Bund Inspection Report 2013

G. Bruss GmbH Dichtungstechnik

Finisklin Road, Sligo

IPPC Licence Duple of P0465-01

Environmental Efficiency Document Number 1461-04 v1.02

Email: energy@iol.ie www.enviro-consult.com
Registered Office: Parnell House, 19 Quinsboro Road, Bray, Co. Wicklow. Registered Number 243 412 Directors: Noel J. McGrath Robert B. Sutcliffe

Environmental Services for Industry Including -

- Air, Noise & Water Monitoring
- ▶ Bund Testing
- ► Environmental Management Systems to ISO 14001
- ► Air & Noise Modelling

Affiliations & Accreditations

- ► ISO14001:2004 Registration No. 2012/1427

- MCERTS Certified personnel for stack testing
 Member of Source Testing Association
 Member of Royal Society for Prevention of Accidents
- ► Member Water Monitoring Association
- Member Environmental Services Association
- ► EMPI Membership

- ▶ Energy & Water use reduction
- ▶ IPPC/Waste Licence Compliance
- ► EIS & Planning
- ► Occupational Dust & Noise







OF 1. v2 Document Lead Sheet

Document Title	Bund Integrity Assessment 2013
Project No.	1461
Document No.	1461-04
Client	G. Bruss GmbH Dichtungstechnik
Address	Finisklin Road, Sligo

				Signed for and on behalf of	
Issue	Status	Date	Author	Environmental Efficiency	Client
1.02	Approved	01/08/2013	GB	Resuldoffe.	

SR02 v1.8

Where it is a requirement that this report be issued to a regulatory or other authority, then the client should sign the appropriate place in the above table and, unless specifically agreed in writing to the contrary, forward copies to the appropriate authority (e.g. EPA).

Bob Sutcliffe, CEng, MIEI **EEC Project Manager:**

George Byrne Biosystems Engineering **EEC Document Author:**

Conditions relating to the issue of this report:

1. No alteration to this report by third parties is permitted

2. Where this report is reproduced, it shall only be reproduced in full.

3. Reports remain the property of Environmental & Efficiency Consultants (Ireland) Limited until paid for in full.

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 2 of 38

Summary of results

Office of Environmental Enforcement PO Box 3000 Johnstown Castle Estate Co Wexford

IPC Licence Number: P0465-01

Company Name:

G. Bruss GmbH Dichtungstechnik

Reporting Period:

3 years

Report Name:

Bund Integrity Assessment

Were all results compliant with the terms of the IPPC licence?

Yes

No

J

Were any complaints received during this reporting period?

Consent of copyright owner required for any of the

Environmental Efficiency

1.	IN	NTRODUCTION		5
2.	S	UMMARY		6
3.	SI	ELECTION OF TEST M	1ETHOD	7
4.	В	UND TEST RECORD SI	HEETS: OIL STORE MB3 TO MB12	8
	4.1	BUND: MB3		8
	4.2			
	4.3			
	4.4			
	4.5			
	4.6			
	4.7	BUND: MB9		14
	4.8			
	4.9			
	4.10			
5.	В	UND TEST RECORD SI	HEETS: RECYCLING AREA MB13 TO MB20	18
	5.1	BUND: MB13		18
	5.2	BUND: MB14	.e.	19
	5.3	BUND: MB15		20
	5.4	BUND: MB16	diffe	21
	5.5	BUND: MB17	47. Sty	22
	5.6	BUND: MB18	82 0 CO.	23
	5.7	BUND: MB19	20° itell	24
	5.8	BUND: MB20	2 little lit	25
6.	R	UND TEST RECORD SI	HEETS: CHEMS TO RE MB21 TO MB27	26
٠.		CIAD TEST RECORDS	Contain Contai	20
	6.1	BUND: MB21		26
	6.2	BUND: MB22		27
	6.3	BUND: MB23		28
	6.4	BUND: MB24		29
	6.5	BUND: MB25	Cox	30
	6.6	BUND: MB26		31
	6.7	BUND: MB27		32
7.	C	ONCLUSIONS		33
			MINATION OF CLASS OF CONTAINMENT AND TEST METHOD	
			1ETHODS	
A	PPEND	IX 1 IDENTIFICATION PHOT	OGRAPHS	37

1. Introduction

G. Bruss GmbH Dichtungstechnik has an IPPC Licence (P0465-01) and is required to demonstrate that bunds on site are of adequate size and construction to perform their intended purpose and are assessed as being water tight.

Determination of whether a bund is of adequate size and construction is by reference to the EPA Guidance Note on Storage and Transfer of Materials for Scheduled Activities. To prove water tightness the EPA guidance document allows two types of assessment, a Water Retention Test or, where a Water Retention Test is not practical, a visual inspection by a Chartered Engineer. Where Water Retention Test is practical, the test protocol depends on the a type of bund (See Section 3). There are three areas in which the bunds are located:

- Oil store Bund reference MB3 to MB12
- Recycling area Bund reference MB13 to MB20
- Chem-store Bund reference MB21 to MB27

Consent of copyright owner required for any other use.

2. Summary

Table 2-1 Summary bund assessment

Bund Ref	Description	Date of Assessment	Adequate size	Suitable construction	Assessment Result
MB3	Steel	16/07/2013	Pass	Pass	Pass
MB4	Steel	16/07/2013	Pass	Pass	Pass
MB5	Steel	16/07/2013	Pass	Pass	Pass
MB6	Steel	16/07/2013	Pass	Pass	Pass
MB7	Steel	16/07/2013	Pass	Pass	Pass
MB8	Steel	16/07/2013	Pass	Pass	Pass
MB9	Steel	16/07/2013	Pass	Pass	Pass
MB10	Steel	16/07/2013	Pass	Pass	Pass
MB11	Steel	16/07/2013	Pass	Pass	Pass
MB12	Steel	16/07/2013	Pass	Pass	Pass
MB13	Steel	16/07/2013	Pass	Pass	Pass
MB14	Steel	16/07/2013	Pass 100 Pass 100 Pass 100 Pass	Pass	Pass
MB15	Steel	16/07/2013	Pass and	Pass	Pass
MB16	Steel	16/07/2013	Passi	Pass	Pass
MB17	Steel	16/07/2013	in ass	Pass	Pass
MB18	Steel	16/07/2013	A Pass	Pass	Pass
MB19	Steel	16/07/2013	Pass Pass Pass Pass	Pass	Pass
MB20	Steel	16/07/2013 16/07/2013 16/07/2013 16/07/2013	Pass	Pass	Pass
MB21	Plastic	16/07/2083	Pass	Pass	Pass
MB22	Steel	16/07/2013	Pass	Pass	Pass
MB23	Steel	16/07/2013	Pass	Pass	Pass
MB24	Steel	16/07/2013	Pass	Pass	Pass
MB25	Steel	16/07/2013	Pass	Pass	Pass
MB26	Steel	16/07/2013	Pass	Pass	Pass
MB27	Plastic	16/07/2013	Pass	Pass	Pass

3. Selection of test method

The EPA document 'Storage and Transfer of Materials for Scheduled Activities' gives guidance on the necessity to test bunds and, if testing is required, the test protocol to be used.

As all bunds were fabricated generally of plastic or steel, a 24 hour water retention test using test method BS 8007 was deemed to be acceptable.

Consent of copyright owner required for any other tree.

4. Bund test record sheets: Oil Store MB3 to MB12

4.1 Bund: MB3

Site:	G. Bruss GmbH Dichtungstechnik	Licence Re	g. No.: P0465-01
Bund Ref. No.:	MB3	Bund	Type: Portable
Bund Dimensions, m:	264x130x33	Primary Vessel(s) – Mate Constr	rials of Steel drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total S Volu	itorage me, m3 1.04
Bund Lining Material:	Steel	Primary Vessel(s) - Volume of Largest Ves	
Bund Retention Volume, m3	1.33	Primary Vessel(s) – 25% o Storage Volu	me, m3 0.200
Dee	med Practicable / S	Safe to Conduct Hydrostatic Test?	Yes/No Yes
Hydrostatic ti	EST DETAILS:	1987 (Yes/No)? Yes Fill Rate n/a y and lilisation Period 2 days	
	BS 8007:	1987 (Yes/No)? Yes	
		Fill Rate n/a 3 m	
		ilisation Period 2 days	
	Dura	tion of the Test 24 hours	
	w	nissible drop in 30 ater level) and	
Water Leve	Change in Refere		
Date a	and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:2	.7 <u>.</u>	22)
15/07/2013 16:5	o Conse	23	
16/07/2013 09:2		23	
Description / Comm	ents of Hydrostatio	e Test:	
Visual Test Date	ila. Inamastian F	Association & Desulter	
Visual Test Deta	ils: Inspection I	Description & Results:	
		Description & Results:	
Visual Test Deta Result (Pass/Fail Recommendation)		

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 8 of 38

4.2 Bund: MB4

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB4	Bund Type:	Portable
Bund Dimensions, m:	80x120x30	Primary Vessel(s) – Materials of Construction:	Steel drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage Volume, m3	0.204
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.224
Bund Retention Volume, m3	0.288	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.051
Dee	med Practicable / Safe	e to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a NS
Stabilisation Period	2 days Me
Duration of the Test	24 hourses
Acceptance Criteria (Total permissible drop in water level), mm	Osotioit
Water Level Change in Reference Vessel ,mp	Quit

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:29	19024	0
15/07/2013 16:31	19	0
16/07/2013 09:24	15 ⁸ 19	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)

Recommendation(s):

Signed: A Description

Qualification: Dip in Environmental Protection

Protection

4.3 Bund: MB5

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB5	Bund Type:	Portable
Bund Dimensions, m:	80x120x30	Primary Vessel(s) – Materials of Construction:	Steel drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage Volume, m3	0.208
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.228
Bund Retention Volume, m3	0.228	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.052
Dee	med Practicable / Safe	e to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

Yes
n/a
2 days
24 hours
O orthorn
dit

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:30	200 Dylie	0
15/07/2013 16:31	30cos	0
16/07/2013 09:24	20	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A reside	Qualification: Dip in Environmental Protection	Date: 16/07/2013

Environmental Efficiency

4.4 Bund: MB6

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB6	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Plastic drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage Volume, m3	0.040
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.044
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	10
Dee	med Practicable / Safe	e to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

Yes
n/a 155
2 days
24 hourses
02 of tal
ON THE PROPERTY OF THE PROPERT

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:34	10 27	0
15/07/2013 16:53	, to	0
16/07/2013 09:25	nse 10	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Pass	
Qualification: Dip in Environmental	Date: 16/07/2013

4.5 Bund: MB7

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB7	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Plastic drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.180
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.022
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.045
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a 15°.
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in	O of of at
water level), mm	Sec. of the
Water Level Change in Reference Vessel ,mp	di
off of	

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:36	Moderation	0
15/07/2013 16:54	. SVC	0
16/07/2013 09:26	11	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A resingle	Qualification: Dip in Environmental	Date: 16/07/2013
Signed:	Protection	

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 12 of 38

4.6 Bund: MB8

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB8	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Plastic drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.325
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.225
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.081
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a tse
Stabilisation Period	2 days the
Duration of the Test	24 hourses
Acceptance Criteria (Total permissible drop in water level), mm	0 solitor
Water Level Change in Reference Vessel ,mm	QU

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:38	1800	0
15/07/2013 16:33	, Us	0
16/07/2013 09:26	S\$ 11	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
	Qualification: Dip in Environmental	D-4 16/07/2012
Signed: A A - Lainte	Qualification: Dip in Environmental	Date: 16/0//2013

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 13 of 38

4.7 Bund: MB9

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB9	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Steel drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.416
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.228
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.104
Deemed Practicable / Safe to Conduct Hydrostatic Test? Yes/No			Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a use.
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	
Water Level Change in Reference Vessel ,mp	NO.
A Y C	

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:40	RP OVITE	0
15/07/2013 16:55	Sto.	0
16/07/2013 09:26	250 11	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A rainfe	Qualification: Dip in Environmental Date: 16	/07/2013

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 14 of 38

4.8 Bund: MB10

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB10	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Plastic drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.2
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.22
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.05
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a use
Stabilisation Period	2 days the
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	0 of total
Water Level Change in Reference Vessel ,mp	Qui

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:41	12004	0
15/07/2013 16:56	1800	0
16/07/2013 09:27	N 12	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Qualification: Dip in Environmental	Date: 16/07/2013
	Qualification: Dip in Environmental Protection

4.9 Bund: MB11

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB11	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Plastic drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.06
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.022
Bund Retention Volume, m3	0.240	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.015
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a vsc.
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	O only ar
Water Level Change in Reference Vessel ,mm	Cair
: of the	

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:33	KONTINE	0
15/07/2013 16:52	\$4 ^{CS}	0
16/07/2013 09:25	nse ^{tt} 14	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A - Comple	Qualification: Dip in Environmental Protection	Date: 16/07/2013

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 16 of 38

4.10 Bund: MB12

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB12	Bund Type:	Portable
Bund Dimensions, m:	120x80x30	Primary Vessel(s) – Materials of Construction:	Steel drums
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.208
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.228
Bund Retention Volume, m3	0.288	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.052
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a susse
Stabilisation Period	2 days alle
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	Os of tot
Water Level Change in Reference Vessel ,mm	c. O

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:42	19.509	0
15/07/2013 16:56	19.5	0
16/07/2013 09:28	ns ⁰¹ 19.5	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		

5. Bund test record sheets: Recycling Area MB13 to MB20

5.1 Bund: MB13

Site:	G. Bruss GmbH Dichtungstechnik	Licence Rep	g. No.:	P0465-01
Bund Ref. No.:	MB13	Bund	Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Mater Constru	rials of	Plastic drums (Empty)
Bund Construction Material:	Steel	Primary Vessel(s) - Stora	- Total ge, m3	0
Bund Lining Material:	Steel	Primary Vessel(s) – Volume of Largest Vess		0
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Storage Volum		0
Dee	med Practicable / Sa	fe to Conduct Hydrostatic Test? Y	Yes/No	Yes
If no give reasons:		87 (Yes/No)? Yes for Fill Rate on the		
HYDROSTATIC TE	EST DETAILS:	मीत्रं मात्रे वर्ष		
	BS 8007:19	87 (Yes/No)? Yes (0)		
		Fill Rate na		
		sation Period 2 days		
	Duratio	on of the Test 24 hours		
		erlevel), mm		
Water Leve	Change in Reference	e Vessel ,mm 0		
Date a	ma rime	Water Level in Bund		er Level in ence Vessel
15/07/2013 10:5	2 Conseil	9.5)	
15/07/2013 16:4		9.5)	
16/07/2013 09:1	3		5 0	
	ents of Hydrostatic T	Sest:		
Result (Pass/Fail		Pass		
Recommendation	n(s):			
Signed: A A	en fre	Qualification: Dip in Environm	ental	Date: 16/07/2013

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 18 of 38

5.2 Bund: MB14

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB14	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Steel drums (Empty)
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0
Dee	emed Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

Yes
n/a uso
2 days Mer
24 hourses
02 of cot
Q III

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:06	12004	0
15/07/2013 16:43	B	0
16/07/2013 09:16	12	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		

5.3 Bund: MB15

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB15	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Steel drums (Empty)
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in	0 other
water level), mm	914. 3114
Water Level Change in Reference Vessel ,mm	0,00
	os ited

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:04	12 50 00	0
15/07/2013 16:43	Last Witel	0
16/07/2013 09:15	1,200	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A	Qualification: Dip in Environmental Protection	Date: 16/07/2013

5.4 Bund: MB16

P0465-01	Licence Reg. No.:	G. Bruss GmbH Dichtungstechnik	Site:
Portable	Bund Type:	MB16	Bund Ref. No.:
Steel drums (Empty)	Primary Vessel(s) – Materials of Construction:	120x120x23	Bund Dimensions, m:
0	Primary Vessel(s) – Total Storage, m3	Steel	Bund Construction Material:
0	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	Steel	Bund Lining Material:
0	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.331	Bund Retention Volume, m3
Yes	to Conduct Hydrostatic Test? Yes/No	med Practicable / Safe	Dee

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in	0 di
water level), mm	Outh, and
Water Level Change in Reference Vessel ,mm	as sid
	20 ite

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:02	14 . 15 14 0	0
15/07/2013 16:42	140 9/110	0
16/07/2013 09:15	14004	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Pass	
Qualification: Dip in Environmental	Date: 16/07/2012

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 21 of 38

5.5 Bund: MB17

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB17	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Plastic/Steel drums (Empty)
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0
Deer	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

Yes
n/a
2 days
24 hours
O Office
all all
0 2 CO.

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:00	12.250	0
15/07/2013 16:42	12025109	0
16/07/2013 09:14	12:25	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A reside	Qualification: Dip in Environmental	Date: 16/07/2013

5.6 Bund: MB18

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB18	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Paint and coating cans
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.06
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.005
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.0176
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	O STA OFF
Water Level Change in Reference Vessel ,mm	as a for

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 09:58	12 :1050 ht 0	0
15/07/2013 16:41	ROTATION	0
16/07/2013 09:14	12000	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)

Recommendation(s):

Signed: A December | Qualification: Dip in Environmental Protection | Protection |

5.7 Bund: MB19

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB19	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Paint and coating cans
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.235
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.005
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.058
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days &
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	O STA STA
Water Level Change in Reference Vessel ,mm	& Stor

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 09:56	13.5 ₁₅ 9 ₁₄ 04	0
15/07/2013 16:41	1355 STOR	0
16/07/2013 09:13	13.9	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A couple	Qualification: Dip in Environmental	Date: 16/07/2013
	Protection	[[마시] 본 경기 보고 1970년 등 기가 없는데 하다 196년

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 24 of 38

5.8 Bund: MB20

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB20	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Paint and coating cans
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0
Dee	emed Practicable / Saf	e to Conduct Hydrostatic Test? Yes/No	Yes
If no give reasons:			
HYDROSTATIC TI	EST DETAILS:		

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	O ONLY ANY OUR
Water Level Change in Reference Vessel ,mm	Qs No

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 09:48	8 institu	0
15/07/2013 16:39	8500 Aire	0
16/07/2013 09:12	85. CO	0

Description / Comments of Hydrostatic Test:

				the longer of the large between the business and the
Visual Test	Dotaile In	enection D	Decrintion	& Doculter

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A recipie	Qualification: Dip in Environmental Protection	Date: 16/07/2013

6. Bund test record sheets: Chemstore MB21 to MB27

6.1 Bund: MB21

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB21	Bund Type:	Portable
Bund Dimensions, m:	158x158x76	Primary Vessel(s) – Materials of Construction:	Steel reinforced plastic IBC
Bund Construction Material:	Plastic	Primary Vessel(s) – Total Storage, m3	1.2
Bund Lining Material:	Plastic	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	1.32
Bund Retention Volume, m3	1.897	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.3
	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes Me
Fill Rate	n/and and
Stabilisation Period	2.dayo
Duration of the Test	24 nours
Acceptance Criteria (Total permissible drop in water level), mai	8
Water Level Change in Reference Vessel mm	0
at it ight	

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:46	<u>\$</u> 52	0
15/07/2013 16:38	52	0
16/07/2013 09:11	52	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass		
Recommendation(s):			
Signed: A A reside	Qualification: Dip in Environmental Protection	Date: 16/07/2013	

6.2 Bund: MB22

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB22	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Plastic
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.228
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.003
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.057
	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days
Duration of the Test	24 hours
water level), mm	O and any oth
Water Level Change in Reference Vessel ,mm	Qs of Cot

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:20	12 in 2 it 0	0
15/07/2013 16:48	1201 Jule	0
16/07/2013 09:20	12004	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A Designed	Qualification: Dip in Environmental Protection	Date: 16/07/2013

6.3 Bund: MB23

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB23	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Plastic
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.4
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.027
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.1
	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in	0 othe
water level), mm	97. July
Water Level Change in Reference Vessel ,mm	050 KO
	os. red

Date and Time	Water Cevel in Bund	Water Level in Reference Vessel
15/07/2013 10:17	11.5 5000	0
15/07/2013 16:48	Hot vigo	0
16/07/2013 09:19	1,100	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A reache	Qualification: Dip in Environmental	Date: 16/07/2013

6.4 Bund: MB24

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB24	Bund Type:	Portable
Bund Dimensions, m:	120x120x23	Primary Vessel(s) – Materials of Construction:	Plastic
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.62
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.23
Bund Retention Volume, m3	0.331	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.16
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	
Water Level Change in Reference Vessel ,mm	Qs X to

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:16	12 :1050 ht 0	0
15/07/2013 16:47	1201 Sylle	0
16/07/2013 09:12	1200	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)	Pass	22.142.11
Recommendation(s):		
Signed: A A recipie	Qualification: Dip in Environmental Protection	Date: 16/07/2013

6.5 Bund: MB25

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB25	Bund Type:	Portable
Bund Dimensions, m:	120x120x23 Prin	nary Vessel(s) – Materials of Construction:	Plastic
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.621
Bund Lining Material:	Steel	Primary Vessel(s) – 110% olume of Largest Vessel, m3	0.23
Bund Retention Volume, m3	0.331 Prim	ary Vessel(s) – 25% of Total Storage Volume, m3	0.16
	emed Practicable / Safe to Condu	ct Hydrostatic Test? Yes/No	Yes
If no give reasons:			
HYDROSTATIC TI	EST DETAILS:		
	BS 8007:1987 (Yes/No)	? Yes	
	Fill Dat	n n/a	

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	0 atty atty othe
Water Level Change in Reference Vessel ,mm	& Co.

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:15	12 0500	0
15/07/2013 16:47	Lat wings	0
16/07/2013 09:18	1304,	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection De	scription & Results:	
Result (Pass/Fail)	Pass	
Recommendation(s):		
Signed: A A	Qualification: Dip in Environmental Protection	Date: 16/07/2013

Environmental Efficiency

Document No.: 1461-04 v1.02 Page 30 of 38

6.6 Bund: MB26

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB26	Bund Type:	Portable
Bund Dimensions, m:	80x120x29	Primary Vessel(s) – Materials of Construction:	Plastic
Bund Construction Material:	Steel	Primary Vessel(s) – Total Storage, m3	0.38
Bund Lining Material:	Steel	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	0.22
Bund Retention Volume, m3	0.278	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.95
Dee	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes

If no give reasons:

HYDROSTATIC TEST DETAILS:

BS 8007:1987 (Yes/No)?	Yes
Fill Rate	n/a
Stabilisation Period	2 days
Duration of the Test	24 hours
Acceptance Criteria (Total permissible drop in water level), mm	O Oly, all of
Water Level Change in Reference Vessel ,mm	9° 210°

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:11	20.5 ns nt	0
15/07/2013 16:46	20.304118	0
16/07/2013 09:18	20:5	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:

Result (Pass/Fail)

Recommendation(s):

Signed: A Decide Qualification: Dip in Environmental Protection

Protection

Pass

Qualification: Dip in Environmental Protection

Environmental Efficiency

Page 31 of 38

6.7 Bund: MB27

Site:	G. Bruss GmbH Dichtungstechnik	Licence Reg. No.:	P0465-01
Bund Ref. No.:	MB27	Bund Type:	Portable
Bund Dimensions, m:	138x138x98	Primary Vessel(s) – Materials of Construction:	Steel reinforced plastic (KOH)
Bund Construction Material:	Plastic	Primary Vessel(s) – Total Storage, m3	1.2
Bund Lining Material:	Plastic	Primary Vessel(s) – 110% Volume of Largest Vessel, m3	1.32
Bund Retention Volume, m3	1.866	Primary Vessel(s) – 25% of Total Storage Volume, m3	0.3
	med Practicable / Safe	to Conduct Hydrostatic Test? Yes/No	Yes
f no give reasons:			

V.
Yes
n/a
2 days
24 hours
0 oth
कर्ट हैं। कर्ट हैं हैं। कर्ट हैं हैं।
05 150°
20 ite

Date and Time	Water Level in Bund	Water Level in Reference Vessel
15/07/2013 10:23	80 inspire	0
15/07/2013 16:48	800 Vite	0
16/07/2013 09:21	8000	0

Description / Comments of Hydrostatic Test:

Visual Test Details: Inspection Description & Results:			
Result (Pass/Fail)	Pass		
Recommendation(s):			
Signed: A A reache	Qualification: Dip in Environmental Protection	Date: 16/07/2013	

Environmental Efficiency

Page 32 of 38 Document No.: 1461-04 v1.02

7. Conclusions

All bunds passed the inspection.

Consent of copyright owner required for any other use.

Environmental Efficiency

Appendix 1 Summary of determination of Class of Containment and test method

The Test Method selection chart shown below is based on various sections as noted below of the EPA document 'Storage and Transfer of Materials for Scheduled Activities'.

Test Method Selection Chart

Volume,	Non Hazardous to	WHC1	WHC2	WHC3
	[- 12일 : 15일 시계 시계 [] [- 12] [- 12] [- 12] [- 12] [- 12] [- 12] [- 12] [- 12] [- 12] [- 12] [- 12]	WHCI	WHC2	WIICS
m ³	Waters	D	D:	D-44'4
<=0.1	Retention not	Retention not	Retention not	Retention not
	required	required	required	required
	(EPA Guidance	(EPA Guidance	(EPA Guidance	(EPA Guidance
	Section 5.3.1)	Section 5.3.1)	Section 5.3.1)	Section 5.3.1)
	Section 3.3.1)	Section 5.5.1)	Section 3.3.1)	Section 5.5.1)
	If bunded and tested,	If bunded and tested,	If bunded and tested,	If bunded and tested,
	treated as Class 1	treated as Class 1	treated as Class 1	treated as Class 1
<=1.0	Retention not	Retention not	Class 1 retention.	Class 2 retention.
1.0	required	required	Generally no	Hydrostatic test
			necessity for a	required but BS8007
	(EPA Guidance	(EPA Guidance	physical test. Visual	inappropriate
	Section 5.3.1)	Section 5.3.1)	inspection normally	
			undertaken.	(EPA Guidance
	If bunded and tested,	If bunded and tested,	thet	Section 6.6.3.2)
	treated as Class 1	treated as Class 1	EPA Guidance	
		OIL	Section 0.0.2.1)	
<=10	Retention not	Class 1 retention. Generally of duited	Class 2 retention.	Class 3 retention.
	required	Generally	Hydrostatic test	Hydrostatic test
		necessity for a	required but BS8007	required based on
	(EPA Guidance	physical test Visual	inappropriate	BS8007
	Section 5.3.1)	inspection normally	(FDA Cuidana	(FDA Cuid-u
	TChanded and to test	oundertaken.	(EPA Guidance Section 6.6.3.2)	(EPA Guidance Section 6.6.3.1)
	If bunded and tested, treated as Class 1	(EPA Guidance	Section 6.6.3.2)	Section 6.6.5.1)
	treated as Class I	Section 6.6.2.1)		
<=100	Retention not	Class 1 retention.	Class 3 retention.	Class 3 retention.
\-100	required	Generally no	Hydrostatic test	Hydrostatic test
	require	necessity for a	required based on	required based on
	(EPA Guidance	physical test. Visual	BS8007	BS8007
	Section 5.3.1)	inspection normally		
		undertaken.	(EPA Guidance	(EPA Guidance
	If bunded and tested,		Section 6.6.3.1)	Section 6.6.3.1)
	treated as Class 1	(EPA Guidance		
		Section 6.6.2.1)		
<=1,000	Need for retention	Class 2 retention.	Class 3 retention.	Class 3 retention.
	subject to a risk	Hydrostatic test	Hydrostatic test	Hydrostatic test
	assessment	required but BS8007	required based on	required based on
	(EDA Cuidanas	inappropriate	BS8007	BS8007
	(EPA Guidance	(EDA Guidanae	(EPA Guidance	(EPA Guidance
	Section 5.3.1)	(EPA Guidance Section 6.6.3.2)	Section 6.6.3.1)	Section 6.6.3.1)
<=10,000	Need for retention	Class 3 retention.	Class 3 retention.	Class 3 retention.
\-10,000	subject to a risk	Hydrostatic test	Hydrostatic test	Hydrostatic test
	assessment	required based on	required based on	required based on
	ussessifient	BS8007	BS8007	BS8007
	(EPA Guidance			
	Section 5.3.1)	(EPA Guidance	(EPA Guidance	(EPA Guidance
		Section 6.6.3.1)	Section 6.6.3.1)	Section 6.6.3.1)

Environmental Efficiency

Appendix 2 Selection of Test Methods

Newly constructed bunds

Where the bund is newly constructed, a hydrostatic test is carried out in accordance with the relevant codes, standards and guidelines.

- If the bund is constructed to BS8007, a 7 day test to Section 9 of BS8007 is carried out.
- If the bund is constructed to CIRIA 163, a 6 hour test to Section 5.5 of CIRIA 163 is carried out. It should be noted that bunds for containment Class 1 or 2 do not require to be constructed to BS8007 (Section 6.6.3.2 of EPA Guidance).
- Where the bund is not constructed to any recognised standard, a 7 day test to Section 9 of BS8007 is carried out unless otherwise agreed.

Existing Bunds

Where a hydrostatic test is required (i.e. for Class 2 and Class 3 containment systems), there may be practical or safety reasons why a hydrostatic test can not be undertaken, or undertake to full design level. Section 6.6.2.2 and 6.6.2.3 for the guidance document cover this.

Where there are existing bunds, the test method, is defined by various tables and sections in the EPA document 'Storage and Transfer of Materials for Scheduled Activities'. This determination is dependant on the Water Hazard Class of the substances stored within the bund and the volume of the substance stored. These rules are summarised below and shown in tabular format in Appendix 1.

Retention not required¹

- Where the substances stored are non hazardous to waters, retention is not required for volumes below 100m³.
- o For WHC 1 retention is not required for volumes below 1m³
- o For WHC 2 and 3 retention is not required for volumes below 0.1m³

Where the site's own internal procedures require retention and also require the retention to be assessed the containment is treated as a Class 1 Containment System (see below).

- Class 1 retention is required where²
 - Where the volume of WHC 1 substances exceeds 1 m³ but is below 100 m³.
 - o Where the volume of WHC 2 substances exceeds 0.1 m³ but is below 1 m³

The EPA guidance, in Section 6.6.2.1 notes that it is generally unnecessary to conduct a physical (i.e. a hydrostatic) test on Class 1 containment. Where this is the case, a visual assessment by a Chartered Engineer is carried out. Where there is doubt about the integrity of an individual bund, the visual assessment is usually supplemented by a low level and/or short duration hydrostatic test.

- Class 2 retention is required where
 - Where the volume of WHC 1 substances exceeds 100 m³ but is below 1,000 m³.

Environmental Efficiency

Section 5.3.1, Table 5.4 of EPA document 'Storage and Transfer of Materials for Scheduled Activities'

² Section 5.3.1, Table 5.4 and Section 6.6.2.1 of EPA document 'Storage and Transfer of Materials for Scheduled Activities'

- o Where the volume of WHC 2 substances exceeds 1 m³ but is below 10 m³
- Where the volume of WHC 3 substances exceeds 0.1 m³ but is below 1 m³

The EPA guidance, in Section 6.6.3.2 notes that a test procedure such as that defined in BS8007 will generally not be appropriate or necessary for these installations. In these cases a hydrostatic test based on CIRIA 163 is used. This is similar to BS8007 except that the test is for 6 hours and requires no drop in water level to pass the test.

 Class 3 retention is required where the volume thresholds for Class 2 retention are exceeded. In these cases testing is to BS8007 for 3 days with a maximum drop in water level of 10 mm.

Steel or plastic bunds

Where bunds are fabricated from steel or are plastic, these are hydrostatically tested for six hours with the criteria for failure set at zero drop in water level. Typical of such bunds are mobile sump pallets and chemical storage cabinets.

For self bunded tanks, no water retention test is practical and these are visually inspected.

Consent of copyright owner required for any other use.

Environmental Efficiency

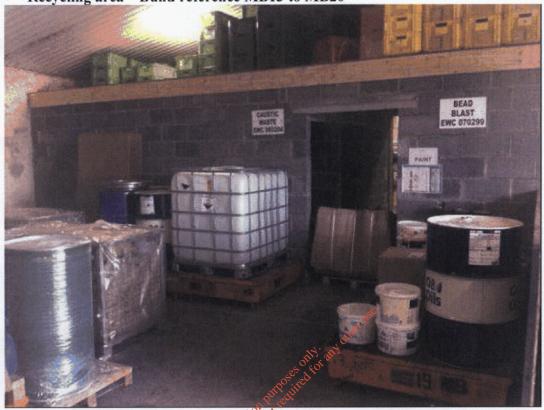
Document No.: 1461-04 v1.02 Page 36 of 38

Appendix 3 Identification photographs

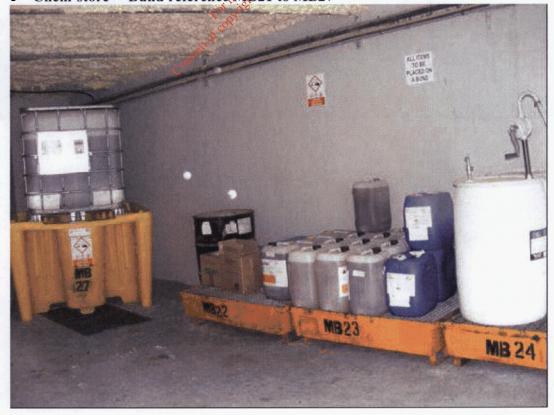
The photographs below are for identification of bunds only; they are not necessarily indicative of the bund assessment and may not necessarily have been taken during the tests.



• Recycling area – Bund reference MB13 to MB20







Environmental Efficiency