

6 PROJECT OPERATIONS

6.1 INTRODUCTION

This section provides an overview of the activities involved in the operation of the proposed western coal seam methane (CSM) water supply pipeline (the proposed pipeline), as described within Chapter 1 Introduction, and further within Chapter 2 Project Needs and Alternatives. Further details on matters related to the proposed pipeline's crossing of water courses, including mitigation measures, are provided in Chapter 11 Water Resources.

6.2 CSM WATER SUPPLY PIPELINE OPERATION

6.2.1 CSM WATER SUPPLY PIPELINE ROUTE

As shown in Figure 1-1-V3.3 (refer Chapter 1), (Note that figures/documents with numbering ending in V3.3, for example, refer to figures/documents contained in Volume 3, Book 3 of the EIS) the proposed pipeline will be approximately 91 km long, from a collection pond adjacent to the existing Spring Gully Reverse Osmosis (RO) Plant to the raw water storage dam on the Wandoan Coal Project mine infrastructure area (MIA). The proposed pipeline will be buried, with a single pump station located at the RO plant.

The initial elevation at Spring Gully RO plant is 308 m AHD. The maximum elevation on the proposed pipeline route is of the order of 310 m and occurs near the RO plant. Surface elevations fluctuate moderately with minimum elevations on the order of 240 m AHD in stream beds. The final elevation at the raw water storage dam on the mining lease application (MLA) areas is approximately 250 m AHD.

Since there are no substantial electrical power sources along the proposed pipeline alignments, one pump station at the RO plant will provide sufficient head to drive the water to the raw water storage dam in the MLA areas.

While the use of polyethylene (PE) pipe was considered, operating pressures will exceed the cost effective available classes of PE. With maximum pressure in the pipe limited to 350 m head, metallic pipe such as ductile iron with cement mortar lining (DICL) or mild steel with cement mortar lining (MSCL) would be cost-effective and has been used as the basis for this assessment.

The design parameters for the proposed pipeline are provided in Table 6-1 below.

Table 6-1: CSM water supply pipeline design parameters

Pipe specification	DICL pipe – DN600 PN35 AS/NZS 2280 K9
Pipeline length (km)	91
Pump power requirement (kW)	1,146
Maximum pressure head (m)	217
Static head (m)	-58
Pumping hours (hr/day)	20
Flow rate (L/s)	434
Flow rate (ML/day)	31
Flow rate (ML/annum)	11,400

6.2.2 OPERATION ACTIVITIES

The potential CSM water providers (Santos and Origin Energy) will be responsible for providing raw water to meet the Project's demand requirements. If CSM water is high in total dissolved solids on extraction from the coal seam, it may require treatment at the Spring Gully RO plant, before being discharged into a collection pond/intake facility, located adjacent to the CSM water pump station. As water quality from these CSM fields is likely to be above 4,000 mg/L total dissolved solids (TDS), it will highly likely require treatment within the RO plant. Treatment and water quality is further discussed in Section 6.5.

Subject to final agreement between the CSM water providers, the Wandoan Joint Venture WJV will take responsibility for CSM water from the collection pond. The pump facility is also likely to be the responsibility of the WJV.

The final selection of pipe type will be subject to detailed design. However, the proposed pipeline will be fabricated from DICL or MSCL. The anticipated diameter will be 600 mm. A design flow rate of 434 L/s or 31 ML/day has been adopted, which will allow delivery of 11,400 ML/a (although the Project's initial demand will be around 8,400 ML/a).

The proposed pump station will be a single lift pump, operating as required to meet demand seven days a week. Consideration is being given to using gas fired motors as an alternative to power supplied through the electricity grid to drive the nominal 900 kW electrically powered pumps.

Operation of the proposed pipeline, including pumps and other ancillary infrastructure, will generally be undertaken in accordance with the Project's Operations Environmental Management Plan (EMP). A summary of activities likely to be undertaken is summarised in Table 6-2.

Table 6-2: Summary of operational activities

Activity
Easement maintenance
Weed control
Line-of-sight clearance
Ground inspections
Aerial inspections
Pipeline maintenance
Air valves
Erosion scours or subsidence areas inspections and maintenance
Pipeline "pigging" (inspection and cleaning)
Excavations for pipeline repairs
Above-ground facility maintenance
Pump inspections and maintenance

6.3 MAINTENANCE

6.3.1 CSM WATER SUPPLY PIPELINE

Routine maintenance of the pipeline easement would be managed in accordance with the Operations EMP for the proposed pipeline, with property owners notified by the WJV prior to entry. Maintenance will include access to air release points, occurring at approximately 800 m intervals, and access to scour outlets, occurring approximately one every 1 to 2 km. Water removed during scour outlet maintenance will be removed from site via a water truck equipped with a cam-loc coupling, or similar suitable device. Disposal of wastewater will be into raw water storage dam on the MLA areas, if the water meets water quality specifications for use, or otherwise disposed to the Project's tailings dam.

In the event that major maintenance works are required, such as the excavation of the proposed pipeline in a particular location, direct consultation with the relevant property owner will be undertaken before any works commence, to minimise potential impacts. Any access for maintenance or other works will be undertaken under the terms of the proposed easement agreement between property owners and the WJV (see section 6.4).

6.3.2 PUMP STATION

The pump station will require regular inspections by on-site staff to ensure proper functioning of the equipment in addition to regular maintenance and servicing. Maintenance activities will be undertaken by a licensed contractor on behalf of the WJV and will follow the requirements of the Operations EMP for the proposed pipeline. Any access for maintenance or other works will be undertaken under the terms of the agreement between property owners and the WJV.

6.3.3 MONITORING

The proposed pipeline network will incorporate a system to monitor pipeline conditions such as pressure, temperature, water flow in and out, valve status, storage tank levels, pump station performance and water quality. The system will enable the pipeline controller, most likely located on the MIA, to instantly open or close valves, alter operating pressures and start or stop equipment as required at sites along the pipeline.

6.3.4 HAZARDS, RISKS, HEALTH AND SAFETY

Chapter 23 Hazard and Risk, and Chapter 24 Health and Safety provide information on the hazards, risks, health and safety associated with the operational phase of the proposed pipeline.

6.4 ACCESS

The WJV will require access to the proposed pipeline easement for monitoring and maintenance purposes.

The conditions of access to the proposed pipeline corridor by respective property owners and the WJV will be clearly specified in the land access agreement that will be established prior to the commencement of construction activities.

Given that the proposed pipeline will be buried, property owners will generally be able to resume previous land based activities, provided that they do not undertake excavation

works near or above the clearly marked pipeline trench, or construction of structures over the easement and access points. Restrictions will apply regarding the planting of deep rooted trees or plant species in the easement, to avoid potential damage to the pipeline and pipe coating.

The WJV will require access to the easement for monitoring and maintenance purposes.

6.5 TREATMENT AND WATER QUALITY

The water produced as a by-product of CSM development is often rich in salts and other constituents that render it unsuitable for many direct beneficial uses. Therefore, if necessary, treatment of the CSM water to a standard suitable for use in coal handling and processing will be undertaken, prior to intake into the proposed pipeline. By-product water treatment (such as through an RO plant) will be undertaken by the CSM water supplier, and does not form part of this impact assessment.

The expected quality of the water to be transported by the pipeline will be less than 4,000 mg/L total dissolved solids (TDS) to minimise impacts of corrosion and scaling on the pipeline and coal preparation plant. Most water from these CSM fields is likely to require treatment to achieve this quality.

6.6 DECOMMISSIONING

Decommissioning will include the following options:

- abandonment – where the pipeline is purged, and physically disconnected from the point of supply, and sealed (capped) at both ends
- removal – where pipelines are purged and removed in entirety from the pipeline corridor
- beneficial re-use – where sale or donation of the infrastructure to a third party occurs for other beneficial use.

Leading industry practice recognises that removing pipelines, particularly underground pipelines, is unlikely to be a commercially or environmentally viable option. Therefore, it is unlikely that this decommissioning option will be considered for this pipeline and that either abandonment (after capping) or beneficial re-use options will be undertaken.

Regardless of the decommissioning option for the pipeline, the pump station and any other above ground infrastructure which will be located above ground, will be dismantled and removed.