

## DRAINAGE REPORT & CERTIFICATION

**SITE:**  
**Site to South of Gordonstown,  
Grange,  
Keith  
AB55 6LY**

**FOR:**  
**Mr & Mrs R. Davidson**

**DATE:**  
**12<sup>th</sup> January 2020**



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**This report is prepared in line with the following guidance:**

Scottish Executive Development Department's Planning Advice Note No. PAN 61 -  
Planning and Sustainable Urban Drainage Systems

The Water Environment (Controlled Activities) (Scotland) Regulations 2005

Building (Scotland) Act 2003 Building (Scotland) Regulations 2004 - Domestic Handbook 2019  
Section 3- Environment

## 1.0 DEVELOPMENT PROPOSALS

The development site is located on agricultural land to the south of Gordonstown, Grange, Keith. It is proposed to erect a new dwelling house and attached garage on the site.

The National Grid Reference is: NJ 48637 53525.

## 2.0 SITE VISIT

On 28<sup>th</sup> December 2020, trial pits were excavated using a 360 degree slew excavator with a 600mm digging bucket. The weather was drizzly and cold.

### *Existing Drainage*

There are currently no drainage facilities on the site.

### *Existing surface water*

There is an existing field drain along the southern boundary of the site, which flows generally in a westerly direction with an eventual outfall to the Burn of Paithnick.

Refer to: <https://map.environment.gov.scot/sewebmap/>

## 3.0 SITE INVESTIGATION

### 3.1 Preliminary Ground Assessment

- (i) *identification of the underlying geology and aquifers*  
The British Geological 1:50 000 scale bedrock geology description: Fordyce Limestone Formation - Pelite And Semipelite. Metamorphic Bedrock formed approximately 541 to 1000 million years ago in the Period. Originally sedimentary rocks formed in shallow seas. Later altered by low-grade metamorphism.  
Refer to: <https://www.bgs.ac.uk/map-viewers/geology-of-britain-viewer/>
- (ii) *whether the ground is liable to flooding*  
According to the SEPA flood risk map the site does not have a likelihood of flooding.  
Refer to: <https://map.sepa.org.uk/floodmap/map.htm>
- (iii) *nature of the sub-soil and groundwater vulnerability*  
The generalised soil type in the area is mineral gleys. Gleys are soils that are periodically or permanently waterlogged.  
Refer to: [https://map.environment.gov.scot/Soil\\_maps/?layer=1](https://map.environment.gov.scot/Soil_maps/?layer=1)  
&  
<https://soils.environment.gov.scot/soils-in-scotland/guide-to-soil-types/>
- (iv) *implication of plot size*  
The site and surrounding land are owned by the applicant. There is sufficient area within the proposed site to accommodate the development and soakaways.
- (v) *proximity of underground services*  
The land owner has advised that there are no known underground services.
- (vi) *ground topography and local drainage patterns*  
A GPS topographical survey has been carried out on the site indicating that the site slopes gradually down to the south. The data allows us to position the house on the site in a location that will not significantly alter the existing topography or drainage patterns.
- (vii) *whether water is abstracted for drinking, used in food processing or farm dairies*  
No water abstraction takes place in the immediate vicinity of the site.

(viii) *implication for, and of, trees and other vegetation*

There are no trees or shrubs or other vegetation which will be adversely affected by the proposals.

This preliminary assessment indicates that the ground is unlikely to be suitable for a foul water and rainwater soakaway at the site

### 3.2 *Trial Pit*

The test pit locations were chosen taking into consideration of the proposed development and the topography of the site.

The trial pit was excavated to a depth of 2 metres, there was no evidence of running water however the sub soil was showing signs of saturation.

### 3.3 *Percolation Testing*

Two holes, 300mm square were excavated below the proposed invert level. The excavated holes were saturated and filled with water to a depth of at least 300mm.

After 6 hours, the water level had not reduced and the ground was deemed impermeable this resulted in the percolation test being abandoned. It was concluded that the ground would not be suitable for a traditional soakaway system.

## 4.0 **FOUL WATER DRAINAGE**

A Sewage Treatment Plant and partial soakaway is recommended for the dwelling house with discharge to the adjacent field drain.

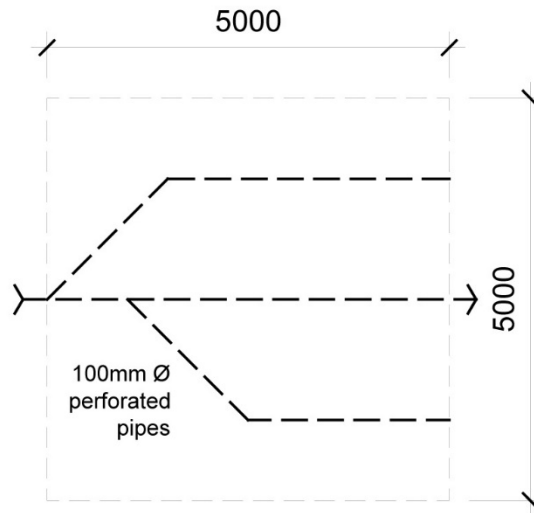
Based on 4 bedrooms (Population Equivalent = 6) we recommend adopting the Klargester Biotech Sewage Treatment Plant 6 POP (or equal and approved) with sampling chamber downstream and a soakaway size of 25m<sup>2</sup> as per SEPA guidance.

The final installed sewage treatment system and discharge will require to be licensed (PE>15) with SEPA .

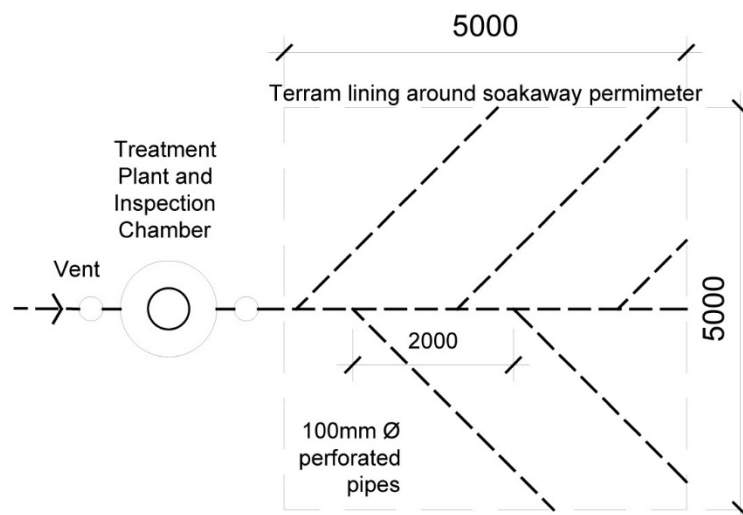
## 5.0 **SURFACE WATER DRAINAGE**

The rainwater drainage will discharge directly to the field drain via a 100mm diameter surface drain in accordance with The Water Environment (controlled activities) (Scotland) Regulations 2011 (version 8.4 October 2019). GBR10 the surface water run-off from a single dwelling and its curtilage is exempt from a SUDs system.

## 6.0 SOAKAWAY PLANS



Surface water soakaway



Foul water soakaway

