Construction Environmental Management Plan (CEMP).

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Client:	GHR Developments
Compiled By:	George Harvey
Contracts Manager:	Meyrick Williams
Project Manager:	Steve Pope

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Appendix Number:	Document Title:	Version (If Applicable):
1	Arboricultural Method Statement	
2	Construction Phase Plan	
3	Method Statement and Risk Assessment	
4	Traffic Management Plan	

1.0. Introduction

1.1. Description of Project

GHR Developments are to remediate the former golf course and landfill site at Virginia Park, Caerphilly to provide a clean, safe development plateau ready for housing development.

1.1.1. Site Address

Virginia Park Golf Club, Heol Bro Wen, Caerphilly, CF83 3SW

1.2. Project Organisation and Responsibilities

1.2.1. Overall Project Organisation

Figure 1 shows an overall management structure for the project from Prichard's with roles and responsibilities of key team members.

The main responsibility for the project will be with Contracts Manager Meyrick Williams, Project Manager Steve Pope and Site Foreman Joss Pope.

Project Manager, Steve Pope, will be responsible for the resourcing of all plant and labour.
Health and Safety Manager Jason Cornock will oversee all health and safety related to the project and will carry out monthly safety audits on site, but Project Manager Joss Pope will be responsible for the health and safety on site.

Environmental Manager George Harvey will be responsible for all environmental aspects.

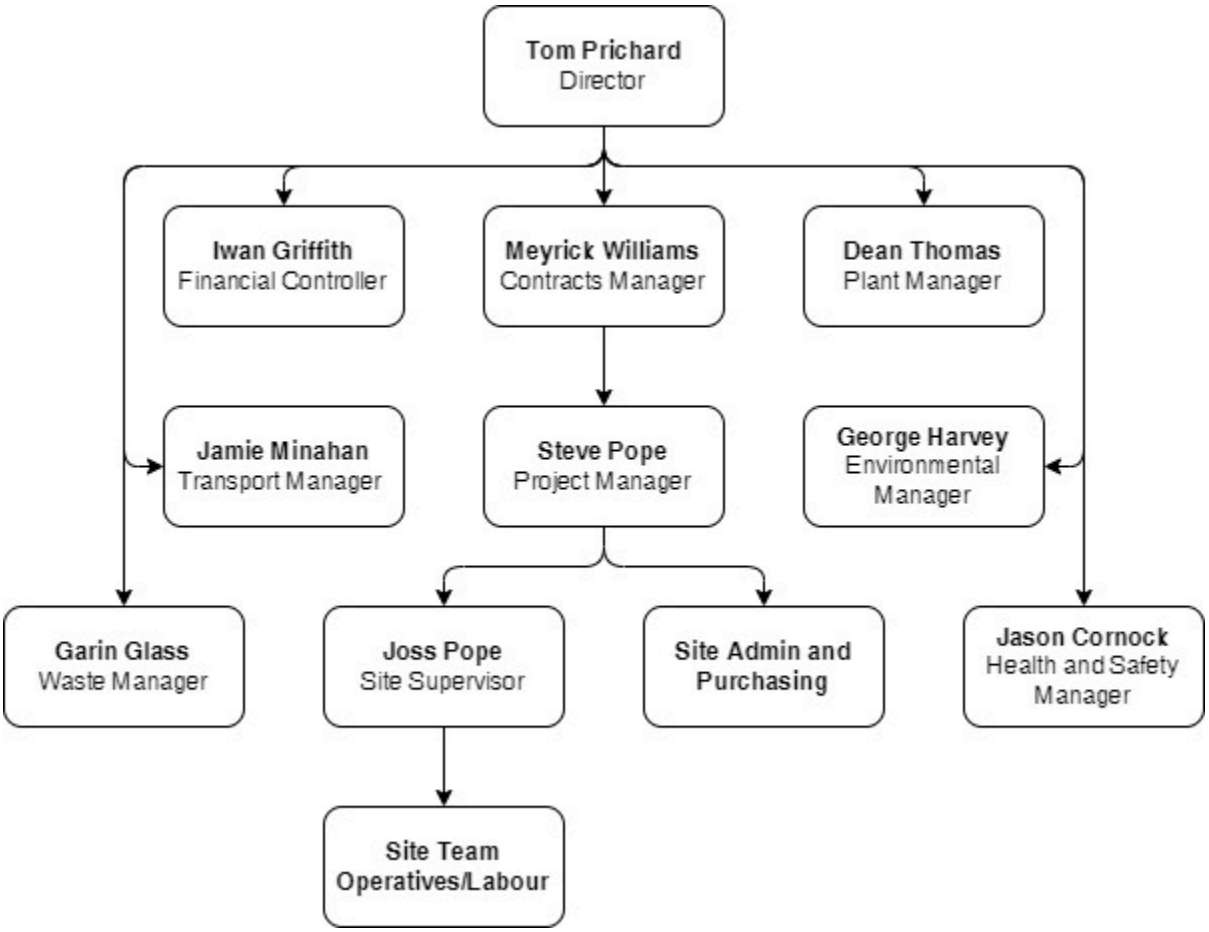

Figure 1: Project Management Team Organogram.

1.2.2. Responsibilities of the Environmental Manager

George Harvey is the companies Environmental Manager who is responsible for all of the company's Environmental activities. George will visit site at the start of the project to ensure environmental compliance and aid the site setup. He will then call into site fortnightly to advise and ensure that all potential risks are mitigated against throughout the operations. George will also be responsible for the deployment of any environmental permits for the treatment of contaminated land, if any such contamination is encountered.

Prichard's trainee Environmental assistant, Callum Mitchell will be responsible for setting up the monitoring of dust and PM10 and for taking the appropriate samples.

The environmental team will collate all waste movements to and from the site during the project to input into the final Health and safety files.

1.2.3. Supply Chain

Prichard's have a robust system in place to ensure the competencies of our supply chain and sub-contractors and have been vetted using our sub-contractor assessment forms to ensure they have adequate systems and procedures in place with regards to environmental standards.

All sub-contractors will be working under the control of Prichard's and under Prichard's supervision on site.

1.3. CEMP Review and Updating

The CEMP is designed to be dynamic in nature throughout the course of the project. It will be updated at regular intervals as the project progresses and as and when different milestones are reached, such as the completion of different phases.

2.0. Scope & Benefits of the CEMP and Regulations

2.1. Purpose of the CEMP

The CEMP is written to provide all relevant parties to the site information of all potential environmental concerns and issues that could result from the activities being carried out, and the measures to be put in place to mitigate against any negative consequences. The CEMP allows all parties to provide their input into the site and to discuss any other relevant environmental concerns.

2.2. Regulatory Framework

This CEMP has been compiled with consideration given to the following environmental legislations.

Table 1: Regulatory Framework

Environmental Factor	Status/Legal Protections
Wildlife Sites, e.g., SSSI's	The Wildlife and Countryside Act 1981 (Amendment) (Wales) Regulations 2004
	Natural Environment and Rural Communities Act 2006 (Commencement) (Wales) Order 2006
	Countryside Rights of Way (CRoW) Act (2000)
European Protected Species: e.g., Bats & Dormice,	Conservation (Natural Habitats, &c.) Regulations 1994
	The Conservation of Habitats and Species Regulations 2017
Other Protected Species: e.g., Nesting Birds, Reptiles & Badgers	The Wildlife and Countryside Act 1981 (Amendment) (Wales) Regulations 2004
	Protection of Badgers Act 1992
Invasive Plant Species	Wildlife and Countryside Act 1981 (Schedule 9) *It is an offence to cause the spread of Japanese Knotweed or Giant Hogweed*
Fuel Storage and Handling	Oil Storage Regulations 2002 *Applicable to storage of fuels outside in containers with a capacity greater than 200 litres.*
Waste	Environmental Protection Act 1990
	Hazardous Waste (England and Wales) Regulations 2005
	The Waste (England and Wales) Regulations 2011 (as amended)
	Waste Management, The Duty of Care Code of Practice (2016 update)
Water	Water Resources Act 1991 *It is an offence to pollute any controlled waters*
Environmental Incidents	Water Resources Act 1991
	Environmental Protection Act 1990

3.0. Communications

3.1. Meetings

Monthly progress meetings will take place on site between Prichard's (Principal Contractor), Integral Geotechnique (Principal Designers) and GHR Developments / Land matters (Client). Environmental concerns will be on the agenda for each of these meetings. Records of these meetings will be recorded and stored. A Prichard's contract directory is included at the end of this document for any party to communicate with at any time to discuss concerns.

3.2. Sub-contractors and the Supply Chain

As Principal Contractor, Prichard's will be responsible for the site sub-contractors and supply chain and ensure the highest standard of environmental safety is upheld across the project.

3.3. Training

Tool box talks shall be provided to all operatives on site on a basis as required by the training provider and daily briefings will be given to the site team by the site supervisor. Only suitably trained and qualified operatives shall operate the plant and machinery. Environmental awareness and methods of works will be a regular topic to ensure it is always fresh in the operative's minds.

3.4. Environmental Records

Records will be kept in the site file of any environmental incidents on site. GHR and Integral Geotechnique will be immediately informed of any such incident and Prichard's environmental manager will be responsible for following up on incidents and keeping track of records. All monitoring records and sample results will be kept throughout the project and records of material movements around the site and imported materials and exported wastes will be kept throughout the project.

4.0. Site Requirements

4.1. Site Operations

Figure 2 shows a development layout of the site with the houses in the 'Development area' and the southern public open space 'POS'. The sub-surface in the development area comprises of topsoil underlain by made ground, landfill waste and peat deposits above the natural ground.
The POS area sub-surface comprises of topsoil underlain by made ground, landfill material on top of the natural ground.

The purpose of the remediation operations is to remove all of the peat underlying the development area and transport this via site haul routes to the POS area, then remove the made ground, landfill materials and some of the natural ground excavated from the POS area to be deposited in the development area to build up the site levels.

The landfill wastes will be processed using screens to remove any oversize or unsuitable materials before it is placed and compacted in engineered fill layers in the ground.

The POS area is currently part of a floodplain, so the site operations will be careful to avoid raising the site levels in this area and materials will be stockpiled in segregated piles before being reused on site.

If there is a deficit of material available to fill the development area, then materials will be imported to site and placed.

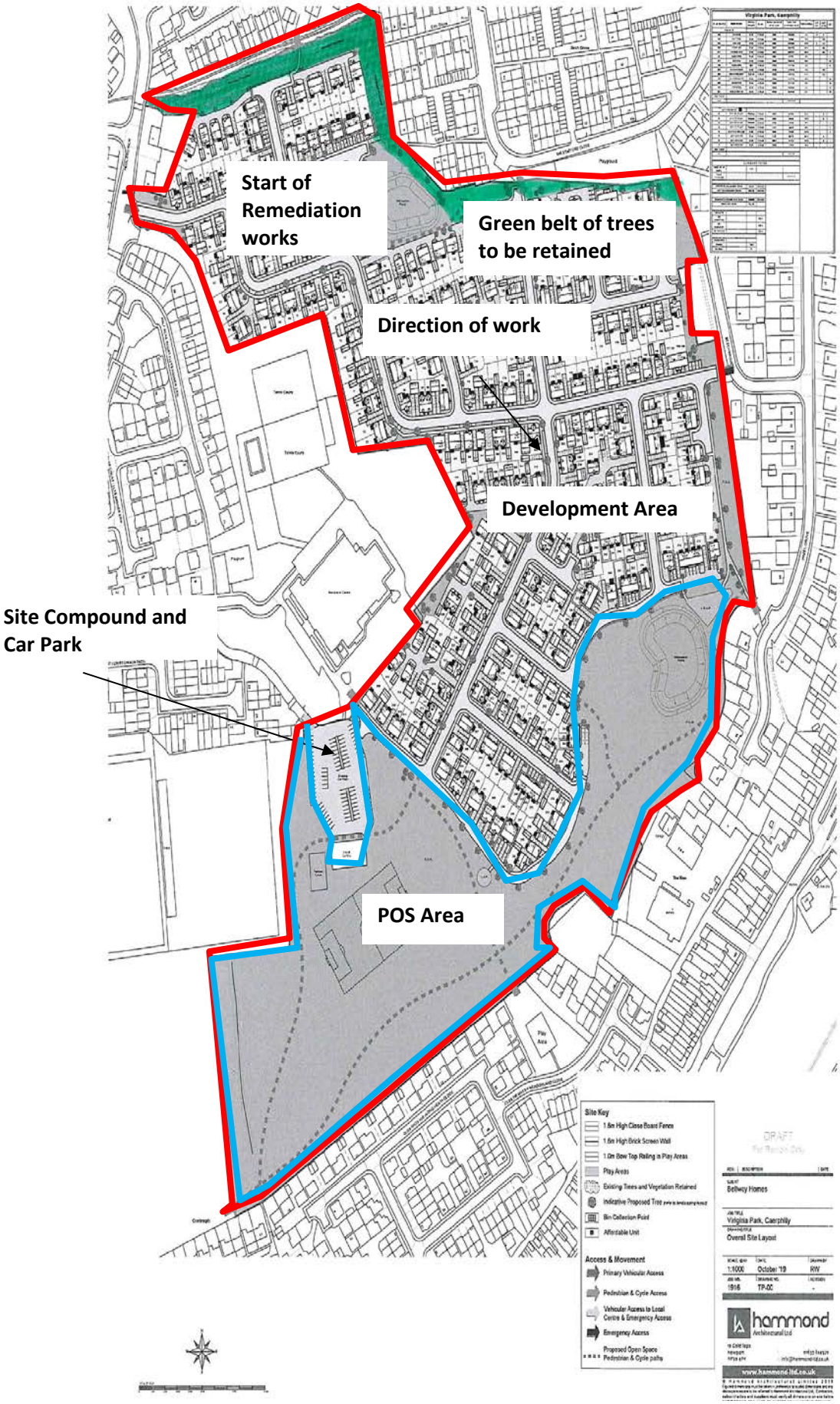

Figure 2: Development plan for the site

4.2. Pollution Control and Contingency Plan

Each phase will employ pollution controls to mitigate any impact onsite or to the surrounding environment.

Controls that will be in place for the duration of the project, will include;

- Road sweeping to avoid lorry derived silts on road and highways,
- Noise, dust and odour monitoring,
- All pollution control systems will be checked routinely for integrity and effectiveness.

There are several watercourses that exist around the site, as shown in the document titled Virginia Park Remediation Site Plans. Prichard's will erect drift style silt fences around the pond and the watercourse on the eastern boundary to prevent any silt accessing the watercourses.

It is not anticipated that any herbicides shall be used on the site, or that any contaminated material will be encountered during the earthworks to have the potential to cause pollution to the site watercourses.

Diesel for site plant shall be stored in double bunded bowsers capable of storing 110% of the volume of the tank, hydraulic oil shall be stored in the site compound area COSHH area complete with drip trays and suitable bunding. It is not anticipated that any other COSHH items are to be used during the remediation works.

An enclosed skip will be situated in the site compound area (Key 8, figure 3) for the disposal of any oil drums, rags and grease cartridges.

All plant contains drip and spillage trays to control any fuel spills and will be stored near to the site compound area when not in use.

Should any pollution occur, the works will be halted immediately and GHR and Integral Geotechnique will be informed, an action plan will then be put in place to control the pollution event the spillage will be cleaned up immediately using the site spill kits.

The site access road at the entrance to the car park will be cleaned using a road sweeper to prevent any debris being taken out onto the surrounding roads during periods of vehicle movement.

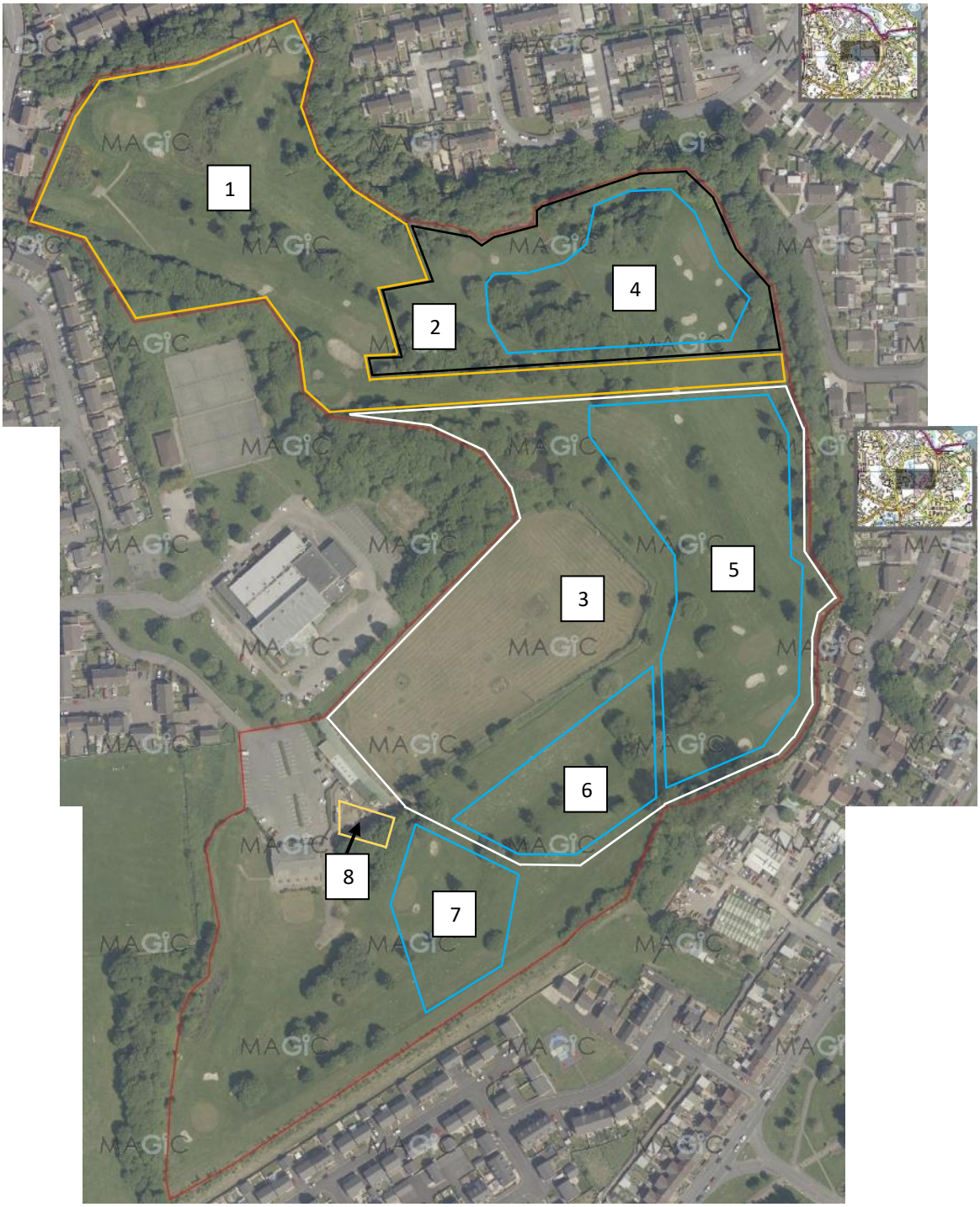

Figure 3: Waste, processing and plant locations.

1. Defined by dark yellow border – Phase 1A
2. Defined by black border – Phase 1B
3. Defined by white border – Phase 2
4. Defined by light blue border – Treatment area and storage stockpile
5. Defined by light blue border – Treatment area and storage stockpile
6. Defined by light blue border – Treatment area and storage stockpile
7. Defined by light blue border – Treatment area and storage stockpile

8. Defined by dark yellow border – COSHH stores and quarantine zone and skip laydown area for wastes unsuitable to be used in the remediation process.

Materials imported onto site will be deposited upon delivery and will not be stockpiled. Imported material will be added over the site won materials.

5.0. Effects

5.1. Landscape Effects

5.1.1. Existing Environment

The proposed development will improve the existing site by enhancing the public open space environment and drainage to allow local communities to fully enjoy the site. The landfill wastes will be processed and any contamination or unsuitable materials will be removed offsite to provide a safe, clean development area.

5.1.2. Changes to Existing Environment

The works will provide the client, GHR developments with a suitable platform on which to develop residential housing.

5.1.3. Potential Construction Impacts

The construction operations will alter the existing landscape in the short-term creating segregated material stockpiles and haul routes throughout the site. Once an area has been completed and brought up to level the finished plateau will be dressed and look similar to the existing environment.

5.2. Ecological Effects

5.2.1. Existing Environment

The existing site has widespread trees throughout, the majority of these will be removed during the development, but a 15m green corridor of trees will remain along the northern boundary. There is widespread Japanese Knotweed throughout the site which will also be remediated under watching brief by a competent invasive species specialist.

5.2.2. Potential Effects

The majority of trees throughout the site will be removed as part of the construction works, and also the Japanese Knotweed stands will be removed from the development area. Once the housing development and final landscaping has been completed there will be a large number of new trees planted throughout the site.

5.2.3. Management and Mitigation

Multipronged preventative approach outlined in section 4.2. will be utilised to prevent and mitigate against a pollution event.

Appendix A shows an arboricultural method statement by Treescene showing the protection measures to be put in place along the northern boundary of the site.

5.3. Water Quality Effects

5.3.1. Existing Environment

The Existing watercourses, shown in document, Virginia Park Remediation Site Plans, are deemed to be clean of contamination and it is unknown at this stage the level of contamination throughout the perched waters and site groundwater, but it is assumed to be clean and able to accommodate clean pumped water to be filtered back into the ground through site lagoons.

5.3.2. Potential Effects

During the site operations there is a potential for silt runoff to the existing watercourses. These will be protected using silt fences in the locations shown in the document Virginia Park Remediation Site Plans. The groundwater is assumed to be clean and the quality will therefore not alter during the site operations. Any contamination in the soil will be removed and cleaned up as part of the works, which in turn will ensure that the groundwater stays clean.

5.3.3. Management and Mitigation

Multipronged preventative approach outlined in section 4.2. will be utilised to prevent and mitigate against a pollution event.

Silt fencing will be erected if required. Throughout the earthworks the water will be managed by a series of settlement lagoons, where it will be pumped away from the working area to the middle/southern part of the site to allow the excavation areas to be dry and free of water. This pumping operation and lagoon location will alter as the programme of works progresses.

5.4. Waste Management (Duty of Care)

A materials management plan will be put in place to cover the material movements around site and into and out of the site. A Site waste management plan (SWMP) will be in place to cover all waste movements offsite. All landfill wastes encountered on site will be processed using a screen and a skip bin will be onsite for the oversize / unsuitable materials to be removed offsite. Prichard's are an upper tier registered waste carrier and all of Prichard's transport fleet are operated by ISYS intelligent systems, which record all material movements electronically and provide duty of care

tickets directly to an online portal, which we can give the client and principal designer access to, to show transparency throughout the waste movements of the project. Prior to the commencement of the site works the SWMP will be produced to provide a forecast of the expected wastes to be removed offsite or recycled throughout the project, this will be updated monthly to reflect the site activities.

During the operations there will always be at least 5 operatives who are fully asbestos awareness trained. If any asbestos is encountered on site during the waste processing operations, then the site supervisor will be informed and an asbestos awareness trained operative will collect the suspicious materials wearing the relevant respiratory protective equipment, double bag the material, seal it with tape and dispose of in an enclosed skip for offsite disposal in a licensed facility. Records will be kept of the positions and details of each discovery.

5.5. Nuisance (Incl. Noise, Vibration & Dust)

5.5.1. Existing Environment

The existing environment is quiet with residential properties and sports facilities in the adjacent area.

5.5.2. Potential Effects

The site activities have the potential to produce noise and may generate dust throughout the project.

5.5.3. Management and Mitigation

Working hours shall be limited to 08:00 to 17:00 Monday to Friday and 09:00 to 13:00 on Saturdays. No works shall be permitted on Sundays or bank holidays.

Dust will be monitored daily by the site foreman. In the instance where dust may become an issue, such as during periods of dry weather, the company will utilise tractor and bowsers to dampen down materials. Materials will not be dampened to the point where materials are saturated so as to prevent silt production.

All plant and machinery used shall be well maintained and thoroughly checked before being used on site to ensure noise is kept within the operating standards. Dust shall be controlled on site by a towable water bowser, which will be used to dampen down haul roads or a portable dust boss suppression system where works are carried out adjacent to residential properties. Dust, PM10 and asbestos fibres will be monitored using frisbee style dust gauges situated at 8 locations around the site, the deposits will be sampled twice monthly and tested against control measures.

Baseline readings for noise and vibration will be taken at specific locations around the boundary of the site near to existing housing prior to the commencement of the works and readings will then be taken continuously throughout the project at the same locations during working hours. If any

measured levels exceed threshold limits in the planning conditions, then a management plan will be put into place and screens will be erected around the working areas. These measurements will take place 2 weeks prior to commencement on site.

A permanent wheel rumble strip facility will be setup near to the site entrance as a self-contained unit to clean any vehicles exiting the site to ensure no debris is spread across the road as a result of the development.

There shall be no waiting or idling of delivery vehicles and site traffic in nearby residential areas during the site operations, including any vehicles waiting for the site to open.

Figure 4 shows the locations of the monitoring stations around the site.

Monitoring is to take place throughout the project in the following locations.

Key;

Dust Monitors - Odour Points -

Figure 4: Approximate Locations of Monitoring Locations

6.0. CEMP Contact Directory

Internal Company Contacts Directory				
Role:	Organisation:	Name:	Email Address:	Mobile Number:
Contracts Manager	Prichard's	Meyrick Williams	Meyrick@prichardholdings.co.uk	07495 761174
Project Manager	Prichard's	Steve Pope	Steve@prichardholdings.co.uk	07866 939649
Site Supervisor	Prichard's	Joss Pope	Joss@prichardholdings.co.uk	07961 086872
Environmental Manager	Prichard's	George Harvey	George@prichardholdings.co.uk	07771 484840
H&S Manager	Prichard's	Jason Cornock	Jason@prichardholdings.co.uk	07947 364226

7.0. External Emergency Contacts Directory

External Company Contacts Directory			
Organisation:	**Contact Name:**	**Information:**	**Contact Number:**
Emergency Services	N/A	Police, Fire, Ambulance	999
Health and Safety Executive (HSE)	N/A	For major injuries or fatality	0345 300 9923 (Office) 0151 922 9235 (Out of Hours)
Natural Resources Wales	N/A	Environmental Incident Hotline 24/7	0300 065 3000
Biffa	N/A	Emergency Spill Response 24/7	08455 216 666