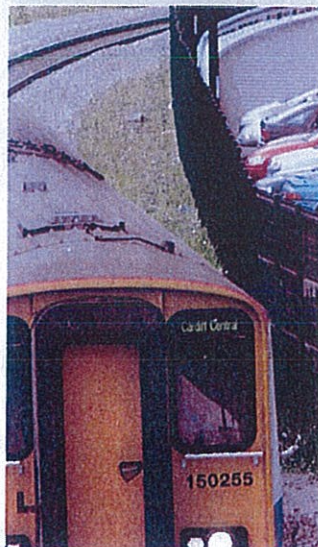
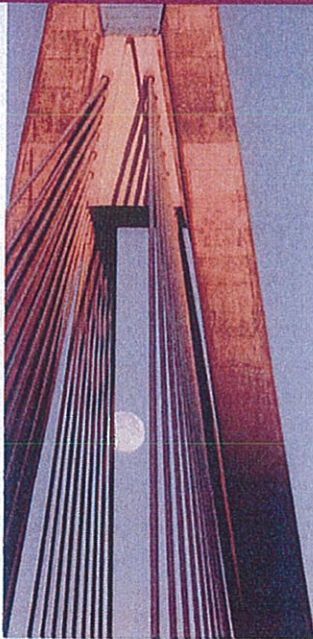


Inspection of Leachate Lagoon Tanks Silent Valley Landfill Site Cwm, Ebbw Vale

March 2011



CAPITA SYMONDS

Project No: CG/5438

Doc Ref: CG/5438/Insp Rep

Rev: 1

Client: Blaenau Gwent County Borough Council

Issue Date: March 2011

Inspection of Leachate Lagoon Tanks

Silent Valley Landfill Site

Cwm, Ebbw Vale



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Issue Record

Rev	Date	Description / Comments	Author / Prepared by:	Approved for Issue by:
0	28.2.11			
1	7.3.11	Change to title	<i>H.D. Watkins</i>	<i>E. W</i>

Contents**Page No.**

1.0	Introduction	1
2.0	Description of Structure	1
3.0	Findings of Inspection	1
4.0	Conclusion	2

Appendices

Appendix A: Inspection Photographs

Note: In the following text, all photograph references are indicated thus: ^(1, 2) etc.

1.0 Introduction

Capita Symonds was commissioned by Blaenau Gwent County Borough Council to undertake a visual structural inspection of the Leachate Lagoon Tanks at the Silent Valley Civic Amenity Site⁽¹⁾.

The inspection was carried on 11 February 2011 by Mr Howard Watkins BSc (Hons), C.Eng, MICE; a Chartered Civil Engineer with over 30 years experience in reinforced concrete structures. For health and safety reasons, an employee of Silent Valley Waste Services Ltd was present during the inspection.

This report presents the findings of the inspection and provides an opinion on the structural adequacy of the tanks. It does not consider any other aspects of the installation or operation.

2.0 Description of Structure

The structure consists of two separate tanks located next to one another and separated by a small horizontal gap that is sealed⁽¹⁾. One tank, with internal dimensions of 7 metres wide x 17.55 metres long, is a settlement tank and the second tank, which is 16.1 metres wide x 17.55 metres long, is a storage tank. Both tanks have an internal height of 2.0 metres.

The settlement tank is at the north end of the structure. The south wall of the settlement tank and the north wall of the storage tank are next to one another. The wall at the north end of the settlement tank is generally below ground level and the walls on the east and west sides are above ground level over a height of approximately 0.75 metres. The southern wall of the storage tank is, by and large, fully above ground level over its full height, whilst the walls on the east and west sides vary in height above ground from about 0.75 metres near their northern ends to 2.0 metres at the south end.

Record drawings indicate that the tanks were constructed in the late 1980s; possibly 1987.

At the time of the inspection, the settlement tank was virtually full of water as intended in its design, with the water level to within about 0.3 metres of the top of the wall. The water level in the storage tank was estimated to be approximately 1.3 metres below the top of the wall.

3.0 Findings of Inspection

The walls of both tanks, where visible, were considered to be sound. Vertical cracks, of the order of 0.2 millimetres in width and sometimes spaced at approximately 1.5 to 2.0 metre centres, were evident in the outer faces of the above ground walls of both tanks^(2 to 5). Vertical cracks were also evident on the internal face of the southern wall of the storage tank⁽⁶⁾. It was judged that this cracking lined-up with the cracking on the outer face. A white to light grey-brown staining was evident along the length of some of the cracks. At the time of the inspection there was no evidence of water leakage on the outside faces of the structure.

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Silent Valley Landfill Site

4.0 Conclusion

Both tanks are considered to be structurally sound.

The fine vertical cracking observed in the structure is not considered to be of any structural significance. It is possible that the cracking is a result of early thermal contraction that took place early on in the life of the structure. Furthermore, the cracks appear to have undergone a process of self healing (autogenous healing) and are now probably sealed after more than 20 years in service.

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Structure:

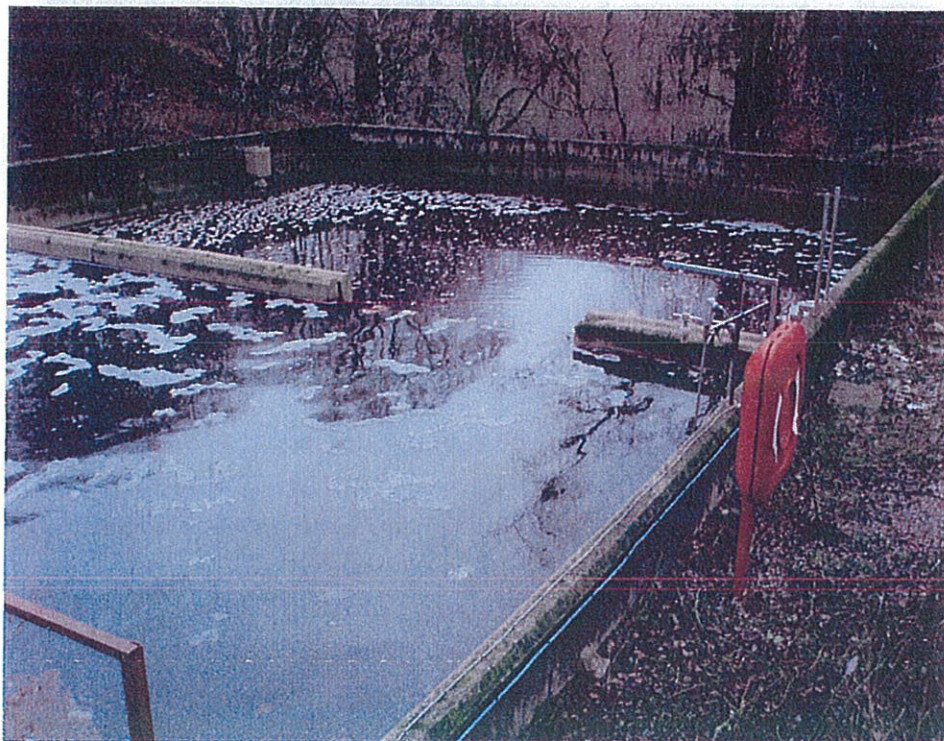
Leachate Lagoon Tanks
Silent Valley Landfill Site

Appendix A
Inspection Photographs

Client: Blaenau Gwent County Borough Council

Structure:

Leachate Lagoon Tanks
Silent Valley Landfill Site



Photograph 1: View on structure looking south – settlement tank in foreground

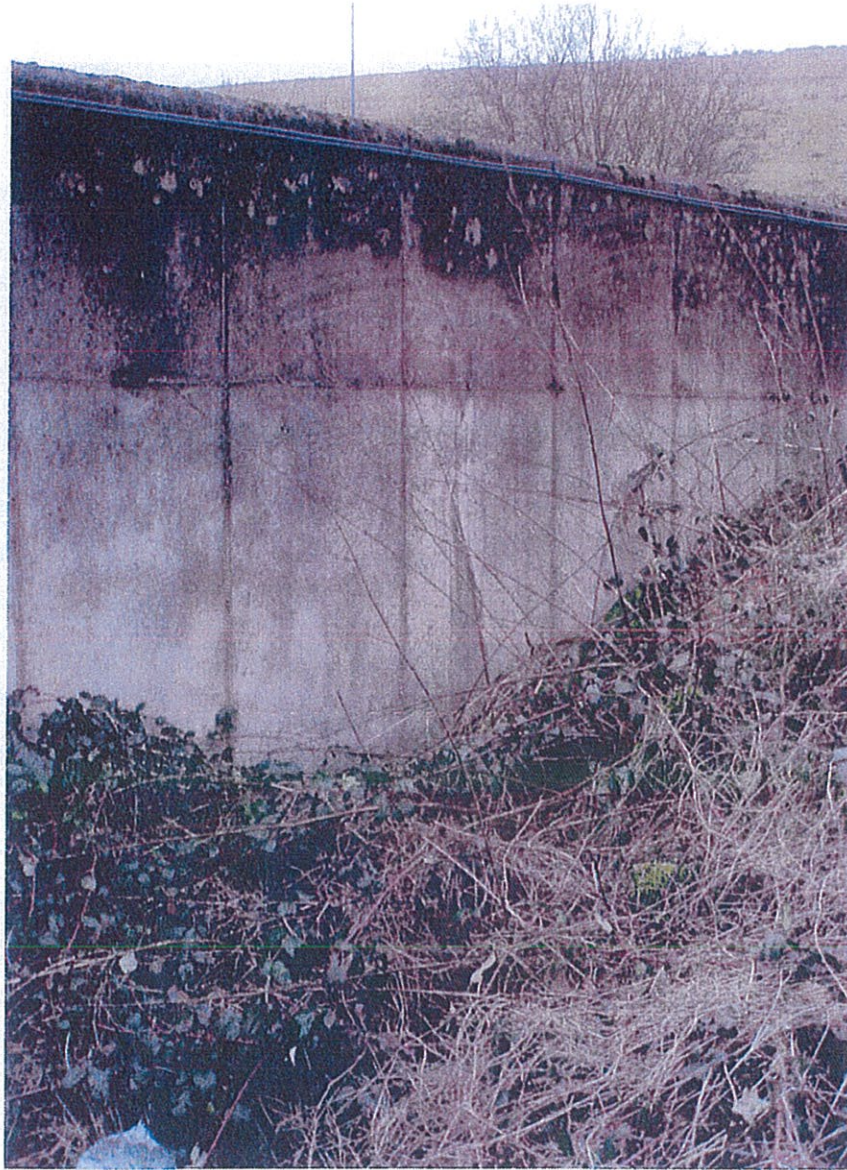


Photograph 2: East wall

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Structure:

Leachate Lagoon Tanks
Silent Valley Landfill Site



Photograph 3: East wall – typical crack

Client: Blaenau Gwent County Borough Council

Structure:

Leachate Lagoon Tanks
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Photograph 4: South wall



Photograph 5: South wall – typical cracking

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Structure:

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Photograph 6: South wall – crack on internal face

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