

## PROJECT SHEET

# Gas Recovery Plant

Carnot supported an Australian company with the complete design of a gas recovery system, which collects remnant gas from disused gas bottles and aerosol containers when they are crushed. Recycled bottles contain a variety of gas types and quantities that must be accommodated. The recovered gases are made available for use within the process plant for firing boilers.

### BRIEF PLANT DESCRIPTION

The client treats disused gas bottles and aerosol containers by crushing them and selling the metal to an independent metal recycler. The gas liberated during the squashing action is drawn from the machine under vacuum, then de-watered, compressed and piped to a storage tank.

### RISK ASSESSMENT

Due to the explosive nature of the gases, Carnot staff in conjunction with the client carried out a full safety assessment of the plant, which included a formal HAZOP risk assessment. Safety zones were defined and classified in accordance with AS/NZS 60079. All mechanical and electrical systems had to comply with a wide range of codes and standards.

### DESIGN

Carnot carried out the full design of the gas recovery system starting with a range of concepts followed by detailed analysis and the delivery of a full set of manufacturing drawings. The control of the recovery system had to be integrated with the control of the existing crushing plant. Documents delivered included: PFD, P&ID, control philosophy, equipment selection, BOM and detailed 3D CAD model and workshop drawings.

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