



Portland Gas Storage Project- Project Management Services and FEED **GAS** Portland Gas Limited

Penspen provided Project Management and Construction Supervision services for every stage of the project including:

- Import/export pipeline to a new salt cavern gas storage facility on the Island of Portland.
- Import/export Brine pipeline between an underground aquifer store at West Stafford and the process facilities on the Island of Portland.
- Drilling of 28 wells on the Island of Portland for leaching of the salt caverns and for import/export of gas and brine
- Drilling of 12 wells at West Stafford for the injection/extraction of Brine into the Sherwood aquifer

Gas will be received from the national transmission system at Mappowder, transferred to Portland, compressed and injected into 14 caverns at a depth of 2,500m.

The high chloride content and operating temperature of many of the piping, associated vessels and equipment required the use of corrosion resistant alloys or internally clad materials including incoloy, inconel, duplex stainless steel, etc. Numerous metallurgical studies were undertaken to evaluate the suitability of a number of corrosion resistant alloys and clad pipe and fitting alternatives. Manufacturing methods, availability, costs, field welding and inspection techniques were studied in depth.

Phase 1

- Gas and Brine pipeline feasibility study
- Cost estimate and project schedule
- Preliminary engineering
- Pipeline construction authorisation (PCA) and route plans
- Landowner Referencing

Phase 2

Project Management services for entire project including:

- Process Plant Facilities
- Gas and Brine Pipelines
- Drilling at Portland and West Stafford including wellhead design, leaching sequencing and workover arrangements, logistics support for drilling programme and interface with plant facilities
- Planning and Environmental Co-ordination
- Detailed Soils Investigation
- CAPEX and OPEX Estimates
- Liaison with Financial and Legal Advisors

Profile:

37km 36" gas pipeline including 9km subsea section
 19km 30" brine pipeline
 West Stafford wellsite
 3x25MW gas compressors,
 1x15 MW generator, filtration and metering, dehydration facilities

Phase 3

- FEED for the Gas and Brine Pipelines including PFDs, P&IDs, drawings and cost estimates.
- FEED for the Process Plant

Phase 4

- Continued specialist advice and liaison regarding sign-off of Planning conditions
- Provision of specialist support within the EPC/Enabling and specialist Geotechnical Contractors offices



Portland Project Site

Storage Capacity: 1,200 Million scm
Penspen Manhours: 20,000
Penspen Contract: Rates/Lump Sum
Project Value: US\$700 Million