

Report to Scrutiny Panel

Name of Scrutiny Panel	Economy and Environment	
Meeting Date	15 th June 2011	
Subject	Vegetable samples taken from Milner Royd allotment site, Sowerby Bridge	
Wards Affected	Sowerby Bridge	
Report of	Joint report of : Mark Thompson, Head of Housing and Environment and Andrew Pitts, Acting Head of Neighbourhoods and Community Engagement.	
Type of Item (please tick✓)	Review existing policy	<input type="checkbox"/>
	Development of new policy	<input type="checkbox"/>
	Performance management (inc. financial)	<input type="checkbox"/>
	Briefing (inc. potential areas for scrutiny)	<input type="checkbox"/>
	Statutory consultation	<input type="checkbox"/>
	Council request	<input type="checkbox"/>
	Cabinet request	<input type="checkbox"/>
	Member request for scrutiny (CCFA)	<input checked="" type="checkbox"/>

Why is it coming here?
The chair of the Economy and Environment Scrutiny Panel requested information on the current position with regard to the results of recent vegetable samples taken from the site.

What are the key points?
5 samples of vegetables were taken and analysed at the request of allotment holders. Some of the samples have elevated levels of some heavy metals and hydrocarbons. These are only preliminary results and may not be indicative of all food produced on site. The source of contamination is unknown at this stage. Further investigation is necessary and on going.

Possible courses of action
Further food samples have been taken and have been prepared as if they were to be eaten prior to sending to the laboratory for analysis. The results are awaited. The results will inform as to what is the the most appropriate course of action. Scrutiny Panel may wish to commission a further report once results are received.

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Should this report be exempt?
No

Report to Scrutiny Panel

1. Background

- 1.1. Following concerns about potential soil contamination on the Milner Royd allotment site, some allotment holders requested that staff from the Neighbourhoods and Community Engagement Service within the Directorate of Safer Stronger Communities take some vegetable samples and submit them for analysis.
- 1.2. This request was agreed and a total of 5 food samples were taken of 4 different vegetables, including brussel spouts, leeks, kale and parsnips. These were then submitted for analysis to an UKAS accredited laboratory on 8th April 2011. The availability and variety of produce at this time of the year was limited and bearing in mind the size of the allotment, with over 20 individual plots, this represented a very small sample size. Ideally the sample size should have been larger and consisted of a greater variety of produce if a truly representative picture of the quality of the produce on this site was to be assessed. Nevertheless because of the concern expressed by some of the allotment holders it was decided to submit the samples for analysis. The results would at least provide a preliminary indication as to the presence of any contamination of the food produced on this site.
- 1.3. The samples which were submitted to the laboratory were brushed prior to analysis; they were not washed and/or peeled as would be normally the case if they were being prepared for human consumption. As there are no food standards in relation to home grown produce the sample results were assessed against standards relating to commercially grown food for human consumption. Whilst some of the samples were below the recommended standards for arsenic, cadmium, chromium and polycyclic aromatic hydrocarbons, all the samples exceeded the standard for lead and some of the samples exceeded the standards for arsenic and polycyclic aromatic hydrocarbons.
- 1.4. Whilst these results were only indicative it was decided to adopt a precautionary approach and advise all the allotment holders not to eat the produce from the site until further investigations had taken place. Discussions regarding the matter have taken place with the Consultant in Communicable Disease Control, West Yorkshire Health Protection Unit, Health Protection Agency and the Director of Public Health, Primary Care Trust. Advice has been issued to all the GPs in Calderdale about the appropriate course of action to be taken should any Milner Royd allotment holders, or people who have consumed the food, visit their surgeries with health concerns as a result of consuming the food.
- 1.5. The allotment site is situated to the east of Sowerby Bridge town centre. It is located in the valley bottom between the River Calder to the north and the closed Milner Royd landfill site to the south. (See Appendix 1). To the east of the site is the proposed Copley Valley Regeneration Project. Historically the surrounding land uses have been given over to mainly industrial type activities including a gas works, a woollen mill, a dye works, a sewage works, a wire works and a landfill site. Historical maps suggest that there has been no previous use of the actual allotment site itself. Appendix 2 contains extracts where there are specific

references to the allotment site, from Ground Investigation Interpretative Report for the Copley Valley Redevelopment November 2005.

1.6. It is not possible at this stage to identify the source of the contamination with the limited information available. Further investigations will provide information about the nature and extent of contamination but may still not provide us as to the source of the contamination. The allotments date back to the 1930s and over the years previous allotment holders may have brought various materials onto the site, used different substances and undertaken activities likely to cause pollution of the site. For example pesticides, fertilisers, soil improvers, coal ash and other chemicals may have been used on the land, burning of garden and other wastes may have taken place on the land. The site has also been flooded, which could have brought some contaminants to the site. There could also have been fly-tipping and other unauthorised waste disposal on the site. The site is also adjacent close to the closed Milner Royd landfill site and might be subject to contamination from the site. Furthermore in some areas of Calderdale there are naturally elevated levels of heavy metals in the geology.

1.8 In terms of potentially contaminated sites generally within the Borough, the Council has a duty to identify and prioritise sites which may pose a significant risk to health. This work has been on going over the last ten years and risk assessments, based on available information, have been undertaken resulting in the formulation of a list of priority sites. Where the necessary funding can be secured, which is rare, remediation has been undertaken. This has occurred on two sites within the borough to date. This list is periodically reviewed and where new information becomes available sites may be added or removed from the list accordingly. Prior to receiving the results of the food samples from the site there was no indication that the cultivated area of the allotment site was contaminated, however the recent results do now support further investigation.

2. Main issues for Scrutiny

2.1. It is important to note that only preliminary results are available to date and they may not be representative of the quality of food being produced on the site, hence further investigation is necessary before any conclusions can be reached. Scrutiny may wish to commission a further report once more results have been obtained and analysed.

3. Consultation

3.1 The allotment holders have been kept informed at every stage of the investigation. When the results of further food samples are known it is proposed to have a meeting with the allotment holders to discuss the results and invite specialist from the Health Protection Agency and The Food Standards Agency with a view to agreeing the appropriate course of action.

4. Further action and timescales

4.1. Further food samples have been taken on 2nd June and we are awaiting the results, which will be available by 22nd June. A total of 12 samples of 8 varieties of food from 9 different allotment sites have been taken. The results will inform the most appropriate course of action to be taken.

4.2 Although no allotment sites are on the priority sites list referred to in 1.8, a desk top exercise is being undertaken to assess the Council's other allotment sites to determine whether there is any cause for concern.

4.3 A procedure will be developed to assess any future land which is put forward for allotment use or for food growing under the Calderdale Incredible Edible licence scheme.

5 Options appraisal

5.2 There are no options to consider at this stage. Further investigations on this site need to be undertaken.

6 Conclusions

6.2 The preliminary results from food samples taken on 8th April suggest further investigations needed to be undertaken.

6.3 Further food samples have been taken on 2nd June and the results are awaited. This will inform the most appropriate form of further action thereafter.

6.4 There is no obvious indication as to the source of the contamination at this stage.

7 Appendices

Appendix 1 Map and photograph of site.

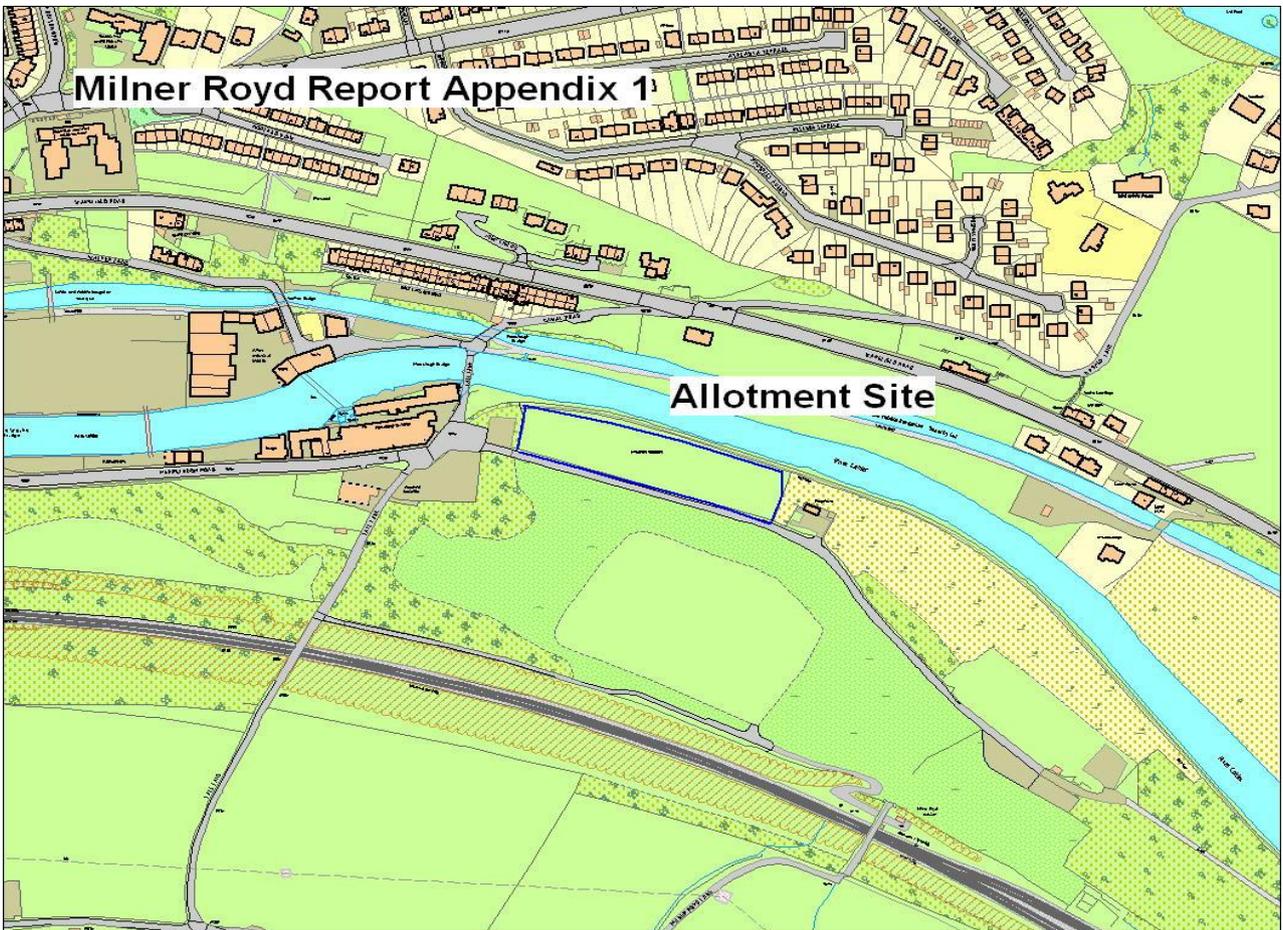
8 Background documents

SBCV Regeneration Project Environmental Statement

9 Documents available for inspection at

Environmental Health, Housing & Environment Service, Northgate House, Halifax, HX1 1UN

Milner Royd Report Appendix 1



Milner Royd Report Appendix 1



Appendix 2

6.3.6 Allotments

Soils

Full laboratory results are presented in Factual Report, Volume 2, Appendix I and a summary of results in comparison to the TSVs is presented in this report in Appendix B. A summary of the chemicals identified above the TSV for residential with plant uptake/allotments in one or more samples is provided in Table 6.7 below. All other contaminants analysed in this area were below the appropriate TSVs.

Table 6.7 Identified Impacts – Allotments

Contaminant	No. Samples Above TSV	TSV * (mg/kg)	Maximum Recorded Concentration (mg/kg)
Arsenic	2/9	20	100
Lead	2/9	450	980
Nickel	1/9	50	95
Benzo(a)anthracene	4/6	3	13
Benzo(a)pyrene	5/6	0.5	13
Benzo(b)fluoranthene	4/6	1	9.4
Benzo(k)fluoranthene	3/6	3	5.3
Chrysene	1/6	15	17
Dibenzo(ah)anthracene	2/6	0.6	1.1
Fluoranthene	3/6	15	33
Indeno(123cd)pyrene	2/6	5	6.8
Naphthalene	1/6	10	17

*TSV for residential with plant uptake / allotments

Metals and PAHs have been identified in shallow soils across the area which may pose a risk to human health. The most significant impacts were generally identified in TP103.

Leachate

Full laboratory results are presented in Factual Report, Volume 2, Appendix K and a summary of results in comparison to the TSVs is presented in Appendix C of this report.

The following elevated concentrations were identified:

- Copper was identified in marginally above the TSV with a maximum concentration of 15µg/l in comparison with the TSV of 10µg/l. This impact does not correlate to any particularly elevated copper in soils and is considered unlikely to be significant. No other impacts were identified in the sample analysed.

Water

Full laboratory results are presented in Factual Report, Volume 2, Appendix J and a summary of results in comparison to the TSVs is presented in Appendix D of this report.

Groundwater monitoring has identified ammonia, sulphate and PAHs at elevated concentrations in this area. PAHs were highly elevated in BH111 in Round 1, but not so significantly elevated in the subsequent monitoring rounds.

6.4.1 Contamination Sources

Allotments

(Allotments end use)

Metals and PAHs have been identified in shallow soils across the area. The most significant impacts were generally identified in TP103.

Leachate analysis generally identified slightly elevated copper. Groundwater monitoring has identified ammonia, sulphate and PAHs at elevated concentrations in this area. PAHs were highly elevated in BH111 in Round 1, but not so significantly elevated in the subsequent monitoring rounds.

7.0 QUALITATIVE RISK ASSESSMENT

By considering the sources, pathways and receptors, an assessment of the environmental risks is made with reference to the significance and degree of the risk. This assessment is based on consideration of whether the source contamination can reach a receptor and hence whether it is of major or minor significance. The potential exposure risks are assessed in general terms for the proposed land uses detailed on the Masterplan dwg No 62/010/102D supplied by Calderdale MBC.

The qualitative risk assessment has been undertaken in accordance with BS10175:2001 and CIRIA Document C552: Contaminated Land Risk assessment, A Guide to Good Practice. The source – pathway – receptor linkages are developed around the information presented above and shown graphically in the Drawing E6065/4104/ENV/CL/04.

The risk assessment has been carried out by assessing the severity of the potential consequence, taking into account both the potential severity of the hazard and the sensitivity of the target, based on the categories given below (after CIRIA 552).

Category	Definition
Severe	Acute risks to human health, catastrophic damage to buildings/property, major pollution of controlled waters
Medium	Chronic risk to human health, pollution of sensitive controlled waters, significant effects on sensitive ecosystems or species, significant damage to buildings or structures
Mild	Pollution of non sensitive waters, minor damage to buildings or structures
Minor	Requirement for protective equipment during site works to mitigate health effects, damage to non sensitive ecosystems or species

The likelihood of an event (probability) takes into account both the presence of the hazard and target and the integrity of the pathway and has been assessed based on the categories given below.

Category	Definition
High Likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term
Low Likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so
Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable

The potential severity of the risk and the probability of the risk occurring have been combined in accordance with the following matrix in order to give a level of risk for each potential hazard.

		Potential Severity			
		Severe	Medium	Mild	Minor
Probability Of Risk	High Likelihood	Very high	High	Moderate	Low/Moderate
	Likely	High	Moderate	Low/Moderate	Low
	Low Likelihood	Moderate	Low/Moderate	Low	Very low
	Unlikely	Low/Moderate	Low	Very low	Very low

A description of these risk classifications and likely action required are given in CIRIA 552 as:
Very high risk – High probability that severe harm could arise to a designated receptor from an identified hazard OR there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in substantial liability. Urgent investigation and remediation are likely to be required.

High risk – Harm is likely to arise to a designated receptor from an identified hazard. This risk, if realised, is likely to result in substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the long term.

Moderate risk – It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation is normally required to clarify risks and to determine potential liability. Some remedial works may be required in the long term.

Low risk – It is possible that harm could arise to a designated receptor from an identified hazard but it is likely that this harm, if realised, would at worst normally be mild.

Very low risk – It is a low possibility that harm could arise to a designated receptor. In the event of such harm being realised it is not likely to be severe.

An assessment of risks associated with each site area is discussed below.

7.6 Allotments

This area is to remain in use as allotments. Identified pollutant linkages are detailed with a qualitative assessment of risks in Table 7.6 below.

Table 7.6 Qualitative Risk Assessment – Allotments

Hazard / Pollutant	Pathway	Receptor	Potential severity	Probability of risk	Level of risk
Metals, Hydrocarbons in shallow soils	Direct contact Inhalation Ingestion of veg.	Future site users	Medium	Likely	Moderate
	Direct contact Inhalation	Site development workers	Medium	Likely	Moderate*
	Leaching from soils and leachate/water migration	Neighbouring properties	Mild	Low	Low
		Surface watercourses	Medium	Likely	Moderate
		Underlying minor aquifer	Medium	Likely	Moderate
	Plant root uptake	Existing vegetation / future establishment	Mild	Low	Low
Groundwater ammonia, sulphate and PAHs	Direct contact Inhalation	Future site users	Mild	Unlikely	Very Low
		Site development workers	Mild	Low	Low
	Water migration	Neighbouring properties	Mild	Low	Low
		Surface watercourses	Medium	Likely	Moderate
		Underlying minor aquifer	Medium	Likely	Moderate
	Plant root uptake	Existing vegetation / future establishment	Mild	Low	Low

*Given the use of appropriate PPE and on site health and safety precautions, risk to workers would be reduced to low.

There is considered to be a potentially significant risk to site users and the adjacent River Calder based on the initial GQRA. Metals and PAHs have been identified in shallow soils across the area, however, the most significant impacts were generally identified in TP103.

8.0 RECOMMENDATIONS

8.1 Further Site Investigation Works

Prior to redevelopment, more specific site investigation will be required to provide a more detailed picture of potential contamination issues and to delineate impacts identified at this stage. Further works should be cognisant of both development plans and the findings of these investigation works.

These works should be undertaken in particular in the areas identified where localised highly significant impacts have been identified, particular the Western area, the allotments, the former landfill area, and the former sewage works including SE of Hollas lane. Works should include further soil sampling and analysis and installation of additional groundwater monitoring points to provide a more complete picture of the groundwater regime and impacts at the site.

Whilst no asbestos was identified in the soil samples analysed during this investigation, the previous development history of the site is such that localised deposits of asbestos waste from past demolition or removal works could be present in those areas not accessed or directly investigated. In particular, waste products can be encountered below the floor slabs of existing buildings, as it was commonly accepted practice in the past to encapsulate asbestos waste in this way. While the site investigation has sought to characterise any significant hazards to health from asbestos, it has not sought to fully classify the soil with respect to waste disposal. Dependent upon final proposals for any cut and fill, plus any off-site disposal of soil, further investigation may be required.

8.2 Further Risk Assessment

Further detailed quantitative risk assessment should be undertaken to assess risk to human health. This QRA work would take the form of derivation of site specific target values using an appropriate software modelling package, taking into account typical exposure scenarios for the proposed end uses and identified site specific physical properties of the ground conditions based on data collected to date.

Further QRA work is likely to be required to assess the risks to identified environmental receptors, in particular the River Calder running through the site. However, the scope of this should be determined only following the installation and monitoring of additional groundwater wells recommended above.

8.3 Possible Remedial Works

At this stage, it is considered likely that some localised remedial works may be required to address the risks to human health and environmental receptors. The extent of any such remedial works should be refined by the recommended further site investigation and QRA works detailed above.