

RECORD OF DELEGATED DECISION TAKEN BY AN OFFICER UNDER THE COUNCIL'S CONSTITUTION

Matter decided: decisions relating to the determination of Malkins Bank Golf Course, Betchton Road, Betchton, Sandbach as Statutory Contaminated Land in accordance with Part IIA of the Environmental Protection Act 1990.

Decision Date ...29/Sept/11...

Decision Taking Officer: John Nicholson, Strategic Director (Places and Organisational Capacity) in consultation with the Cabinet Member for Safer & Stronger Communities

Finance and Contract Procedure Rule No(s): N/A

Functions in relation to contaminated land are 'Local Choice Functions' – the Constitution (page 60) provides that Cabinet are the decision-making body with a delegation of these functions (under Part IIA of the Environmental Protection Act 1990) to the Strategic Director – Places.

Key Executive Decision NO

It is important to record here whether this is/is not a Key Decision (see definition overleaf) in respect of executive functions taking into account the definition of such functions and decisions in the Council's Constitution as the Call-in procedures operate in relation to Key Decisions taken by officers.

1.0 THE DECISION

- 1.1 to formally determine the area of land known as Malkins Bank, Sandbach, shown edged in red on the plan attached at Appendix A ('the Land'), as contaminated land for the purposes of Part IIA of the Environmental Protection Act 1990 ('the 1990 Act');
- 1.2 to approve the draft record of determination attached as Appendix B as the formal Record of Determination;
- 1.3 to authorise the Public Protection and Health Manager to take all necessary steps to effect the determination and provide the required notices to relevant parties;
- 1.4 to determine that the conditions set out in section 78H(5)(a) of the 1990 Act are applicable, i.e. the authority is satisfied that there is nothing by way of remediation which could be specified in a remediation notice; and

- 1.5 to approve the draft remediation declaration attached as Appendix C and to authorise the Public Protection and Head Manager to take all necessary steps involved in the publication of the remediation declaration.

2.0 REASONS FOR THE DECISION

2.1 Part IIA of The Environmental Protection Act 1990

- 2.1.1 Part IIA of the Environmental Protection Act 1990 deals with the identification, prioritisation, determination and remediation of contaminated land. The legislation places a statutory obligation on a local authority to inspect its area for the purpose of identifying potentially contaminated sites, including special sites, and for the further inspection of such sites. A site will meet the legal definition of contaminated land if there is a Significant Pollutant Linkage from a source to a receptor, therefore all three factors of a pollutant linkage must be present:

source → pathway → target

2.2 History of the site

- 2.1.2 Malkins Bank golf course and the adjacent land has a long industrial history stemming from 1864 as a salt works and brine springs, alkali works in 1913 and salt works in 1923. Unsworth and Sons took ownership of the site in the 1950s and operated the site as a waste tip. The freehold was sold to Mr Holland of Effluent Services circa 1960 and Congleton Borough Council obtained ownership of the land in 1968.
- 2.2.2 Very little information exists to what was deposited on the site but local knowledge speaks of a 'tom cat' smell emanating from the tip that could be smelt in Alsager and the residents of Jubilee Villas tell of lorries coming to and from the tip during the night time hours raising concerns of uncontrolled tipping.
- 2.2.3 It is understood that in the 1970's the former Sandbach Urban District Council and Congleton Rural District Council applied for a derelict land grant to reclaim the land. As part of this work some remediation took place under the supervision of a specialist company of consultants which resulted in the removal of barrelled substances from the site and the burial of remaining waste. Unfortunately data relating to this remediation operation is no longer available and it is therefore not possible to ascertain what was and what was not removed from the site. The land was subsequently redeveloped as a golf course and has been operated as such by the Council since 1980.
- 2.2.4 A leasehold interest in the site is due to be transferred to a third party operator on the 1 October 2011 to operate the site as a golf course.

2.3 Site investigations

- 2.3.1 Environmental Health have received complaints regarding odours and outbreaks of leachate on the site since the 1980s and some stand alone investigations have been undertaken on parts of the site with

recommendations that further investigations should be undertaken. However it is only since the enactment of the contaminated land regime in 2000 that powers have been available to local authorities for the inspection of such sites.

- 2.3.2 In February 2001 Congleton Borough Council were informed by the Environment Agency that their ongoing sampling of the Birchenwood Brook, which runs through the site, had identified failures of the Environment Quality Standard with possible impacts to human health and the environment. In response to the Environment Agency's information, a working party was formed and an investigation strategy was devised incorporating water sampling from discharge points through the upper layer drainage system, a large number of outfalls, the stream that runs through the site and groundwater sampling from two deep boreholes already in situ on site. In addition radiation and air quality surveys were carried out.
- 2.3.3 The data collected gave Congleton Borough Council enough information to present to The Environment Agency that Malkins Bank Golf Course may be a potential special site; thus placing placed the obligation for the inspection onto the Environment Agency. In 2004 the Environment Agency appointed consultants (Atkins Consultants Ltd) to carry out further investigations on the site in order to determine its status under the contaminated land legislation. A conceptual model was identified which identified a number of possible pollutant linkages and receptors from the waste mass. The aim of the investigation was to investigate if any of the pathways existed and if so, whether they were significant. The reports produced by Atkins are attached as Appendices D, E and F.
- 2.3.4 Congleton Borough Council was notified of the Environment Agency's findings and conclusions in 2008. A copy of the relevant correspondence from the Environment Agency is attached as Appendix G. The Environment Agency confirmed that the reports confirmed:
- (a) that there are no significant pollutant linkages to human health (either to people using the golf course or nearby residents) or property;
 - (b) there are a number of pollutant linkages to surface water (i.e. Birchenwood Brook) but that they were not found to be significant in the context of the Part IIA regime; and
 - (c) that ten pollutant linkages were identified in relation to groundwater which were considered to be significant and meet the statutory definition of contaminated land by means of causing 'pollution of controlled waters.'
- 2.3.5 The significant pollutant linkages were identified as a result of the leaching of the following contaminants out of the waste mass via vertical and lateral migration into shallow groundwater: copper, 4-chlorophenol, benzene, toluene, ammoniacal nitrogen, phenol, 2-methylphenol, 3-methylphenol, 4-methylphenol and 2,4-dimethylphenol.
- 2.3.6 Until the introduction of the Water Framework Directive which resulted in the repositioning of surface water monitoring points; The Environment Agency monitored the surface water as part of their on-going programme of river

quality sampling. The latest available monitoring results indicate that the water quality of the stream that runs through the site has achieved a grade of 'very good' in terms of dissolved oxygen and in relation to ammonia has improved from a grade 'C' in 2008 to a grade 'B' in 2009.

2.3.7 The intrusive site investigation undertaken in 2007 identified that 'pollution of controlled waters is being caused.' The Environment Agency have recently (23rd September 2011) advised that in their view the conceptual site model has not changed (i.e. contaminates within a large uncapped area of buried waste, leaching into the underlying groundwater or drainage system via percolation or rainfall) and for this reason it "seems reasonable to assume that in the relatively short time since the inspection was completed (compared to the time since the waste was deposited) that contaminants within the waste mass are still entering the groundwater beneath the waste mass." The Environment Agency has also highlighted the fact that some time after the final open day, high groundwater levels contaminated with BTEX were noted to the west of the waste mass as a result of a blockage of the drainage system and has suggested that this supports the conceptual site model that contaminants were continuing to enter the groundwater.

2.3.8 Anecdotal evidence supports the view that the pollution of controlled water is still being caused, as the odour at the culvert exit is still prominent; this is as a result of the contaminated groundwater dripping through the culvert into the stream that underlies the waste mass. In addition the consultant that was asked to produce an indication of remedial costs state (in the document ref no: AF0096/LQ-581/PJM/077.32481 contained within Appendix H) that 'the system would need to continue to operate until such a time as the waste no longer produced leachate probably in the order of at least hundreds of years'. On the basis of the information above it is suggested that the Council can be reasonably satisfied that pollution of controlled waters is still being caused, however it should be noted that the Environment Agency have suggested that the Council considers taking some further samples to confirm the position.

2.4 Determination of contaminated land

2.4.1 Paragraph B.50 of the statutory guidance states:

"The local authority should determine that land is contaminated land on the basis that pollution of controlled waters is being caused where:

- (a) it has carried out an appropriate scientific and technical assessment of all the relevant and available evidence, having regard to any advice provided by the Environment Agency; and
- (b) on the basis of that assessment, it is satisfied on the balance of probabilities that both of the following circumstances:
 - (i) a potential pollutant is present in, on or under the land in question which constitutes poisonous, noxious or polluting matter, or which is solid waste matter, and

- (ii) that potential pollutant is entering controlled waters by the pathway identified in the pollutant linkage.

The evidence provided within the reports produced on behalf of the Environment Agency has indicated that pollutant linkages have been identified in relation to groundwater which are considered to be significant and meet the statutory definition of contaminated land by means of causing 'pollution of controlled waters.'

2.4.2 Paragraph B.52 of the statutory guidance indicates that where an authority determines that particular land is contaminated a written record of that determination should be prepared, and should include:

- (a) A description of the particular significant pollutant linkage, identifying all three components of pollutant, pathway and reception;
- (b) A summary of the evidence upon which the determination is based;
- (c) A summary of the relevant assessment of the evidence; and
- (d) A summary of the way in which the authority considers that the requirements of the guidance in Chapters A and B of the Guidance have been satisfied.

Attached as Appendix B is a draft record of determination which includes the information within (a) to (d) above.

2.4.3 If the Land is determined as contaminated land, in accordance with 78B(3) of the 1990 Act notice will be given to: (i) the appropriate agency (Environment Agency); (ii) the owner of the land; (iii) any person who appears to the local authority to be in occupation of the whole or any part of the land; and (iv) each person who appears to the local authority to be an 'appropriate person' (see paragraph 8.5 above).

2.4.4 On the basis of the information provided in 2.3.7 and 2.3.8 above, it is suggested that the Council can reasonably conclude that the pollution of controlled waters is still being caused. However, the Environment Agency has suggested that the Council should consider taking further samples to confirm the position before carrying out any formal determination of the site. For this reason, one of the options which is open to the decision-maker, and which is included within paragraph 3.2 below, is to defer a decision until further evidence has been obtained (by way of sampling at the site).

2.4.5 It is recognised that the boundary of the site on the plan at Appendix A differs from that attached to the correspondence from the Environment Agency at Appendix G. The revised boundary plan (Appendix A) excludes the Northern part of the site where the club house and car park are located as this is the former industrial area and no evidence of tipping or significant contamination has been found in this area. Boreholes 17, 20 and 22 (Plan 5042312/001/003 in Volume 2 of 3 Appendix F) were also free of significant contamination and these boreholes are located to the North of Zone E which is the area of the old railway cut; this is the area where drums were placed during the historic remediation of the site. Therefore we can be confident that by revising the line of determination along the line formed by boreholes 17, 20, 22, the boundary line is well within an area that is free of significant contamination but will still remain protective of Zone E. In addition the pond on the golf course has also

been excluded as no significant contamination was found in the pond and therefore it now falls outside the area to be determined as contaminated land.

2.4.6 A consultation exercise has recently been carried out by DEFRA which related to the contaminated land regime. The consultation document included proposals to amend the definition of contaminated land as it relates to controlled waters by means of the commencement of section 86 of the Water Act 2003 ('the 2003 Act'). This would mean that rather than the test being 'pollution of controlled waters is being caused' it would be 'significant pollution of controlled waters is being caused.' The consultation document indicates that it would be for the statutory guidance (in parallel with the EU Water Directives) to explain what is meant by 'significant pollution.' The consultation document also proposed a "red-amber-green" test where 'red' would describe types of water pollution that would always be considered to be significant; 'amber' would describe sites where the regulator would have discretion over whether or not the pollution should be considered to be significant' and 'green' would describe types of pollution that would never be significant.

2.4.7 It is not clear at this stage whether of the above categories would apply to Malkin's Bank and therefore whether the contamination of controlled waters would be categorised as 'significant pollution' (as referred to within section 86 of the 2003 Act). The timeframe for the consideration of the consultation responses and the commencement of any amendments to the legislation is yet to be definitively confirmed, although the Environment Agency have suggested that the changes are currently expected in November 2011. The Environment Agency has suggested that the Council may wish to consider deferring a decision on determination until the outcome of the consultation and any subsequent changes to the contaminated land regime are fully understood. However, the existing statutory guidance does appear to recognise that changes may be made to the test and that in the interim period land should still be determined even if the amount of pollutant is small.

2.4.8 The Guidance states:

6.30 As stated above (see paragraph 2.9) the definition of "POLLUTION OF CONTROLLED WATERS" is simply the "entry into CONTROLLED WATERS of any poisonous, noxious or polluting matter or any solid waste matter."...Some commentators have suggested that the entry of very small amounts of matter into CONTROLLED WATERS might satisfy this definition, and thus lead to the identification of land as CONTAMINATED LAND. As indicated at paragraph 2.9 above, the definition is to be amended to include a significance test.

6.31 However, in the interim, even if land is identified as CONTAMINATED LAND in this way – on the basis of the actual or likely entry of only a very small amount of a POLLUTANT into CONTROLLED WATERS – this should not lead to the imposition of major liabilities: there are other balances elsewhere in the regime to prevent this. In particular, any REMEDIATION that can be required must be "reasonable", having regard to the cost which is likely to be involved and the seriousness of the POLLUTION OF CONTROLLED WATERS involved. If there is only a very low degree of contamination on any land which gives, or is likely to give, rise to POLLUTION OF CONTROLLED WATERS which is only minor in terms of its seriousness, it will be reasonable

to incur only a correspondingly low level of expenditure in attempting to remediate that land.

6.32 Nevertheless, the simple fact of land being identified as CONTAMINATED LAND in this way may cause its own problems – for example, for landowners. It is therefore important that the circumstances of such cases are clearly entered on the REGISTER kept by the ENFORCING AUTHORITY. If REMEDIATION is not carried out because it would not be reasonable, a REMEDIATION DECLARATION needs to be published by the ENFORCING AUTHORITY and entered onto its REGISTER. In this way, a public record is created explaining that no remediation is required under Part 2A, even though the land has been formally identified as CONTAMINATED LAND.

2.4.9 The Environment Agency have also raised the issue about how the entry on the register of contaminated land is dealt with if the test were to be amended and the site no longer fell within the definition. The legislation is silent as to the issue of removal of an entry from the register and therefore there is no express power in relation to such removal. If, as and when a significance test is introduced, the site no longer fell within the definition of contaminated land, the Council would have to determine whether (a) the relevant entry remains on the register (on the basis that, subject to a decision on a remediation declaration dealt with below, that the remediation declaration would make it clear that no action was required); or (b) that the relevant entry is amended.

2.4.10 In the light of the proposed amendments to the statutory definition of contaminated land an option which is open to the Council, and has been recommended to it by the Environment Agency, is the deferral of a decision until the position in relation to the amendment is known (see paragraph 3.3 below).

2.5 Remediation of contaminated land

2.5.1 Section 78E(1) of the 1990 Act provides that where land has been identified as contaminated land, the enforcing authority, shall serve on each person who is an 'appropriate person' a notice specifying what that person is to do by way of remediation. However, Section 78E(4) prescribes that the only thing which the enforcing authority may require to be done by way of remediation are things which it considers reasonable, having regard to – (a) the cost which is likely to be involved; and (b) the seriousness of the harm, pollution of controlled waters, in question. Where an enforcing authority is precluded by virtue of section 78E(4) from specifying any particular thing by way of remediation in a remediation notice, the authority is required to prepare and publish a document known as a 'remediation declaration.'

2.5.2 As set out within the correspondence attached as Appendix G, The Environment Agency have advised as follows in relation to remediation:

- (i) The groundwater is in a minor aquifer in shallow drift deposits and is not considered as a significant resource for potable water. They can provide locally important groundwater abstraction points but this is not considered to be the case in Malkins Bank, as there are no groundwater abstractions;

- (ii) Birchenwood Brook is considered to be the most sensitive controlled water receptor at the site. The groundwater, contaminated from the waste buried on site, feeds Birchenwood Brook but it appears to be having a minimal impact on the water quality of the brook;
- (iii) Any remedial action to address the contamination in the shallow groundwater would be risk based on the most sensitive receptor, in this case Birchenwood Brook, and would need to meet the reasonableness and cost benefits tests within the Part IIA regime. As the impact on the brook is minimal, the cost of the remediation of the groundwater is likely to outweigh any benefits of marginally improving the water quality in the brook slightly.

2.5.3 The Environmental Health Service has consulted Atkins Consultants Ltd in order to establish possible remediation methods and the costs which may be associated with any such remediation. The consultant (Atkins Limited) who undertook the site inspection and investigation was asked to provide some indicative remedial solutions and also undertake a costing exercise to determine the reasonableness and cost benefit of undertaking such remedial action.

Atkins identified three preferential options for the remediation of the site contained within Appendix H:-

- Dig and dump – the complete removal of the waste mass from the site;
- A bentonite/cement groundwater cut off wall;
- In-ground reactive groundwater barrier.

The cost and estimated maintenance costs associated with the options detailed above are displayed in Table 1 below.

Option	Cost 2008 (Millions)	Cost 2008 (+ 5%) (Millions)	Cost 2008 (+ 10%) (Millions)	Maintenance Costs Per annum (Thousands)
Bentonite/Cement Groundwater cut off wall	£9.7	£10.2	£10.7	£1000
Reactive Groundwater Barrier	£1.5	£1.6	£1.65	£50
Removal and Off Site Disposal	£84	£88.2	£92.4	

Table 1: Summary of Favoured Options and Associated Costs

Dig and Dump

The total volume of waste buried on the site is estimated at $5.6 \times 10^6 \text{m}^3$ based on an area of 29 hectares averaging a typical depth of 20 metres. All the waste on site will be treated as hazardous waste and will therefore need to be disposed of at an appropriate landfill facility. In addition, due to the unknown nature of the buried material the risk of explosion from trapped gasses is a

possibility and the operation will need to be monitored for the presence of explosive gasses.

Remediation methods of this nature mean an increase in traffic movements to and from site, increased noise levels on site and disturbance through noise, and odours. In addition such operations can create health related concerns to the local community. The dig and dump method is simply movement of the hazardous material from one site to another site and is not considered an environmentally friendly or cost effective way of remediating contaminated land.

Groundwater cut off wall

This method involves building a wall underground sited 1km into the low permeable strata, around the outside of the waste mass so it blocks the flow of contaminated ground water from the waste mass. The length of the wall required is estimated to be around 3km in length with average depth of 11 metres. This method will have an ongoing operational cost due to the necessity to remove and treat the leachate that will build up behind the cut off wall.

In-Ground Reactive Groundwater Barrier

This method works on the same theory as the cut off wall but it differs in the respect it actively funnels the contaminated groundwater towards a higher permeability reactive zone where the water will be treated in-situ in reactive 'gates'. The wall would need to be around 400 metres in length and have an average depth of 11 metres. The reactive 'gates' will have an ongoing maintenance cost as detailed in Table 1.

- 2.5.4 In order to determine whether remediation is appropriate the authority is required to assess the significance of any pollution against the costs of remediation. Paragraph C31 of the statutory guidance suggests that the authority should "regard the benefits resulting from a remediation action as being the contribution that the action makes, either on its own or in conjunction with other remediation actions, to (a) reducing the seriousness of any harm or pollution of controlled waters which might otherwise be caused; or (b) mitigating the seriousness of any effects of any significant harm or pollution of controlled waters."
- 2.5.5 In this case, the evidence indicates (i) that there are no significant pollutant linkages to human health or property; and (ii) that the pollution of groundwater is having a minimal impact on the water quality of Birchenwood Brook (it appears from the 2009 monitoring that the quality has slightly improved). It is therefore suggested that the costs of remediation referred to within paragraph 2.5.3 above would be disproportionate to the benefits which may be achieved by such work.
- 2.5.6 Independent expert opinion was sought from the Environment Agency, which is the national governing body in respect of controlled waters. Having reviewed all available data and additionally given consideration to all currently available remedial techniques and associated costs, the Environment Agency advised

that they would not seek any remediation of the shallow ground water (Appendix G). This position has been confirmed by the Environment Agency in correspondence dated 23rd September 2011.

2.5.7 In conclusion it is suggested that the costs associated with the remedial options as discussed in paragraph 2.5.3 would be disproportionate to any environmental benefits that may be gained. This is due to the fact that the shallow groundwater is not abstracted for either drinking or agricultural use and there appears to be minimal impact on the water quality of Birchenwood Brook.

2.5.8 If satisfied, by virtue of section 78H that the authority is precluded from specifying in a remediation notice any particular thing which it would otherwise require to be done, a 'remediation declaration' must be published. A draft remediation declaration is attached as Appendix C. Any declaration published must also be placed on the public register.

3.0 ALTERNATIVE OPTIONS CONSIDERED IN ARRIVING AT THE DECISION

3.1 The Strategic Director could decide not to determine Malkins Bank Golf Course as Contaminated Land but it is suggested that this would be contrary to legislative requirements.

3.2 The Strategic Director could decide to defer a decision until such time as further evidence is obtained by way of confirmatory sampling at the site. This option has been suggested by the Environment Agency; however supporting information which may lead the Council to be reasonably satisfied that contamination of controlled waters is still being caused is set out within paragraphs 2.3.7 and 2.3.8 above.

3.3 The Strategic Director could decide to defer a decision in relation to the determination until such time as the outcome of the DEFRA consultation and any impact on the current definition of statutory contaminated land are known.

Signed by the Decision Taking Officer

Designation

Strategic Director Places & Organisational
Development

Date

29/Sept/11

Approved by
(if needed)

* See Note (1)

.....
Borough Treasurer
and Head of Assets

.....
Borough Solicitor

Date

.....

.....

Approved by
(if needed)
See Note (2)

David Kelly
.....
**Cabinet Member for Safer &
Stronger Communities**

.....
**Cabinet Member for
Prosperity**

Date

..27th September '11..
.....

NOTES

(1) Decisions taken under Finance and Contract Procedure Rule E.23 also need to be approved by the Borough Treasurer and Head of Assets and the Borough Solicitor and this form completed accordingly.

(2) Where the decision involves a virement or supplementary estimate of between £100,000 and £500,000, the relevant Cabinet Member and the Cabinet Member for Resources must be consulted (as provided by Finance and Contract Procedure Rules A.33 and A.37) and their signatures added to the form where indicated.

(3) If an officer is unsure about his/her powers to take the decision, he/she should seek advice from the relevant officer in either Finance or Legal Services.

(4) Where the decision is a "Key Decision" a copy of this record must be sent to the Borough Solicitor and the Borough Treasurer and Head of Assets as soon as it has been signed to enable the decision to be published by the Borough Solicitor within two working days of it being made. The call-in period of a further five clear working days will then operate. This period cannot start until the decision is published. A decision here must not be implemented until the call-in period has elapsed (normally five clear working days in all) and no notice has been served. If a call-in notice is served you will be advised of the process and no action must be taken on the decision which is technically suspended.

(5) A copy of this document must be kept in the Register of Delegated Decisions (held in your Directorate) which must be available for inspection at any time during normal office hours by Members of the Council, the Borough Treasurer and Head of Assets and Borough Solicitor. Where the decision relates to Rule E.83 (Award of Contract on basis of best offer), approval of fully funded SRE/SCE's, approval of Accredited Partnership agreements or when charging more or less than full cost a copy of the decision must be published on the Council's website.

(6) The decision must be reported to Members in accordance with the requirements of the Finance and Contract Procedure Rules.

(7) For Key Decisions, any relevant supporting papers, or document references (background documents), should be described (with details of where they can be accessed – e.g. file number) to this document and where they were a material consideration leading to the decision.

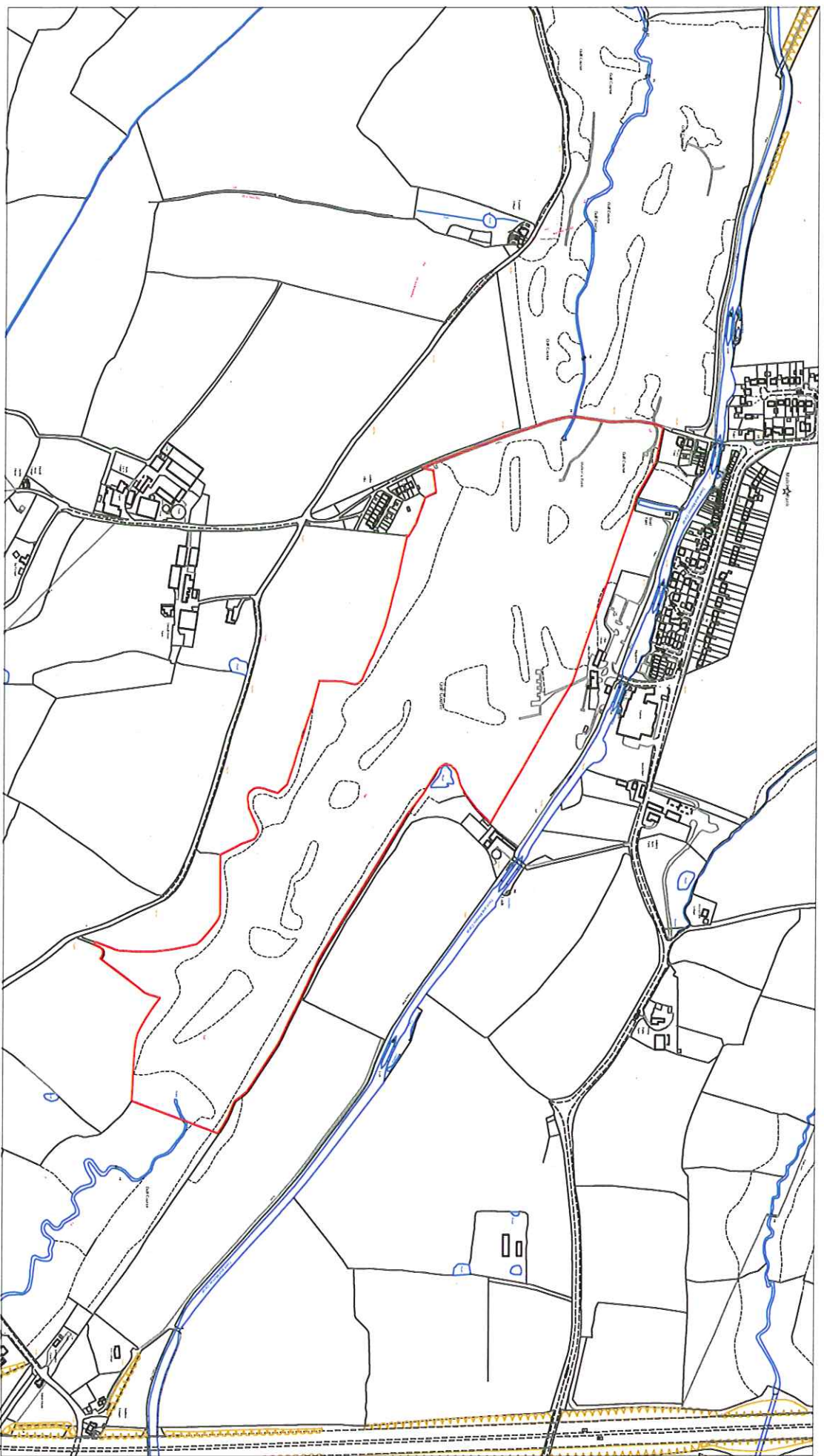
DEFINITION – "KEY DECISION"

A decision which is likely to (a) result in the Council incurring expenditure which is, or the making of savings which are, significant having regard to the Council's budget for the service or function to which the decision relates; or (b) to be significant in terms of its effects on communities living or working in an area comprising two or more wards or electoral divisions in the area of the local authority.

Delegated Decision: Determination of Malkins Bank Golf Course

Appendix A

1 of 1



NORTH
 1:20:000
 February 2011

Site: Malkins Bank Golf Course Boundary of Determination

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Delegated Decision: Determination of Malkins Bank Golf Course

Appendix B

1 of 1

Environmental Protection Act 1990 – Section 78 B

RECORD OF THE DETERMINATION OF LAND KNOWN AS
MALKINS BANK GOLF COURSE, BETCHTON ROAD,
SANDBACH AS CONTAMINATED LAND

Prepared by Cheshire East Borough Council

In accordance with Part 2A of the Environmental Protection Act 1990, Cheshire East Borough Council has determined that part of the site known as **Malkins Bank Golf Course, Betchton Road, Malkins Bank, Sandbach, Cheshire CW11 4XN**

National Grid Reference SJ376635 358813

Meets the definition of **Contaminated Land** as defined by Section 78A (2) of the Environmental Protection Act 1990, because:

The Environment Agency has identified the presence of a contamination source, a pathway and a receptor with respect to the current use of the land. Cheshire East Borough Council is satisfied that as a result of this pollutant linkage pollution of controlled waters is being caused with no suitable and sufficient risk management arrangements in place to prevent such harm

A summary of the basis on which this determination has been made is set out in the schedule to this record.

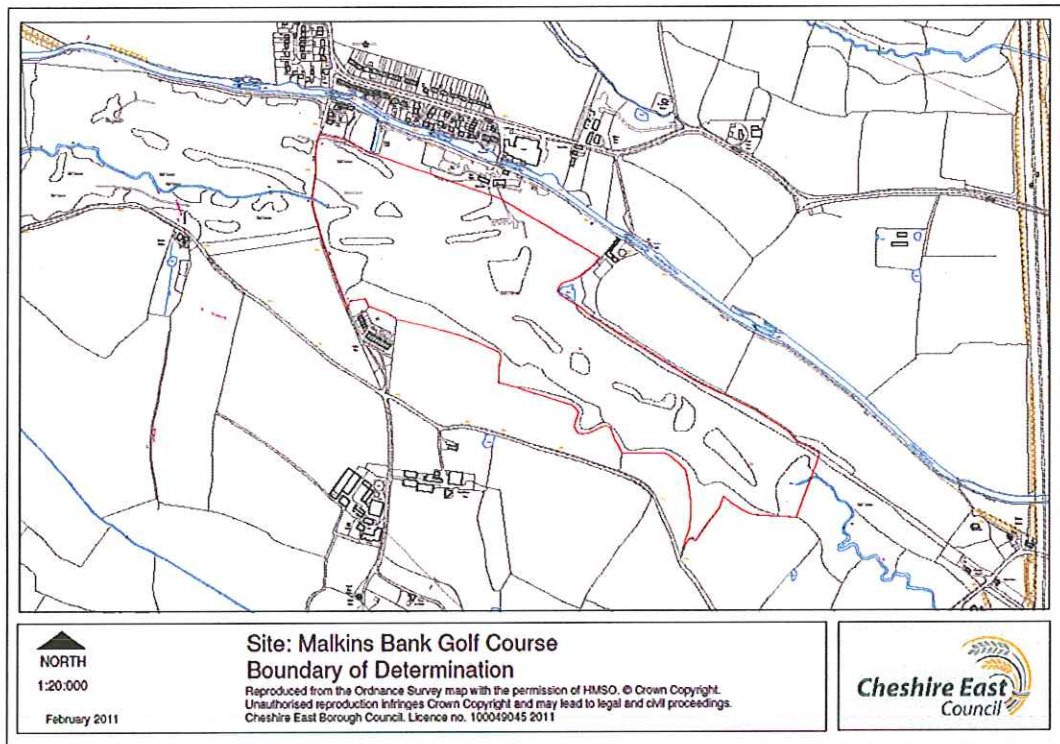
Date:

29 / Sept / 11

Signed:


Strategic Director (Places & Organisational Capacity)

Figure 1: Malkins Bank Determination Area



Schedule

1 DESCRIPTION OF THE SIGNIFICANT POLLUTANT LINKAGE

In order to declare the site as Statutory Contaminated Land, it is considered that the following pollutant linkages are significant pollutant linkages, assessed in accordance with the guidance (A.11 to A.17)

Table 1: Significant Pollutant Linkages found at the Site

Pollutant Linkage	Contaminant	Migration & Exposure Pathways	Receptor
1	Copper	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)
2	4-Chlorophenol	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)
3	Benzene	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)
4	Toluene (Methylbenzene)	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)
5	Phenol	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)
6	2-Methylphenol	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)
7	3-Methylphenol	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)
8	4-Methylphenol	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)
9	2,4-Dimethylphenol	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)
10	Ammoniacal Nitrogen	Leaching out of the waste mass and downward and lateral migration.	Controlled Water (Groundwater)

The above significant pollutant linkages have been identified in accordance with the Guidance (A.35 to A.39). It is considered that authoritative, scientifically-based, relevant assessments of the contamination and pollutant linkages have been undertaken.

2 SUMMARY OF EVIDENCE UPON WHICH THE DETERMINATION IS BASED

The determination has been made by compiling evidence over a long period of time. The area in which the site stands was formerly governed by

Congleton Borough Council and has a long industrial history stemming from 1864 as a salt works and brine springs, alkali works in 1913 and salt works in 1923. Unsworth & Sons took ownership of the site in the 1950s and operated the site as a waste tip. The freehold was sold to Mr Holland of Effluent Services circa 1960 and Congleton Borough Council took ownership of the site in 1968 after a court case against Effluent Services.

Very little information exists to what was deposited on the site but local knowledge speaks of a 'tom cat' smell emanating from the tip that could be smelt in Alsager and the residents of Jubilee Villas tell of lorries coming to and from the tip during the night time hours raising concerns of uncontrolled tipping.

Congleton Borough Council undertook remediation of the land under the guidance of a specialist company Harwell. The land was subsequently redeveloped as a golf course and opened in 1980.

Environmental Health have received complaints regarding odours and outbreaks of leachate on the site since the 1980s and some stand alone investigations have been undertaken on parts of the site with recommendations that further investigations should be undertaken.

In 2001 the Environment Agency wrote to Congleton Borough Council to advise that their ongoing sampling of the Birchenwood Brook, which runs through the site, had identified failures of the Environmental Quality Standard with possible impacts to human health and the environment.

In 2003 a six month intensive water-sampling programme on site to include the Birchenwood Brook and the herringbone drainage system on the site was undertaken by the Environmental Health Team of Congleton Borough Council in an attempt to provide evidence to the Environment Agency that the site was in fact a potential special site. At the beginning of 2004, the Environment Agency formally agreed to inspect the site on this basis.

Several investigations have then been undertaken as detailed below:

- Environment Agency & Congleton Borough Council, Detailed Intrusive Inspection (Part IIA of EPA 1990) Malkins Bank Golf Course; volumes 1 to 3. Atkins 2007.
- Environment Agency & Congleton Borough Council, Detailed Intrusive Inspection (Part IIA of EPA 1990): Supplementary Report Malkins Bank Golf Course. Environment Agency, January 2008.

The reports conclude there are **NO** significant pollutant linkages to human health either to residents living close to the golf course or members of the public using the golf course recreationally.

With regard to controlled waters the reports conclude that although there are a number of pollutant linkages to the surface water these were not found to be significant.

Ten pollutant linkages have been identified to the groundwater. These are considered to be significant and meet the statutory definition of contaminated land as defined by Section 78A of The Environmental Protection Act 1990 by means of causing 'pollution of controlled waters' (groundwater).

3 DESCRIPTION OF POTENTIALLY CONTAMINATIVE ACTIVITY AT THE SITE

There is no other known potentially contaminative use of the site other than that described in Section 2 of this report. Although the site was 'remediated' by Harwell prior to its use as a golf course in 1980, it is believed that 'dangerous chemicals' were removed from the site and the remainder buried within the old railway cut. However standards have changed dramatically since the late 1970s and a large number of chemicals have now been reassessed. It is these chemicals that are now causing problems on the site.

4 SUMMARY OF EVIDENCE UPON WHICH THE DETERMINATION HAS BEEN MADE

The Site has been determined to be Statutory Contaminated Land in accordance with Section 78A(9) of the act, because:

'pollution of controlled waters is being caused'

In declaring the Site as Contaminated Land, an assessment of available information and an intrusive investigation has been carried out in accordance with the Guidance (B.39, B.50).

The Determination has been made using information obtained from the comprehensive site investigation undertaken by Atkins on behalf of the Environment Agency and the former Congleton Borough Council. Guidance on assessing the significance of pollutant linkages to controlled waters, including groundwater, is provided in the Environment Agency document 'Technical advice to third parties on Pollution of Controlled Waters for Part 2A of the EPA 1990'.

In relation to the linkages to groundwater at the Malkins Bank site, the geological and hydro-geological information indicates that pathways exist and, that the timescales and pathways lengths are such that contaminants could justifiably be expected to have reached receptors. On this basis, significant pollutant linkages were assessed on the water quality at the receptor rather than upon modelling in order to assess the possibility of pollution occurring.

In assessing significance, the guidance indicates that a judgement should be made regarding the most applicable standards and that this should be based on the actual use of a controlled water. As the groundwater in the alluvial strata is a minor aquifer which is highly unlikely to be exploited for potable use, but does feed into the Birchenwood Brook, the most applicable standard

was deemed to be the surface water environmental quality standard. This is because the Birchenwood Brook is assumed to be the critical receptor in terms of assessing risk to controlled waters. The Desk Top Study identified a number of potential pollutant linkages that required further investigation to determine their presence and significance. Potential contaminants were grouped together for ease of reporting, for example the metal group would include contaminants such as cadmium, zinc, mercury etc.

In total, 32 potential pollutant linkages were identified from the 14 contaminant groups. The intrusive investigation showed there were proven pollutant linkages involving the leaching of 39 separate substances from the on-site waste mass and migration into the underlying groundwater. A subsequent screening exercise then removed contaminants of concern (CoC) from the list using the following parameters;

- Where the evidence did not indicate an increased concentration down-hydraulic gradient;
- Where the evidence showed the CoC to be in excess of the Drinking Water Standard and Surface Water Abstraction Directive, as these were not considered to be relevant screening values for the groundwater; and
- In the case of non-statutory substances which were not included on the List I or List II substances of the Ground Water Regulations 1988.

Ten pollutant linkages were found to have failed the screening assessment and are deemed to be significant pollutant linkages in the context of contaminated land as defined by Section 78A of The Environmental Protection Act by means of causing 'pollution of controlled waters' (groundwater).

5 REFERENCES

Environment Agency & Congleton Borough Council, Detailed Intrusive Inspection (Part IIA of EPA 1990) Malkins Bank Golf Course; volumes 1 to 3. Atkins 2007.

Environment Agency & Congleton Borough Council, Detailed Intrusive Inspection (Part IIA of EPA 1990): Supplementary Report Malkins Bank Golf Course. Environment Agency, January 2008.

Delegated Decision: Determination of Malkins Bank Golf Course

Appendix C

1 of 1

Environmental Protection Act 1990 – Section 78H (6)

REMEDIATION DECLARATION

Prepared by Cheshire East Borough Council (Enforcing Authority)

Under the provisions of the Environmental Protection Act 1990, Cheshire East Borough Council has identified the land specified in the Schedule to this Declaration, situated within the Enforcing Authority's area, as contaminated land under section 78B of the 1990 Act.

Reason for Determination

Leachate percolating through the waste mass buried on the site, into the ground water underlying the waste has resulted in contamination of the ground water. The results of the intrusive sampling undertaken by the Environment Agency identified ten pollutant linkages to the groundwater, which are considered to be significant and meet the statutory definition of contaminated land as defined by Section 78A of The Environmental Protection Act 1990 by means of causing 'pollution of controlled waters' (groundwater).

Site Assessment and On-going Conditions

The intrusive site investigation undertaken in 2007 identified that 'pollution of controlled waters is being caused'. The Council has considered all of the available information and is satisfied that the pollution of controlled waters is still being caused at the site.

Section 78E (4) – Duty of Enforcing Authority to Require Remediation of Contaminated Land

In circumstances where an enforcing authority has identified contaminated land, subject to certain exceptions, it is required to specify what is required by way of remediation. The only things by way of remediation which the enforcing authority may require to be done are things which it considers reasonable having regard to;

- a) The cost which is likely to be involved; and
- b) The seriousness of the harm or pollution of controlled waters in question.

In order to establish the reasonableness of any remediation actions consideration has been given to the following information.

Three preferential options for the remediation of the site were identified;

Dig and Dump

The total volume of waste buried on the site is estimated at $5.6 \times 10^6 \text{ m}^3$ based on an area of 29 hectares averaging a typical depth of 20 metres. All the waste on site will be treated as hazardous waste and will therefore need to be disposed of at an appropriate landfill facility. In addition, due to the unknown nature of the buried material the risk of explosion from trapped gasses is a possibility and the operation would need to be monitored for the presence of explosive gasses.

Remediation methods of this nature mean an increase in traffic movements to and from site, increased noise levels on site and disturbance through noise, and odours. In addition such operations can create health related concerns to the local community. The dig and dump method is simply movement of the hazardous material from one site to another site and is not considered an environmentally friendly or cost effective way of remediating contaminated land.

Groundwater cut off wall

This method involves building a wall underground sited 1km into the low permeable strata, around the outside of the waste mass so it blocks the flow of contaminated ground water from the waste mass. The length of the wall required is estimated to be around 3km in length with average depth of 11 metres. This method will have an ongoing operational cost due to the necessity to remove and treat the leachate that will build up behind the cut off wall.

In-Ground Reactive Groundwater Barrier

This method works on the same theory as the cut off wall but it differs in the respect it actively funnels the contaminated groundwater towards a higher permeability reactive zone where the water will be treated in-situ in reactive 'gates'. The wall would need to be around 400 metres in length and have an average depth of 11 metres. The reactive 'gates' will have an ongoing maintenance cost as detailed in Table 1.

The cost and estimated maintenance costs associated with the options detailed above are displayed in Table 1 below.

Option	Cost 2008 (Millions)	Cost 2008 (+ 5%) (Millions)	Cost 2008 (+ 10%) (Millions)	Maintenance Costs Per annum (Thousands)
Bentonite/Cement Groundwater cut off wall	£9.7	£10.2	£10.7	£1000
Reactive Groundwater Barrier	£1.5	£1.6	£1.65	£50
Removal and Off Site Disposal	£84	£88.2	£92.4	

Table 1: Summary of Favoured Options and Associated Costs

Section 78H(6)(a) – Restrictions and Prohibitions on Serving Remediation Notices

Where an enforcing authority is satisfied that contaminated land is in existence then it is normally required to serve a remediation notice on all interested parties stipulating the works that would be required for remediation. However this decision is subject to a review of cost benefit analysis and there are situations where a remediation notice and associated works would be precluded.

The enforcing authority has considered the seriousness of the pollution of controlled waters in this case and has balanced this against the costs associated with the remediation methods identified above.

The enforcing authority is satisfied that the costs associated with the remedial options detailed above would be disproportionate to any environmental benefits that may be gained. This is due to the following factors;

- (i) that there are no significant pollutant linkages to human health or property;
- (ii) that the pollution of groundwater is having a minimal impact on the water quality of Birchenwood Brook; and
- (iii) the shallow groundwater is not abstracted for either drinking or agricultural use

On this basis the enforcing authority is satisfied that it is precluded from the service of a remediation notice which would specify one or a combination of remediation actions detailed above and that it would be unreasonable to serve such a notice given the costs involved when balanced against the nature and extent of pollution of the controlled waters.

Conclusion

The enforcing authority is satisfied that it is precluded from serving a remediation notice on the basis that the costs involved would be disproportionate to any benefits which may be achieved by remediation.

Signed:



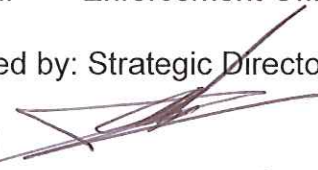
Date:

27th September 2011

Position: Enforcement Officer (Public Protection and Health)

Approved by: Strategic Director (Places & Organisational Development)

Signed:



Date:

29/Sept/11

