Application for Environmental Permit EPB3.5 (Version 4)

Buckles Farm, Kaber, Kirkby Stephen. Cumbria

Pre Application Ref.EPR/GP3001LP/A001

BF 6. Drainage Review

Drainage review goes with drainage drawing BF 2.2(iii) drainage arrangements

The poultry farm has existed since 2013 and was the subject of compliance with the needs of EA and NE but administered only through the planning process.

The review follows the drainage review guidance of 2008 and revised in 2012

It is planned that all components of the proposed building would comply with guidance as required and therefore the review relates only to the existing unit.

Step 1 BF 2.2 (iii) Drainage arrangements

Step 2 Detailed site walk and revisions on 8th July 2021

Step 3 site drainage plan revised during application.

Step 4 Questionaire

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|  | Question | Answer | Comments |
| 1 | Receptor identification on plan? | Yes | No comprehensive plan previously established. Only soakaways are for 2 No. septic tanks. |
| 2 | Access paths to key inspection Monitoring points? | No | Access to and management of original swale now on annual schedule for grass cutting in June – August. Repairs when required and re-seeding undertaken Sept / Oct. On new management schedule. |
| 3. | Identification of all discharge sources?. | Yes | All known drains laid by existing site operators in 2013. One historic drain from main farm site by-passes poultry business. |
| 4a. | Inlet points? | yes | Inlets on drawing to wash-water catch pit, septic tank soakaways and swale. |
| 4b | Outlet points? | yes | No open waters – Free range and risk to bio-security. High level overflow from swales when exceeding design treatment to Bracken Gill (on drawing) |
| 5. | Sizing of structures and quality of construction? | Yes | Wash-down reception pit dry and covered at all times. Annual inspection.  Swales designed and on maintenance schedule.  No NVZ in area. |
| 6. | Protection of receptors against pollution? | Yes | Flow to wash down interceptor pits controlled. All flows to it derived from controlled pressure washers. Swales designed to accommodate variable flows from incident rainfall. |
| 7 | Consistency of run off in fluctuating flow regimes ? | Yes | No diversion systems on site. Only routine discharge is from swales which receive lightly contaminated surface water.  During clean out, no litter put outside onto concrete pad. All transported directly via trailers / conveyors to covered manure store or directly applied to fields if timing coincides with that operation. |
| 8 | All pathways shown on plan | Yes |  |
| 9 | All manholes and inspection covers on plan | yes | Manholes will be added to site drawing of new site at construction time. |
| 10 | Identification of manholes to specific drainage routes | Yes | There are no scenarios where a diverter mechanism changes the nature of flow quality or direction at different times. |
| 11 | Colour coded manholes | **No** | not yet. Separate system. Colour code to be included in improvement plan. |
| 12 | Standard of gutters and downspouts and drains |  | Capacity and size determined at house design stage. On maintenance schedule. No filters included. All flows to swales for ‘attenuation’, not treatment. |
| 13 | Sleeping policemen diverters and interceptors identification? | yes | Overland flow not an issue for a site which is wholly engineered at design stage.  Internal house floor is main concrete area checked at each clean-out. Supported by DPM beneath. No risk of flow impediment. All materials on site stored in identified location. |
| 14 | Limits of concrete , planings and grass | yes | Access roads made of compacted planings. At both locations there is an identified location where vehicle wheels are sprayed (not washed). These areas of roads have intercepted drainage that passes to swales for treatment. |
| 15 | Identification of drain inlets, channels and gullies on plan | yes | Drains at gable ends and limited.  Only channels on site are at end of each building, and internal.  These carry final manure belt before exiting building and lift to trailer and also used for wash-water draining to reception pit outside the house but provided with separate roof to preclude rainwater. Channel built as integral to house flooring and checked when house cleaning undertaken. |
| 16 | Dedication of Q15 above to specific conduits? |  | Channels all ‘red coded’ as manure is a solid, which could fall off belt and wash-water is defined as dilute slurry.(tankered off site to available land over 3-4 days every 55 to 60 weeks) All contained. |

Sources of pollutants

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| 17 | Are all sources included on the plan? | Yes |  |
| 18 | Is roof water uncontaminated? | Yes | House 1a has high velocity fans and 1b, 2a and 2b all have gable end extraction fans. However **all** roof water is directed to swales also to support Council objectives to attenuate/ buffer incident rainfall and contribute to flood avoidance downstream (Appleby and Carlisle) and to mitigate against climate change. |
| 19 | Is the rainfall collected from the yards areas uncontaminated? | No | Small yards (concrete pads) at gable end will receive settled dust from extraction fans and therefore needs diversion to sales as ‘lightly contaminated surface water’ at all times. Swales designed to accommodate. |
| 20 | Are all contaminated liquids directed to a managed receptor? | yes | * No run-off potential from manure in new covered store as manure maintained at >60% dryness. * Wash-water (pressure washer)all goes to interception pit for continuous removal during house cleaning. * All drainage downwards in scratch area is intercepted by perforated drain system and transferred to swales for treatment. * Oils storage and transfer to standby generator is carefully undertaken to strict standard of security. Tanks double skinned and locked at all time Delivery mechanism (hose and trigger)checked 6 monthly * Pesticides and disinfectants. Stored in Central Services building in bunded area or refrigerator. Working solutions made up in bunded area. No residuals anticipated. Wheel *spray* (not *wash*) is low volume and any residual dripping off is to a section of road provided with interception drain to swale system. * Feedstuffs delivered by hose to silos. Displaced air exits via cyclone fitted with filter. Any spillage during hose coupling is either returned to house as feed or classed as dirty and bagged and disposed of to licenced site. |
| 21 | Are any lightly contaminated sources directed to swales or soakaways?. | Yes  both | Soil quality and ground conditions good for proposed swale and existing one has functioned since 2013. |
| 22 | Has the release of all contaminants been minimised where possible? | Yes | Contaminants largely confined inside because of nature of business. Those which escape such as dust from ventilation system are managed through design of infrastructure and diversion to appropriate treatment. Ie. Swales and the appropriate ‘rural’ SUDs.  In this case no installation of sleeping policemen, kerbs of diverters is necessary and precautionary principal taken on interpretation and management of lightly contaminated waters. |

Checklist (Points identified on Site Drainage plan)

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|  | **Points to be shown on plan** | **Tick if included in Plan** |
| 1 | Location of all receptors | **√** |
| 2 | Buildings, structures and other sources of drainage | **√** |
| 3 | Points where clean water discharges to watercourses | **√** |
| 4 | Outfall points to into dirty water lagoons and their emptying points. | **None** |
| 5 | Boundaries of grassed areas, wales and soakaways | **√** |
| 6 | Pathways (blue) where the flows are clean | **√** |
| 7 | Pathways (purple) where the flows are lightly contaminated | **√** |
| 8 | Pathways (red) where the flows are dirty water | **√** |
| 9 | Access Points into pathways and coloured accordingly | **√** |
| 10 | Inspection Points and manholes and coloured accordingly | **√ proposed building (2a and 2b) to follow. (not yet available)** |
| 11 | Diverters, interceptors and sleeping policemen | **None** |

Drainage Action Plan

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| **Issue** | **Action** | **Proposed timescale** | **Estimated cost** | **Agreed , EA timescale** |
| Access to receptors & Inspection points | Grass cutting on swales to maintain optimal sward | 3x /yr | 3 x £150 =£450/ yr. |  |
| Colour code manhole lids | Given nature of site this action requires appraisal.  Important task is to include all drains on site plan accurately and make available on notice board. | One -off | Potentially £0 |  |