



Scope of Supply

ECO₂ scope of supply

ECO₂ Technology - System design and one (1) ECO₂ SuperOxygenation Cone capable of dissolving a predetermined amount of pure oxygen per day into a side stream water flow, based upon design operating conditions supplied by Client.

- ECO₂ SuperOxygenation Cone constructed of 304 stainless steel fabricated to ASME standards for 100 psig pressure rated vessels
 - Self-cleaning bottom discharge design
 - Sight glasses
 - Access hatch (Manway)
 - Flanged inlet and discharge ports
- PLC driven automatic oxygen flow control system with sensing features
 - Oxygen feed rate continuously adjusted to actual water flow rate
 - Alarm notification by phone or existing SCADA system
 - Oxygen flow and side stream pump shut off
 - Data logging and performance trending capabilities
- On-site support by ECO₂ staff
 - Installation oversight
 - Initial Start-up, Performance Verification & Operator Training
- Operations manual



Installation Subcontractor Scope of Work

Installation - Construction, installation and set-up at client site by an independent contractor, per installation drawings as determined by client, including unloading and installation of ECO₂ SuperOxygenation Cone and control panel, side stream pump and oxygen source equipment is the responsibility of the client. All equipment used in this project will be installed consistent with permit requirements from the Cities / Fire Departments, and in a manner that does not restrict operation or maintenance of the pump station owned by Client.

a) Installation of ECO₂ SuperOxygenation Cone

(ECO₂ SuperOxygenation Cone is to be supplied by ECO₂, the installation thereof is to be provided by the client's chosen contractor)

- ECO₂ Cone
- Reinforced concrete pad
- Secure ECO₂ Cone to concrete pad
- Appropriately sized tap into existing force main pipe
- Appropriately sized stainless steel pipe and valves from tap to inlet of Side Stream pump
- Appropriately sized stainless steel pipe from discharge of Side Stream pump to top of ECO₂ Cone
- Appropriately sized stainless steel pipe and valves from discharge of ECO₂ Cone to force main pipe
- Appropriately sized tap into existing force main pipe downstream of first tap

b) Installation of ECO₂ Control Panel

(The ECO₂ Control Panel is to be supplied by ECO₂, the installation thereof is to be provided by the client's chosen contractor)

- Bolt Control Panel to wall mount or unistrut system (provided by contractor)
- Electrical wiring and flexible conduit from instrumentation to control panel
- Provide 110 vac to Control Panel

c) Installation of Side Stream Pump

(Side Stream Pump and Pump Control Panel is to be supplied by contractor or other third party, the installation thereof is to be provided by the client's chosen contractor)

- Secure Side Stream Pump to concrete floor
- Electrical wiring and conduit from Owners MCC panel to Pump Control Panel
- Electrical wiring from Pump Control Panel to Pump
- Piping connections to Pump



d) Provision for gaseous pure oxygen

1. Bulk liquid oxygen storage tank and evaporator

(Bulk liquid oxygen storage tank and evaporator and installation thereof is to be supplied by an independently contracted third party industrial gas supplier except as noted below.)

- Suitably sized reinforced concrete pad for liquid oxygen storage tank and evaporator
- Suitably sized reinforced concrete pad for refilling truck
- Install oxygen clean oxygen piping from the oxygen source to the ECO₂ control panel and from the ECO₂ control panel to the ECO₂ Cone (client contractor)

2. Onsite oxygen generation

(The oxygen generator system is to be supplied by contractor or other third party, the installation thereof is to be provided by the client's chosen contractor)

- Secure Oxygen Generator, air compressor and oxygen storage tank(s) to concrete floor
- Install oxygen clean oxygen piping from the oxygen source to the ECO₂ control panel and from the ECO₂ control panel to the ECO₂ Cone
- Electrical wiring and conduit from Oxygen Generator to Control Panel
- Provide 110 vac to Oxygen Generator System

ECO₂ System Operation

The ECO₂ SuperOxygenation Cone will sit on a reinforced concrete pad. An appropriately sized intake pipe will be tapped into the force main at the discharge of the force main pumps. This pipe will be connected to a submersible dry pit pump (Side Stream Pump). An appropriately sized pipe will be connected from the discharge of the Side Stream pump to the top of the ECO₂ SuperOxygenation Cone. An appropriately sized pipe will be connected from the discharge of the ECO₂ SuperOxygenation Cone and tapped back into the force main, at least 6' downstream of the system intake tap.

Oxygen supply piping from the oxygen source will run to the ECO₂ Control Panel and from the ECO₂ Control panel to the top of the ECO₂ SuperOxygenation Cone. The oxygen volume will be measured and controlled by the ECO₂ Control Panel.

General operation will be as follows: the Side stream pump will run continuous. The ECO₂ Control Panel will monitor the flow of the force main and meter oxygen flow into the ECO₂ SuperOxygenation Cone to be dissolved to match the oxygen demand of the force main.