LAKESIDE EFW

Ch 12

Summary tables

12 Summary tables

Introduction

12.1 This chapter summarises the findings of the EIA. A comprehensive assessment has been undertaken of the potential environmental effects arising from the proposed development. Where possible, measures have been incorporated into the development proposals to prevent or reduce the potential for adverse environmental effects. These primary mitigation measures are an integral part of the design and were taken into account in the impact assessments. The primary mitigation measures are summarised in table 12.1.

12.2 Measures to help mitigate adverse effects identified during the assessment process have also been proposed for some of the environmental topics. These secondary mitigation measures are summarised in table 12.2.

12.3 The residual effects, i.e. the significant effects remaining after mitigation, are summarised in table 12.3. The measures envisaged for monitoring adverse effects are set out in table 12.4.

Table 12.1: Primary mitigation measures

Design description / detail / operational measure	Environmental issue addressed / avoided / reduced or environmental benefit
A north - south orientation for the EfW plant minimises the outline of the main building when viewed from Richings Park to the north and Colnbrook to the south.	Reduced visual impact
The air-cooled condensers are located to the south west, so they are as far away as possible from the nearest existing properties.	Avoid noise impact
During design of the site layout and buildings consideration was given to the massing, height and scale of the different elements of the proposals in order to minimise impacts on the surrounding area. The buildings have been designed to occupy the smallest footprint in order to reduce, as far as is practicably possible, the building's mass. The curved building / roof profile is also considered to be less obtrusive.	Reduced visual impact
To avoid the visual impact of sun reflection a gentle curved roof profile has been adopted for the EfW building and the materials have been selected for the walls of the main process buildings that will absorb light, whilst also providing contrasting texture, natural weathering and visual softening to the scale of the building.	Reduced visual impact
The EfW facilities will generate energy through the combustion of waste and effectively represent a low carbon energy source. The generation of low carbon energy can assist in the reduction of greenhouse gas emissions by displacing more carbon-intensive energy sources such as coal and natural gas. The existing EfW facility generates 40.5 MW of electricity, 37 MW of which is exported to the local grid. As well as ensuring that this low carbon energy generation will continue, the improvements in efficiency mean that the relocated EfW will increase electricity generation to approximately 44 MW and the export of electricity to 39 MW.	Generation low carbon energy
Steam created by the HTI process will be added to that of the EfW to improve the efficiency of the EfW process.	Improving energy efficiency of the plant processes
Up to 20 MWth of heat from the EfW facility will be available for export to potential local heat users. Depending on the requirements of any heat users, either high pressure steam or hot water could be supplied. High pressure steam could be extracted from the turbine and piped directly to heat users. Alternatively, low pressure steam exiting the turbine (prior to the condensers) could pass through an onsite heat exchanger to heat up water for use in a heat network. The volume of steam extracted would vary depending on the heat load requirements of the heat users.	Opportunities for CHP
The south-facing roof of the EfW building will be fitted with 1,500m^2 of photovoltaic panels which will make a further contribution to renewable energy generation at the site.	Renewable energy generation
The replacement EfW and HTI's lighting design is based on the use of appropriate lighting to provide safe working conditions, whilst minimising light pollution and the visual impact on the local environment. The luminaires used will not	Reduced visual impact and effect on bats

Design description / detail / operational measure	Environmental issue addressed / avoided / reduced or environmental benefit
project light above the horizontal plane, ensuring that direct upward light pollution will be zero and will be glare rated to minimise the impact on both human and ecological receptors.	
The education facility within the EfW building will include a multi-functional meeting room with capacity for accommodating up to 45 people and exhibition space. The education centre will provide the opportunity to promote the importance of good waste management. Grundon Waste Management and Viridor have a history of supporting education and research projects and specific provision will be made for the presentation of the facilities and operations as a resource for local schools and educational establishments.	Education opportunities – improved awareness and understanding of waste management issues
Twenty-four secure spaces for bicycles and up to five motor cycle spaces will be provided adjacent to the EfW building for use by staff and visitors.	Opportunities for sustainable travel encouraged
Of the 120 staff and visitor parking spaces 10% will be provided with electric charging points to encourage the uptake of electric vehicles. There is the ability to increase provision should there be greater demand in the future.	Opportunities for air quality improvement
Surface water run-off from the site will be collected via rainwater down pipes, linear drainage channels and a number of external gullies, passed through oil interceptors and silt traps and then discharged via gravity into two below ground attenuation crates. Here the surface water will be attenuated, prior to discharge at greenfield run off rates, into the existing ditch to the north of the site boundary. A Class 1 by-pass separator is also proposed to minimise the pollution generated from vehicles accessing the site and the car parking area. The surface water drainage strategy also incorporates a 40% allowance for climate change which will ensure that the proposed development will not be at increased risk of flooding as a result of climate change.	Avoidance of surface water pollution and avoidance of flooding both on and off site
A rainwater harvesting tank will be installed to collect rainwater from building roof areas. This water will be used on site to support site activities / processes where appropriate.	Efficient use of water resource
Where practicable, waste waters generated from the processes will be re-used / recycled within the facilities. Process effluents and wash down waters collected from internal process areas will be collected in a process effluent system. The process effluents will then be collected within the process water drainage systems for re-use.	Water pollution avoidance
The proposed new access road is designed to include a 3m wide shared footway / cycleway	Encourage sustainable travel to and from the site
While not screening the EfW and HTI buildings, the proposed planting will assist in breaking up the building mass and a degree of the ground level activity.	Reduced visual impact
Water-efficient fittings will be specified for the staff facilities where possible.	Efficient use of water resource
Incinerator bottom ash (IBA) from the EfW will be recycled and used to make sustainable aggregates suitable for construction and road projects. 100% of the IBA will be used for secondary aggregate production.	Reduced use of primary resources for aggregate production and avoided the need for landfill

Design description / detail / operational measure	Environmental issue addressed / avoided / reduced or environmental benefit
Air pollution control residues (APCr) from the EfW will be sent for treatment and used to create a lightweight, high quality, sustainable carbon-negative aggregate called Carbon8 Aggregate which is used to make carbon negative building blocks as well as in other construction material products. The APCr from the replacement facility will also be treated in this way. It is proposed where possible that the carbon negative blocks will be used in the construction of the replacement EfW facility, which will reduce the use of primary resources in the development.	Reduced use of primary resources for aggregate production
The APCr will be removed from the EfW in enclosed tankers thereby minimising the chance of spillage and dust emissions.	Avoidance of water / ground / air pollution
The facilities will be built in accordance with the requirements of the prevailing Building Regulations in relation to target emission rates of CO_2 and target fabric energy efficiency rates.	Reduce CO_2 emissions
The combustion chamber of the EfW will use a moving grate to agitate the fuel bed and promote good burnout of the waste, ensuring a uniform heat release.	Maximise the efficiency of the process and energy generation
The combustion chamber of the EfW will be designed to achieve the requirements of the IED with respect to minimum temperatures (850°C). During normal operations the heat required for compliance with the IED will come entirely from the feedstock and no auxiliary fuel will be required.	Protection of health, avoidance of deterioration in local air quality and minimal use of additional fuel
Flue gases generated from the EfW combustion process will be cleaned before being released into the atmosphere to the appropriate standards required to protect human health and the environment. The flue gas treatment (FGT) systems will be designed to comply with the requirements of the Waste Incineration BAT reference document.	Protection of health and avoidance of deterioration in local air quality
The height of the stacks was determined following consultation with Heathrow Airport Limited, National Air Traffic Services and the Civil Aviation Authority, and extensive computer dispersion modelling of emissions and evaluation of the resulting dispersion plumes. Ground level concentrations of key pollutants will be kept within acceptable levels under all operating conditions, including emergency shutdowns.	Protection of health and avoidance of deterioration in local air quality
Emissions from each of the EfW stacks will be continuously monitored using a continuous emission monitoring system (CEMS) for the following pollutants: particulates, sulphur dioxide, hydrogen chloride, carbon monoxide, nitrogen oxides, ammonia and VOC's, expressed as total organic carbon. There will be two CEMS systems, one per waste incineration line and an installed back-up which can operate on both lines in the event of a CEMS failure. In addition, periodic monitoring will be undertaken of pollutants which are not able to be monitored continuously, such as hydrogen fluoride, metals and dioxins and furans.	Protection of health and avoidance of deterioration in local air quality
All raw materials required for the EfW processes will be stored safely on site, in suitable tanks, silos or bunded areas as appropriate.	Avoidance of water and ground pollution
HTI waste will be stored within bins in designated secure storage areas until such time as it can be incinerated.	Avoidance of water and ground pollution and protection of human health

Design description / detail / operational measure	Environmental issue addressed / avoided / reduced or environmental benefit
Once emptied, the HTI waste bins will be washed, disinfected and moved to a clean storage area ready for collection and reuse.	Re-use of bins / avoidance of waste generation
The combustion chamber of the HTI will be designed to achieve the requirements of the IED with respect to minimum temperatures (1,000-1,100°C). During normal operations the heat required for compliance with the IED will come entirely from the feedstock and no auxiliary fuel will be required.	Protection of health and avoidance of deterioration in local air quality
Bottom ash from the HTI combustion chamber will fall from the end of the grate into a fully sealed system to prevent dust emissions.	Prevent dust emissions
Heat will be recovered from the HTI flue gases by means of a waste heat recovery boiler where the heat in the gases will be used to produce saturated steam. Provision will be made for heat to be exported to the EfW plant when it is in operation, to increase energy efficiency.	Heat recovery and increased energy efficiency
Flue gases generated from the HTI combustion process will be cleaned before being released into the atmosphere to the appropriate standards required to protect human health and the environment. The FGT system will be designed to comply with the requirements of the Waste Incineration BAT Reference document.	Protection of health and avoidance of deterioration in local air quality
The HTI acid gas abatement system will utilise a dry system, using lime as a reagent to reduce concentrations of acid gases, such as SOx and HCl, in the flue gas stream. This abatement technology has the benefit that it does not produce a liquid effluent.	Avoidance of potential water / ground pollution
Emissions from the stack connected to the HTI will be continuously monitored using a CEMS for the same pollutants as the EfW emissions noted above. Flow rate and oxygen content will also be measured. There will be an installed back-up CEMS which can operate in the event of a CEMS failure.	Protection of health and avoidance of deterioration in local air quality
All raw materials required for the HTI processes will be stored safely on site, in suitable tanks, silos or bunded areas as appropriate.	Avoidance of water and ground pollution
The EfW and HTI facilities will operate a detailed maintenance programme to ensure systems and equipment operate safely, effectively and reliably. The maintenance programmes for the two facilities will aim to maintain and improve overall efficiency, reduce emergency repairs, reduce unscheduled equipment shutdowns and the duration of such shutdowns, decrease process faults or reduced performance due to equipment problems and extend the useful life of equipment, repairing and adapting it where necessary.	Avoidance of pollution events through good site management
Spill procedures will be produced covering spillage of raw material inputs to the plant, ready use consumables and waste material outputs. Suitable equipment will be maintained on site (such as spill kits) in order to deal with the predicted scale of possible spillages of material. Staff will receive training in the use of the spill kits and will regularly practise as part of the normal operation of the facility. Under all circumstances, priority will be given to the potential environmental and health and	Avoidance of water and ground pollution

Design description / detail / operational measure	Environmental issue addressed / avoided / reduced or environmental benefit
safety impacts of spillages. Engineering controls will be employed where these would reduce the potential for spillage (or minimise the impact of spillage) e.g. bunded areas for fuel storage above ground.	
Procedures and training will be in put in place for dealing with abnormal operating conditions. The EfW and HTI facilities will be designed to avoid the need for regular shutdowns but if any incident endangers or is likely to endanger personnel, or there is a risk of serious damage to the facilities, or there is a complete power failure, an emergency shutdown will be necessary (a standby generator will be present on site to support the safe shut down of the facilities at any time). A full set of procedures will be developed and implemented on site for an emergency shutdown. These will be published in an Emergency Plan. Appropriate drill and training exercises will be undertaken at regular intervals to ensure that all plant operatives are aware of and are competent to identify and respond to plant emergencies.	Efficient emergency shutdowns will avoid the potential for water, ground and air pollution. High standards of health and safety will be maintained for staff and visitors.
The EfW and HTI facilities will be equipped with comprehensive fire protection and detection systems which will comply with the requirements of the National Fire Protection Association's recommended practice for fire protection for electricity generating plants and high voltage direct current converter stations (NFPA 850). Automatic fire alarm detection will be provided throughout specified areas as well as manual alarm break glass call points. An underground fire main will encircle the EfW and HTI plant facilities and will supply a number of fire hydrants and will spur off at strategic points to supply the water-based fire protection system. Within the HTI a water deluge system will also be employed.	Avoidance of pollution from fire water. Safety of staff and visitors is maintained.
Dust and odour control • Combustion air will be drawn from above the waste pit so that odours and airborne dust are drawn from the bunker into the incineration line, thus preventing their escape to atmosphere. • Odour will also be controlled by keeping the doors between the waste tipping area and the waste bunker closed when there are no waste deliveries occurring. • Waste feed hoppers will be designed to ensure that emissions of dust and odours are minimised. • Potential emissions of dust and fumes from the bottom ash discharger will be minimised by the quenching process and storage systems proposed. • Dust level checks will be carried out on a regular basis in operational areas of the EfW facility where high dust levels may be present. This will provide an early warning of increasing dust levels, at which point action will be taken to reduce dust levels. • Daily olfactory checks will be carried out around the perimeter of the site to check for odours. • In the event of a plant shutdown the doors to the bunker will be kept shut. If necessary fresh waste will be used to cap older waste in order to minimise odours. A water-based deodoriser will also be hired if necessary to assist in odour management. • Odour control in the HTI facility will be managed in a similar manner. Waste will be stored in secure, air-tight containers. Waste is then loaded onto the belt feeder and transferred to the furnace. The primary air for the	Protection of air quality and avoidance of odour and dust nuisance issues

Design description / detail / operational measure	Environmental issue addressed / avoided / reduced or environmental benefit
combustion process is taken from within the HTI building, providing a level of negative pressure and minimising the emissions of odour from the facility. • Dust from the HTI bottom ash will be contained within a fully sealed system and the building will be under negative pressure. • The site access road will be properly maintained and regular checks will be carried out on road conditions. Cleaning will be carried out as necessary. Vehicles will also be checked to ensure that they are clear of loose waste and that their loads are secure.	
Noise control • Most noisy plant items will be installed inside the EfW and HTI buildings rather than outside, and equipped with noise insulation if necessary. • The air-cooled condensers have been designed to reduce noise and tonal components, and have been located to the south west of the site in order to have minimum noise impact on permanent local receptors. • Doors will be kept closed when not in use to prevent noise egress. • A sound attenuator will be fitted to the exhaust of the EfW and HTI flue gas ID fans. • Waste vehicle movements at night will be limited. • Regular maintenance of plant items will ensure noise does not become a problem. • Mobile plant for the site will comply with the most up-to-date standards, including noise emissions. All mobile plant will be operated and maintained in accordance with the manufacturers instructions. Mobile plant that does not comply with the agreed operating noise limits will be taken out of service until compliance is achieved. • Noise level checks will be carried out on a regular basis in operational areas of the EfW and HTI facilities where high noise levels may be present. Early warning of increasing noise levels will result in a noise reduction or mitigation programme.	Prevention / avoidance of excessive noise emissions
Pest control • Waste delivered for disposal will only be stored in the designated areas of the two buildings and any spillage of waste will be recovered in accordance with specific, time limited procedures. This will reduce the potential for feeding patterns to be established by vermin and therefore discourages infestation. • The design of the waste bunker for the EfW will ensure that the bunker is watertight and this will prevent access to the contained waste by burrowing pests such as rats or squirrels. • The waste bunker of the EfW will also be enclosed and under cover thereby reducing access to waste for birds and the tipping hall will be designed so as to eliminate roosting points for birds. • Routine cleaning and good housekeeping will reduce the potential for the facilities to provide an attractive environment for vermin and this will be implemented through the maintenance programmes.	Avoidance of health / hygiene issues and general nuisance

Design description / detail / operational measure	Environmental issue addressed / avoided / reduced or environmental benefit
• In the event that pests are identified, an action plan will be developed to eliminate or reduce the potential for nuisance to neighbours. • Daily visual checks will be undertaken of the waste storage areas and EfW tipping hall / waste bunker area, as well as the access road and the site generally. If pests are reported appropriate measures will be taken and pest control specialists utilised where necessary. • The EfW tipping hall will be washed periodically and standard pest control methods will be implemented.	
Litter control • All vehicles carrying waste into or out of the EfW facility will be covered or sheeted, thereby ensuring the potential for litter to escape is minimised. • The delivery and storage of all waste within buildings on site further minimises the potential for wind-blown litter to occur. • A daily check will also be made to key areas of the site (e.g. the tipping hall) to identify any build-up of waste.	Avoidance of nuisance
The EfW and HTI will both operate 24 hours a day, seven days a week, though there will be periods of annual maintenance when waste processing is reduced. The majority of deliveries and collections will be received / made between 05:00 and 22:00 hours Mondays to Fridays and 06:00 and 14:00 hours on Saturdays.	Prevention of noisy activities during quieter periods of the day / night
Lakeside EfW Ltd will operate a good neighbour culture. Implementation of this culture includes the maintenance of a local liaison group which meets on a regular basis to discuss the operation of the plant and any potential issues or queries that those in the local community have. It provides a forum for community stakeholders to be informed and consulted regarding site operations and procedures. Liaison group members will continue to include locally elected representatives of the community as well as representatives of the Environment Agency, SBC and other stakeholders as appropriate.	Building good community relations with neighbours and good avenues of communication.
The existing EfW and HTI facilities at Lakeside Road are both currently certified to ISO14001 Environmental Management System with the BSI accreditation body. They also meet ISO9001 Quality Management and OHSAS18001 Occupational Health and Safety requirements. These quality management systems will be implemented at the replacement Lakeside EfW and HTI facilities, thus indicating Lakeside EfW Ltd's aim to achieve the highest practical standards of quality, safety, occupational health and environmental control and performance at the replacement site.	Demonstrates ongoing commitment to protecting all facets of the local environment (air quality, noise, water, ground conditions, traffic, etc.).

Table 12.2: Secondary mitigation measures

Potential effect	Mitigation
	Air quality
Dust generation during construction	A range of measures will be implemented through the construction environmental management plan (CEMP). Appropriate measures for a site of this size include the following: • Displaying the name and contact details of person(s) accountable for dust issues on the site boundary. This may be the environment manager / engineer or the site manager • Displaying the head or regional office contact information • Recording all dust and air quality complaints, identifying the cause(s), taking appropriate measures to reduce emissions in a timely manner and recording the measures taken • Making the complaints log available to Slough Borough Council when asked • Recording any exceptional incidents that cause dust and / or air emissions, either on or off site, and the action taken to resolve the situation in the logbook • Planning the site layout so that machinery and dust-causing activities are located away from receptors, as far as possible • Keeping site fencing, barriers and scaffolding clean using wet methods • Removing materials that have the potential to produce dust from site as soon as possible, unless these are being re-used on site. If they are being re-used on site, covering, seeding or fencing stockpiles to prevent wind whipping • Ensuring all vehicles switch off engines when stationary and there are no idling vehicles • Only using cutting, grinding or sawing equipment fitted, or in conjunction, with suitable dust suppression techniques, such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems • Ensuring an adequate water supply on the site for effective dust / particulate matter suppression / mitigation, using non-potable water where possible and appropriate • Ensuring equipment is readily available on site to clean any dry spillages and cleaning up spillages as soon as reasonably practicable after the event using wet cleaning methods • Prohibiting bonfires and burning of waste materials • Ensuring sand and other aggregates are stored in designated areas and are not allowed to dry out, unless this is required for a particular process, in which case ensuring that appropriate additional control measures are in place • Ensuring vehicles entering and leaving the site are covered to prevent escape of materials during transport • Implementing a wheel wash system • Ensuring there is an adequate area of hard surfaced road between the wheel wash facility and the site exit
	Community and health effects

Potential effect	Mitigation
No significant adverse effects predicted	In addition to the measures that are integral to the design and management of the plant, as set out in table 12.1, the HIA recommends the following mitigation measures are put in place: • Establish a community complaints procedure during the construction phase that should be advertised widely, including the steps that will be taken once a complaint is received and the timescale in which a response and resolution can be expected • Communicate information regarding construction activities throughout the construction period to the most local communities via channels such as a liaison group or a website • Ensure the construction site is secure and not vulnerable to trespass through adequate fencing and, if appropriate, the use of security guards • Implement a traffic management plan during construction, working closely with Slough Borough Council and the local highways authority to implement measures to deal with unusual traffic movements (such as large loads), consult with the council to evaluate the need to install traffic calming and control measures, and adopt procedures for liaison with the local emergency services in case of accidents • Inform police and emergency services of any issues relating to site safety and access post-construction • Encourage local employment and procurement during construction. If feasible and available, local suppliers should be used for goods and services. Jobs created during construction should also be advertised and made available in the local area initially • Ensure open communication and sharing of information (as occurs for the existing facilities), including the display of emissions data on a website, in a form that is accessible and as close to real time as possible • Implement a traffic management plan during operation
Cultural heritage	
None required	
Ground conditions and the water environment	
Risks to human health and the water environment from existing contamination during and post-construction	The construction of the proposed development will be carried out in line with a CEMP, which will include best practice measures to manage potential effects associated with ground conditions and the water environment At the current level of knowledge on the site's level of contamination, it is anticipated that standard personal protective equipment will be sufficient to provide protection to ground workers, although asbestos may need a specific protocol and equipment.
	Construction works will be carried out in accordance with the Environment Agency's (2007) *Pollution Prevention Guideline 5: Works and Maintenance on or Near Water.*
	In addition to the CEMP, the following mitigation measures and further work will be undertaken in relation to ground conditions: • Additional ground investigations and ongoing monitoring of groundwater quality and levels and ground gas concentrations • Incorporation of gas protection measures into the design of the buildings if the gas monitoring indicates that this is required • Development of a waste soils management strategy • Completion of a foundation works risk assessment, in accordance with Environment Agency standards, prior to construction to inform the potential risks associated with foundation types under consideration or to identify mitigation measures that may be needed

Potential effect	Mitigation
	• Further interpretation of existing ground investigation information with regard to existing surface water and groundwater quality and leachate results • Minimisation of dewatering requirements by programming excavation works to be as short as possible. The need for an environmental permit to undertake dewatering will be established and the necessary applications made as required. Coordination with Thames Water will be undertaken regarding dewatering activities should a potential risk to the deeper chalk aquifer be identified as part of the interpretation of ground investigation data and the environmental permit risk assessment process • Development of a remediation strategy (if needed), together with validation and verification documentation as necessary • Development of a materials management strategy • Development of an asbestos management and health and safety plan • Confirmation from Slough Borough Council as to any restrictions or requirements at the site with respect to minerals extraction
Effects on surface water and groundwater quality from pollution during construction	The implementation of a CEMP during construction will include best practice measures to minimise potential effects on the water environment. These will include the preparation of a pollutants, water and sediment management protocol to inform construction works, which will set out measures such as the following: • Minimise storage of hazardous chemicals on site and, where storage is necessary, use anti-pollution measures such as bunded trays or leak-proof containers • Use designated refuelling sites, located away from open water • Any cleaning materials or chemicals used during the construction phase are not to be hazardous to the water environment • No storage of potentially contaminating materials in areas liable to water inundation • Use of electrical power, rather than diesel, where possible • Design of construction methods to minimise disturbance to, and mobilisation of, sediment • No washing down of plant while on site • Implementation of piling design with tight quality assurance / quality controls • Oil spill kits to be kept on site, and site staff trained in their use
Landscape, townscape and visual effects	
Damage to trees in temporary construction compound during construction	It is proposed to fence off any mature trees within the proposed temporary construction compound during site preparation and construction activities in accordance with BS 5837: 2012
Natural heritage	
Damage to trees in temporary construction	It is proposed to fence off any mature trees within the proposed temporary construction compound during site preparation and construction activities in accordance with BS 5837: 2012

Potential effect	Mitigation
compound during construction	
Risk to badgers present in the wider area during construction	Any excavations left open overnight will be covered where possible or a suitable means of escape for any animal that might fall in will be provided. Speed limits will be put in place and enforced along the proposed new access road. Drivers will be informed of the presence of badgers during the site induction.
Killing or injuring nesting birds during the construction phase	To ensure legal compliance, where possible vegetation removal will be undertaken outside of the breeding bird period (March to September, inclusive). Should clearance be required to be undertaken within this period, all work will be supervised by an appropriately qualified ecologist. In the event that nesting birds are present, all clearance of the relevant area will cease until chicks have fledged.
Killing, injuring or displacing reptiles during the construction phase	Pre-commencement reptile surveys covering the suitable habitats within the application boundary will be undertaken prior to any on-site works. If any reptiles are recorded, an appropriate receptor habitat will be found and improved (e.g. by allowing grass growth, opening up scrub areas and creating refugia from logs/rubble/soil piles) in order to increase the number of reptiles it can support. Reptiles will then be moved from the replacement facilities site to the receptor site.
The severing of a bat foraging route by the new access road (both the physical loss of existing vegetation and lighting)	A 'hop-over' vegetation bridge will be established at the start of the construction phase at the point at which the access road cuts through the existing scrub vegetation to provide a vegetation link for brown long-eared bats.
Disturbance of otter using Colne Brook during construction and any necessary maintenance of the drainage pipe	Prior to any works being undertaken in the vicinity of Colne Brook, an updated otter survey will be undertaken to check on the status of any territories. Specific standard mitigation measures will be proposed as necessary.

Table 12.3: Significant residual effects

Significant residual effect	Sensitivity of receptor	Magnitude of change	Nature	Duration	Degree of effect	Level of certainty
Air quality						
No residual air quality effects						
Community and health effects						
No residual community and health effects						
Cultural heritage						
No residual cultural heritage effects						
Ground conditions and the water environment						
No residual ground condition or water environment effects						
Landscape, townscape and visual effects						
Change to views from residents on Old Slade Lane, The Poynings (V2)	High / medium	Medium	Adverse	Short and long term	Moderate	Reasonable
Change to views from PROW adjacent to site (V4)	Medium	Medium / large	Adverse	Short and long term	Moderate	Reasonable
Change to views from PROW north of M4 (V7)	Medium	Medium	Adverse	Short and long term	Moderate	Reasonable
Change to views from road users on Old Slade Road and The Poynings (V15)	Medium	Medium / small	Adverse	Short and long term	Moderate	Reasonable
Natural heritage						
Loss of broadleaved woodland on site	Low	Large	Adverse	Long term	Moderate	Absolute
Temporary severance of brown long-eared bat commuting route by site access road while ‘hop-over’ establishes	Low	Medium	Adverse	Short term	Moderate	Reasonable

Table 12.4: Proposed monitoring measures

Adverse effect	Proposed monitoring measure	Responsibility for monitoring
Generation of dust during construction (mitigated through CEMP)	Regular site inspections to monitor compliance with the dust management plan and recording of results	Contractor
Potential for ground and water pollution during site preparation / construction activities	Regular on-site monitoring of the works will be undertaken by an environmental specialist during the construction phase. This will include groundwater sampling, surface water inspections, surface water runoff management observations and materials handling observations. The detailed scope of the monitoring will be refined following detailed interpretation of the existing ground investigation data and data from any additional ground investigations undertaken.	Environmental specialist appointed by the contractor
Need to meet appropriate standards required to protect human health and the environment	Comprehensive monitoring of emissions will be undertaken at both the EfW and HTI facilities in line with their environmental permits. No additional operational mitigation or monitoring is required beyond that embedded into the design and required by legislation.	Environment Agency in line with the environmental permits
The severing of a bat foraging route by the new access road (both the physical loss of existing vegetation and lighting)	Bat activity in this area will need to be subject to ongoing monitoring to determine if the proposed 'hop-over' vegetation is well situated and sufficiently dense.	Contractor