

**NOTES:**

1. Based on Drawing 0404.R1, provided by Celtic Composting Sytems LTD , April 2004
2. Tunnel composters and mixed waste reception and preparation buildings will also contribute to roof water run-off
3. Contaminated process waters to be recycled in the process
4. 'Dirty' surface water to reed bed
5. Roof water to stream/soakaway
6. 'Clean' surface water to oil separator and stream/soakaway
7. To be read in conjunction with Figure 4.9

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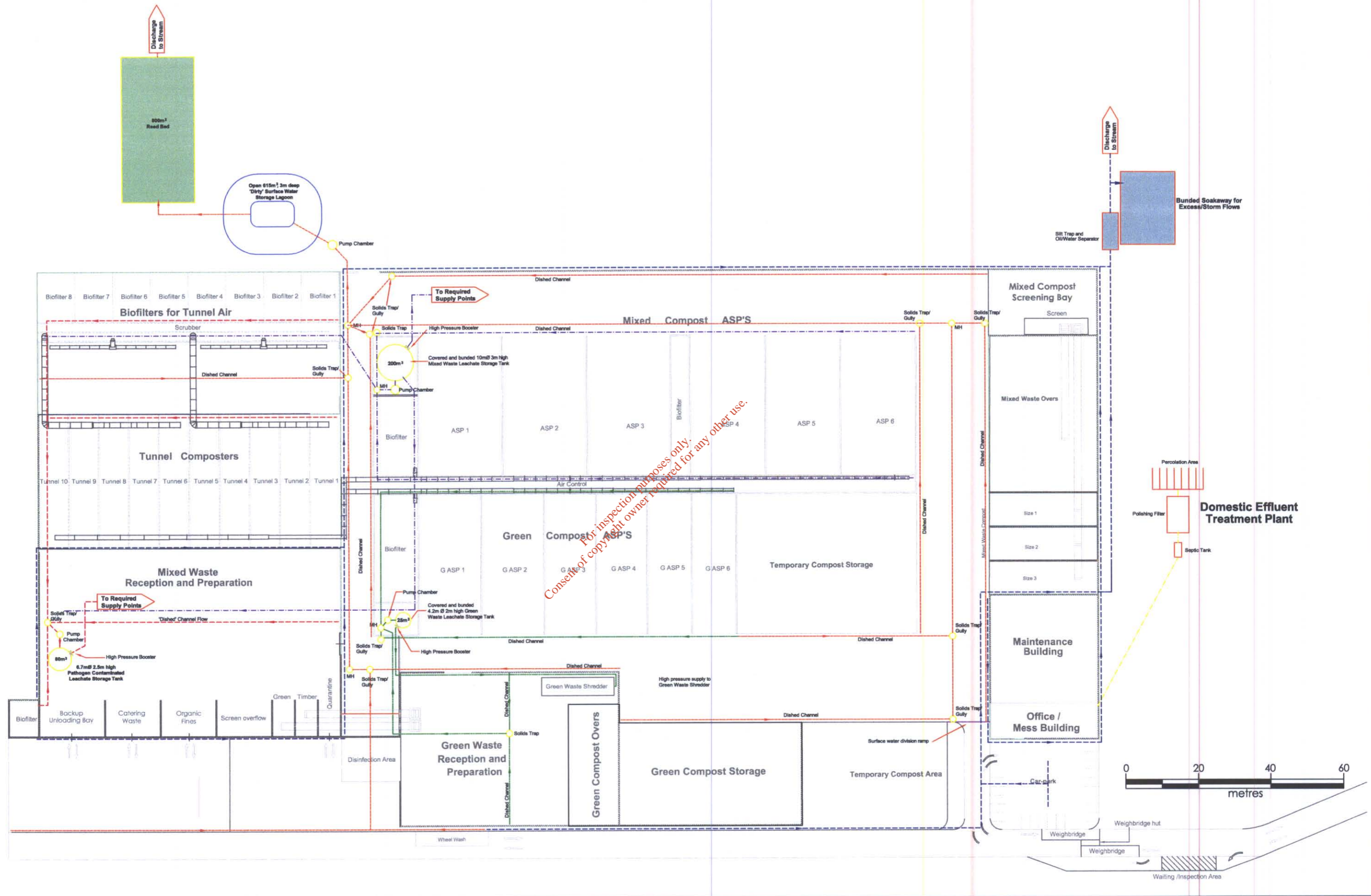


**FIGURE 4.8**  
DRAINAGE ZONES

**KEY:**

- Roofed areas
- Contaminated process water areas
- 'Clean' surface water areas
- 'Dirty' surface water areas



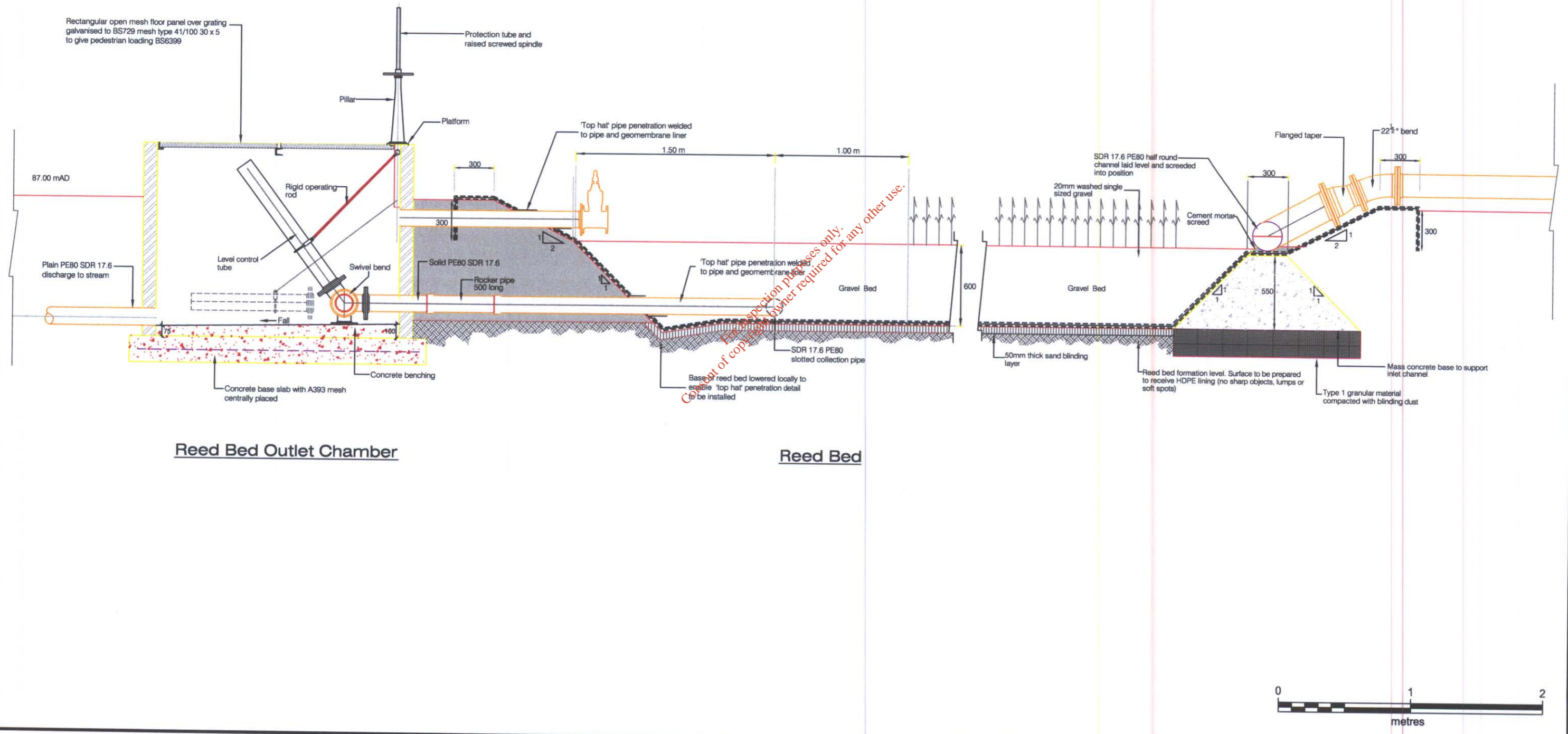


NOTE:  
To be read in conjunction with Fig 4.8

- KEY:
- Pathogen contaminated process water
  - Mixed waste ASP process water
  - 'Dirty' surface water
  - Green waste ASP process water
  - 'Clean' surface/roof water
  - Domestic effluent



**FIGURE 4.9**  
PROCESS AND SURFACE WATER MANAGEMENT



**FIGURE 4.10**  
TYPICAL CROSS SECTION THROUGH REED BED







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**FIGURE 10.2**  
 ADDITIONAL SURFACE WATER MONITORING  
 January 2005

**KEY:**  
 Surface water monitoring locations  
 Flow direction



3. REED BED SIZING CALCULATIONS

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# Calculation Sheet

Client Thorntons Recycling Ltd

Project and Subject Compost Facility at Pass Kenbridge - Reed Bed

Compiled by JSO on (date)

CANTH0710004

Methodology reviewed by on (date) Calculations checked by on (date)

## Reed Bed Sizing

Design Flow =  $170 \text{ m}^3/\text{day}$

Design max  $\text{BOD}_5 = 50 \text{ mg/l}$

Design max  $\text{NH}_4\text{-N} = 10 \text{ mg/l}$

## Population Equivalents (pe)

$$\underline{\underline{\text{BOD}_5}} \Rightarrow 170 \times 50 / 60$$

Where a pe is defined as  
 $60 \text{ g BOD}_5/\text{pe.d}$

$$\Rightarrow 141.67 \text{ pe}$$

$$\underline{\underline{\text{NH}_4\text{-N}}} \Rightarrow 170 \times 10 / 12$$

Where a pe is defined as  
 $12 \text{ g NH}_4\text{-N}/\text{pe.d}$

$$\Rightarrow 141.67 \text{ pe}$$

Note: pe defined as per 'Reed Beds & Constructed Wetlands' Severn Trent Water (June 1996)

# Calculation Sheet

Client \_\_\_\_\_

Project and Subject \_\_\_\_\_

Compiled by \_\_\_\_\_

on \_\_\_\_\_ (date)

CAN \_\_\_\_\_

Methodology reviewed by \_\_\_\_\_

on \_\_\_\_\_ (date)

Calculations checked by \_\_\_\_\_

on \_\_\_\_\_

(date)

## Reed Bed Type

- Sub - Surface Horizontal Flow, with occasional flooding during storms exceeding design storm of 24 & 48 hrs with 10yr return period.
- Gravel bed, planted with Phragmites australis (Common Reed).

Planting : 9cm pot grown  
10 reeds / m<sup>2</sup>

Gravel : nominal 20mm single  
size gravel (Class GR as  
per 'Specifications for Highway  
Works')

# Calculation Sheet

Client \_\_\_\_\_

Project and Subject \_\_\_\_\_

Compiled by \_\_\_\_\_

on \_\_\_\_\_

(date) \_\_\_\_\_

CAN \_\_\_\_\_

Methodology reviewed by \_\_\_\_\_

on \_\_\_\_\_

(date) \_\_\_\_\_

Calculations checked by \_\_\_\_\_

on \_\_\_\_\_

(date) \_\_\_\_\_

Area

Contaminant loading

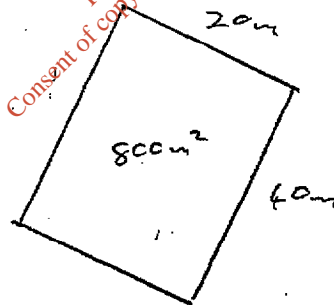
$$\text{Design} = 5 \text{ m}^2 / \text{pe}$$

↳ 'Reed Beds & Constructed Wetlands'  
Seven Trent Water / CIRIA

$$\text{Area} = 5 \times 141.67 = 708.35 \text{ m}^2$$

$$\approx 710 \text{ m}^2$$

use  $800 \text{ m}^2$  for design



0.6m deep



E

#### 4. SURFACE WATER TESTING SCHEDULE AND RESULTS

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Interim  
 Validated

# ALcontrol Laboratories Ireland

## Table Of Results

Ref Number: 05-B00215/01

Client: Enviro (Dublin)

Date of Receipt: 19/01/2005  
(of first sample)

Sample Type: WATER

Location:

Client Contact: Enda Hoey

Client Ref: TH071

ALcontrol Reference	Sample Identify	Other ID	Detection Method	5 DAY ATU	CV AA	FLAME PHOTO	FLAME PHOTO	ICP IRIS	ICP IRIS	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN	IR	
			Method Detection Limit	<2mg/l	<0.05ug/l	<0.2mg/l	<0.2mg/l	<0.05mg/l	<0.05mg/l	<0.4ug/l	<1ug/l	<5ug/l	<1ug/l	<5ug/l	<1ug/l	<10ug/l	<5ug/l	<2mg/l
			UKAS Accredited	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓
			BOD	Dissolved Mercury Low Level	Potassium	Sodium	Dissolved Calcium	Dissolved Magnesium	Dissolved Cadmium Low Level	Dissolved Chromium Low Level	Dissolved Copper Low Level	Dissolved Iron Low Level	Dissolved Lead Low Level	Dissolved Manganese Low Level	Dissolved Nickel Low Level	Dissolved Zinc Low Level	Total Organic Carbon	
			mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	
05-B00215-S0001	SW1	UNKNOWN	5	<0.05	2.2	7.4	191.70	7.86	<0.4	<1	<5	76	>5	46	<10	<5	<2	
05-B00215-S0002	SW2	UNKNOWN	2	<0.05	1.8	7.3	174.70	7.20	<0.4	<1	<5	132	>5	54	<10	<5	47	
05-B00215-S0003	SW3	UNKNOWN	2	<0.05	1.0	8.1	142.40	5.41	<0.4	<1	<5	455	>5	79	<10	<5	33	
05-B00215-S0004	SW3A	UNKNOWN	2	<0.05	2.0	7.7	179.40	7.44	<0.4	<1	<5	159	>5	64	<10	<5	18	
05-B00215-S0005	SW4A	UNKNOWN	3	<0.05	2.0	7.8	179.50	7.31	<0.4	<1	<5	148	>5	66	<10	<5	17	
05-B00215-S0006	SW5A	UNKNOWN	7	<0.05	2.0	7.5	176.90	7.31	<0.4	31	6	286	>5	68	17	9	16	
05-B00215-S0007	SW6A	UNKNOWN	<2	<0.05	2.2	7.9	174.60	7.34	<0.4	3	<5	136	>5	105	<10	<5	17	

**Notes :** METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL. **NDP** = NO DETERMINATION POSSIBLE

THE DATA ON THIS PRELIMINARY REPORT IS NOT VALIDATED AND MAY BE SUBJECT TO CHANGE.

Checked By \_\_\_\_\_ Marie Dolan

Printed at 12:45 on 11/02/2005

\* SUBCONTRACTED TO OTHER LABORATORY / \*\* SAMPLES ANALYSED AT THE CHESTER LABORATORY





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