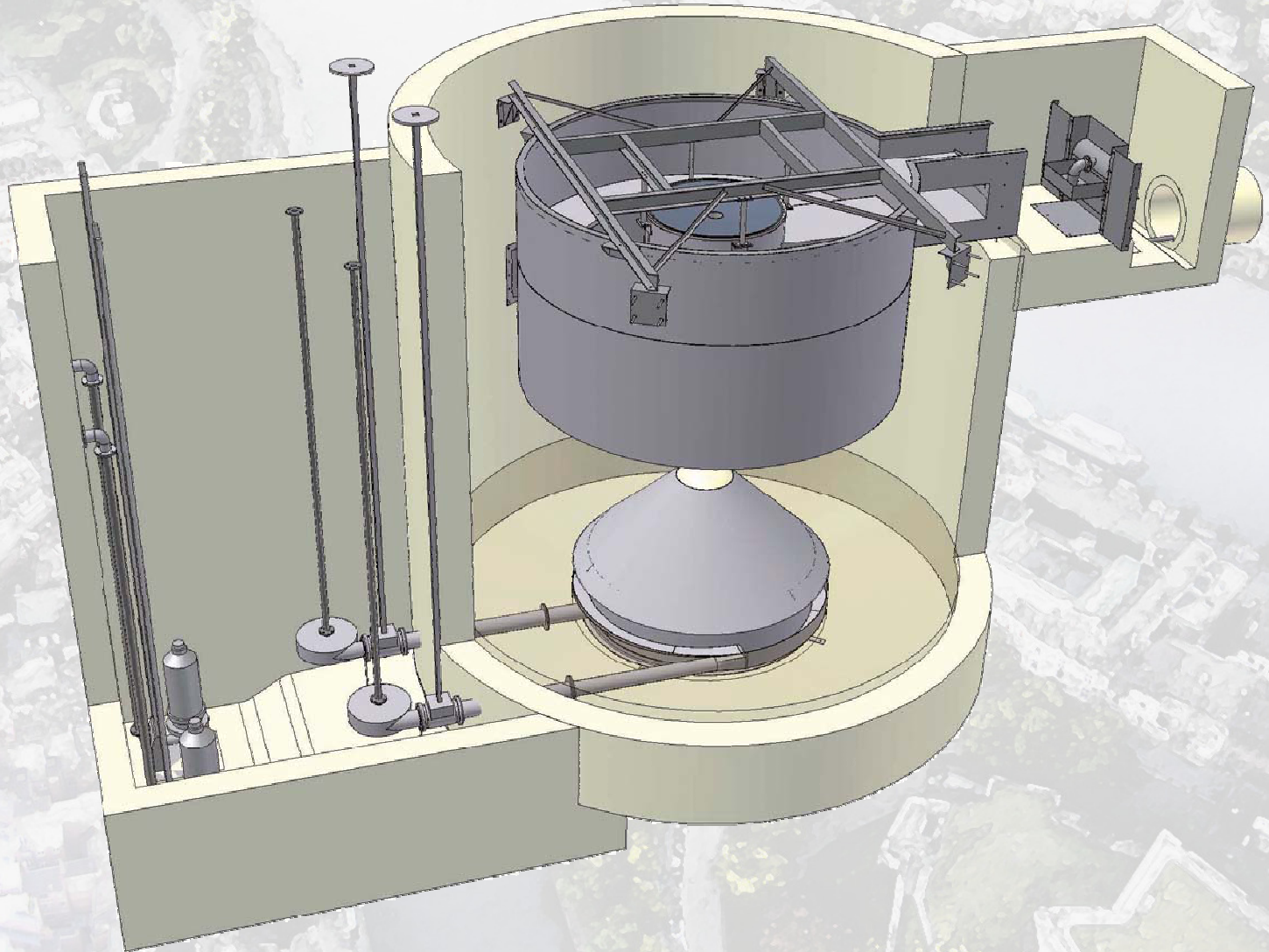
next

by Hydro International





Pumped pass forward flow



Namur trial unit - 2005





**Graph 1:
Efficiency/Rainfall Graph**



Accurate Sampling for this type of project is extremely difficult

Need to combine visual observations with logged data to deduce behaviour of the device

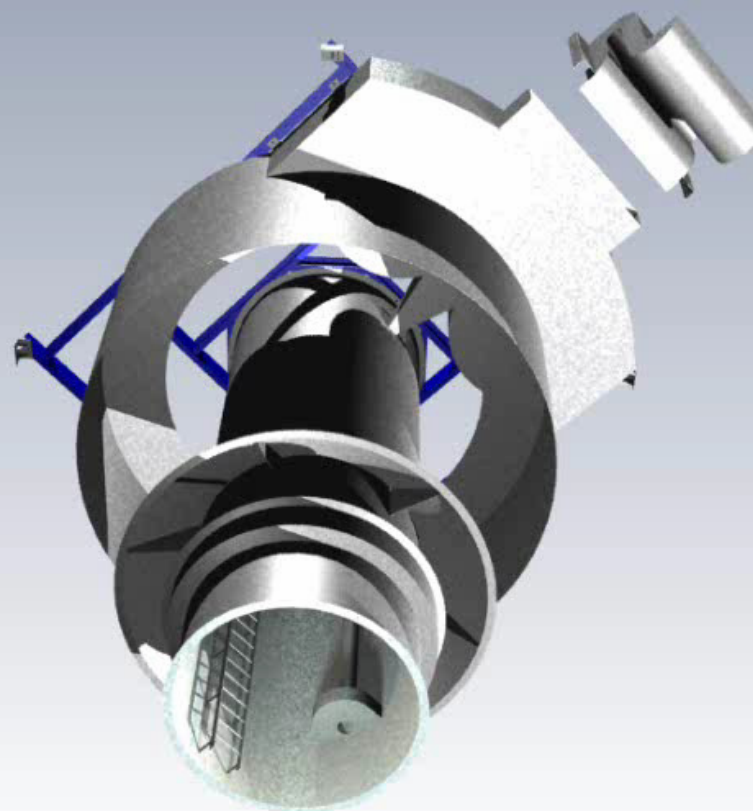
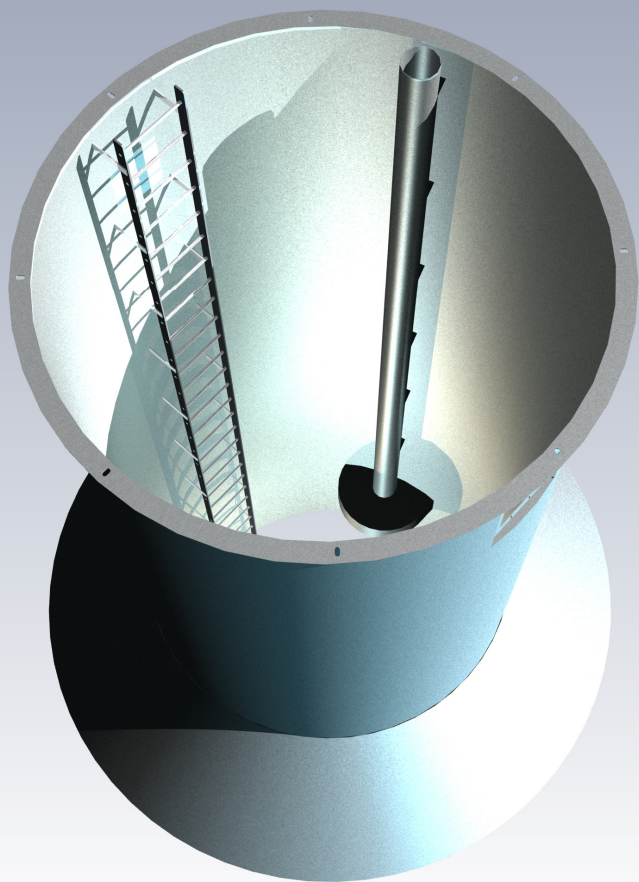
Combination of all three tests help give a clearer picture to what is actually happening

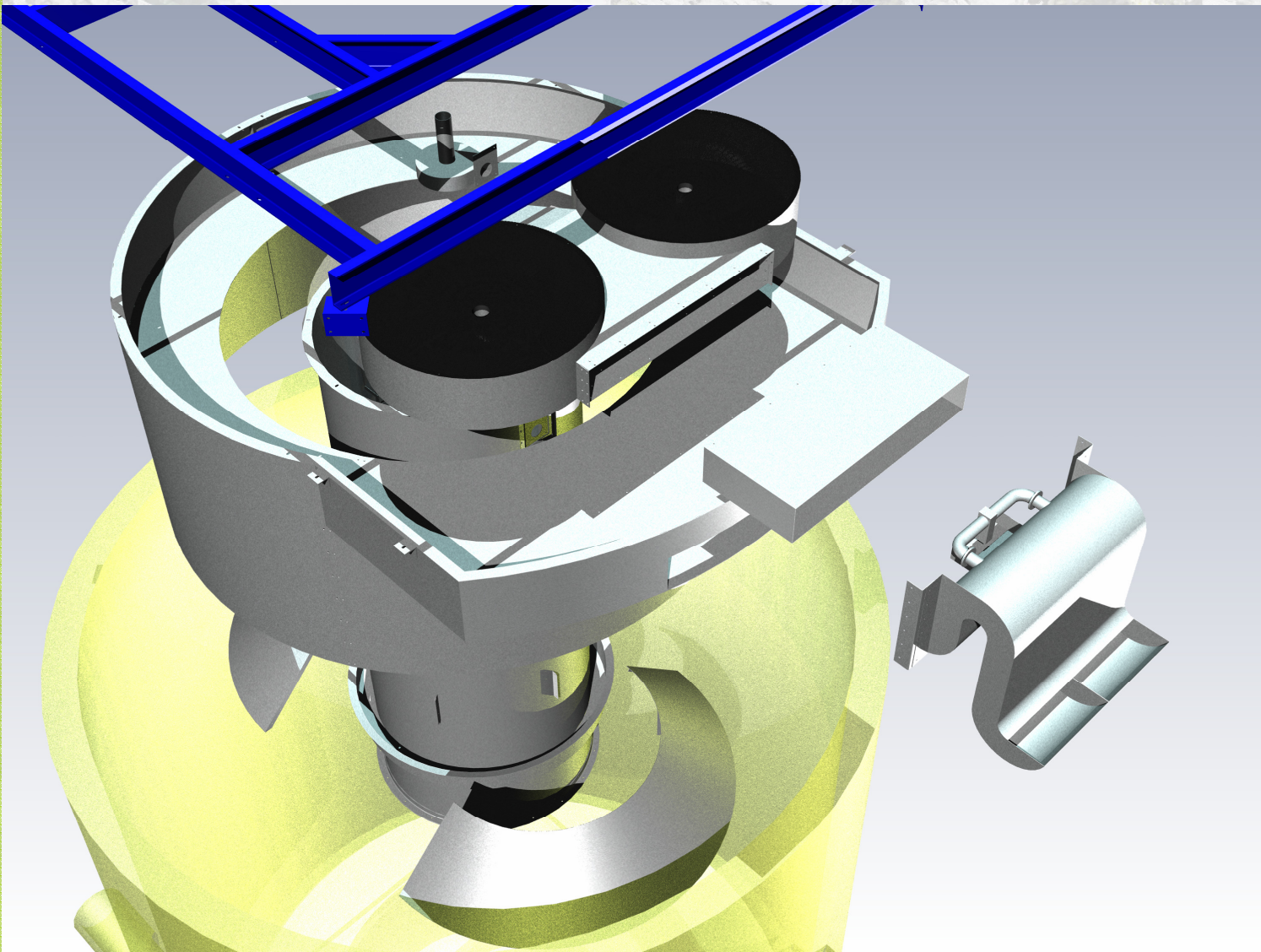


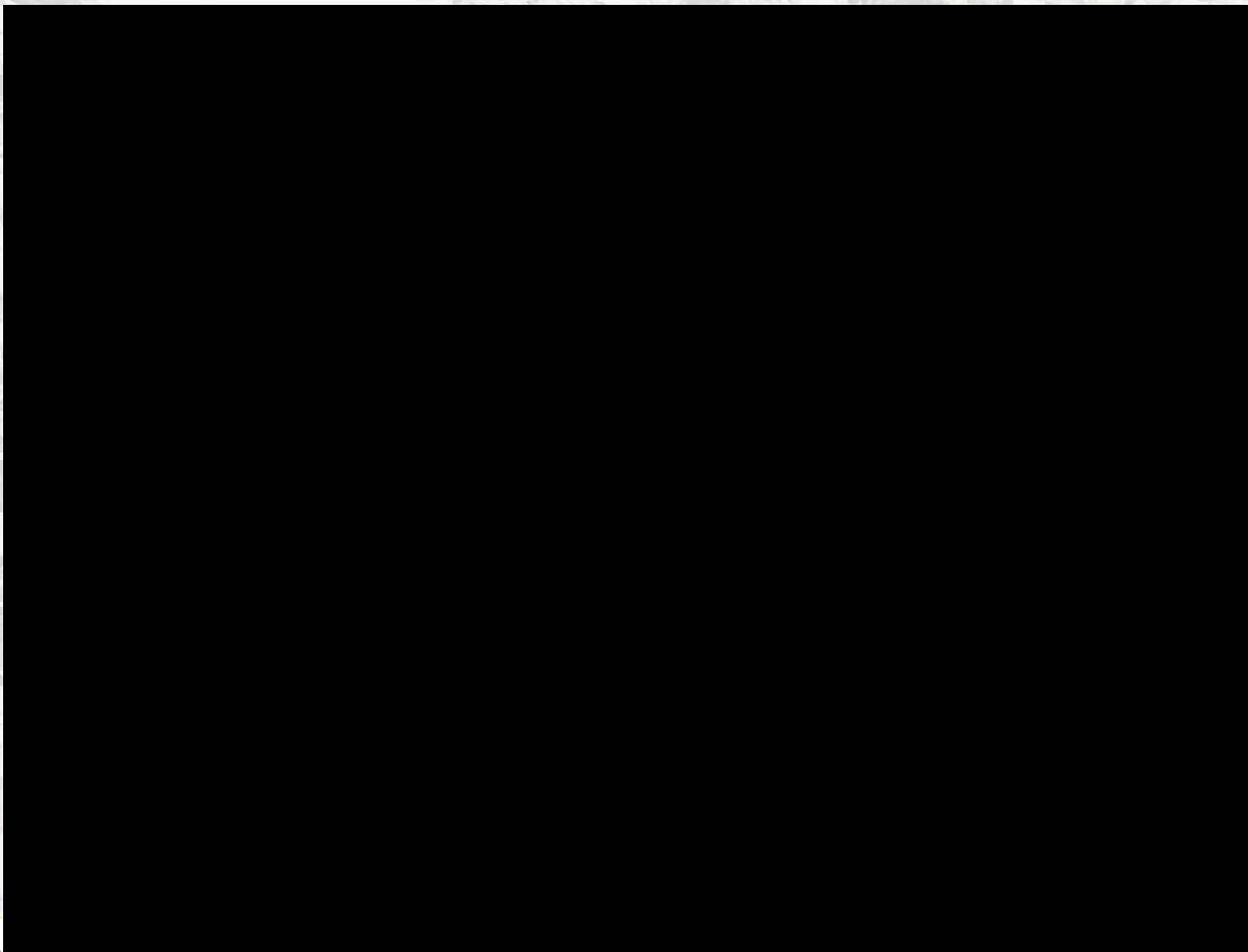


Saco, Maine

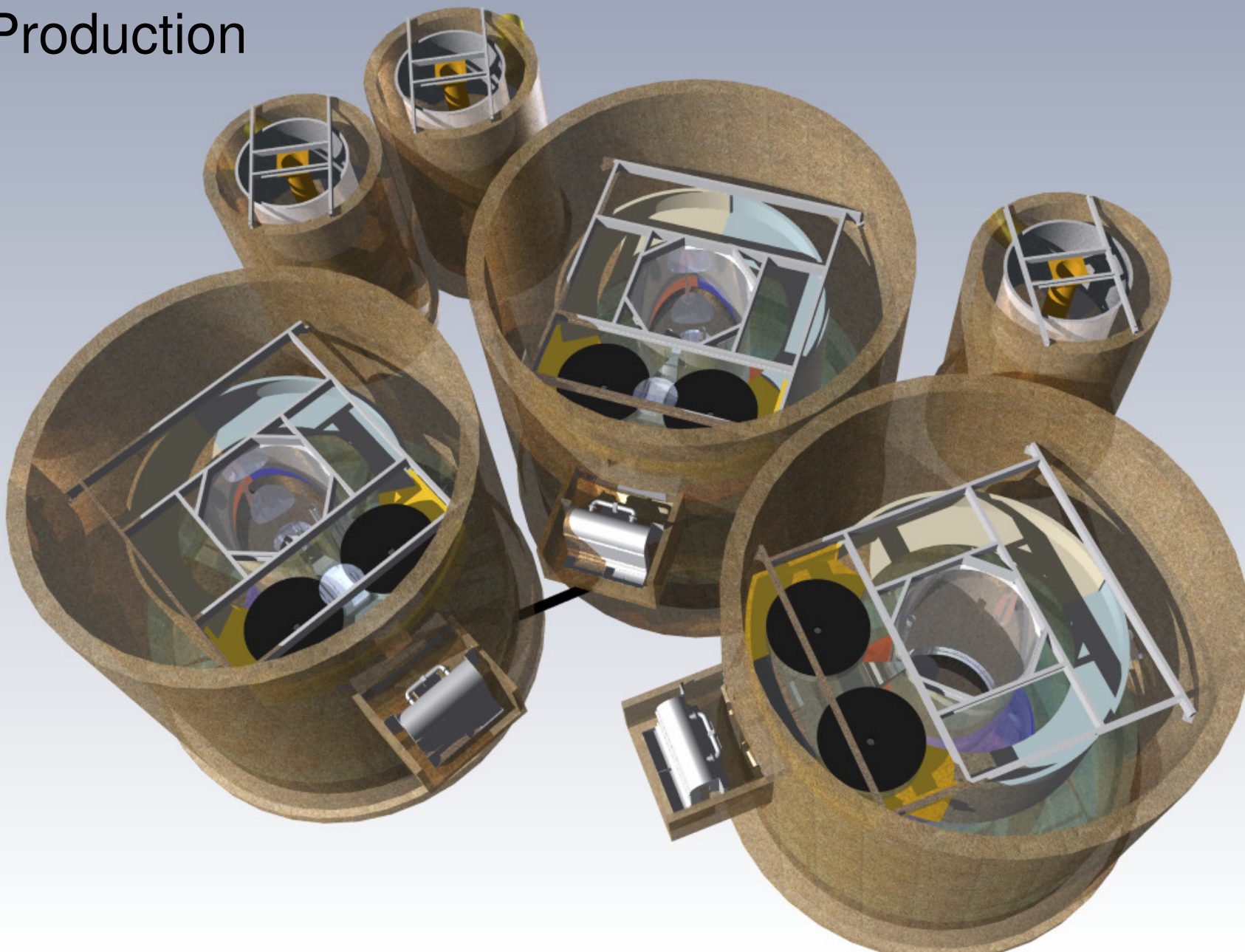


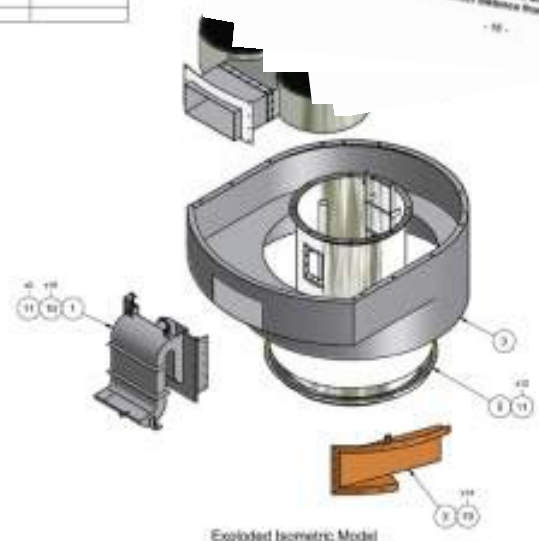
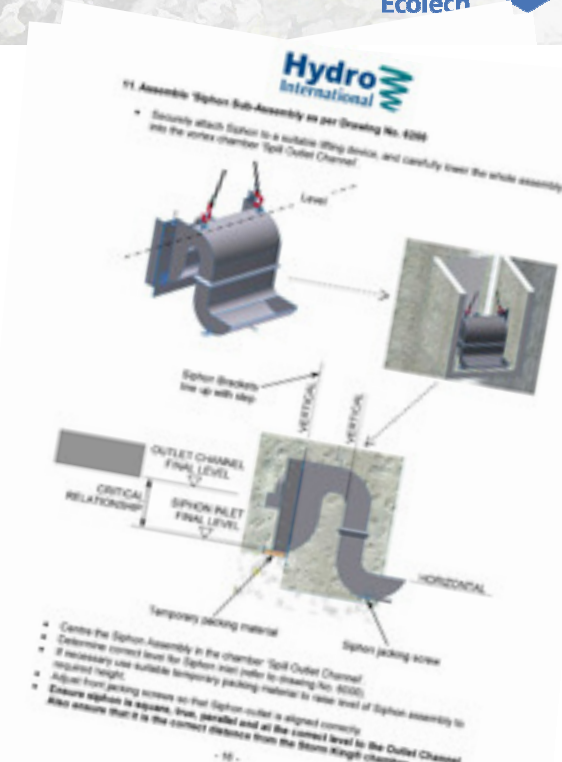
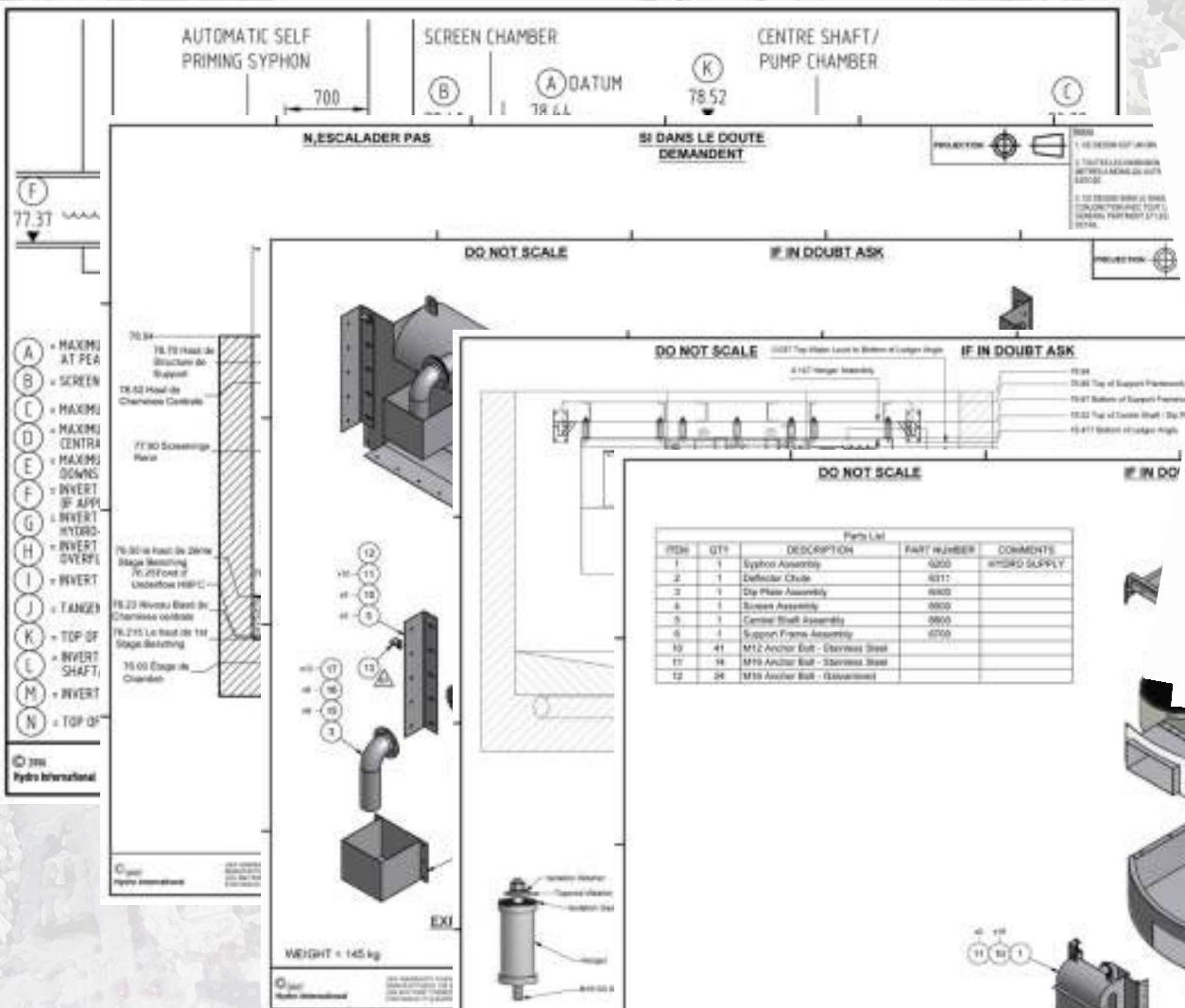






Production





24.08.2002 17.8

MAP 0204 0024

NAMUR SCHEME
Storm King with
Sewer Cleaners

SERPENT VAL 4.0m Dia.
Storm King G.A.
Sheet 2 of 2

Hydro International
Water & Waste Water Division

Pocklington Road,
Ely,
Cambridgeshire,
CB7 4TX

Tel: 01 353 645700
Fax: 01353 646702

email:
hydro@hydro-international.co.uk

N°: 06-1105-31
124 6100 1A





Conclusion:

Hydro International has a policy of continual Product development and employ cutting edge technologies to reduce time scales whilst still conducting real world validation and verification

Proven track record of the use of applied hydraulics to effectively control flows and prevent pollution

Storm King® with Swirl Cleanse™ offers BATNEEC* approach to the resolution of potential problems



*Best Available Technique Not Entailing Excessive Cost

Hydro International

