

Project # XXXX
 Data: XX.XX.XXXX
 Customer: XXXXXXXX

CONCEPTUAL ENGINEERING

(document example)

Project description:

Conceptual engineering, also called feasibility study:

In the industrial world projects often need to be defined in advance, sometimes years before the start of it. In this preliminary phase, you will need preliminary details of your air treatment system, not a simple budgetary offer.

Our conceptual engineering service has the aim to propose the technology that represents the optimal solution to your project by providing comprehensive overview of the plant, including footprint, process functioning, planning and budget.

Deliverables:

1. Economic assessments (CAPEX, OPEX)
2. Preliminary layout
3. Preliminary Process Flow Diagram (PFD)
4. Process description
5. Preliminary P&ID
6. Project scheduling
7. Utility requirements



CAPEX :

ATP Environment S.r.l.
 Via Camisana 244, 36040 Torri di Quartesolo (VI) – Italy

BIOTRICKLING UNIT CATALOG: CBBTK	<p>1x HDPE biotrickling structure – insulated with aluminum sheet finishing. 2x Re-circulating centrifugal pumps. 1x automatic biological additive dosing system, including metering pump. 1x automatic clean water re-loading system with vortex nozzles. 1x automatic wastewater discharge system. 1x HDPE dry scrubber structure - insulated with aluminum sheet finishing. 1x HDPE connecting ducts and valves set. 1x Set of filtering media. 1x Set of instruments. 1x Electrical heater to reduce RH at dry scrubber's inlet. 1x Fan with soundproof cabinet 1x Electrical cabinet with VFD to regulate fan's speed and PLC Siemens for the fully automatic control of the plant.</p> <p>Suitable packing for road transportation Complete Technical Documentation</p>
Warranty time	12 months from the acceptance certificate
Manufacturer	ATP Environment, Italy
Design Airflow rate	1200m ³ /h@40°C
BUDGET PRICE	XXXXX
Needed place for installation:	6m x 4m
Total Power Installed	Pi = 11kW

PERFORMANCE

<u>Inlet</u> H ₂ S: 5mg/m ³ R-SH: 2 mg/m ³ ; NH ₃ : 2mg/m ³	<u>Outlet</u> H ₂ S: 0,1mg/m ³ R-SH: 0,1 mg/m ³ ; NH ₃ : 0,1mg/m ³
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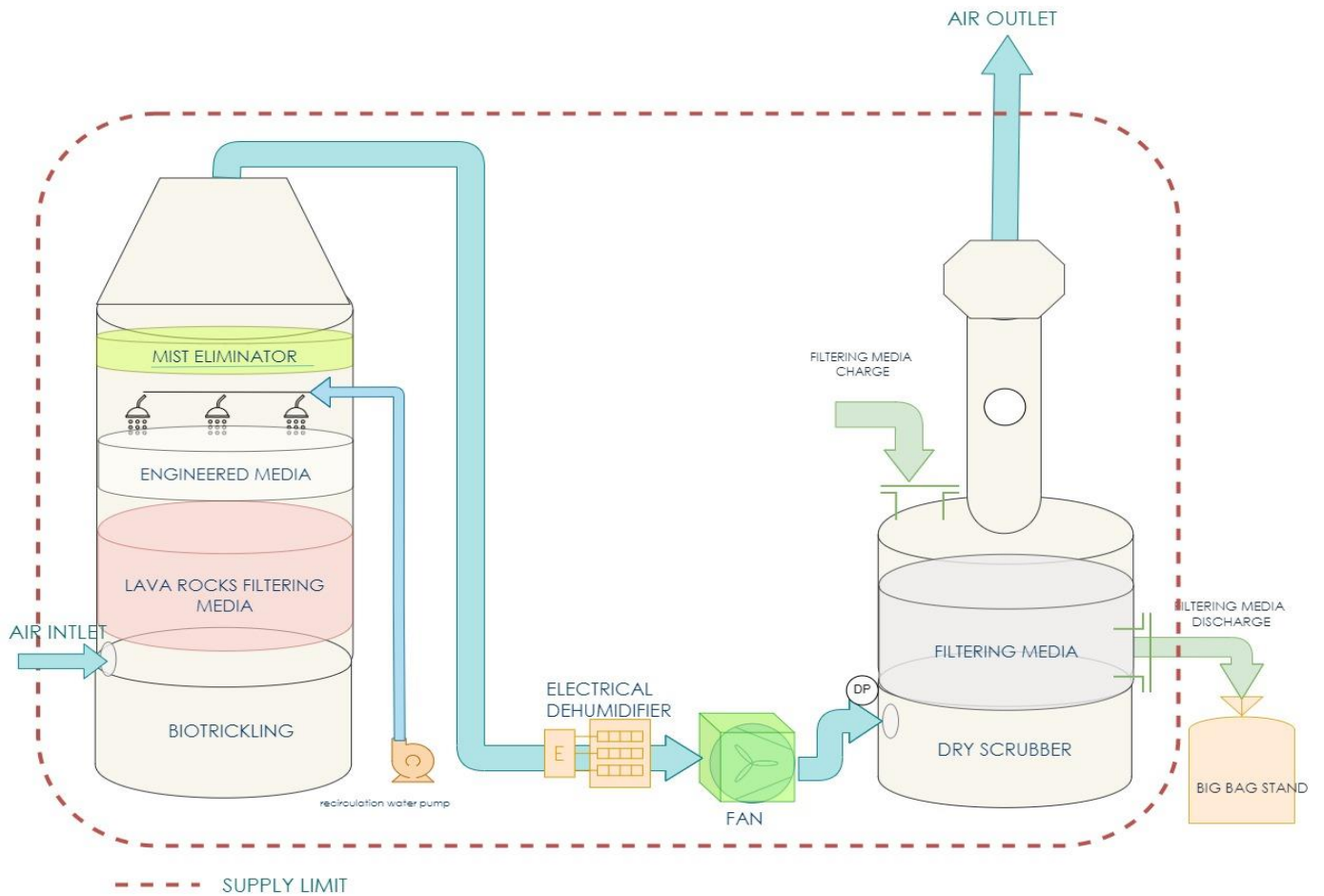
TECHNICAL DOCUMENTATION:

FEED delivered within 4 weeks of receipt of the order:	<p>General layout drawings, P&I Process design. Distributed loads for civil engineering calculations. Technical data sheets of the main components. Electrical loads list lists</p>
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SYNTHETIC TECHNICAL SPECIFICATIONS

System	BIOTRICKLING FILTER
Design Flowrate	1.200m ³ /h@40°C
Construction material	HDPE isolated with rock wool and aluminum sheet finishing. Diameter 2.200mm x H 6.500mm
Structure adds-on	3x Inspection hatches Anti-corrosion media bed support Sprinkler system above the filtering beds
Mineral bed + inert bed	Lava rock step: height 2.000mm Engineered filling step: height: 1.800mm
Droplet separator (mist eliminator or demister)	HDPE 99.9% efficiency for drops ≥ 20 µm
2x Centrifugal pumps	SS AISI 316 5m/h – 1,5kW – 20mm w.c.
System	DRY SCRUBBER
Structure	HDPE Diameter 1.700mm x H2.000mm
3 layers bed of filtering media:	Total height about 1.000mm (1.000Kg) First layer: KOH impregnated for H ₂ S and R-SH elimination. Second layer: H ₃ PO ₄ impregnated for NH ₃ adsorption. Third layer: Oxidation catalyzed carbon pellets
Head losses	180 mm wc @ clean filter
Centrifugal Fan	SS AISI 304 2.000 m ³ /h – 350 mm w.c. – 3Kw
Electrical Heater	SS AISI 304 with Epoxy painted steel case 5Kw
Electrical control cabinet	With VFD and PLC
Chimney	HDPE, with sampling point and conical finishing. Dimensions: Diameter 250mm x H 4.000mm

PRELIMINARY PROCESS FLOW DIAGRAM:



For More Information
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