smartalliances
ENGINEERING / RESOURCE MANAGEMENT / ARCHITECTS LTD

SmartAlliances Ltd
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Blenheim, 7240

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E: info@smartalliances.co.nz

17 September 2008

Alan Anderson
Marlborough District Council
PO Box 443
Blenheim 7240

Dear Alan

Re: U080900, BC081531 – M Steve Pellet, Nydia Bay, Pelorus Sound
Our Ref: 1061

Please find attached site investigations for effluent field soil classifications and test locations.

Please do not hesitate to contact the undersigned should you have any questions or require further information.

Yours sincerely

Khalid Suleiman
Smart Alliances Ltd

c.c Steve Pellett 1736 Redwood Pass Road, RD4 Blenheim 7274

Test results
Effluent Field Soil Classification
Steve Pellet – Lot 3 DP374876, Nydia Bay

W1

	Horizon or Layer and boundary	Genesis	Description							Drainage Category
			Colour	Field Texture	% + 2mm Fragments	Compactness	Consistency	Structure	Moisture condition	
0.1	A	Topsoil	Dark brown	Silt Loam	None	Loose	Soft	Strong	Moist	2
0.3	B	Residual	Brown	Silt Loam	5%	Loose	Stiff	Strong	Moist	3
0.6	C	Residual	Orange-brown	Silty Clay	15%	Loose	Stiff	Weak	Dry	4

W2

	Horizon or Layer and boundary	Genesis	Description							Drainage Category
			Colour	Field Texture	% + 2mm Fragments	Compactness	Consistency	Structure	Moisture condition	
0.2	A	Topsoil	Dark brown	Silt Loam	None	Loose	Soft	Strong	Moist	2
0.25	B	Residual	Brown	Silt Loam	None	Loose	Stiff	Strong	Moist	3
0.6	C	Residual	Orange-brown	Silty Clay	20%	Loose	Stiff	Weak	Dry	4

W3

	Horizon or Layer and boundary	Genesis	Description							Drainage Category
			Colour	Field Texture	% + 2mm Fragments	Compactness	Consistency	Structure	Moisture condition	
0.15	A	Topsoil	Dark brown	Silt Loam	None	Loose	Soft	Strong	Moist	2
0.25	B	Residual	Brown	Silt Loam	10%	Loose	Stiff	Strong	Moist	3
0.6	C	Residual	Orange-brown	Silty Clay	15%	Loose	Stiff	Weak	Dry	4

north

W3
W2
W1

DRAINAGE FIELD

BUILDING SITE
301780.591E
742327.173N

STREAM

Lot 3
DP 374876
1.1825ha

0 20
10

REV	DATE	DETAILS

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CLIENT
STEVE PELLET

PROJECT
ACCESS TRACK
NYDIA BAY

DRAWING
TEST LOCATIONS

SCALE (A3)	DATE	DWG NO.	REV
1:500	08 JUL 08	1061-T1	0

CAD FILE REF: P:\1061-Pellet Lot 3 Nydia Bay\Drawings

File Ref: U080900

Case Officer: Alan Anderson

09 Sep 2008

ISO 9001:2000
Form Ref CI855

S92 request

Stephen Pellett
1736 Redwood Pass Road
RD 4
Blenheim 7274

Dear Sir,

Request for Further Information -

U080900 - Pellett, Stephen Michael - Nydia Bay Inner Pelorus

Under section 92 of the Resource Management Act 1991, the Marlborough District Council requests further information for your application to define the water channel of an unnamed stream, to create a 2.0 metre wide track exceeding a gradient of 1:6 which also crosses the foreshore reserve, and to discharge treated domestic wastewater to land on Lot 3 DP 374876.

Requested Information

The further information required is detailed below. It will help the Council to better understand your proposed activity, its effect on the environment and the ways any adverse effects on the environment might be mitigated.

1. With regard to the wastewater management system please provide a site and soil assessment undertaken by a Council accredited site and soil evaluator. Show on the plans where the bore logs for the soil assessment have been undertaken. Please clarify whether or not water reduction fixtures will be installed in the house and supply details of these fixtures.

2. I note in your application that you applied for a resource consent for the retaining walls. I understand that these works will require a building consent however can you confirm which rule in the plan the works do not comply with requiring an application for resource consent.

3. Details of the access track across the foreshore reserve, how much vegetation will be removed, the slope angle on which the works will occur and how much soil will be excavated.

4. Provide further details of the extent of works proposed for the watercourse. How much of the waterway will be affected.

5. Provide affected party approval from the Department of Conservation (green form enclosed) for all works within the Foreshore Reserve and river surface bed activity works. You should provide an initialled copy of the application and signed plans.

Responding to this request

Within 15 working days from the receipt of this letter you must either:

- provide the requested information; or

- provide written confirmation that you can not provide the requested information within the timeframe, but do intend to provide it; or
- provide written confirmation that you do not agree to provide the requested information.

The processing of your application has been put on hold from 09/09/08.

If you can not provide the requested information within this timeframe, but do intend to provide it, then please provide:

- written confirmation that you can provide it
- the likely date that you will be able to provide it by, and
- any constraints that you may have on not being able to provide it within the set timeframe.

The Council will then set a revised timeframe for the information to be provided.

If you do not agree to provide the requested information, then please provide written confirmation of this to the Council. You may also choose to object to providing the information under s357 of the Resource Management Act 1991.

Restarting the processing of your application

The processing of your application will restart:

- when all of the above requested information is received (if received within 15 working days from the date of this letter), or
- from the revised date for the requested information to be provided, if you have provided written confirmation that you are able to provide the requested information, or
- from the date that you have provided written confirmation that you do not agree to providing the requested information, or
- 15 working days from the date of this letter (if you have not provided the requested information or written confirmation).

Once the processing of the application restarts

If you have not provided the requested information, then your application will continue to be processed and determined on the basis of the information that you have provided with the application. The Council may decline the application on the basis of insufficient information.

If you have provided all the requested information, then Council will consider its adequacy and make a decision on whether your application requires notification or limited notification, or, whether any parties are considered adversely affected from who you will need to obtain written approval in order for the proposal to be considered on a non-notified basis.

If the application is to be notified or limited notified, you will be further advised.

If notification is not required, Council will let you know the decision on the application within the required statutory timeframe. This assumes that your response to the above requests is adequate.

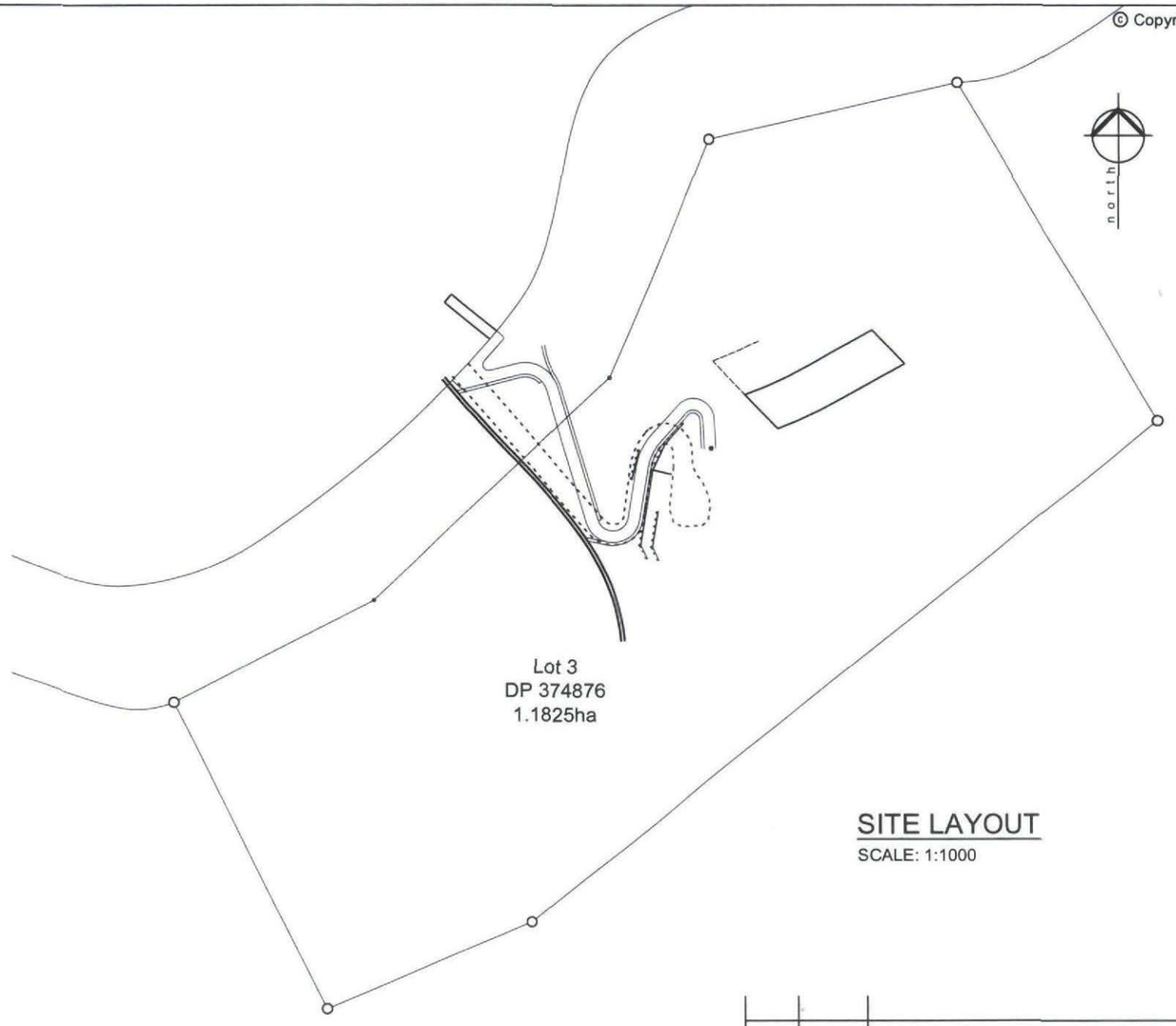
If you have any questions regarding this request, please do not hesitate to contact me.

Yours sincerely

Alan Anderson
RESOURCE MANAGEMENT OFFICER

\\a....O:\TemplatesForms\RegQualitySystems\1ResourceMgmtControlChapter\s92RequestLetterSQL.doc Saved 19/12/2007 16:20:00

SITE LOCATION
SCALE: 1:10000



SITE LAYOUT
SCALE: 1:1000

REV	DATE	DETAILS

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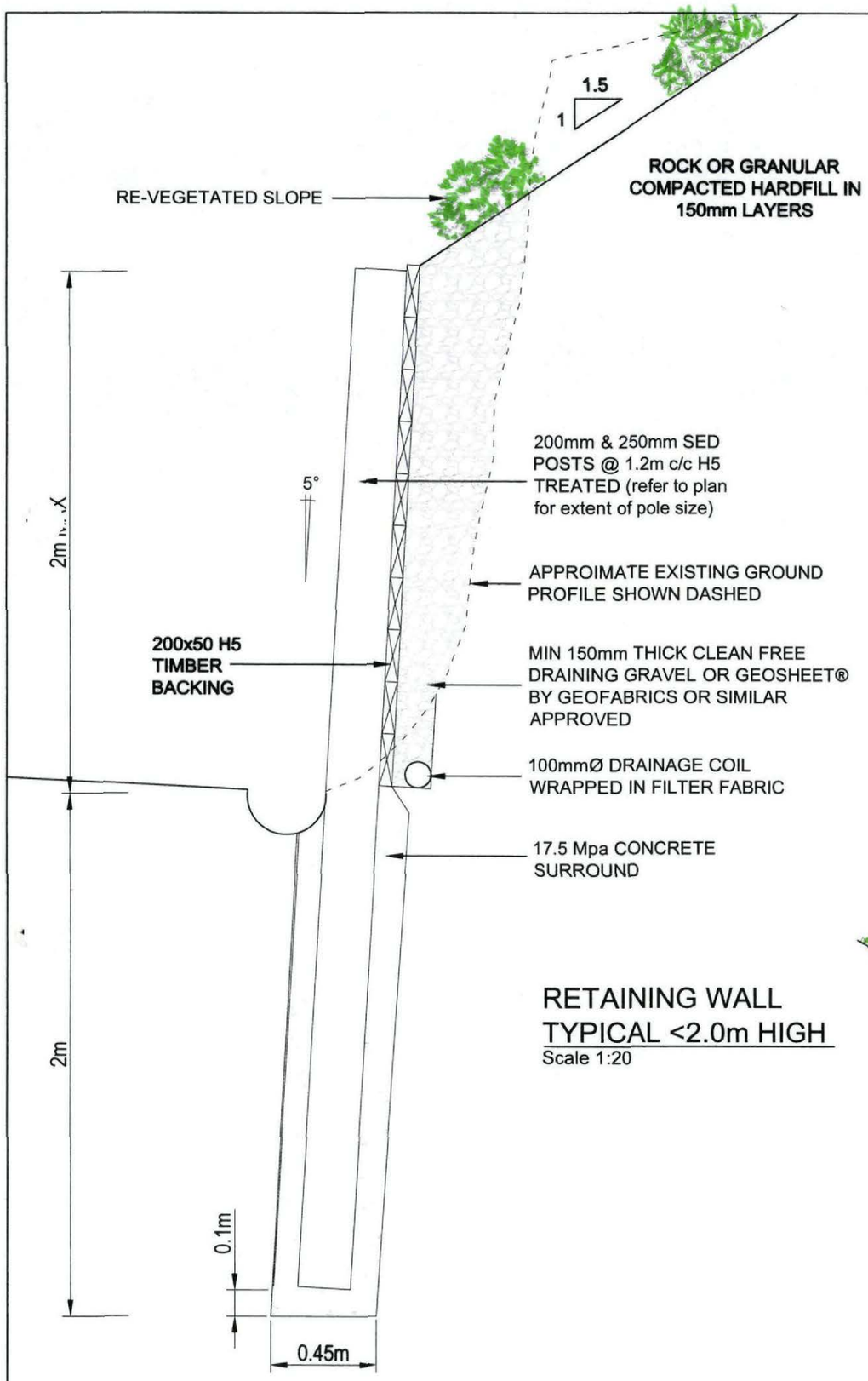
STEVE PELLETT

PROJECT
ACCESS TRACK
NYDIA BAY

DRAWING
SITE LAYOUT

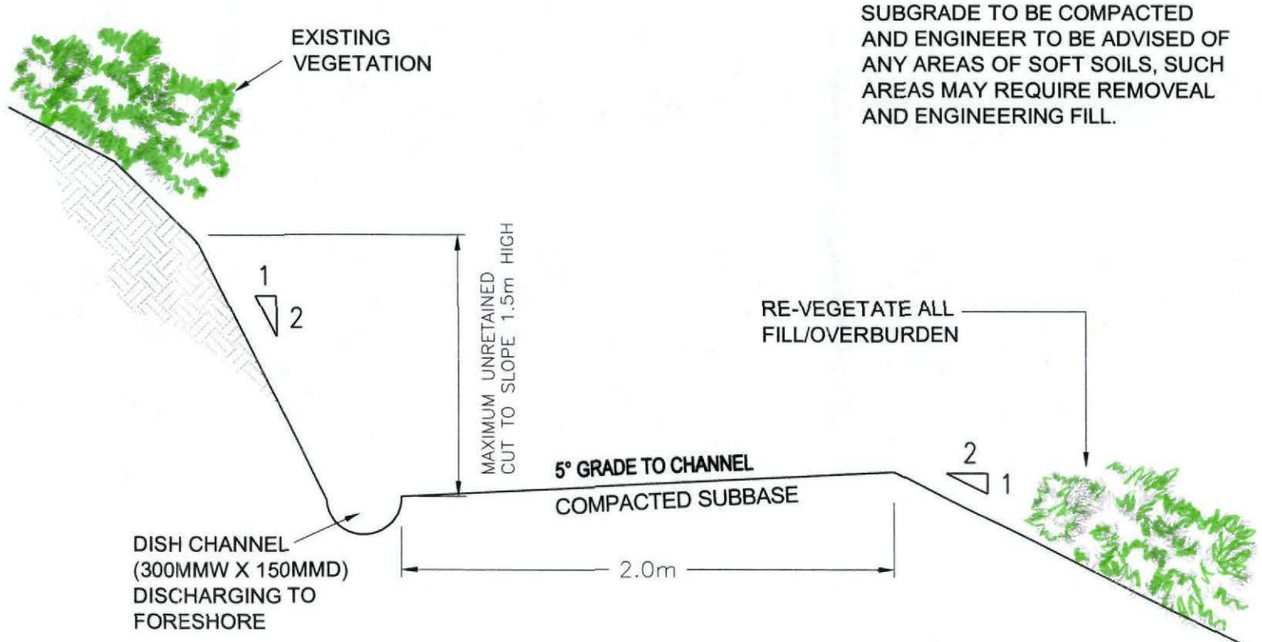
SCALE (A3)	DATE	DWG NO.	REV
as shown	08 JUL 08	1061-001	0

CAD FILE REF: P:\1061-Pellet Lot 3 Nydia Bay\Drawings\0802-Site Layout



RETAINING WALL TYPICAL <2.0m HIGH

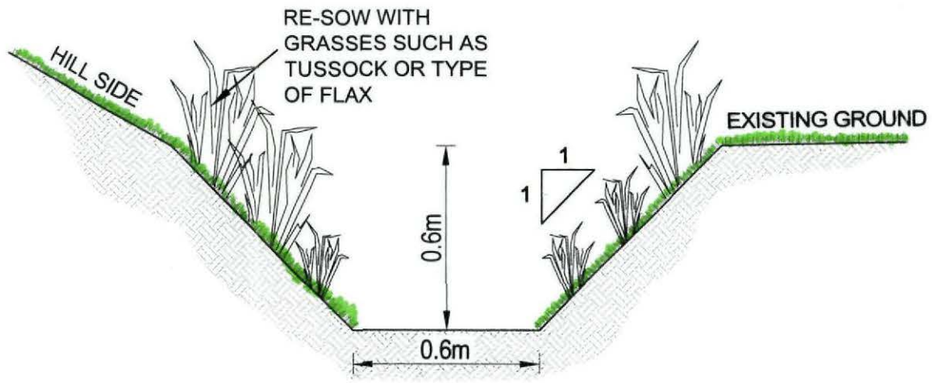
Scale 1:20



TYPICAL ACCESS CROSS SECTION

SCALE: 1:25

NOTE:
SUBGRADE TO BE COMPACTED AND ENGINEER TO BE ADVISED OF ANY AREAS OF SOFT SOILS, SUCH AREAS MAY REQUIRE REMOVEAL AND ENGINEERING FILL.



WATER CHANNEL DEFINING

SCALE: 1:20

REV	DATE	DETAILS

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STEVE PELLET

PROJECT
ACCESS TRACK
NYDIA BAY

DRAWING
DETAILS
SHEET 1

SCALE (A3)	DATE	DWG NO.	REV
1:500	08 JUL 08	1061-003	0

CAD FILE REF: P:\1061-Pellet Lot 3 Nydia Bay\Drawings\0802-Site Layout

REV	DATE	DETAILS

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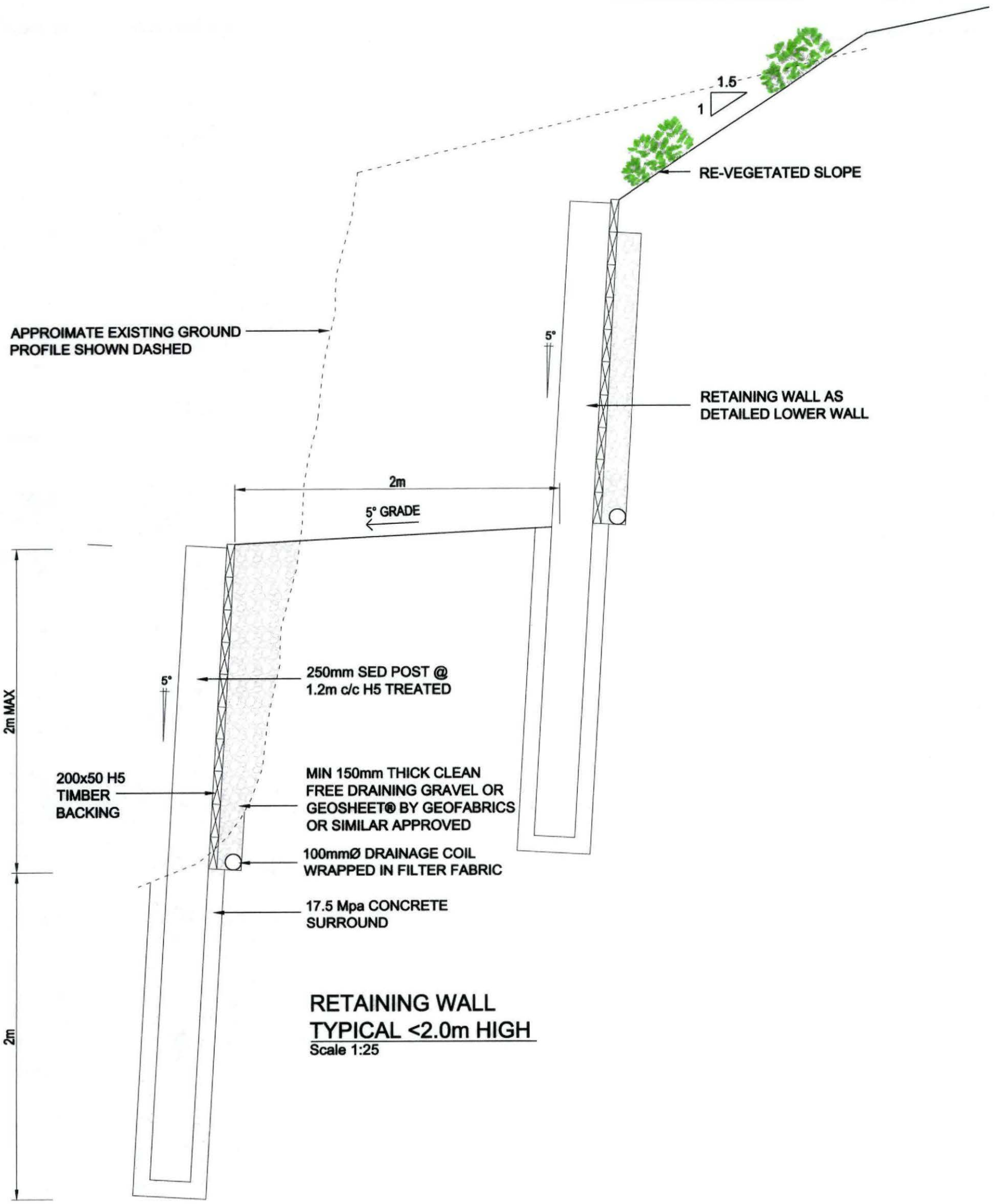
ACCESS TRACK
NYDIA BAY

DRAWING
DETAILS
SHEET 2

SCALE (A3)	DATE	DWG NO.	REV
1:25	08 JUL 08	1061-004	0

CAD FILE REF: P:\1061-Pellet Lot 3 Nydia Bay\Drawings\0802-Site Layout



RETAINING WALL
TYPICAL <2.0m HIGH

Scale 1:25

PRODUCER STATEMENT - PS1 – DESIGN

ISSUED BY: **Smart Alliances Ltd**

TO: **Steve Pellett**

TO BE SUPPLIED TO: **Marlborough District Council**

IN RESPECT OF: **Timber Retaining Walls Design**

AT: **Lot 3, DP 374876, Nydia Bay, Pelorus Sounds**

Smart Alliances Ltd have been engaged by **Owner**

to provide **Design, specification and Observation** services in respect of the requirements of

Clause(s) **B1 - Structure , B2 - Durability** of the Building Code for ☐ All ☒ Part only as specified, of the building work,

The design carried out by us has been prepared in accordance with

☒ Compliance Documents issued by Department of Building and Housing **VM1**

☐ Alternative Solution as per attached schedule:

The proposed Building Work covered by this producer statement is described on the drawings titled

Access Track, Nydia Bay and numbered **1061-001 to 1061-004**

Together with the specification and other documents set out in the schedule attached to this statement.

On behalf of Smart Alliances, and subject to:

(i) The site verification of the following design assumptions: **all other construction to NZBC**
Engineers inspection as per schedule

(ii) All proprietary products meeting the performance specification requirements

I believe on **REASONABLE GROUNDS** that the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

I, **John Smart** am ☒ CPEng **67715** ☐ Reg Arch

I am a member of: ☒ IPENZ ☒ NZIA and hold the following qualifications : **CP Eng, BEng**

The Design firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000.00
The Design Firm is a member of ACENZ ☒ Yes ☐ No

Signed By : **John Smart** On behalf of **SMART ALLIANCES LTD**

Date 21/08/08

RECEIVED
04 SEP 2008
MARLBOROUGH DISTRICT COUNCIL

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20 August 2008

Building Control Officer
Marlborough District Council
PO Box 443
Blenheim

Dear Sir/Madam

Timber Retaining Walls
For Steve Pellet
Our Ref: 1061

Proposed Monitoring Schedule

Item	Description	No. of Inspections
1.	Footings (pre pole & concrete placement)	1
2.	Final Inspection	1
	Total	2

Please do not hesitate to contact the undersigned should you have any questions.

Please ensure 48hrs notice prior to any required inspection.

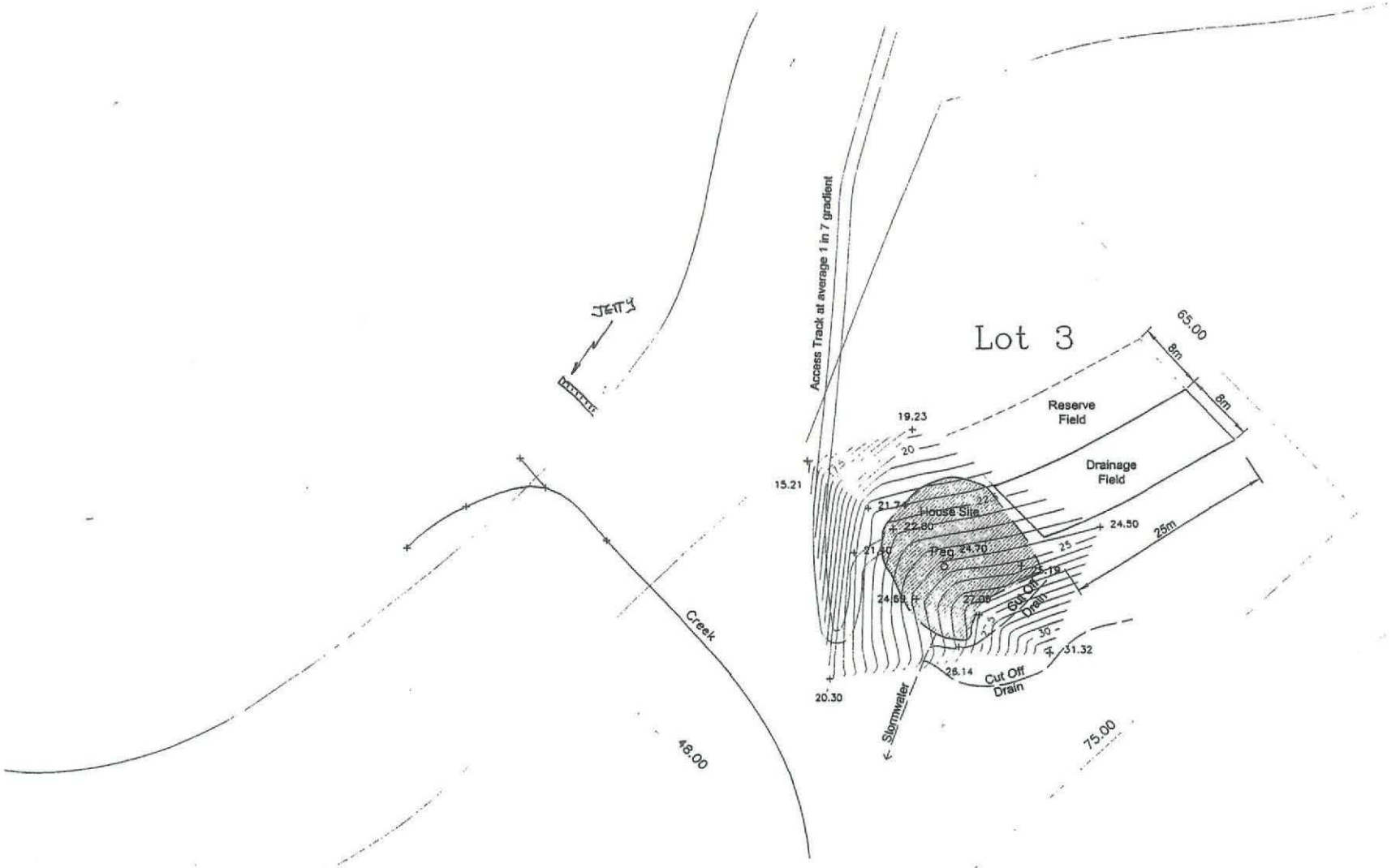
Yours faithfully

Khalid Suleiman
Smart Alliances Ltd

RECEIVED
04 SEP 2008
MARLBOROUGH DISTRICT COUNCIL

U080

AMENDMENTS



JETTY CONSENT FOR S. PELLET - U080160.

NOTE: DRAWINGS ADAPTED FROM SITE SURVEYS AND DRAWINGS PRODUCED BY GILBERT HAYMES ASSOCIATES LTD. Subdn of Secs 2 & 3 Blk IV Orieri SD

SMART ASSOCIATES Ltd.
ENGINEERS & ARCHITECTS
31 George Street
P.O.Box 57
Blenheim, N.Z.
Tel: +64 3 577 7487
Fax: +64 3 577 7485
design@smartassociates.co.nz
AGENZ

JOB TITLE:	DRAWING TITLE:	DATE:	DRAWI
PROPOSED HOUSE SITE DEVELOPMENT NYDIA BAY, PELORUS SOUND For The Best Promotion Co. Ltd.	ENGINEERING REPORT	14/05/04 SCALE: As Shown	Ap
PROJECT No. **W2003-702**	DESIGNED: JIS / DRAWN: RRP / CHECKED:	REVISION: /	

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WASTEWATER SYSTEM DESIGN SHEET
To AS/NZS 1547:2000

Client: Steve Pellet - Nydia Bay **File No: 1061**

Proposed 3 Bedroom Dwelling

Intended water Supply:

~~Public Supply~~ ~~Bore/Well/Dam~~ *Rain water (roof collection)*

Local experience with existing on-site systems:

Septic Tank or similar (Primary treatment):

~~OK when installed properly with a correctly sized level drainage area and maintained.~~

Secondary treatment:

Produce high quality effluent suitable for irrigation.

Recommendation for this site: *Secondary treatment system utilising irigation system effluent disposal (Biolytix or Oasis TEXASS System)*

DRAINAGE CONTROLS:

Need for surface water collector / cut-off drains?

AVAILABILITY OR RESERVE / SETBACK AREAS

Reserve area available for extensions, % of design area: *100%*

Setback distance? (between development and disposal system): *Min. as required by Resource Management Act*

Ksat, (m/day): ESTIMATED SOIL CATEGORY: *Category 4 - Moderately well drained loam*

Design

RECOMMENDED D.I.R. *25.0* mm/week

(NOTE: Where DIR is 10mm/week or less, ETA/ETS trenches to Fig 4.5A7 NZS1547:2000 should be specified to enable the utilisation of such soils)

Occupancy: 6 L/person/day: (140) = **840** L/day from Appendix 4.2D AS/NZS 1547:2000

DESIGN WEEKLY FLOW: **5880** L/week

SEPTIC TANK SIZE (MIN):

AREA REQUIRED: **235.2** m²

LENGTH REQUIRED: **251** m . **(Refer Irrigation System Calculation below)**

RESERVE AREA REQUIRED: *100%* of specified drainage area

RECOMMENDATION :

Secondary treatment system with dripper line irrigation (Biolytix or Oasis TEXASS System).
Irrigation lines to be a minimum total length of 146 using 1.6 l/hr emitters Lines to be laid at 1.0m spacing to follow contours (when possible), at 150mm below ground level or with 150mm mulch/inert layer. Installation of the irrigation system to be in accordance with the product Installer Guide. Detailed design of the irrigation system is to be responsibility of the installer.

Irrigation System Calculation - Detailed design is the responsibility of the installer.

Acceptable daily loading rate (mm/day)	3.6
Daily influent (l/day)	840
Emitter type	Raam 17
Emitter flow rate (l/h)	1.6
Emitter Spacing (m)	1
Dripline Spacing (m)	1
Distance from Treatment system to Irrigation Field (m)	5
Field Size (m^2)	235
Field length assuming square area	15
Number of lines	16
Total Dripline Length (m)	251

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04 September 2008

Marlborough District Council
PO Box 443
Blenheim 7240

Dear Sir / Madam

Re: Effluent Field, Lot 3, DP 374876 - Nydia Bay
Our Ref: 1061

The applicant Steve Pellett wishes to apply for a Resource Consent to install an onsite effluent treatment plant and associated discharge application area.

The report by Smart Associates dated May 2004 indicates a category 4 soil class and a recommendation for a secondary treatment system to be used.

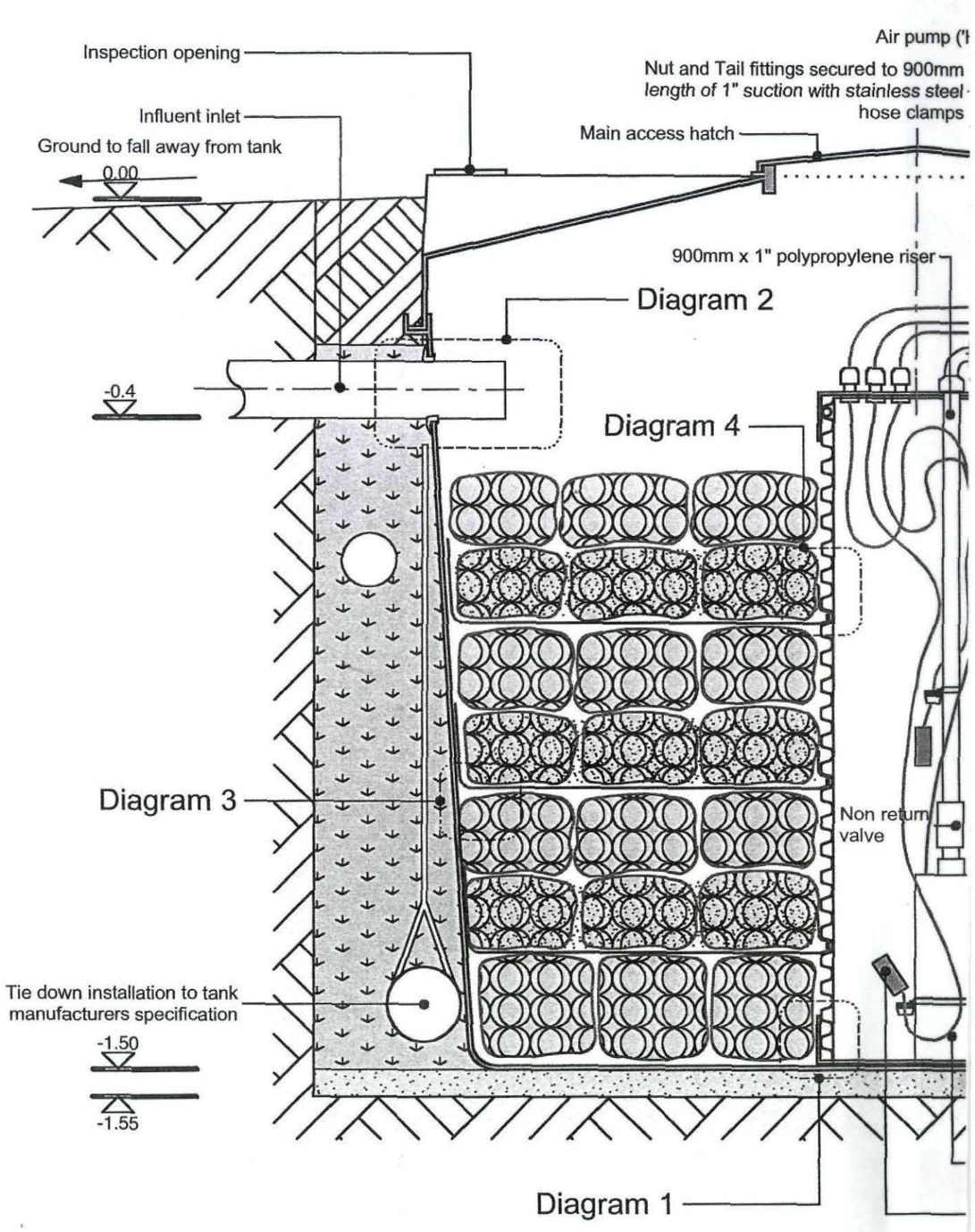
The report calculates the application area for a 3 bedroom 5 person dwelling. New guidelines now recommend occupancy to be 2 people per room and therefore we have revised our calculations (attached) to suit this new loading and this has increased the length of irrigation line to be increased to 251m.

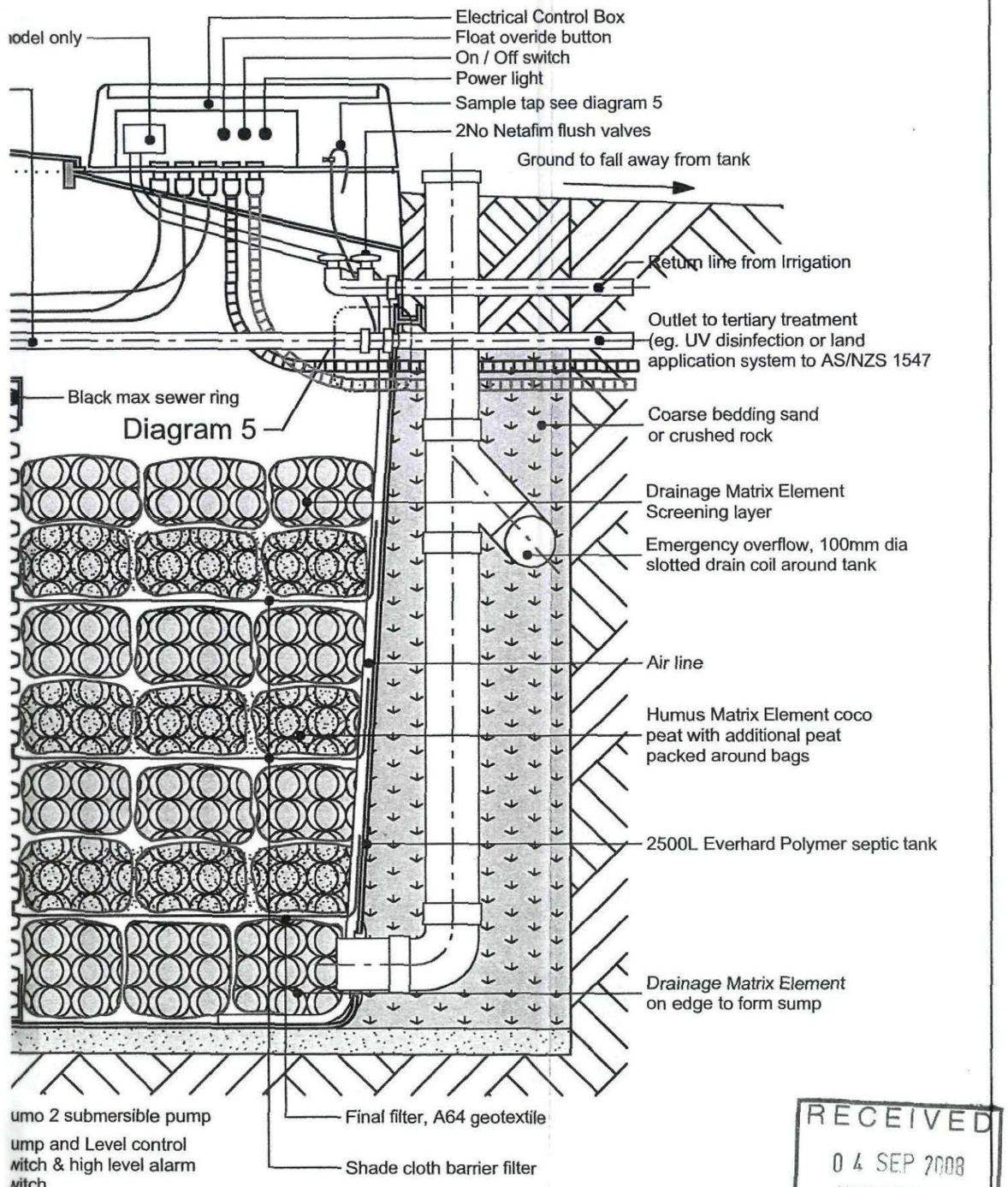
Testing for the determination of the soil category was undertaken in 2003, however we have visually inspected the site on several occasions following investigation and determine the site to be in the same state as in 2003. Therefore the soil category 4 is still relevant to this site.

Please do not hesitate to contact the undersigned should you wish to discuss this item further.

Yours sincerely

Khalid Suleiman
Smart Alliances Ltd





Section A:A Through Biolytix Filter BF6

General Notes:
This drawing and the concepts detailed are the property of Biolytix Technolgies Pty Ltd

Revisions	Revisions

Drawn	Checked	Date	Scale
ML		15/10/04	

Title	Number	Revision
Biolytix Filter BF6-2500P	BF-602	

BIOLYTIX TECHNOLGIES

Category	Details
Model:	**Biolytix® Filter Model BF6** (or "Deluxe Model") On-site wastewater treatment system. Treats domestic wastewater to a high secondary standard.
Manufacturer:	Biolytix® Technologies Pty Ltd A Biolytix® Information pack may be downloaded from: http://www.biolytix.com/docs/biolytixinfokit.pdf
Versions	The Filter may be configured to suit project specific requirements. Variables include: pump or gravity discharge, tank size (to suit inlet sewer invert), pump type, tank type (factory supplied or retrofit).
Bed Configuration:	Central pump well with sealed lid (pumped version only). Base level sump of bagged open plastic structural support material to a minimum depth of 225 mm. (usually 250mm). Filter bed of three layers each consisting of a geotextile support cloth under bagged structurally supported humus/peat layer 250 mm deep below a 200 mm layer of bagged open plastic support material. Refer Figure 1 for typical cross-section of Filter (pumped discharge version). A drawing of a Biolytix® model BF6-2500PAT Filter may be downloaded at: http://www.biolytix.com/docs/bf6drawing.pdf

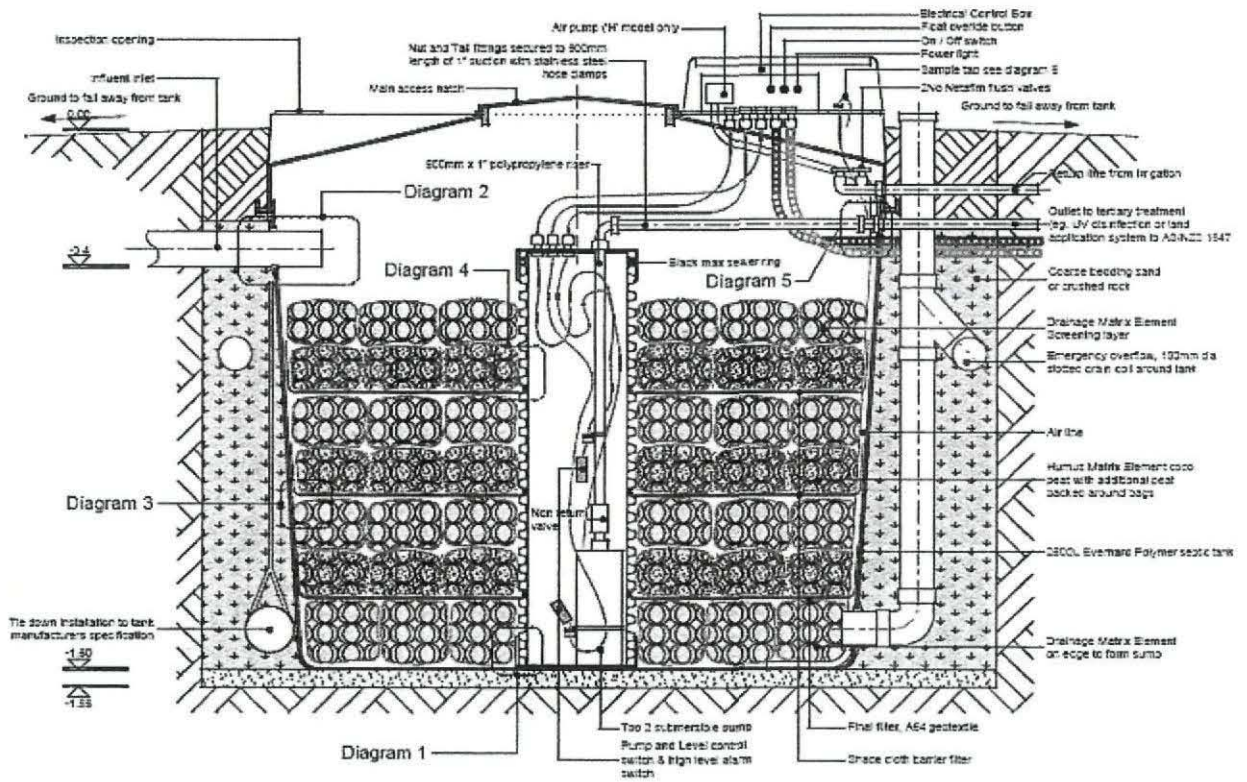


Figure 1: Cross Section of Biolytix® Filter BF6 – Pumped Version

Category	Details
Certification:	Regulatory approval requirements for installation of a Biolytix® BF6 vary throughout Australia and New Zealand. This section summarises general accreditation approvals for each state or region. Pumped version passed independent testing (SAI Global) to AS/NZS 1546.3 for alternative aerated treatment systems, including operational options: 1. UV disinfection at a dose rate of 88 mWs/cm^2 2. Influent loaded with 2.4 kg/day of putrescible food waste passed through an in-sink food waste disposal unit. Gravity Filter has same bed configuration as pumped systems. Copies of SAI Global reports (include effluent quality data) for two separate testing trials and StandardsMark Certificate may be obtained from: http://docs.biolytix.com/products/record/PR_BF6ApprovalWithUV.doc http://docs.biolytix.com/products/record/PR_BF6JASANZReport.pdf http://docs.biolytix.com/products/record/BF6_JASANZ_ReportUV.pdf
	Filter Operation Approvals – BF6 Filter with no disinfection Approval Authority & Reference/ webpage link to document copy
Australia	
NT	Dept of Health: Ref DF2005/862 http://biolytix.com/biol2/docs/NT_BF6_Approval
NSW	Dept. of Health: WCT 023, 3/9/2003 http://biolytix.com/biol2/docs/NSW_BF6_Approval
QLD	Dept. of Natural Resources & Mines: Model Approval No. 107, 29/8/03. http://biolytix.com/biol2/docs/Qld_BF6_Approval
SA	Dept. of Human Services: WCS 01586, 16/12/2003 http://biolytix.com/biol2/docs/SA_BF6_Approval
Tas	Dept. of Justice: Accreditation BSR 0438/2006, 7/12/2006 http://biolytix.com/biol2/docs/TAS_BF6_Approval
Vic	EPA Victoria:CA90/04, 6 July 2004 http://www.biolytix.com/docs/vic_epa_approval.pdf
WA	WA Health: Approval No 169, 27/4/2004 http://biolytix.com/biol2/docs/WA_BF6_Approval
New Zealand	
ARC	ARC letter 13 April 2006. http://docs.biolytix.com/products/record/PR_BF6ApprovalARC.pdf
	Filter Operation Approvals – BF6 Filter with UV Disinfection
Australia	
NT	Project specific approval by NT Dept. of Health required.
NSW	Dept. of Health: BF-002, 3/12/2004 http://biolytix.com/biol2/docs/NSW_BF6_Approval
QLD	Dept. Local Gov. Planning, Sport & Recreation: Model Approval No. 114, 21/12/05 http://biolytix.com/biol2/docs/Qld_BF6_Approval
SA	Application pending
Tas	Application pending
Vic	Project specific approval by Council required. Supplementary fittings or attachments (e.g. UV disinfection) to certified systems do not require EPA approval.
WA	Application pending
New Zealand	
	No formal approvals in place. Contact regulatory authority for requirements.

<table>
<tr><th>Category</th><th>Details</th></tr>
<tr><td>Effluent quality:</td><td>Secondary standard effluent quality as defined by AS/NZS1547 – "Effluent quality following secondary treatment is expected to be equal or better than 20 g/m^3 5-day biochemical oxygen demand and 30 g/m^3 suspended solids".

Effluent quality produced by the BF6 Filter is to a higher standard than the secondary standard effluent quality limits. SAI Global completed independent performance tests to AS/NZS1546.3 On-site Domestic Wastewater Treatment Units Part 3: Aerated Wastewater Treatment Systems September 2003. The Table below summarises the results from the independent testing on the BF6 Filter. Essentially the independent testing showed that the Biolytix® Filter (BF6) produces a high quality secondary effluent (at average flow rates the Filter consistently produces a 5/5 BOD_5/ TSS effluent).

No detailed mass balance has been carried out on the nutrient removal efficiency of the Biolytix® BF6 Filter. Based on test results on the BF6 Filter module the average nutrient levels in the final effluent is typically TN: 28-38mg/L (NH_3 approx 30%, NO_x approx 70%) and TP 8mg/L. Nutrient levels may however vary significantly subject to hydraulic load and the nutrient level in the influent wastewater (e.g. strength of influent and whether insinkerator is installed). Greater N removal is normally achieved at higher hydraulic loading rates.

BF6 Filter Effluent Quality
90 percentile data from AS1546.3 independent tests
<table>
<tr><th></th><th>Standard</th><th>Putrescible food waste</th></tr>
<tr><td>Biochemical Oxygen Demand -BOD_5</td><td>≤ 12 mg/L</td><td>≤ 15 mg/L</td></tr>
<tr><td>Total suspended solids</td><td>≤ 9 mg/L</td><td>≤ 10 mg/L</td></tr>
<tr><td>Thermotolerant Coliforms</td><td><10 cfu/100mL*</td><td>< 10 cfu/100mL*</td></tr>
</table>
*Thermotolerant Coliforms only applicable with UV disinfection. The Biolytix® Filter normally achieves 3-4 log reduction in Thermotolerant Coliforms without separate disinfection equipment.</td></tr>
<tr><td>On-site dispersal:</td><td>Subsurface drip irrigation or trenches/beds/mounds installed to AS/NZS 1547 if effluent is not disinfected with UV. Biolytix® supplies IWT Netafim Safety Flow dripline and irrigation equipment (refer www.kisss.net.au)
Subsurface drip irrigation guidelines document may be downloaded from:
http://docs.biolytix.com/products/procedure/PP_BiolytixDripIrrigationGuidelines.pdf
Surface or subsurface irrigation installed to AS/NZS 1547 with UV disinfection at a dose rate not less than 88 mWs/cm^2.</td></tr>
<tr><td>Loading:</td><td>Hydraulic:
Standard Filter bed – Filter bed volume 1.6m^3
Long Term Acceptance Rate (LTAR) 1600 L/day.
4-day peak capacity 2150 L/day
Concrete or Non-standard tank – Requires 1 m^3 of bed volume per kilolitre of influent per day or 660 mm/day internal surface, whichever is the lesser. Peak loading rate is 880 mm internal surface area/day.
Biological:
Filter has been comprehensively tested to treat domestic wastewater including putrescible food wastes (through Insinkerator) at the maximum hydraulic loading rates specified above. Contact Biolytix® if the Filter is required to treat non-standard wastewater (e.g. blackwater only) as the hydraulic loading maximum may need to be reduced to suit higher strength wastewater.</td></tr>
</table>

Tank Details:

Standard Tanks & Existing Tank Retrofit Kits

Standard:
The standard Biolytix® Filter is installed in an Everhard polymer septic tank (refer www.everhard.com.au). The Filter may also be supplied in other tanks (e.g. concrete) certified to AS/NZS 1546.1 .

Everhard Tank (size)	**3000**	**4000**[1]
Height (m):	1.901	2.362
Diameter (m):	1.88	1.88
Inlet Sewer Invert Depth (m)	0.65	1.1
Mass: Dry (kg)	396	440
Wet[2] (kg)	970	1014

1. The 4000 size Filters have the same bed configuration as the 3000 Filter except that the tank is deeper and therefore the bed is located deeper in the ground.
2. Wet weight is with moist filter media, but with no standing water in Filter sump. Filters would normally be delivered with dry weight.

Retrofit: The Biolytix® Filter bed may be retrofitted into an existing Australian Standard compliant septic. Typically the tank should be vertical cylindrical with a central access hatch although it may be possible to retrofit into other tank shapes. Biolytix® provides retrofit kits for various circular tank diameters. A minimum 1.6 m diameter tank is required, and a minimum of 1.1m tank depth is required below inlet sewer to provide sufficient depth for installation of Filter bed.

Level Control:

Treated effluent either discharges under gravity or is pumped. In pumped option, effluent is stored in the base layer of each Filter module until float controls are initiated.
Standard float switch with swivel mount
Open circuit typical setting: 60mm represents 120 l left in storage
Closed circuit typical setting: 170mm 340 l in storage

Alarm:

Various options are available including:

Standard Telemetry: Event Monita (or equivalent) phone line telemetry alarm direct to service provider. Operates on any analogue telephone system and is certified for operation with the ACA on the Australian Telephone Network.

Audio/ Visual: Standard AS 1546.3 compliant audible and visual alarm. Different options are available, including siren or panel mount systems.

Electrical control box:

IP56 polycarbonate weatherproof control box and isolation switch.
All components to AS3000:2000.

Control box is normally mounted on BF6 Filter module as standard. Wall/ post mount control box option is also available (e.g. for areas that may be prone to flooding).

Typical pump cycle:

Adjustable range 160-220 litres.

Pump specifications:

(Pump discharge Filter only)

Biolytix® normally supplies Pedrollo Pumps in the Sumo and Top ranges. Full specification details of Pedrollo pumps may be obtained from: www.pedrollo.com. The standard pump supplied is a Pedrollo Sumo 2/5, however a Pedrollo Sumo 2/7 or other suitable borehole type pump may be installed to suit required duty.

General specification details of the standard pumps supplied, is summarised in table below.

Manufacturer:	Pedrollo Spa			
Model:	Top 2	Top 3	Sumo 2/5 (BF6 default)	Sumo 2/7
Voltage/Phase:	240 volts AC/ Single			
Thermal protection:	Yes			
Seals:	Double oil lubricated mechanical			
Submersion (max)	6m		20m	
Head (max)	9m	10.5m	36m	60m
Duty 1	20l/min@8m	20l/min@10m	10l/min@35m	10l/min@58m
Duty 2	140l/min@4m	200l/min @ 4m	80 l/min @14m	80 l/min @ 18m
Power:	0.37kW	0.50kW	0.45kW	0.75kW
Estimated life:	3,000 hours		10,000 hours	

Air Pump Specifications	**Manufacturer:**	Schego
	Model:	M2K3 (membrane pump)
	Voltage/phase/power:	220-240 V/50Hz/single 5 watt
	Maximum delivery head:	3m
	Flow rate:	350 l/hr
	Estimated life:	Diaphragm = 4 years/ Coil = 20 years
	Refer Schego website for further details: http://www.schego.de/english/home.htm	
UV Disinfection Unit (Optional)	UV disinfection unit needs to be ordered separately to the Biolytix® Filter.	
	Models:	Various, selected to provide a minimum dose rate of 88mWs/cm^2 at the design flow rate for the land application system.
	Chamber Material:	316SS
	Peak Flow (BF6 effluent):	Selected to suit UV dose.
	UV Lamp Wattage:	75 Watt minimum at 12L/min.
	UV Rated Lamp Life	Selected at 9000 hrs minimum (1 year)
	Voltage:	220/240 VAC, 50Hz
	Protection Class:	IP21
	Installation	Mounted in accordance with manufacturer's installation instructions, either on top of Biolytix® Filter or remote from Filter, subject to site requirements.
Energy Usage	*Treatment Process*: Air Pump. Air pump operates continuously (5 watts). A gravity discharge Filter operating at a full capacity (1600 L/day) would have an energy usage of 0.075 kWhrs/kL treated *Final Effluent Discharge*: BF6 Transfer Pump (pump units only). Pump operation varies with influent flow rate.	
Maximum Noise	Complies with AS 1546.1 < 40 dB(A) @1m fast response	
Operating conditions:	Operates under normal temperature and humidity conditions experienced in Australia and New Zealand (if winter temperatures regularly drop below – 8°C then site ground temperature, soil conditions and hydrology assessment is required to determine if thermal ground insulation is warranted). A cold climate add-on kit is currently under development to enhance performance of treatment system in cold climate regions (e.g. in Tasmania defined as above 900m AHD)	
Emergency storage capacity:	1,340 litres above high level float cut-in level. This is the storage volume within the tank. The Biolytix® Filter may be installed with a subsoil emergency overflow drain that can provide for significantly higher emergency capacity than this because of soil infiltration. The emergency storage typically allows a response time of more than 2 days at design hydraulic loading rate and more than 7 days at typical loading rate of 600 l/day.	
Installation	The Biolytix® Filter modules are designed typically for in-ground installation. If the Filter is to be installed above ground, the external walls of the tank are to be UV protected. A detailed copy of the Biolytix® Filter installation manuals may be downloaded from: http://docs.biolytix.com/installation/procedure/IP_BiolytixFilterInstallationManual.pdf Electrical Installation manual: TBA Retrofit kits are to be installed by a trained Biolytix® Installer.	

<table>
<tr><td>Servicing Requirements:</td><td>Servicing procedures are detailed in the Biolytix® Instruction & Service Manual. A copy of the manual may be downloaded from:
http://docs.biolytix.com/service/procedure/VP_BiolytixServiceManual.pdf
The Biolytix® Filters require an annual service and system check that includes:
Monitoring and maintenance of humus levels;
Testing effluent quality compliance;
Integrity check for pump, switches, alarm;
Checking biology of the Filter bed;
Flushing irrigation lines and irrigation filter;
Reporting on system performance.
UV Lamp (if installed)
Quartz sleeve cleaned 6-monthly.
UV lamp replaced every 12 months.</td></tr>
<tr><td>Operators Manual</td><td>A copy of the operator's manual may be downloaded from:
http://docs.biolytix.com/service/record/VR_Operators%20Manual%28web%29.pdf/download</td></tr>
<tr><td>Warranty:</td><td>A 12-month warranty is provided free of charge with the purchase of a Biolytix® Filter, guaranteeing the performance, and all components for that period. The Biolytix® Performance Warranty for the Biolytix® Filter is also available after that period for up to 20 years consecutively. Annual fees apply depending on the Filter model, and this includes the above-mentioned annual service. The serviceable life of the treatment system is equal to the tank life – typically 20+ years.
A copy of Biolytix® Performance Warranty may be downloaded from:
http://docs.biolytix.com/service/form/VF_CompServiceContract.pdf</td></tr>
<tr><td>Product Specification / Naming Convention Details</td><td>The table below provides a simplified outline of the Filter naming convention that covers the most popular Filter range. Biolytix® Filter Naming Convention Document (PP-FilterNamingConvention) should be referenced to specify special filter configurations (e.g. with a pump different to a Sumo 2/5 or to be supplied as a retrofit kit).
<table>
<tr><th>Model</th><th>Tank Size</th><th>Pump/ Gravity Discharge</th><th>Air Pump</th><th>Telemetry or Audio Visual Alarm</th></tr>
<tr><td>BF6</td><td>3000</td><td>P</td><td>A</td><td>T</td></tr>
<tr><td></td><td>4000</td><td>G</td><td></td><td>V</td></tr>
</table>
Examples:
BF6-3000-PAT: BF6 Filter with 3000 litre Everhard tank, Sumo 2/5 pump discharge, Schego air pump and phone line telemetry alarm.
BF6-4000-GAV: BF6 Filter with 4000 litre Everhard tank, gravity discharge, Schego air pump and audio visual alarm system.</td></tr>
</table>

Document Status

Rev	Status	Author	Reviewer		Approved for Issue		
			Name	Signature	Name	Signature	Date
R-1	On-site disposal method edited	DOC	Dean Cameron				4/9/03
R-2	Alarm option for conventional audio/ visual included.	DOC	Dean Cameron				19/9/03
R-3	UV disinfection option included	GRI	Dean Cameron		Jill Jordan		30/8/04
R-4	Major update	GRI	Dean Cameron		Jill Jordan	*	13/12/06

* Biolytix® QA review and approval document embedded in file copy