



## Northern Gateway, Deeside

# Construction Surface Water Management Plan

January 2025

Project Information	
Project:	Northern Gateway, Deeside
Report Title:	Construction Surface Water Management Plan
Client:	Bellway Homes Limited (North West) & Persimmon Homes Ltd
Instruction:	The instruction to undertake this Construction Surface Water Management Plan was received from Mr Joe Nelson of Persimmon Homes Ltd.
File Ref:	13028-CSWMP-02

Approval Record	
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Document History		
Revision	Date	Comment
01	30/05/2024	First issue
02	13/01/2025	Second issue – Updated with dewatering arrangements

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## Introduction

This Construction Surface Water Management Plan (CSWMP) has been prepared in support of a proposed residential development at Northern Gateway, Deeside, CH5 2HJ.

This CSWMP has been prepared with reference to the following regulations and guidance documents:

- The CIRIA publication 'The SuDS Manual' 2015
- Control of Pollution (Oil Storage) (England) Regulations 2001
- Groundwater Regulations 2009
- Guidance for Pollution Prevention (GPP) 1 – Understanding Your Environmental Responsibilities – Good Environmental Practices (June 2021)
- GPP 2 – Above Ground Oil Storage Tanks (January 2018)
- GPP 5 – Works and Maintenance in or Near Water (February 2018)
- Pollution Prevention Guidelines (PPG) 6 – Working at Construction and Demolition Sites (2012) – (withdrawn but still relevant)
- PPG 7 – The Safe Operation of Refuelling Facilities (July 2011) – (withdrawn but still relevant)
- GPP 13 – Vehicle Washing and Cleaning (April 2017)
- GPP 21 – Pollution Incident Response Planning (June 2021)
- GPP 22 – Incident Response - Dealing with Spills (October 2018)
- GPP 26 – Safe Storage – Drums and Intermediate Bulk Containers (February 2019)

## Existing Conditions

The site covers an area of approximately 13.9ha and is located at National Grid Reference: 332183, 369264. A location plan and an aerial image are included in Appendix A.

Online mapping (including Google Maps / Google Streetview imagery, accessed May 2024) shows that the site comprises undeveloped agricultural land. The site is bordered by residential properties and a construction compound to the north-east, Farm Road, residential properties and agricultural land to the south-east, an unnamed road and agricultural land to the south-west, and agricultural land to the north-west.

Access to the site is provided from Farm Road to the south-east. Garden City Drain flows south-west along the south-eastern boundary of the site and joins the River Dee approximately 200m south-west of the site.

## Local Topography

A topographical survey has been undertaken by Greenhatch Group for the wider Northern Gateway site. The topographical survey shows that the site is relatively flat with levels ranging from 4.85m Above Ordnance Datum (m AOD) in the north-east to 4.17m AOD in the north-west.

Topographic levels to m AOD have also been derived from a 1m resolution NRW composite 'Light Detecting and Ranging' (LiDAR) Digital Terrain Model (DTM). The LiDAR data generally reflects the topographical survey.

Topographical information is provided as Appendix B.

## Development Proposals

The proposed development is for the erection of 400 dwellings, public open space including play facilities, and other associated works. A proposed site layout is included in Appendix C.

This site forms part of the Northern Gateway development allocated for residential development in the Flintshire Unitary Development Plan (UDP) (2011). As part of the wider Northern Gateway development, a number of flood mitigation measures have been embedded into the design alongside strategic measures undertaken by Welsh Government to facilitate development. These works include raising and strengthening of the River Dee flood defences, creating flood storage areas and land raising to create a flood free development platform in the design flood scenario. Site levels will be raised above 5.5m AOD.

A plan identifying the proposed drainage arrangement is included in Appendix D.

The proposed drainage system will include:

- Discharge of surface water to an adjacent swale (water feature) designed to accommodate runoff from the wider Northern Gateway site. The swale ultimately outfalls to Garden City Drain and the River Dee and provides appropriate attenuation storage and flow control. Direct discharge to Garden City Drain is also proposed
- 9No. separate surface water sub-catchments / outfalls to the swale / Garden City Drain.
- The piped drainage system will be designed to convey storm events up to and including the 1 in 100 year plus 30% CC event, with attenuation provided by the swale / water feature serving the wider Northern Gateway site.

## Management of Surface Water During Construction

Runoff from a construction site should not be allowed to flow off site unless it has been allowed for within the design specification. Uncontrolled runoff can result in pollution and sedimentation of receiving watercourses.

To prevent runoff or exceedance flows from the construction site reaching downstream waterbodies (River Dee) the following control measures can be incorporated. The following control measures should be utilised where appropriate.

### Sediment Control Measures

Sedimentation control measures should be applied prior to any major groundworks taking place at the site set up. Additional sedimentation control should be applied as the development progresses, for example, when the surface water drainage system is installed. The following options could be used in isolation or in conjunction to reduce and prevent sediment being released to the local water environment.

#### Initial Construction Phase

The following sediment control measures should be established at the earliest stage of construction and prior to excavation or disturbance of soils at the site. The sediment control features at this stage of development should be applied to manage potential sediment release within uncontrolled rainfall runoff i.e. overland flows.

#### Silt Fences

Recently disturbed or unvegetated ground has potential to release high quantities of sediment within runoff. Runoff rates can increase where the ground is compacted i.e. by site machinery. Silt fences intercept uncontrolled runoff / sediment from entering the downstream water environment.

Silt fences can be installed to retain sediment at appropriate locations, for example, between the construction area and Garden City Drain. A series of silt fences may be required to be laid at frequent intervals as to minimise the contributing catchment area draining to a single silt fence. An example of silt fencing is shown in Figure 1.



**Figure 1:** Silt Fence (source [siltbuster.co.uk](http://siltbuster.co.uk))

### Interception Ditches

Interception ditches could be placed between the site and the receiving water environment to collect and intercept runoff. Interception ditches could be used in favour of, or in conjunction with silt fences. Runoff collected by the ditches would be directed through sediment basins for sediment settlement prior to release to the water environment.

### Drainage System Considerations

The following sediment control measures will be applied to drainage systems during construction, specifically inlets and outlets, gullies and manhole chambers. The Construction Team will use the most appropriate for the conditions.

### Gully Sacks

Gully sacks constitute an inexpensive low maintenance silt trap. Gully sacks will be implemented within gully pots, as well as manhole chambers and channel drainage systems to intercept any sediment or contaminants carried by surface water runoff from construction works. These are a suitable option to prevent siltation within conventional piped drainage systems and subsequent release of sediment to the water environment. An example of a gully sack installation is provided in Figure 2.





**Figure 2:** Gully Guard (source <https://www.forestgroupuk.co.uk/gully-guard/>)

### Manhole Muck Stoppers

Manhole muck stoppers provide a similar function to gully sacks and are designed to protect inspection chambers from silt and debris. They feature a frame which is temporarily installed below the manhole cover to capture debris, sediment and other contaminants. A deep bucket, with holes at the top allowing water to overflow into the gully, is supported by the frame. The bucket is removed periodically to be emptied of silt and debris. An example of a manhole muck stopper is provided in Figure 3 below.



**Figure 3:** Manhole Muck Stopper (source <https://www.drainfast.co.uk/products/muckstopper>)



### Silt Wattles / Silt Sock

Silt wattles/Silt socks can be used as perimeter protection around inlets, outlets and gullies. An example of Silt Wattle/Silt Sock is provided in Figure 4.

**Figure 4: Silt wattle/Silt sock** (source: <https://www.water-pollutionsolutions.com/silt-sock.html>)



### Drain Guards

Drain Guards can be installed within gullies to prevent oil and sediment pollution in surface water runoff from entering the surface water drainage system. Drain Guards are made from a high permeability non-woven polypropylene geotextile that trap solids and oils but allow water to drain through and also incorporate bypass ports to further maintain flow into the drain. An example of a drain guard installation is provided in Figure 5.

**Figure 5:** Ultra Drain Guards (source: <https://www.tcs-geotechnics.co.uk/drain-guards/>)



### Manhole Filter Bags

Similar in nature to gully sacks, manhole filter bags can be implemented within the last manhole before the flow control chamber to intercept any sediment or contaminants carried by surface water runoff.

### Settlement Tanks

A settlement tank allows for suspended sediments to settle out of the water as flow passes through the tank. Accumulated solids form at the bottom of the tank and requires periodic removal (removal frequency subject to site conditions and tank size). Flow is typically pumped from the drainage system or an excavation into the settlement tank prior to release of treated water to the water environment (where there is permission in place to do so), or discharge off-site via a tanker.

It is understood that a high-water table is present and will require groundwater to be pumped out of excavations when installing the proposed drainage system. Abstraction of groundwater from excavations will take place for longer than 3 months and as such an Environmental Permit is required from Natural Resources Wales for the discharge of the groundwater to a watercourse. The following treatment stages are proposed prior to groundwater being discharged to a watercourse:

- Flows will be pumped to a settlement tank (Siltbuster Lamela). The Siltbuster Lamela can reduce 95% of particles to 18 micron. The Siltbuster Lamela will be suitable where sandy deposits are present. Where dense clay is present, the performance of the Siltbuster Lamela will be monitored and performance can be improved through introduction of coagulants and flocculants. Details of the Siltbuster Lamela system are included in Appendix E. Data sheets for the coagulants and flocculants (polyaluminium chloride hydroxide sulphate), where required, are also included in Appendix E.
- Prior to discharge to the water environment, water will pass through a manhole with a sump which has been infilled with Terram (geotextile) and backfilled in clean stone.

- Hay bales wrapped in Terram will be placed at the outfall to Garden City Drain and on the base of the outfall headwall. Diffuser blocks placed on the base plate of the headwall will prevent erosion from the discharge to Garden City Drain.

### Additional Control Measures

In addition to the measures stated above, the following control measures will be put into place to reduce the likelihood of runoff, siltation and pollution occurring:

- Haul roads will be designed so that the length is kept to a minimum, while still serving its purpose. The gradient will be shallow to reduce runoff velocity.
- Plant and machinery should be stored in designated locations a minimum of 10m away from any waterbodies.
- Oil and any other potential pollutants will be stored a minimum of 10m away from watercourses.
- The storage of fuel and oils on site will be in accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001.
- Stockpiles of excavated land and materials should be positioned a minimum of 10m away from waterbodies and covered (subject to material).
- Concrete / cement mixing and washing areas will be located a minimum of 10m from waterbodies. Mixing and washing will be undertaken within a designated impermeable area. Washout areas will be contained to prevent contaminated water entering waterbodies or groundwater. Contaminated water will be collected and taken off site by a licensed contractor.
- Trade materials, chemicals and hazardous substances will be stored safely and securely, a minimum of 10m from waterbodies and within an impermeable bunded area.
- Waste will be stored appropriately in suitable containers and in a designated area. Waste will be transferred by an authorised waste carrier for appropriate disposal.
- Containers will be placed on drip trays to collect any small spillages and prevent entrainment of oils and hydrocarbons within surface water runoff.
- Any soils contaminated during the course of the works should be excavated and disposed of correctly in accordance with current waste disposal legislation. Where gross contamination occurs, professional advice should be sought immediately.
- Refuelling activities will be carried out a minimum of 10m away from any watercourse or drain. An emergency spill kit will be located near the refuelling area.
- The site will be appropriately secured to prevent trespass and vandalism.
- Waste materials and debris will be tidied up as work progresses.

- Street cleaning will be undertaken as good practice. Road sweepers will be frequently used to keep roads (particularly haul roads) clean, and water will be sprayed regularly to suppress dust.

## Maintenance

In order to ensure the performance of the pollution control measures the following maintenance and inspection regime will be adopted:

Gully sacks and manhole filtration bags are to be inspected every 2 weeks (as a minimum) and replaced every 6 months or sooner if found to be defective.

The surface water drainage system is to be inspected every 3 months and cleansed when deemed necessary. Care must be taken not to flush silts into the watercourse or receiving sewer, this can be achieved by stooping up the last manhole on the surface water drainage system and removing silts from this point.

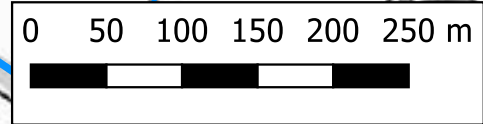
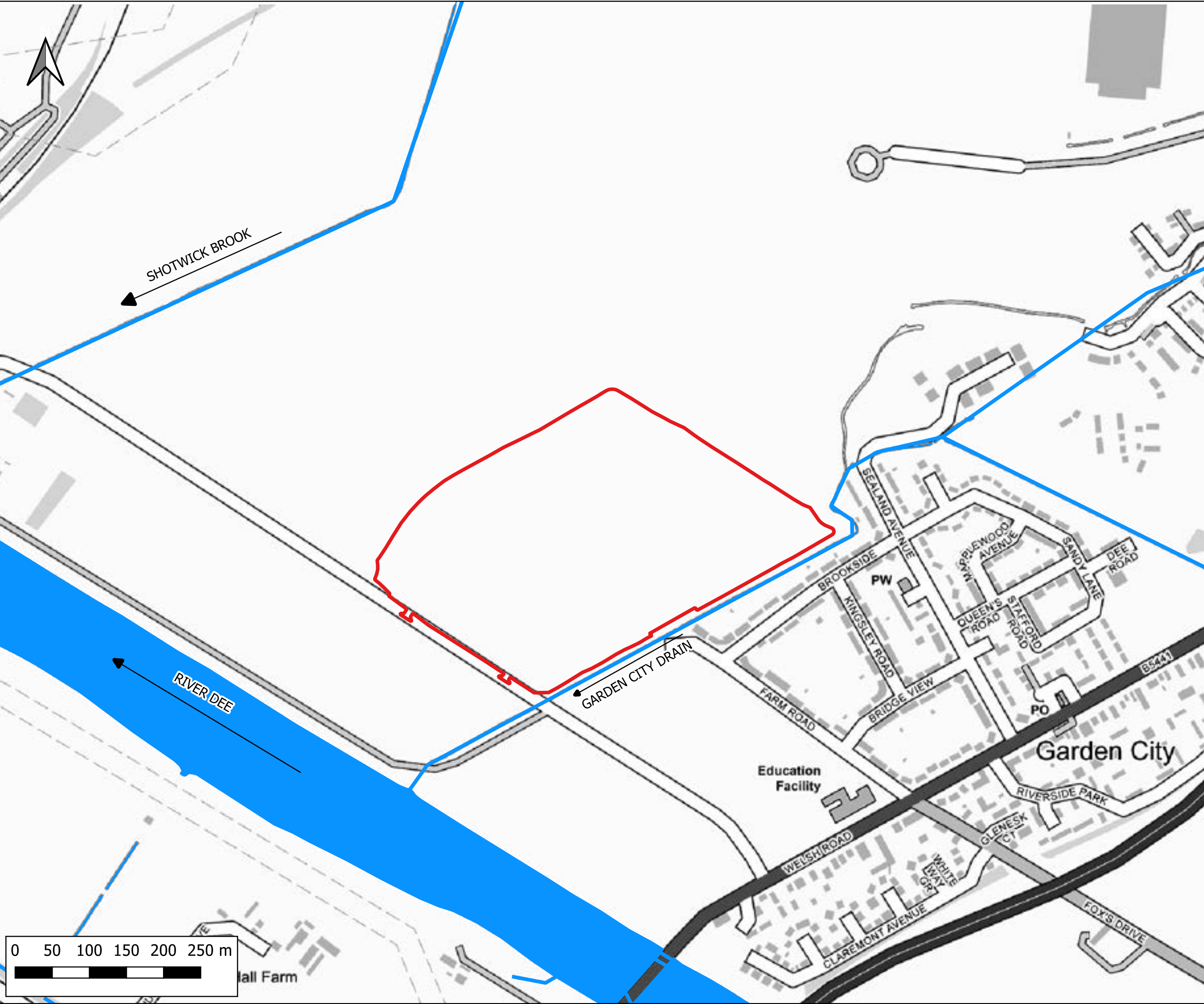
Monitoring should be undertaken to identify any modifications that may be required to optimise performance. The scope of monitoring depends on the selected pollution control method.

## Summary

Surface water runoff will be managed during the construction phase through good site management. Any residual risk of runoff or drainage system exceedance during the construction phase will be managed and prevented from entering downstream waterbodies (Garden City Drain) through implementation of mitigation measures such as silt fences.

## Appendix A Location Plan & Aerial Image





Notes:  
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

**LEGEND**

- Site Boundary
- Watercourses
- Waterbodies

CLIENT:

Bellway Homes Limited (North West) & Persimmon Homes Ltd

www.waterco.co.uk

SCHEME:

Northern Gateway, Deeside

PLOT TITLE:

Location Plan

PLOT STATUS:		FINAL		DATE:	24-05-2024
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:		
MJW	AW	MW	1:5000		

PLOT NAME:		13028_Location_Plan	REVISION:	-
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Notes:  
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

**LEGEND**

Site Boundary

CLIENT:

Bellway Homes Limited (North West) & Persimmon Homes Ltd

www.waterco.co.uk

SCHEME:

Northern Gateway, Deeside

PLOT TITLE:

Aerial Plan

PLOT STATUS:		DATE:	
FINAL		24-05-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MJW	AW	MW	1:5000

PLOT NAME:	REVISION:
13028_Aerial_Plan	-



**Appendix B    Topographical Data**

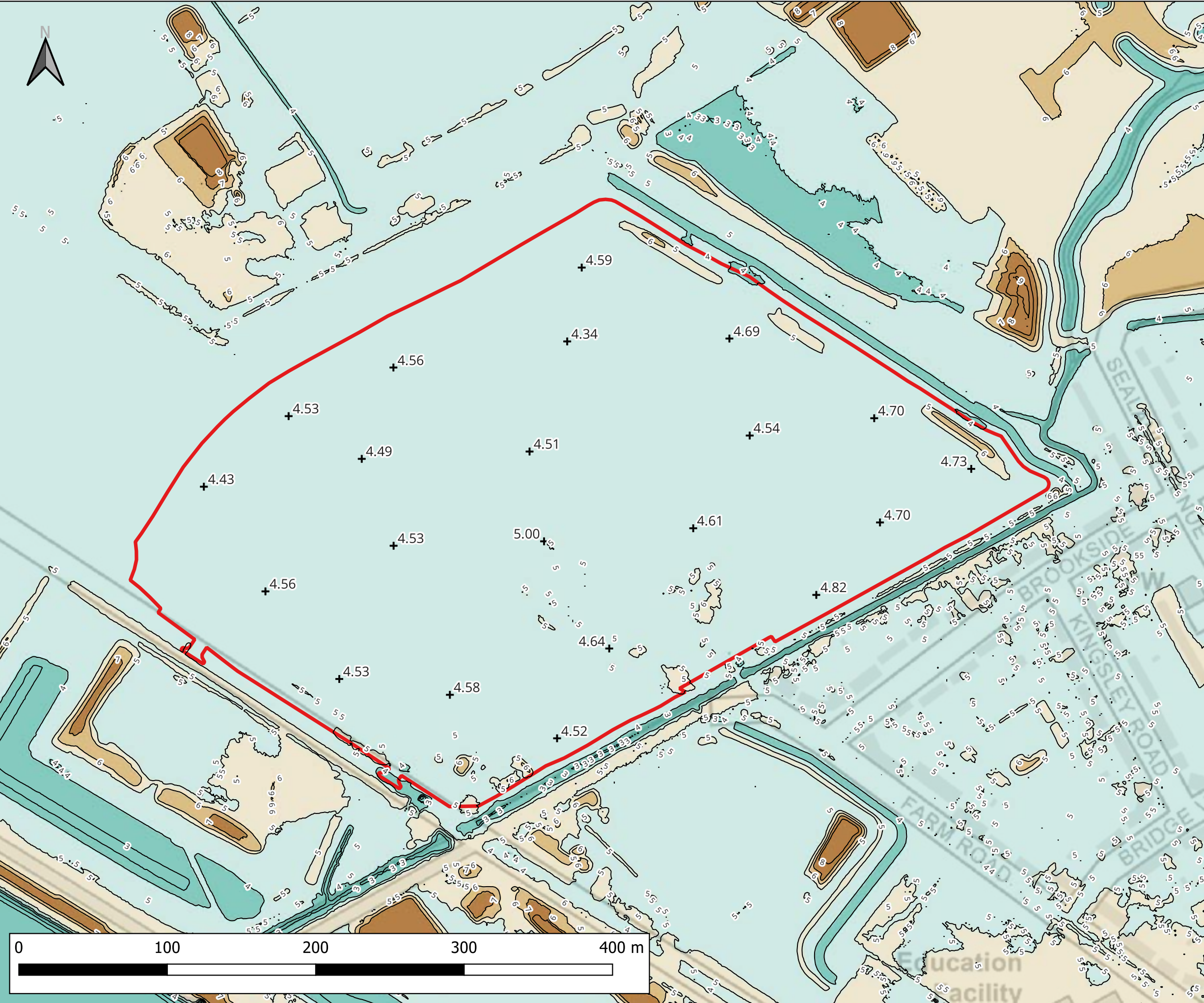


SCALE 1 : 2500

m 100 0 100 m

REPRODUCED FROM OS MASTERMAP 1:2500 SCALE BY PERMISSION OF ORDNANCE  
SURVEY ON BEHALF OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE.  
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Notes:  
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

**LEGEND**

Site Boundary  
1m contour

Ground Elevations (m AOD)

- <= 4.0
- 4.0 - 5.0
- 5.0 - 6.0
- 6.0 - 7.0
- > 7.0

**CLIENT:**  
Bellway Homes Limited (North West) & Persimmon Homes Ltd

**SCHEME:**  
Northern Gateway, Deeside

**PLOT TITLE:**  
LiDAR Plan  
1m Resolution  
Data from Natural Resources Wales

**PLOT STATUS:**  
FINAL

**DATE:**  
24-05-2024

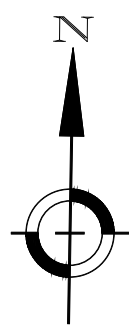
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**PLOT NAME:** 13028\_LiDAR\_Plan **REVISION:** -

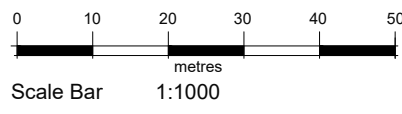
**Appendix C    Proposed Development Plan**








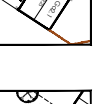
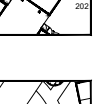


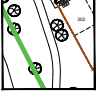
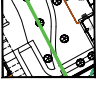
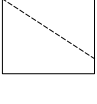
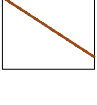
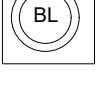
DEESIDE				
HOUSE TYPE MIX				
Housetype	Description	SQFT	Number Of Units	%
R25 HOUSETYPES				
Ailmouth semi	2 Storey 2 Bed	663 SQFT	2	1
Ailmouth end	2 Storey 2 Bed	663 SQFT	2	1
Ailmouth mid	2 Storey 2 Bed	663 SQFT	1	1
Danbury semi	2 Storey 3 Bed	818 SQFT	5	3
Chiltham semi	2 Storey 3 Bed	889 SQFT	5	3
Galloway semi	2 Storey 3 Bed	948 SQFT	20	10
Kingley det	2 Storey 3 Bed	976 SQFT	7	4
Sherwood	2 Storey 3 Bed	1010 SQFT	9	5
Barnwood	2 Storey 3 Bed	1041 SQFT	12	6
Saunton semi	3 Storey 3 Bed	1033 SQFT	0	0
Saunton mid	3 storey 3 Bed	1033 SQFT	4	2
Saunton end	2 Storey 4 Bed	1033 SQFT	8	4
Knebworth	2 Storey 4 Bed	1190 SQFT	7	4
Burnham	2 Storey 4 Bed	1115 SQFT	15	8
Marston	2 Storey 4 bed + study	1230 SQFT	10	5
Charmwood	2 storey 3 bed	1041 SQFT	1	1
R21 HOUSETYPES				
Ailmouth Semi	2 Storey 2 Bed	643 SQFT	2	1
Barnwood	2 Storey 3 Bed	1041 SQFT	16	8
Burnham	2 Storey 4 Bed	1114 SQFT	9	5
Danbury	2 Storey 3 Bed	818 SQFT	8	4
Deepdale	2 storey 3 Bed	887 SQFT	8	4
Galloway	2 Storey 3 Bed	919 SQFT	14	7
Kingley	2 Storey 3 Bed	976 SQFT	9	5
Knebworth	2 Storey 4 Bed	1190 SQFT	11	6
Marston	2 Storey 4 Bed + Study	1226 SQFT	6	3
Saunton Semi	3 Storey 3 Bed	1007 SQFT	6	3
Sherwood	2 Storey 3 Bed	968 SQFT	3	2
			92	
TOTAL		202314 SQFT	200	
Gross Site Area	13.666 Acres	6.42 Hectares		
Undevelopable	1.987 Acres	0.7960252 Hectares		
Nett Site Area:	13.899 Acres	5.62 Hectares		
Gross Density:	12.61 Units/Acre	31.15 Units/Hectare		
Nett Density:	14.39 Units/Acre	35.56 Units/Hectare		
Gross Footage:	12751.42 SQFT/Acre	2927.29 SQM/Hectare		
Nett Footage:	14556.01 SQFT/Acre	3341.57 SQM/Hectare		



# NORTHERN GATEWAY, DEESIDE



## Development Key:-

- **Proposed adoptable highway**
- **Denotes existing buildings**
- **Planning Application Boundary**
- **Proposed Shared Private Drives**
- **Group Single Garage**
- **Group Sales Garage**
- **Group Twin Garage**
- **Proposed indicative soft landscaping.  
Refer to landscaping design for  
further details**
- **Proposed substation**
- **Cycle / Pedestrian Way**
- **Open Space**
- **1.8m close boarded screen fence**
- **1.8m full screen wall**
- **Bollard Lighting**

DO NOT SCALE FROM THIS DRAWING.  
ALL DIMENSIONS MUST BE VERIFIED AT THE SITE BEFORE SETTING OUT.  
COMMENCING WORK OR MAKING ANY SHOP DRAWINGS.

B	Rollards shown to plots 225 - 228, 241-242, 255-256, 269-271, 273-274, 288-292, 299-302	17.05.24	CF
A	Updated to comments presented from JR	10.01.24	SDA



Northern Gateway, Deeside

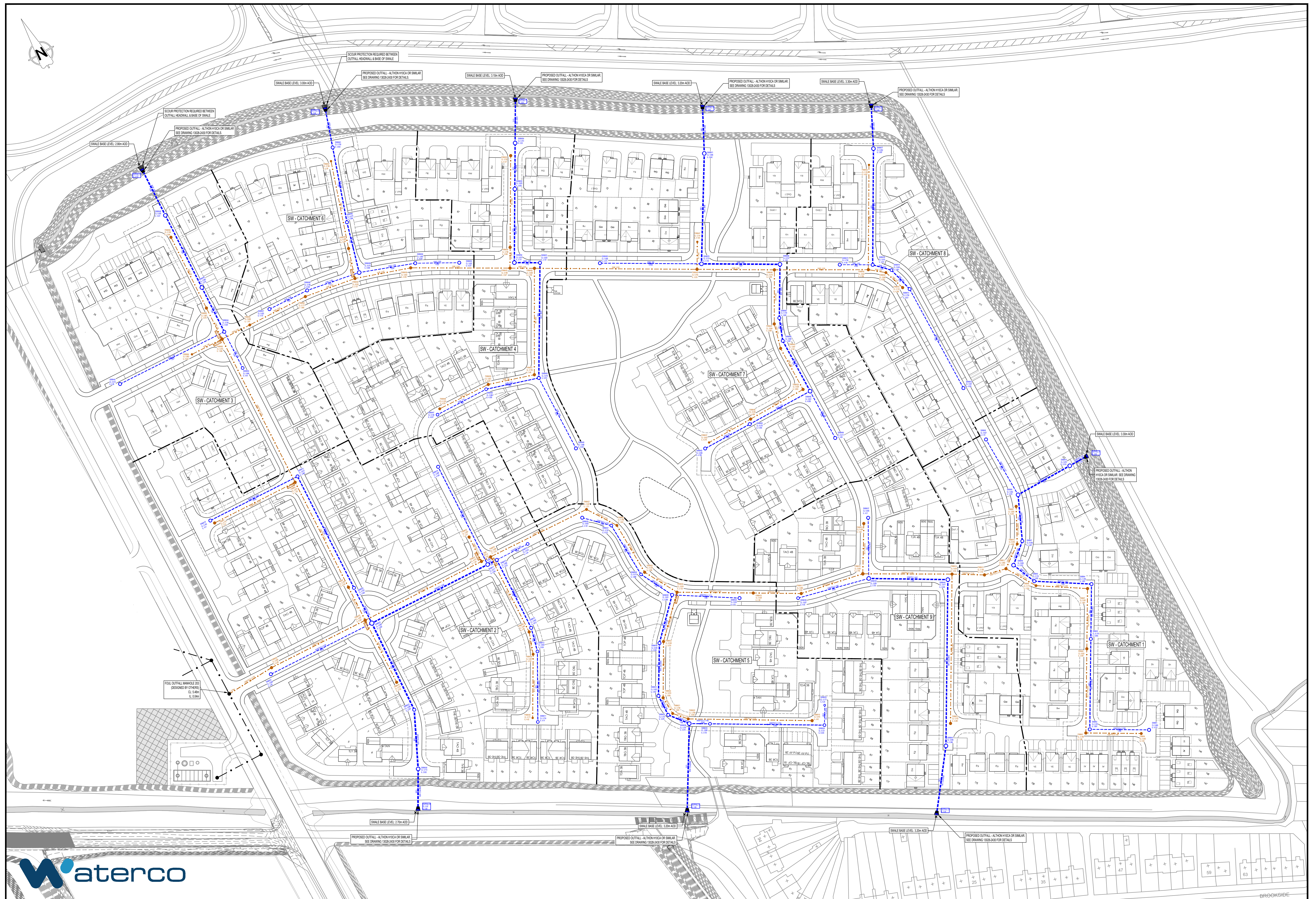
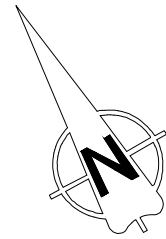
Planning Layout  
Composite Layout

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NGD/SDA/09	B	17.05.24



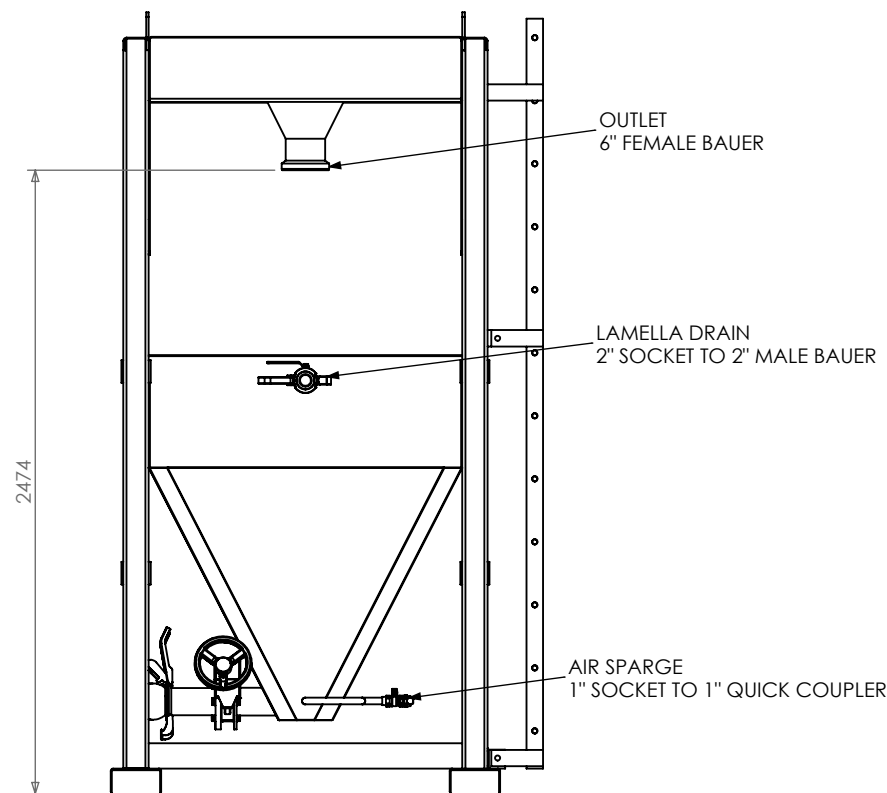
## **Appendix D    Proposed Drainage Layout**



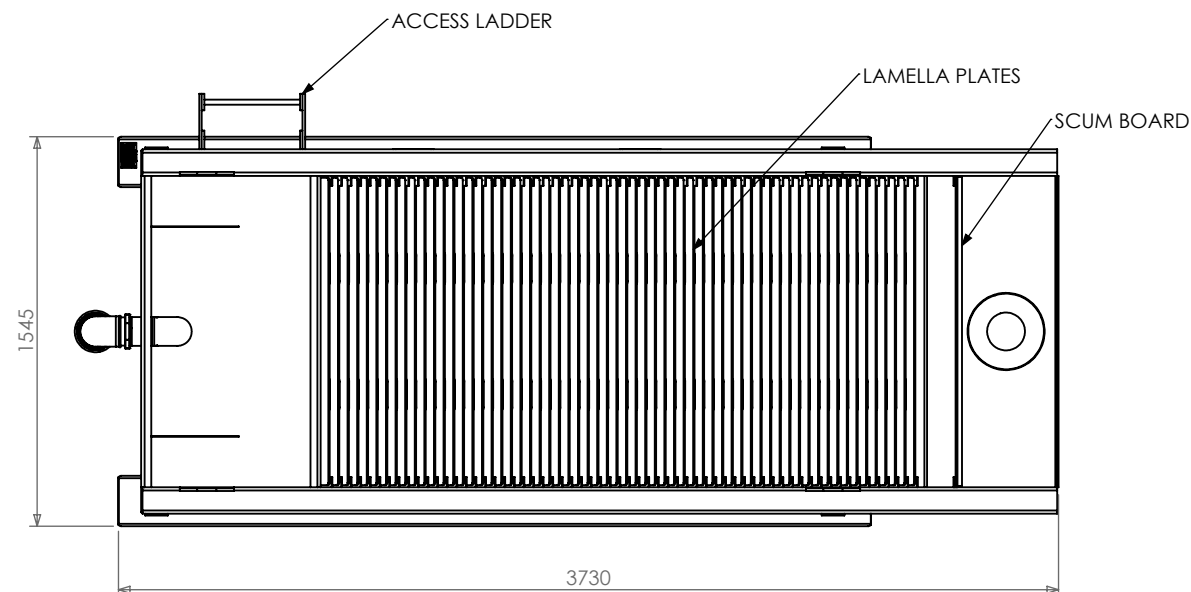




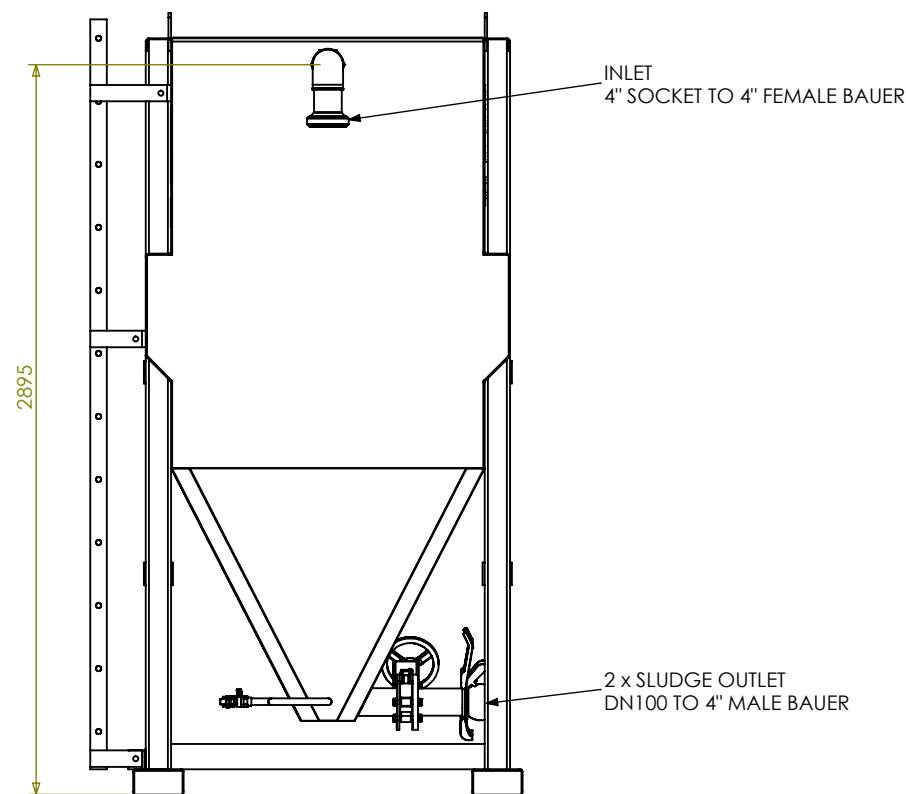
**Appendix E    Settlement Tank Details**



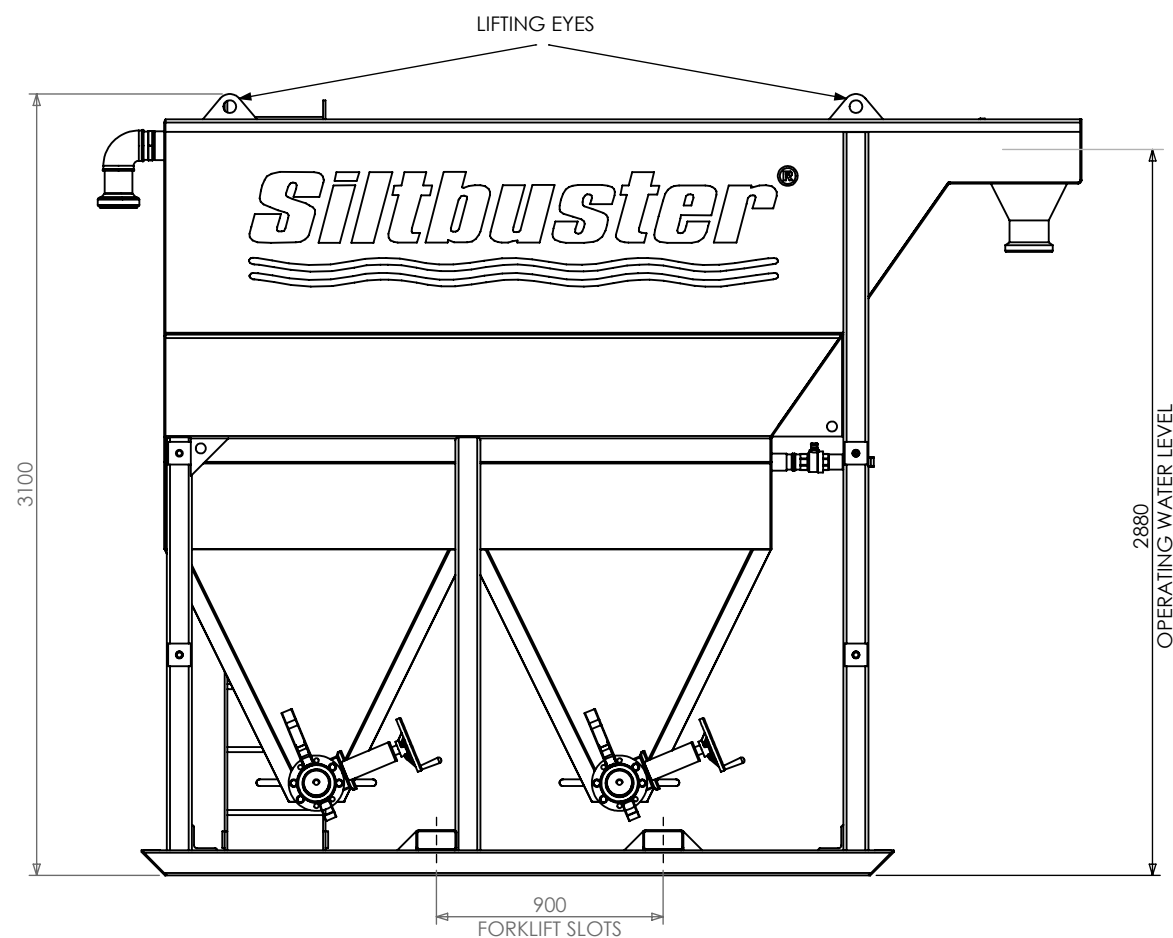
REAR ELEVATION



PLAN ELEVATION



FRONT ELEVATION



SIDE ELEVATION

## Unit Specifications

### 1 Materials of Construction

Carcass:	S275 Mild Steel
Lamella Plates:	PVC (8mm)

### 2 Corrosion Prevention (Primer Internal)

All Surfaces	Blast Clean SA2.5 (SSPC-SP-10)
Surface Prep:	2 Pack High Build Anti-Corrosive Epoxy Primer
Primer Coat:	DFT: 100µm
Thickness:	

Wetted Parts	None
Top Coat:	DFT: 100µm
Total Thickness:	Grey
Colour:	

External Surfaces	Standard RAL 5001 (Blue/Green)
Top Coat:	@DFT: 50µm
Total Thickness:	DFT: 150µm

### 3 Weight

Empty:	2.4t
Operating:	10t (Approx)

### 4 Additional Information

Nominal Design Flowrate:	50m <sup>3</sup> /hr
Effective Settlement Area:	50m <sup>2</sup>
Sludge Holding Volume:	2x0.4m <sup>3</sup>
Sludge Thickening Area:	3.0m <sup>2</sup>
Lifting Eye Design:	Type C

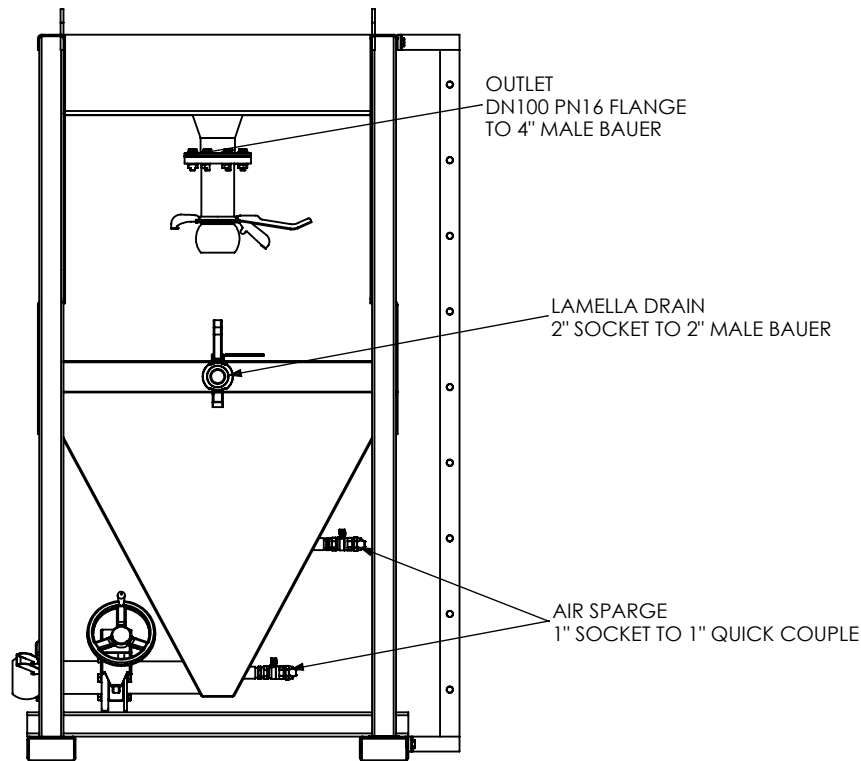
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REVISION:	2
DATE:	21/12/2021

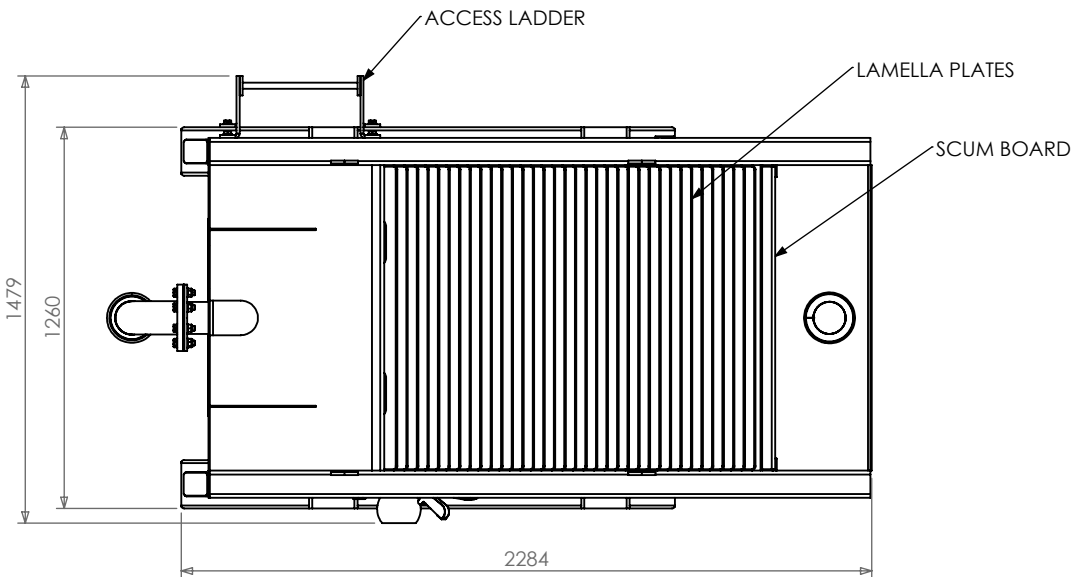
**Siltbuster**<sup>®</sup>

SILTBUSTER LTD.  
WILLIAMS BUILDING,  
KINGSWOOD GATE,  
MONMOUTH,  
MONMOUTHSHIRE  
NP25 4EE

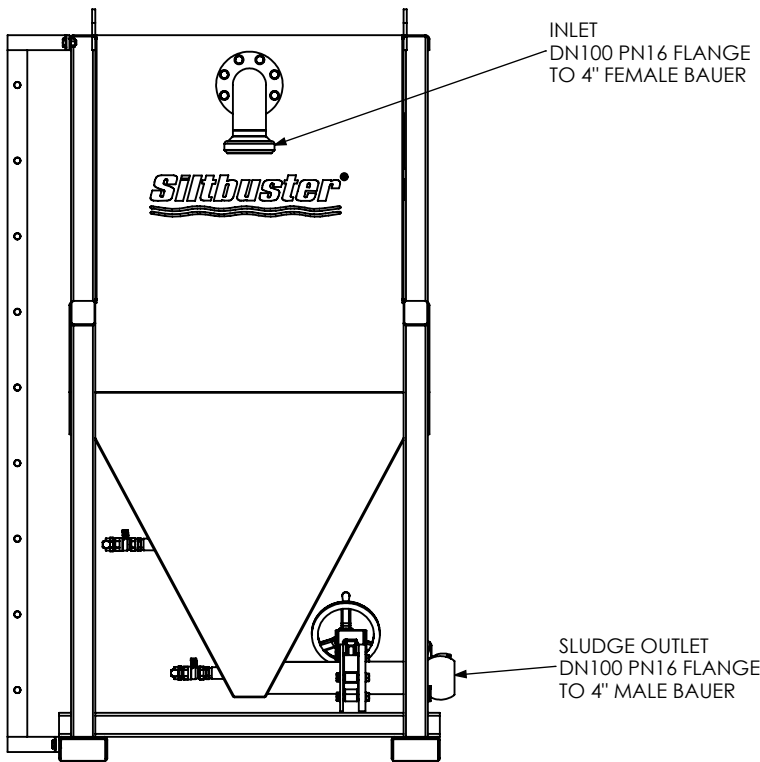
TEL: 01600 772256  
FAX: 01600 775312  
EMAIL: [enquiries@siltbuster.com](mailto:enquiries@siltbuster.com)



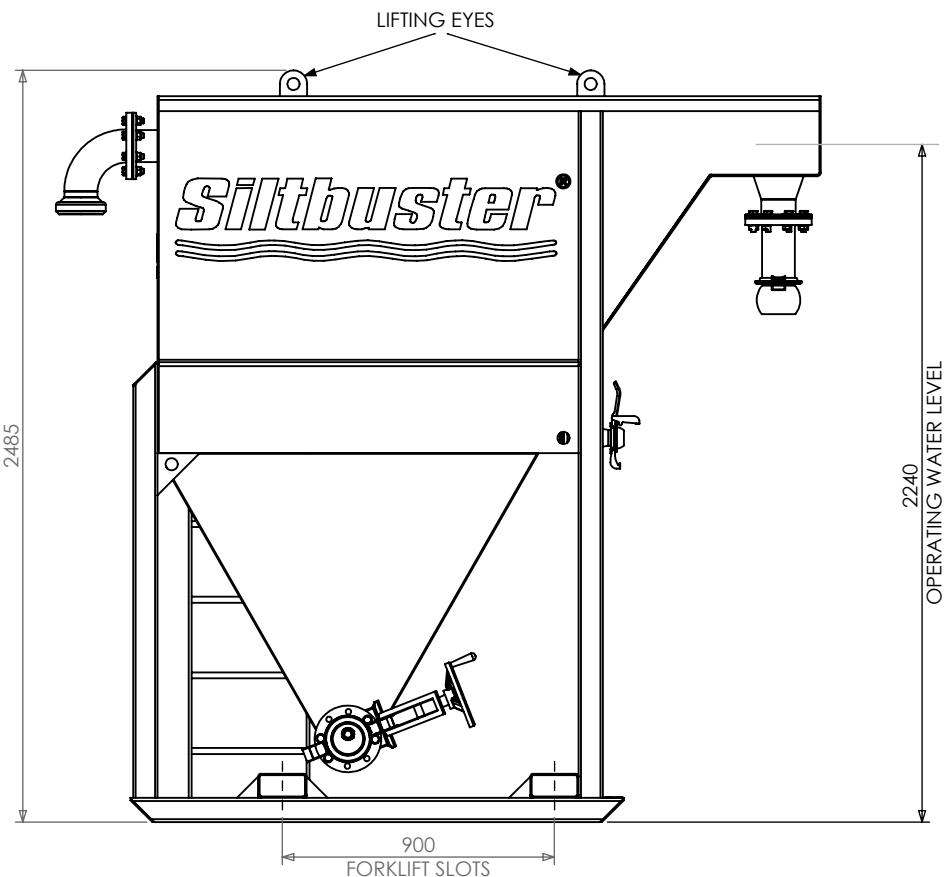
REAR ELEVATION



PLAN ELEVATION



FRONT ELEVATION



SIDE ELEVATION

Unit Specifications

1 Materials of Construction

Carcass:	S275 Mild Steel
Lamella Plates:	PVC (6mm)

2 Corrosion Prevention (Primer Internal)

All Surfaces	
Surface Prep:	Blast Clean SA2.5 (SSPC-SP-10)
Primer Coat:	2 Pack High Build Anti-Corrosive Epoxy Primer
Thickness:	DFT: 100µm

Wetted Parts	
Top Coat:	None
Total Thickness:	DFT: 100µm
Colour:	Grey

External Surfaces	
Top Coat:	Standard RAL 5001 (Blue/Green) @DFT: 50µm
Total Thickness:	DFT: 150µm

3 Weight

Empty:	1t
Operating:	3.5t (Approx)

4 Additional Information

Nominal Design Flowrate:	20m <sup>3</sup> /hr
Effective Settlement Area:	20m <sup>2</sup>
Sludge Holding Volume:	0.5m <sup>3</sup>
Sludge Thickening Area:	1.5m <sup>2</sup>
Lifting Eye Design:	Type A

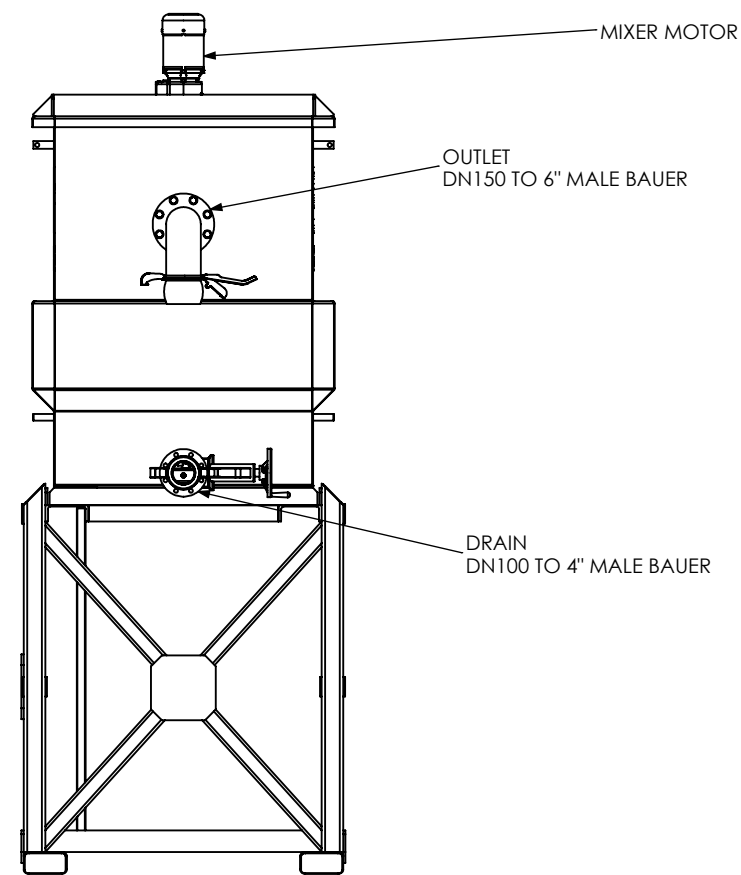
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DRAWING NO:	S230024
REVISION:	2
DATE:	29/11/2021



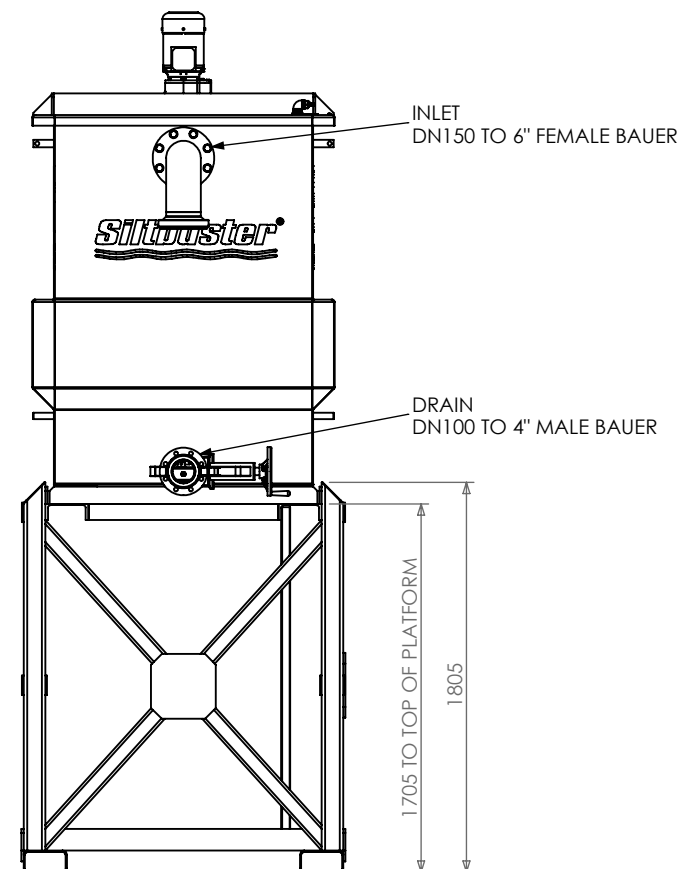
SILTBUSTER LTD.  
WILLIAMS BUILDING,  
KINGSWOOD GATE,  
MONMOUTH,  
MONMOUTHSHIRE  
NP25 4EE

TEL: 01600 772256  
FAX: 01600 775312  
EMAIL: enquiries@siltbuster.com

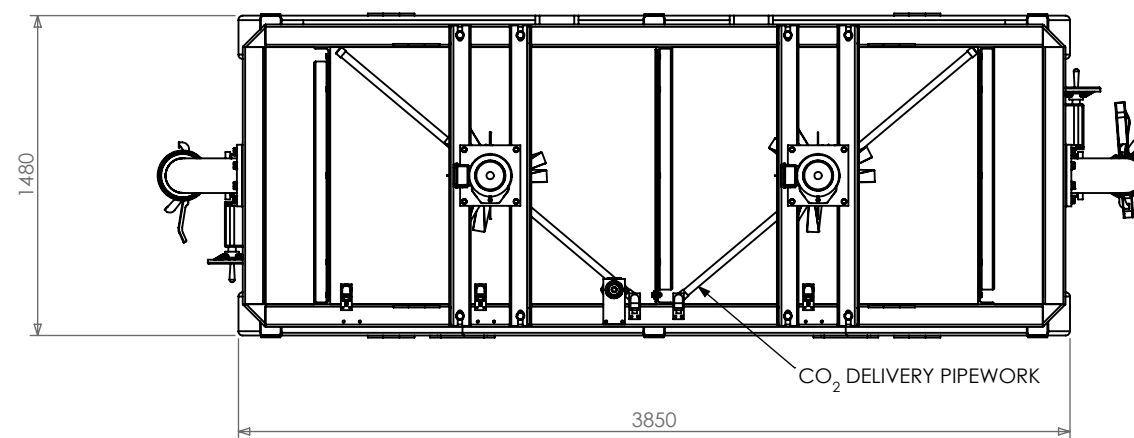
SILTBUSTER IS A REGISTERED TRADEMARK OF SILTBUSTER LTD.  
DIMENSIONS ARE INDICATIVE AND DUE TO ONGOING PRODUCT DEVELOPMENT ARE SUBJECT TO CHANGE WITHOUT NOTICE.  
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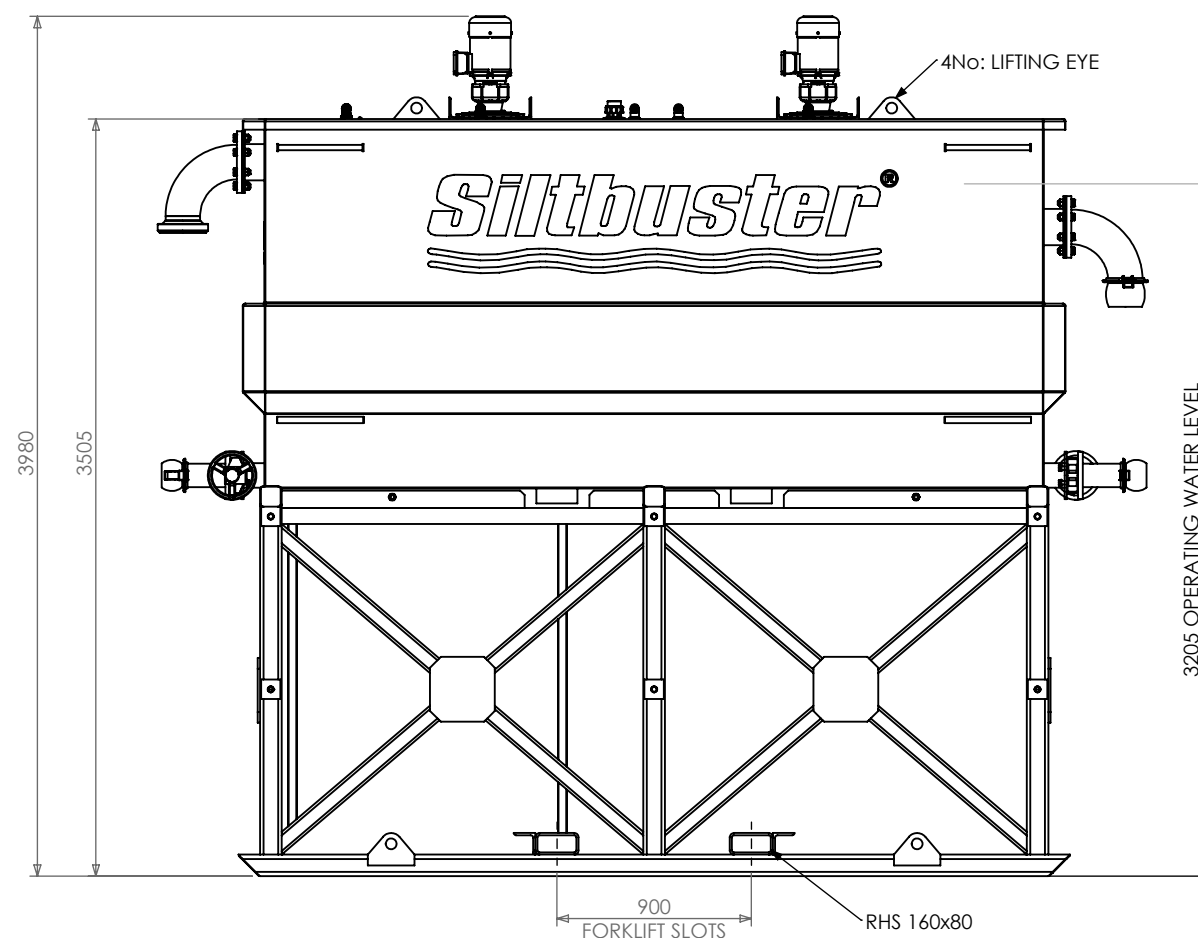
REAR ELEVATION



FRONT ELEVATION



PLAN ELEVATION



SIDE ELEVATION

## Unit Specifications:

### 1 Materials of Construction

Carcass:	S275 Mild Steel
Mixer Shaft:	SS316(1.4401) Stainless Steel
CO <sub>2</sub> Sparger Pipework:	Galvanised Mild Steel
Stand:	S275 Mild Steel
Walkway:	Galvanised Mild Steel

### 2 Corrosion Prevention (Primer Internal)

All Surfaces	
Surface Prep:	Blast Clean SA2.5 (SSPC-SP-10)
Primer Coat:	2 Pack High Build Anti-Corrosive Epoxy Primer
Thickness:	DFT: 100µm
Wetted Parts	
Top Coat:	None
Total Thickness:	DFT: 100µm
Colour:	Grey
External Surfaces	
Top Coat:	Standard RAL 5017 @DFT: 50µm
Total Thickness:	DFT: 150µm

### 3 Weight

MT8	
Empty:	2t
Operating:	9t (Approx)

STAND	1.2t
-------	------

### 4 Additional Information

Operating Volume:	6.8m <sup>3</sup>
Control Panel Appliance Inlet:	32A/400V 3PH+N+E
Mixer Motors:	2.2kW/400V
Configuration:	1 or 2 stage compartments
Baffles:	"Over/Under" or "Under/Over"
Lifting Eye Design:	Type C

## TITLE: MT8 (STAND) DATASHEET

MODEL:	A0000500
REVISION:	0
DATE:	06/09/2021

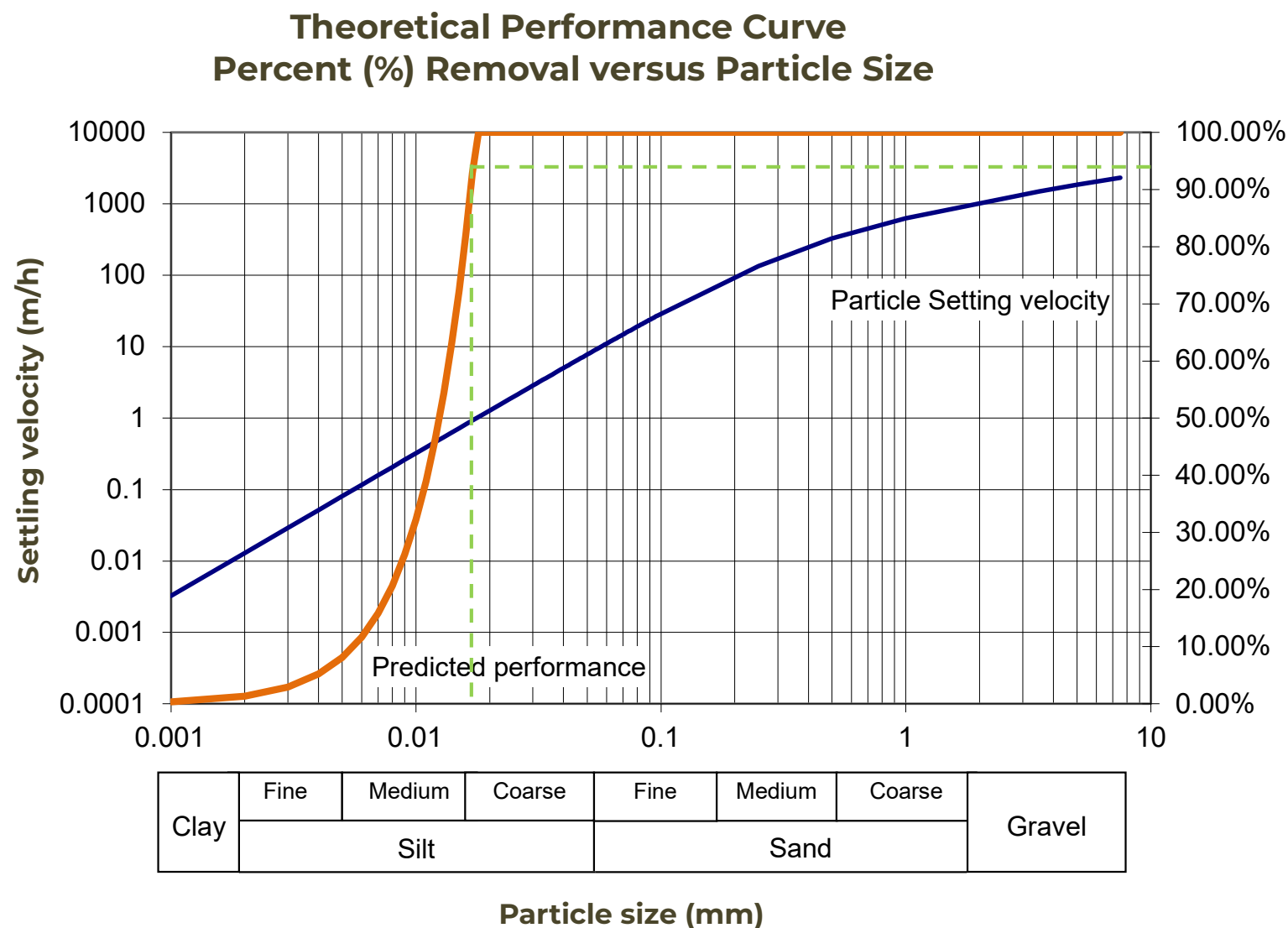
**Siltbuster**<sup>®</sup>

SILTBUSTER LTD.  
WILLIAMS BUILDING,  
KINGSWOOD GATE,  
MONMOUTH,  
MONMOUTHSHIRE  
NP25 4EE

TEL: 01600 772256  
FAX: 01600 775312  
EMAIL: enquiries@siltbuster.com

# Lamella performance (gravity alone)

- Mineral based solids (silica);
- $2.65\text{t/m}^3$  (particle density);
- At typical operating range;
- 95% of solids down to 18 microns in diameter;
- Proportion of the finer sized solids in suspension;
- Greater percentage of finer sized solids are captured if flowrate is reduced;



## Material Safety Data Sheet

Page 1 of 5

### Section 1: Identification of Substance/mixture and of the company undertaking

#### 1.1: Product Identifier

Product Name    AQUATREAT 2084

#### 1.2: Relevant Identified use of substance/mixture and uses advised against

#### 1.3: Details of the Supplier of the safety data sheet

Company Name: Aquatreat

Albany House  
North Dock  
Llanelli  
Carmarthenshire  
SA15 2LF

Telephone: 01554 775236

Fax: 01554 772253

E-mail: [enquiries@aquatreat.co.uk](mailto:enquiries@aquatreat.co.uk)

Website: [www.aquatreat.co.uk](http://www.aquatreat.co.uk)

#### 1.4: Emergency Telephone Numbers:

Emergency Telephone: 0333 333 9499

### Section 2: Hazards Identification

#### 2.1: Classification of substance/mixture according to Regulation (EC) No 1272/2008

Classification under CLP:        NC            Not Classified

Additional Information:

#### 2.2: Label Elements: Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]

Label elements under CLP:        NC            Not Classified as Hazardous

Signal Words:

Hazard Pictograms:

#### Precautionary Statements

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

#### 2.3: Other Hazards

**Section 3: Composition information on hazardous ingredients**

Hydrocarbons, C12 - C15, isoalkanes, cyclics &lt;2% aromatics

EINECS	CAS No	Classification according to Regulation (EC) 1272:2008	Percent
920-107-4		H302; ASP Tox.1	20 - 45

Isotridecanol, ethoxylated

EINECS	CAS No	Classification according to Regulation (EC) 1272:2008	Percent
Polymer		H318; Eye Dam.1, H302; Acute Tox.4	<5

**Section 4: First Aid Measures****4.1: Description of First Aid measures**

- Skin Contact:** Wash off immediately with soap and plenty of water and remove any contaminated clothing. If persistent irritation occurs, seek medical advice
- Eye Contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Alternatively, rinse immediately with Diphoterine. Get prompt medical attention
- Ingestion:** Rinse mouth with water. DO NOT induce vomiting. Seek medical attention immediately
- Inhalation:** Move to fresh air. No special first aid measures required.

**4.2: Most important symptoms and effects both acute and delayed**

- Skin Contact:** None under normal use
- Eye Contact:** None under normal use
- Ingestion:** None under normal use
- Inhalation:** None under normal use

**4.3: Indication of any immediate medical treatment and special treatment required**

None reasonably foreseeable.

**Section 5: Fire fighting measures****5.1: Extinguishing media**

Use fire extinguishers appropriate to the surrounding fire

**Unsuitable Media**

None

**5.2: Special hazards arising from the substance/mixture**

Oxides of Carbon and Nitrogen. Hydrogen cyanide may be produced as a result of combustion in an oxygen deficient atmosphere.

**5.3: Advice for firefighters**

Wear self contained breathing apparatus and protective clothing. Spills become extremely slippery when wet



**Section 6: Accidental Release Measures****6.1: Personal precautions, protective equipment and emergency procedures**

Wear appropriate PPE - See section 8

**6.2: Environmental precautions**

Do not allow spills to enter surface water drains and watercourses

**6.3: Methods and Materials for containment and clean up**

Soak up with inert material. Sweep and shovel into suitable closed containers and arrange disposal

**6.4: References to other sections****Section 7.0: Handling and Storage****7.1: Precautions for safe handling**

Avoid contact with skin and eyes. Renders surfaces extremely slippery when spilled. Do not eat, drink or smoke when using this product

**7.2: Conditions for safe storage.**

Keep away from heat and sources of ignition. Do not allow the product to freeze. Incompatible with oxidising agents

**7.4: Specific End Use(s)****Section 8: Exposure controls/Personal Protection****8.1: Control Parameters**

None known

**8 Hour TWA:**

**15MinSTEL:**

**8.2: Exposure Controls**

Engineering Measures    Use local exhaust ventilation if misting occurs

Respiratory Protection    respiratory protective equipment is not normally required under normal conditions of use

Hand Protection    PVC or other plastic material gloves

Eye Protection    Safety glasses with side shields

Skin Protection    Coveralls or chemical apron

**Section 9.0: Physical and Chemical Properties****9.1: Information on basic physical and chemical properties**

State: Liquid

Colour: Milky

Odour: Aliphatic

Specific Gravity: 1.05

pH: 5 - 8 @5g/l

**9.2: Other Information**

## Section 10: Stability and Reactivity

## 10.1: Reactivity

Stable under recommended conditions of storage and use

## 10.2: Chemical Stability

Stable under recommended conditions of storage and use

## 10.3: Possibility of Hazardous Reactions

None known

## 10.4: Conditions to Avoid

Heat, Sunlight and frost

## 10.5: Incompatible Materials

Oxidising Agents

## 10.6: Hazardous Decomposition Products

Oxides of Carbon and Nitrogen

## Section 11: Toxicological Information

Aquatreat 2084

Dermal	Rat	LD50	>5000 mg/kg (estimated)
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Aquatreat 2084

Oral	Rat	LD50	>5000 mg/kg (estimated)
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## Section 12: Ecological Information

## 12.1: Toxicity

LC50/Oncorhynchus mykiss/ 96hours>100mg/l (estimated), EC50/Daphnia Magna/48 hours>100mg/l (estimated), IC50/Algae/72 hours>100mg/l(estimated)

## 12.2: Persistence and Biodegradable

Not readily biodegradable

## 12.3: Bioaccumulative Potential

This product is not expected to bioaccumulate

## 12.4: Mobility in Soil

No data available

## 12.5: Results of PBT and vPvB Assessment

Not according to the criteria of Annex XIII of REACH

## 12.6: Other adverse effects

None

## Section 13: Disposal Information

Dispose of waste in accordance with local or national regulations

## Section 14: Transport Information

UN Number	<input type="text"/>		
Shipping Name	Not classified as hazardous for transport		
Transport Class	<input type="text"/>		
Packing Group	<input type="text"/>		
Environment Hazard	<input type="text"/>		
Special Precautions	<input type="text"/>		
Tunnel Code	<input type="text"/>	Transport Category	<input type="text"/>

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

## Section 15: Regulatory Information

15.1: Safety, Health and Environmental regulations/legislation specific for the substance/mixture

15.2: Chemical safety assessment

## Section 16: Other information

The above information is based on our present knowledge of the product at the time of publication. It is given in good faith, no warranty is implied as to the quality or specification of the product. Information contained in this data does not constitute an assessment of workplace risks. The user must satisfy himself that the product is entirely suitable for their purpose

**SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006****Polyaluminium chloride hydroxide sulphate (PAC)**

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
MSDS code: MPAC100

**1. Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Trade name : Polyaluminium chloride hydroxide sulphate (PAC)  
CAS-No. : 39290-78-3  
EC-No. : 254-400-7

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Use of the Substance/Mixture : At this time we do not yet have information on identified uses.  
They will be included in this safety data sheet when available.

Recommended restrictions on use : At that time we do not yet have information on use restrictions.  
They will be included in this safety data sheet when available.

**1.3. Details of the supplier of the safety data sheet**

Company : Brenntag UK & Ireland  
Albion House, Rawdon Park  
GB LS19 7XX Leeds Yeadon  
Telephone : 0113 3879 200  
Telefax : 0113 3879 280  
E-mail address : msds@brenntag.co.uk

**1.4. Emergency telephone number**

Emergency telephone number : Emergency only telephone number (open 24 hours):  
01865 407333 (N.C.E.C. Culham)

**2. Hazards identification****2.1. Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

REGULATION (EC) No 1272/2008			
Hazard class	Hazard category	Target Organs	Hazard statements

## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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Hazard class	Hazard category	Target Organs	Hazard statements
Skin corrosion/irritation	Category 2		H315
Serious eye damage/eye irritation	Category 2		H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Directive 67/548/EEC or 1999/45/EC	
Hazard symbol / Category of danger	Risk phrases
Irritant (Xi)	R36/38

For the full text of the R-phrases mentioned in this Section, see Section 16.

**Most important adverse effects**

- Human Health : See section 11 for toxicological information.  
No further information available.
- Physical and chemical hazards : See section 9 for physicochemical information.  
No further information available.
- Potential environmental effects : See section 12 for environmental information.  
No further information available.

**2.2. Label elements****Labelling according to Regulation (EC) No 1272/2008**

Hazard symbols :



Signal word : Warning

Hazard statements : H315 Causes skin irritation.  
H319 Causes serious eye irritation.

**SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006****Polyaluminium chloride hydroxide sulphate (PAC)**

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
**MSDS code: MPAC100**

**Precautionary statements**

General	:	P264 P280	Wash hands thoroughly after handling. Wear protective gloves/ protective clothing/ eye protection/ face protection.
		P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P332 + P313	If skin irritation occurs: Get medical advice/ attention.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P337 + P313	If eye irritation persists: Get medical advice/ attention.

**Additional Labelling:**

EUH210 Safety data sheet available on request.

**Hazardous components which must be listed on the label:**

**II** • Aluminum chloride hydroxide sulfate

**2.3. Other hazards**

No other information is available.

**3. Composition/information on ingredients****3.1. Substances**

Chemical nature : Aqueous solution

Chemical Name	Identification Number	Amount [%]
Aluminum chloride hydroxide sulfate	CAS-No. : 39290-78-3	< 100
	EC-No. : 254-400-7	

*SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006***Polyaluminium chloride hydroxide sulphate (PAC)**

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Print Date 2010/12/03  
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**4. First aid measures****4.1 Description of first aid measures**

- General advice : Take off all contaminated clothing immediately.
- In case of skin contact : Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.

**4.2 Most important symptoms and effects, both acute and delayed**

- Symptoms : No further information available.
- Effects : No further information available.

**4.3 Indication of immediate medical attention and special treatment needed**

- Treatment : Treat symptomatically.  
No further information available.

**5. Fire-fighting measures****5.1. Extinguishing media**

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.

**5.2. Special hazards arising from the substance or mixture**

- Specific hazards during fire : The product itself does not burn.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### ***Polyaluminium chloride hydroxide sulphate (PAC)***

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fighting

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### 5.3. Advice for firefighters

Special protective equipment for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary.

Further information : No further information available.

## 6. Accidental release measures

## 6.1 Personal precautions, protective equipment and emergency procedures

**Personal precautions** : Wear personal protective equipment. Avoid contact with skin and eyes.

## 6.2 Environmental precautions

Environmental precautions : No special precautions required.

### 6.3 Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up	: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Treat recovered material as described in the section "Disposal considerations". Flush away residuals with plenty of water.
---	--

## 6.4 Reference to other sections

For personal protection see section 8.

## 7. Handling and storage

### 7.1 Precautions for safe handling

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Advice on safe handling : Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.  
Hygiene measures : Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feedingstuffs. When using do not eat or drink.

**7.2 Conditions for safe storage, including any incompatibilities**

Requirements for storage areas and containers : Keep in an area equipped with acid resistant flooring. Use acid resistant materials only. Use chloride resistant materials only. Keep container tightly closed.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on common storage : Store separate from acidic- and chloride sensitive materials.

German storage class : 8B: Non-combustible substances, corrosive

Storage temperature : 0 - 30 °C

**7.3 Specific end uses**

Specific use(s) : No information available.

**8. Exposure controls/personal protection****8.1. Control parameters**

**Component: Aluminum chloride hydroxide sulfate**

**CAS-No.  
39290-78-3**

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Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
MSDS code: MPAC100

**Other OELs**

Regulatory Basis	: UK. EH40 Workplace Exposure Limits (WELs)
Regulatory List	: EH40 WEL
Value type	: Time Weighted Average (TWA):
Value	: 2 mg/m <sup>3</sup>

**8.2. Exposure controls****Engineering measures**

Refer to protective measures listed in sections 7 and 8.

**Personal protective equipment***Respiratory protection*

Advice : Breathing apparatus needed only when aerosol or mist is formed.

*Hand protection*

Advice : Neoprene gloves  
Protective gloves should be replaced at first signs of wear.

Glove thickness : 0.75 mm

*Eye protection*

Advice : Tightly fitting safety goggles

*Skin and body protection*

Advice : Protective suit

**Environmental exposure controls**

General advice : No special precautions required.

**9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

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Form	: liquid
Colour	: clear to slight cloudy
Odour	: odourless
Odour Threshold	: Currently we do not have any Information from our supplier about this.
pH	: 2 - 3 20 °C
Freezing point	: -12 °C
Boiling point	: > 100 °C
Flash point	: not applicable
Evaporation rate	: Currently we do not have any Information from our supplier about this.
Flammability (solid, gas)	: Currently we do not have any Information from our supplier about this.
Upper explosion limit	: Currently we do not have any Information from our supplier about this.
Lower explosion limit	: Currently we do not have any Information from our supplier about this.
Vapour pressure	: Currently we do not have any Information from our supplier about this.
Relative vapour density	: Currently we do not have any Information from our supplier about this.
Density	: ca. 1.192 - 1.3 g/cm <sup>3</sup> 20 °C
Water solubility	: completely soluble
Partition coefficient: n-octanol/water	: Currently we do not have any Information from our supplier about this.
Ignition temperature	: Currently we do not have any Information from our supplier about this.
Thermal decomposition	: Currently we do not have any Information from our supplier about this.

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Viscosity, kinematic	: Currently we do not have any Information from our supplier about this.
Explosive properties	: Currently we do not have any Information from our supplier about this.
Oxidizing properties	: Currently we do not have any Information from our supplier about this.

**9.2 Other information**

No further information available.

**10. Stability and reactivity****10.1. Reactivity**

Advice : No information available.

**10.2. Chemical stability**

Advice : No decomposition if stored and applied as directed.  
No further information available.

**10.3. Possibility of hazardous reactions**

Hazardous reactions : No information available.

**10.4. Conditions to avoid**

Conditions to avoid : Extremes of temperature and direct sunlight.

**10.5. Incompatible materials**

Materials to avoid : Oxidizing agents  
Bases

**10.6. Hazardous decomposition products**

Hazardous decomposition products : Oxygen  
hydrogen chloride

**11. Toxicological information****11.1. Information on toxicological effects**



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MSDS code: **MPAC100**

<b>Product:</b>	<b>CAS-No.</b> <b>39290-78-3</b>
<b>Acute toxicity</b>	
<b>Oral</b>	
Value type	: LD50
Value	: > 5,000 mg/kg
Species	: rat
<b>Irritation</b>	
<b>Skin</b>	
Remarks	: Irritating to skin.
<b>Eyes</b>	
Remarks	: Irritating to eyes.
<b>Sensitisation</b>	
Remarks	: No sensitizing effect known.

**12. Ecological information****12.1. Toxicity**

<b>Component: Aluminum chloride hydroxide sulfate</b>	<b>CAS-No.</b> <b>39290-78-3</b>
<b>Acute toxicity</b>	
<b>Fish</b>	
Species	: Leuciscus idus (Golden orfe)
Exposure Time	: 48 h
Value type	: LC50

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||Value : ca. 1,500 mg/l

**12.2. Persistence and degradability****12.3. Bioaccumulative potential****12.4. Mobility in soil****12.5. Results of PBT and vPvB assessment****12.6. Other adverse effects**

<b>Product:</b>	<b>CAS-No.</b> <b>39290-78-3</b>
<b>Additional ecological information</b>	

Remarks : Solutions with low pH-value must be neutralized before discharge.  
Ecological injuries are not known or expected under normal use.

**13. Disposal considerations****13.1. Waste treatment methods**

Product : Can be disposed as waste water, when in compliance with local regulations.

Contaminated packaging : Empty remaining contents. Rinse with plenty of water. Store containers and offer for recycling of material when in accordance with the local regulations.

European Waste Catalogue Number : No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

**14. Transport information****14.1. UN number**

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3264

**14.2. UN proper shipping name**

ADR : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(Aluminum chloride hydroxide sulfate)

RID : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(Aluminum chloride hydroxide sulfate)

IMDG : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(Aluminum chloride hydroxide sulfate)

**14.3. Transport hazard class(es)**

ADR-Class : 8  
(Labels; Classification Code; Hazard  
identification No; Tunnel restriction code) 8; C1; 80; (E)

RID-Class : 8  
(Labels; Classification Code; Hazard  
identification No) 8; C1; 80

IMDG-Class : 8  
(Labels; EmS) 8; F-A, S-B

**14.4. Packaging group**

ADR : III

RID : III

IMDG : III

**14.5. Environmental hazards**

Labeling according to 5.2.1.8 ADR : no

Labeling according to 5.2.1.8 RID : no

Labeling according to 5.2.1.6.3 IMDG : no

Classification as environmentally  
hazardous according to 2.9.3 IMDG : no

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MSDS code: **MPAC100**

**14.6. Special precautions for user**

Not applicable.

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

IMDG : Not applicable.

**15. Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.2. Chemical Safety Assessment**

Currently we do not have any Information from our supplier about this.

**16. Other information****Full text of R-phrases referred to under sections 2 and 3.**

R36/38 Irritating to eyes and skin.

**Full text of H-Statements referred to under sections 2 and 3.**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

**Further information**

Other information : The information provided in this Safety Data Sheet is correct to

*SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006****Polyaluminium chloride hydroxide sulphate (PAC)***

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
**MSDS code: MPAC100**

the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use.

|| Indicates updated section.