

## 1 INTRODUCTION

These Principles complement the Sewage Pumping Station Code of Australia, WSA 04-2005 (the Code) and contains additional (supplementary) information to cover:

- Coliban Water's detailed requirements for specific matters which the Code anticipates individual water agencies will address; and
- Variations to the Code where its requirements are not compatible with Coliban Water's current requirements.

These Principles have been developed jointly by Coliban Water and Campaspe Asset Management Services and will remain in effect for a period not exceeding 5 years.

## 2 SAFETY PRINCIPLES

### 2.1 **Base Standard:**

The WSAA Sewage Pumping Station Code of Australia (WSA 04-2005 Version 2.1) is adopted as the base standard of the design and construction of all new sewer pump stations (SPS) in the Coliban network.

### 2.2 **Bollards:**

Bollards will be installed around SPS sites where there is a risk of vehicle traffic and will include the following features:

- Be removable;
- Painted in Heritage green with 50mm reflective tape around the top;
- Be lockable;
- Be no less than 90mm in diameter and 900mm in height (above the ground).
- Be situated no greater than 1,500mm apart
- In residential areas, stakeholders will be consulted prior to installation.

### 2.3 **Outer Pit Lids:**

Wet-well openings shall be as per the "the Code", constructed as "Class A" lids and incorporates the following features:

- Double opening;
- Recessed handles;
- Recessed locking mechanism;

- Be constructed of lightweight marine grade aluminum chequerplate;
- Be attached with stainless steel hinges;
- Open toward the side handrails, 90° to the access gate.
- Heavy duty stainless steel hinges and fixings
- Lids in traffic areas (laneway or roadways) will have same features except they will be constructed of heavier gauge aluminum (class 'B' or 'C' lids) or steel to a maximum weight of 30kg.

## 2.4 **Inner Safety Grates:**

Each wet-well shall have a safety grille to prevent personnel falling into the well, which will incorporate the following features:

- Be constructed of 20mm Aluminum Walkway Ampligrip;
- Double hinged grates opening onto outer lids as per design drawings;
- Rod handles;
- Hinged inspection ports located over floats;
- Include a 100x100 notch positioned on the leading edge of each grate so that the grate may remain closed after maintenance fitters raise pumps for maintenance whilst cables remain connected;

## 2.5 **Lid Restraints:**

Lid restraints shall be installed and incorporate the following features:

- Be constructed of stainless steel cable;
- Be attached by bolt or rivet to the underside of the outer lid, within approximately 100mm from the centre edge<sup>1</sup>;
- A stainless steel swivel clip at the end of the chain.
- An attachment "D" loop will be welded to the nearest corner post between the top and middle rail.

## 2.6 **Hand Rails:** *Where possible, handrails shall be permanent and incorporate the following features:*

- Double opening gates to the pump side and opposite (where possible);

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<sup>1</sup> Chain can be either clipped directly to post loop to hold back outer lid, or threaded through grate and clipped to the post loop to hold back both lid and grate.

- 75mm Kickboard to bottom with 25mm pipe on top;
- Be positioned between 150mm – 300mm from the pit edge;
- Where the electrical cabinet is positioned within 150mm of existing well edge, no rails will be installed and the cabinet will form part of the rail system;
- Be constructed in hot dipped galvanized steel;
- Be painted Heritage green.

Where permanent handrails cannot be installed (lanes & roadways), a temporary handrail system will be installed.

## 2.7 **Fall Arrest Posts:**

A Concrete Detent ground anchor system will be installed at all sites within a 90° range of the centre of each set of access gates, and approximately 2500mm from each set of access gates. The system, installation and maintenance must comply with AS/NZ1891.4.

## 2.8 **Concrete Slab:**

To be constructed as per “the Code” (min 1700mm from the edge of any opening and incorporate wet-well, dry-well, valve pit and flow meter. Should incorporate electrical cabinet and structurally support fall arrest anchorage.

## 2.9 **Valve Spindle Extensions:**

To be installed as per existing specifications to all existing and new SPSs, incorporating the following features:

- Smooth fitted edge to hole in safety grate to prevent lacerations;
- Hole in safety grate positioned directly above valve handles.

## 2.10 **Wet-Well Ladders:**

Internal ladders will not be installed in to wet-wells.

## 2.11 **Valve Pit ladders:**

Ladders or step irons will not be installed to valve pits.

## 2.12 **Electrical Cabinet:**

To be installed on a concrete pad approximately 1200mm long and same width as cabinet at the edge of the concrete slab, approximately 1500mm from an edge of the wet well access pit. Not to be positioned on the same side of access gates if possible. To include side opening cabinet doors (not facing well openings).

## 2.13 **Valve Access:**

Must have clear access from the ground surface. In deep pits, valve wheel remains and spindle extension is attached over.

## 2.14 **Well/Pit access openings:**

As per “the Code” as minimum (1200mm x 1200mm). Larger pump size may determine need for larger access opening.

## 2.15 **Rubber Seals:**

To be installed to assist with odour control as per specifications.

## 2.16 **Warning Plates:**

Signs stating “Warning – Do not stand on grid mesh” to be fitted to all inner safety grates as per existing specifications. Outer lids of wet wells to be fitted with “Danger – Confined Space – Entry by permit only” signs.

## 2.17 **Well Vents:**

To be installed as per “the Code”.

## 2.18 **Location of Pump Chains:**

Pump chains will be installed on the same side (guide rail side) as the access gate.

## 3 REFERENCES AND DOCUMENTATION

*WSAA Sewage Pumping Station Code of Australia (WSA 04-2005 Version 2.1) – Part 1: Planning & Design*

WSSA Sewer Code WSA 02-1999 – Part 4: Construction

## 4 DRAWINGS

- [Overview Drawing](#) (10706-S10, Rev. B)
- [Lids, Gratings & Bollards Drawing](#) (10706-S11, rev. A)
- [Guardrails Drawing](#) (10706-S12, rev. A)
- [Valve Extensions & Signage Drawing](#) (10706-S13, rev. B)
- [Hinges & Seals Drawing](#) (10706-S14, rev. A)