

FAO: Mike Grundy
Wedgwood Buildings
Tipping Street
Stafford
Staffordshire
ST16 2DH

Our ref: UT/2013/111145/01-L01
Your ref: SCO.55/2013/M
Date: 01 February 2013

Dear Sir

REQUEST FOR SCOPING OPINION FOR AN ENVIRONMENTAL IMPACT ASSESSMENT

GREAT OAK ROAD, AUDLEY, STAFFORDSHIRE

Thank you for referring the above which we received on 09 January 2013. We apologise for the delay in replying.

The Environment Agency would wish to see the following information provided as part of an Environmental Statement accompanying an application for the development proposed.

FLOOD RISK & DRAINAGE

The site is shown on the Environment Agency's Flood Maps as being within Flood Zone 1, an area which has a low probability of fluvial flooding. There could however, be localised flooding problems that are not shown on our Flood Maps. This should be assessed as part of a Flood Risk Assessment (FRA).

The Environment Agency's records indicate that there are a number of 'ordinary watercourses' that flow through the site. The proposals for the site should ensure that the watercourses remain in open channel, for both flood risk and ecological reasons. Should the proposals affect any watercourse, the Lead Local Flood Authority (LLFA) should be contacted as their consent may be required under the Land Drainage Act 1991. The LLFA for this site is Staffordshire County Council.

The FRA should also determine how the discharge of surface water from any proposed development is to be managed. The discharge of surface water from any proposed development should mimic that which discharges from the existing site. If a single rate of discharge is proposed, this is to be the mean annual run-off

Environment Agency
Sentinel House (9) Wellington Crescent, Fradley Park, Lichfield, WS13 8RR.
Customer services line: 03708 506 506
www.environment-agency.gov.uk

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(Qbar) from the existing undeveloped greenfield site. If surface water is to discharge to mains sewer, the water company should be contacted for confirmation of the acceptable discharge rate. For discharges above the allowable rate, attenuation will be required for up to the 1% annual probability event, including allowances for climate change.

The discharge of surface water should, wherever practicable, be by Sustainable Drainage Systems (SuDS). SuDS, in the form of grassy swales, detention ponds, soakaways, permeable paving etc., which can help to remove the harmful contaminants found in surface water and can help to reduce the discharge rate.

During a severe rainfall event overland flow of surface water could cause a flooding problem. The FRA is to demonstrate how this risk is to be contained within the site, does not affect new buildings and how safe access and egress is provided.

BIODIVERSITY

According to our maps and aerial photographs there are several ordinary watercourses and ponds on site. Some of which are on areas proposed for open case mining and so will be damaged and lost by the work.

The destruction of waterbodies will have a harmful impact on biodiversity and fisheries. Ponds, seasonal ponds, wetlands and watercourses etc are important wildlife habitats that support a wide variety of plants and animals, including rare and endangered species. England has lost many of its wetland areas through land drainage, river canalisation and in-filling. The loss or deterioration of watercourses, ponds and wetland habitats and the consequent effects on a range of fauna and flora (especially amphibians) is well recognised.

The National Planning Policy Framework (NPPF) paragraph 109 recognises that the planning system should aim to conserve and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible. Paragraph 118 of the NPPF states that if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused and that opportunities to incorporate biodiversity in and around developments should be encouraged.

The Water Framework Directive (WFD) is a wide-ranging and ambitious piece of European environmental legislation. Its overall objective is to bring about the effective co-ordination of water environment policy and regulation across Europe.

In exercising their functions, all public bodies and statutory undertakers (that is most reporting authorities) have a duty to have regard to the objectives of the River Basin Management Plans or their supplementary plans (section 17 of the [Water Environment \(Water Framework Directive\) \(England and Wales\) Regulations 2003](#)).

In developing plans you should be aware of WFD. In particular the requirement that nothing be done to a water body which would cause its condition (in WFD terminology - chemical status or ecological status) to deteriorate. Measures should be in place to ensure that no part of this development should affect the water courses ability to reach “good ecological potential” by 2027. In addition, the river basin management plan requires the restoration and enhancement of water bodies to promote recovery.

Standing open waters, which include ponds, are also recognised as a priority habitat under the UK Biodiversity Action Plan. Development is listed as one of the major threats to these habitats. Article 10 of the Habitats Directive requires Member States to encourage the management of features of the landscape that are of major importance for wild flora and fauna. We consider the ponds on this site to be such a feature.

Due to the damage to the waterbodies on site we would expect to see an assessment for WFD compliance incorporated in to the EIA. We would also expect to see appropriate mitigation including a surface water protection plan to avoid contamination of controlled waters. This is particularly important as there are white-clawed crayfish present within the catchment downstream tributaries of this site and the limits of the population are unknown. White-clawed crayfish are particularly sensitive to water quality and so we would not wish to see any deterioration.

As part of the restoration of the site we would expect to see appropriate compensation and enhancements due to loss of on the waterbodies on site (including ponds and watercourses). We would expect to see the restoration of these features on a 2 for 1 basis and on a like for like basis. Therefore we were pleased to see that according to the proposed restoration plan the applicant intended to create ponds, open meandering streams and scrapes. We recommend that the applicant sees <http://www.afterminerals.com/> for further advice on restoring such sites.

As part of any development of this area we would expect to see appropriate up to date ecological surveys covering the full range of habitats and species found on site, undertaken at the appropriate time of year by a suitably qualified ecologist. Dependent on the results of these surveys we would expect to see appropriate mitigation and compensation.

We would like to make the applicant aware that we have records of water vole on watercourses downstream of this site and on adjacent tributaries. The 'Extended Phase 1 Habitat Survey (November 2011, page 18) did consider water vole and concluded that none were present and that the habitat was poor. However the survey methodology and criteria by which the habitat was assessed was not included in the document. Furthermore the site visit was undertaken in November which is outside of the suggested water vole survey window.

The water vole (*Arvicola amphibius*) is fully protected under Section 9 of the Wildlife & Countryside Act, 1981 (Variation of Schedule 5, Order 2008). Under this legislation it is an offence to intentionally or recklessly damage, destroy or obstruct access to any structure or place used by a water vole for shelter or protection; to intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose; and to intentionally kill, injure or take water voles.

We recommend consultation with Natural England regarding great crested newts (*Triturus cristatus*). The great crested newt and its habitat (aquatic and terrestrial) are afforded full protection by the Wildlife and Countryside Act, 1981 (Section 9, Schedule 5), and are listed on Annex II and Annex IV of the Habitats Directive. Under this legislation, it is an offence to damage or destroy a breeding site or resting place of a great crested newt, or to disturb a great crested newt while it is occupying a structure or place.

The 'Request For EIA Scoping Opinion' does not make any reference to the possible presence of fish within the waterbodies on site. The Animal welfare act places a duty

of care on people who have ponds holding fish on their land. RSPCA are the prosecuting agency (<http://www.defra.gov.uk/food-farm/animals/welfare/on-farm/legislation/>). Under the Salmon and Freshwater Fisheries Act (1975), any person who causes or knowingly permits to flow, or puts or knowingly permits to be put in, into any waters containing fish or into any tributaries of waters containing fish, any liquid or solid matter to such an extent as to cause the waters to be poisonous or injurious to fish or the spawning grounds, spawn or food of fish, shall be guilty of an offence. It is imperative that every attempt is made to ensure that there is no deterioration in water quality during or post development. Silt, whether inert or organic, may clog important spawning gravels, smother plants or directly asphyxiate fish.

Japanese knotweed (*Fallopia japonica*) is present on site (Request For EIA Scoping Opinion, December 2012, page 20). The spread of which is prohibited under the Wildlife & Countryside Act (1981). Development of this site will require a method statement to be agreed to put appropriate control measures in place regarding this invasive species.

GROUNDWATER

We note that the developer has already identified an intention to provide details of the site geology; local abstractions and groundwater levels. The site is at the head of several stream catchments, and it is likely that the necessary dewatering activity may involve some temporary and perhaps permanent re-apportionment of flow to each of these minor respective streams. As such, the Environment Agency would wish to ensure that there would be no disagreeable impact on downstream ecology or water interests in those watercourses, and that the development shall be carried out in a manner not likely to adversely affect local groundwater or surface water abstractors or local water quality.

Mine waters can be polluting, as can excavation spoil, and there are already known to be existing pollution problems accredited to mining in the headwaters of Valley Brook associated with Jamage Colliery and Talke Pits to the north side of the proposed development. This development is likely to require dewatering of strata, and that may include discharge of mine-waters or leachates that require treatment before discharge. It is hoped that this development can be achieved in such a way as to avoid aggravation of local mine pollution, and if possible it might even afford an opportunity to help ameliorate those historical effects, depending on any relationship between them and the proposed workings.

The protection of local water dependencies and prevention of pollution are consequently the key factors that we would wish to see addressed in the Hydrogeological Impact Assessment and the Water Management Plan. A requirement for on-going operational groundwater monitoring during development is only likely to be made in the case of developments that will interfere with the water table. Because of the depth of the proposed excavation, this would appear to be such a development.

Use of water, discharge of effluent, interference with watercourses or deposit of wastes including mines and quarries waste may attract requirement of Environment Agency Permits.

The notes below indicate preferred standards for the submission of information in support of the Hydrogeological Impact assessment, and the Planning Application. They also provide some basic guidance on the Environment Agency Permits that

may be necessary for the related site activities:

Advice on Hydrological Impact Assessment

Topographic map and site plans:

Ideally to include a detailed topographic plan showing surface features and ground levels in and around the site at scales somewhere in the range of 1:5,000 to 1:2,500. Versions of this plan in the Application documents should show the existing ground surface, the proposed lowest excavation surface, and the proposed final restoration surface across the development area.

Ground levels should be presented as value-labelled contours, with additional spot heights shown at key locations such as low points and high points, and at nearby surface water features, borehole sites etc and showing the position and the measuring datum and ground levels at identified water level monitoring points etc.

Hydrogeological map and site plan:

This information should normally incorporate a published map showing the common understanding of the local geological setting and structure of the immediate district in the scale range 1:50,000 to 1:25,000 AND a larger scale site geology plan providing greater details of the site and its immediate environs, as supported by site investigation etc. This Geological Plan should usually be presented within the scale range of 1:5,000 to 1:2,500 as appropriate, and it should show the known geological structure of the site (which may sometimes differ from the published map interpretations) and the locations of geological logs and groundwater monitoring boreholes etc that have been used to corroborate the structure and monitor groundwater conditions in and around the proposed excavation. (See also 'Geological Logs' 'Mining Information')

Where sufficient groundwater level information is available to provide pre-development groundwater contours (only in aquifer layers that are likely to be affected by the development) it may be appropriate to add these contours onto the large scale hydrogeological plan. In sites with multiple aquifer layers, it may be more appropriate to have separate contour plots for each aquifer, or to use different coded contours for each. (See 'Groundwater Level and Abstraction Data') The hydrogeological plan should also show the lines of any relevant cross sections.

Hydrogeological Cross Sections:

The best way to illustrate the hydrogeological relationships between the proposed development, the geology, the indigenous groundwater and noteworthy surface water features or abstractions etc is to produce cross-sections through the proposed excavation, usually in at least two directions through the deepest point, in such a way as to demonstrate the relationship between the excavation and the potentially affected water features in close proximity.

Such cross sections are usually best drawn at an exaggerated vertical scale, showing the existing ground surface, the geology, the proposed lowest excavation surface, proposed restoration surface and the known (existing) groundwater levels in each aquifer layer likely to be affected. (NB Shallow mined voids may function as 'aquifer layers' in their own right if confined between low permeability strata, and they may provide significant hydraulic conduits over long distances, influencing both the amount of dewatering that might be necessary, and the distance over which effects of the dewatering might be felt.)

When defining groundwater gradients in any aquifer it is prudent to take into account the observed water levels in the monitoring boreholes and to give consideration to where that groundwater gradient is coming from and heading towards. These relationships are very important in determination of the likely effect of the development, and the elements necessary for inclusion in the operational Water Management Plan.

Mining Information:

In mining areas, the Hydrogeological Impact Assessment should include a mining report from the Coal Authority providing basic details of the known or suspected presence of surface and underground workings etc. In areas where non-coal types of mining may have taken place, additional available information should also be obtained wherever possible from the relevant parties such as the land-owners, the owners of the mines or mineral rights, the British Geological Survey the Brine Compensation Board and Mineral Planning Authority etc.

In areas where known or suspected shallow mine-workings or former mine openings may exist within 100 metres of the site surface, and/or within 50 metres of the proposed excavation surface, the outline and level(s) of these workings should be clearly identified on the geological plan and sections. - NB: In sites where the workings are too numerous or complex to show this information clearly on the Geological Plan, it may be appropriate to have a separate large scale plan to that purpose.

The proximity and influence of the mine-workings should be considered and taken into account when developing the understanding of groundwater levels and flows across the site, and when developing the water management plan for the proposed development.

Survey of Water Dependent Features:

This should include a location plan and tabulated listing of relevant water dependent features and their basic details where they might fall within the potential range of hydrogeological influence of the proposed development.

The features of relevance include all water abstraction wells, springs and boreholes (licensed and unlicensed); water dependent designated conservation sites; and groundwater dependent terrestrial ecosystems etc.

It should also have regard to local unlined lakes ponds or watercourses, and the relationship they may have with the aquifer layers and groundwater levels therein. The Environment Agency are the authoritative source of records for Licensed Abstractions and for Formerly Licensed Abstractions that may still have protected rights on account of deregulation. The Environmental Health Officer of the Local Authority would be the authoritative source of information for the location of abstractions for Private Drinking Water Supplies, and Landowners should be able to identify any other key dependencies such as dairy use or stock-watering etc.

The true potential radius of hydrogeological influence will be dictated by the geological structure, the lithology and the degree of direct connectivity offered by any shallow mine-workings or former mine openings etc. However, it is assumed that in the absence of knowledge of such artificial conduits at this stage, the initial screening radius for features around the edge of an excavation of c 40m depth in Coal Measures Strata in this topographic setting may be reasonably set at 1000 metres. Depending upon the observed groundwater conditions and/or identified presence of

shallow mine workings during initial investigation, this distance might need to be locally revised in places.

The ground level and normal range of water levels for each feature should be related to Ordnance Datum and in the case of wells or boreholes, the known or likely total depth and pump intake level should be identified where this information can be ascertained. The degree of accuracy to which it is necessary to determine the water levels will largely depend upon the distance from the proposed excavation or dewatering activity.

It appears unlikely that there are any SSSI, SAC or RAMSAR sites near the proposed development but there are some locally designated sites of biological importance and a Priority Habitat designation nearby. (Authoritative details from Natural England.)

Geological Logs and Installation Details:

These are usually to be supplied in some detail as an appendix of individual logs showing the details of the geology and any piezometer or standpipe installations. The logs (or a table of summary data should clearly record the exact locations and ground level and measuring datum levels relative to Ordnance Datum depth, and the location and lithology etc may also be represented simply on the cross-sections where appropriate).

Groundwater Level Monitoring Network:

To determine the pre-development groundwater level and flow direction details, and the likely need for dewatering or geotechnical assessments etc for deep excavations it will be necessary to obtain data from monitoring boreholes in advance of the development.

Where the excavation is likely to extend below the highest natural variation in the water table, or where active dewatering is likely to be necessary during development, it is likely to be necessary to maintain a network of groundwater level monitoring boreholes around the excavation area throughout the development as part of a scheme of Monitoring under the Planning Conditions.

This monitoring facilitates corroboration of the actual impact of the permitted development against the initial predictions, and it also provides essential information for any geotechnical stability assessments or investigation of why conditions might have turned out at variance with original predictions of the impact assessment. As such, it is usually appropriate to establish and maintain in each aquifer layer likely to affect or be affected by the development, an enclosing envelope of groundwater monitoring boreholes around the outer periphery of the excavation, constructed to at least the base of the aquifer layer being monitored, or to a level equivalent to the lowest part of the proposed excavation (whichever the least depth). This enclosing envelope of monitoring should comprise at least four monitoring points in each monitored layer, at spacing of not more than 200 metres apart around the proposed excavation.

There may be savings for the developer if the initial investigation boreholes are deliberately located in places where they may be maintained throughout the development. Groundwater level monitoring in each bore, and in the sump at the base of each excavated void, should be carried out at monthly intervals throughout the development, to an accuracy of 1cm and reported along with details of each monitoring point to the Planning Authority at intervals of not more than 12 months.

Where operational dewatering is also taking place, monthly records of the quantity of water pumped or siphoned out of the excavation at the same intervals, and the position and approximate level of the pump intake should be recorded and reported along with the water level monitoring data.

Groundwater level and abstraction data:

A copy of the data obtained from the survey of water features and the operational site monitoring should be maintained on site throughout the term of the development, and made available for inspection on request during normal office hours by appointment.

All observed levels should be recorded both as raw measured 'dip' observations and as an absolute level related to Ordnance Datum.

The monitoring data and details of the current site topography and mitigation measures etc should be reported periodically to the Mineral Planning Authority. (Usually Annually)

The periodic submission of monitoring results to the Planning Authority should include a plan showing the locations of all the monitoring points; basic construction details and datum levels of each, confirming the structure of each monitoring point and what it measures, and all the tabulated data collected to date from commencement.

The data report should also be presented as hydrograph plots for the whole term of the development, along with a representation of the progressive changes in the base level of the excavation so that trends and relationships can be easily identified. It is usually best to combine all hydrographs for an individual aquifer on one plot, and where there is more than one aquifer being monitored, it may also be appropriate to provide a plot comparing the response of each aquifer.

The information collated under the headings above should form the basis of the Hydrogeological Impact Assessment (the HIA). This should offer a determination of the likely impact of dewatering activities and drainage of the development upon the local water features, and identify the requirement (if any) for formal Permits and / or mitigation measures that may be necessary to ameliorate the effects of the development during both the mineral excavation and restoration period.

Regard should be had to the likely amount of water discharge necessary to achieve the desired dewatering, and how it might be done and disposed of without causing environmental harm, pollution or derogation of abstractors and water dependent conservation sites etc. It may be the case that there are few such interests in this area, so it is suggested that it is useful to carry out a desk study to provide an initial understanding of the likely water features survey before committing heavily to field work and intrusive investigation.

Water Management Plan:

Arising from the Hydrogeological Impact Assessment the Planning Application should be supported by a proposed 'Water Management Plan' which may often be incorporated as a prescribed document within the terms of the Mineral Planning Conditions. This document should set out the expected requirements to use, move and discard water and effluent as the development progresses, and it should provide details of the means by which effluent treatment and water monitoring and storage will be carried out.

On sites where there may be fuel, oil or chemical usage it may be appropriate to include details of how prevention or mitigation of pollution risk will be achieved (e.g. by the use of dual containment storage facilities and the implementation of operational instructions for the management of accidental spills or requirement of contingency measures etc).

It may be necessary to define contingency plans to deal with events that are difficult to predict with any great accuracy, (such as provision of a contingency area or method for enhanced or additional effluent treatment should the quality of dewatering effluent turn out to be much worse than anticipated).

The water management plan should culminate at the point where no further active water management is necessary – usually the point at which groundwater levels have fully recovered in the restored site. If there is potential for groundwater or mine-water from workings in or under the pit to commence discharge to surface through the backfill after working has finished, contingency provision should be made in restoration for passive control of this discharge (e.g. via an attenuation pond or passive reed-bed system at the natural point of site discharge).

Environment Agency Permits that may be relevant to this proposal:

Discharges of foul effluent, dewatering effluent, process effluent or site drainage from an active mineral extraction will require an appropriate Environment Agency EPR discharge permit to facilitate the discharge into watercourses or soakaway. EPR Permitted Discharges from a working mineral excavation are likely to be subject to limits on suspended solids, oil and grease, pH and rate of flow. Restrictions on rate of flow are normally applied to ensure against adverse effects of scour or flooding in the receiving watercourse.

Maximum potential flows to be issued from the site should be considered in the Flood Risk Assessment, along with the potential capacity of the receiving watercourse(s). Usually the biggest risk of high flows that might exceed the ecological or hydraulic capabilities of the watercourse arises when a large quarry has been allowed to fill with water that then needs to be discharged in a short period of time to resume activity.

This restriction on discharge rate can sometimes be an unexpected and unwelcome constraint on reactivation of workings that depend upon small streams for disposal of accumulated water. The Water Management Plan should address how such situations would be avoided or managed.

Flood Defence Consents (Formerly known as Land Drainage Consents) may be required for any activity involving direct interference with the channel of a 'Main River' designated watercourse, (eg by the construction of an effluent outfall bay, or weir etc), or for any activity that will significantly change the flow in a main river here or downstream. In the case of this site none of the watercourses adjacent to the site are currently designated Main River where they are close to the site. In practice therefore, it is currently only activity likely to cause a significant change in flow downstream that would require a Flood Defence Consent.

Any abstraction of water exceeding 20 cubic metres in any day for a purpose of use (e.g. mineral processing, dust suppression etc) is likely to attract requirement of a formal Water Abstraction Licence issued by the Environment Agency.

Any water abstracted to enable protection or safe execution of below ground excavation or engineering works, and where the abstracted water is disposed of

without any intervening use, is, at the time of writing, an activity exempt from the requirement of any Environment Agency water abstraction permit. However it is anticipated that within the time frame proposed for this development, this licence exemption for the operational dewatering may be removed in favour of a new type of water abstraction permit called a Water Transfer Licence. Transitional arrangements will be put in place to provide for an activity already in progress at that time.

A formal EPR permit may be required for the deposit of mines and quarries waste arising from the development – this depends upon the size and nature of the material; and a formal permit or exemption certificate may be required for any importation of other wastes for processing or deposit on the site.

Finally, the Planning Authority are advised to ensure that any Restoration Bond secured from the operator is sufficient to restore the site if the operator should fall into default or become insolvent at a time when a large excavation remains substantially unfilled.

The Agency trusts that you find these comments useful. Please do not hesitate to contact us should you wish to discuss this further.

Yours sincerely

Mrs Laura Perry
Planning Liaison Team Leader

Please ask for John Dingley
Direct dial 01543 404941
Direct fax 01543 444161
Direct e-mail john.dingley@environment-agency.gov.uk