

IN THE MATTER OF the Resource Management Act
1991

AND

IN THE MATTER OF a private plan change request
(‘Proposed (Private) Plan Change
40: Wallaceville’) to the Upper
Hutt City District Plan made by
Wallaceville Developments
Limited.

STATEMENT OF EVIDENCE OF DAVID JOHN ROBOTHAM

1.0 EXECUTIVE SUMMARY

- 1.1 The site at Ward Street, Wallaceville was used as an animal / veterinary research site from the early 1900s until 2007.
- 1.2 Investigation and remediation work has been carried out by Tonkin and Taylor (1996, 2004, 2005, and 2008) and ENGEO (2014 and 2015). The Tonkin and Taylor work assessed the distribution of contamination at the site, remediated waste disposal pits by excavating the waste and disposing to a licensed landfill and then validated that contamination had been removed. The Tonkin and Taylor work in 2008 indicated that the remediated waste pits did not contain levels of contamination at concentrations of concern to human health. The ENGEO work followed on to re-assess remaining contamination in light of the new legislation (NES for soil), which was introduced in 2012 and stipulates more stringent controls for some contaminants.
- 1.3 The submission in relation to ‘Plan Change 40’ made in 2015 alleges that human health risks persist from ‘toxic waste’ and microbiological and radiological contaminants.
- 1.4 A response has been made to this submission based on a detailed review of the Tonkin and Taylor work, multiple historical data sources and communications with former employees.
- 1.5 ‘Toxic waste’, or miscellaneous small items consigned to disposal pits has been managed by Tonkin and Taylor in 2008, and remaining contamination issues associated with the disposal pits are currently being addressed by ENGEO.
- 1.6 Communication with Allen Heath and David Cole, long-term former employees at the site, indicated the following:
- Practices at the site for handling animal carcasses and disease pathogens were very strict due to the potential biohazard;
 - All infected carcasses were reportedly incinerated; and
 - The research was restricted to animal diseases further reducing the potential risk to human health,

- Based on this data I consider it highly unlikely that there is a microbiological risk to human health present at the site.

- 1.7 The Radioactivity Desk Study assesses five credible scenarios for use of radioactive substances, which indicate risks are likely to be very low even with conservative assumptions.
- 1.8 Based on the above, which includes assessment of Mr. Persico's submission, I consider the site is suitable for its intended plan change for residential and commercial use and development, and the areas identified requiring further work can be further investigated, managed or remediated during the sub-division consenting process.
- 1.9 I make the following recommendations for further work which can be addressed during the subdivision resource consent process:
- 1.10 ENGE0 (2015) provides three options for the management of small areas of the site identified as containing soils in excess of Soil Contaminant Standards for arsenic. Two of the options involve removal of the soil and disposal to a suitable facility and the third involves using the relevant parts of the site for less sensitive land uses.
- 1.11 Non-intrusive surface monitoring in the paddocks in the northern and western parts of the site in which 'top-dressing' trials using cobalt-60 labelled substances, and in which no monitoring was undertaken during previous investigations. This monitoring would look to identify any areas where there are gamma count rates significantly in excess of background, which could be indicative of residual concentrations of cobalt-60 in the upper part of the soil. This investigation has been undertaken within the week commencing 29th June 2015 and results will be reported to the Hearing Committee.
- 1.12 Investigation to determine whether tritiated waste toluene scintillation fluid has impacted groundwater beneath the site, potentially either on a wider site basis, or on a more localised scale. This would be on the basis of the potential groundwater quality impacts, rather than radiological risk and would use existing groundwater monitoring installations if appropriately located. New piezometers would have to be installed if existing ones are not suitable. Data in ENGE0 (2015) and Cervantes et al (2001) indicates that large scale dilution due to the regional hydrogeological characteristics combined with the tendency for toluene to be degraded by microbial action under a range of conditions indicates that such an investigation will be for assurance purposes, rather than due to concerns over significant current groundwater impacts.
- 1.13 Review of aerial photographs indicate that there is a waste disposal pit in the northern part of the site (adjacent to the railway line, close to another former pit of very similar appearance) for which no remediation appears to have been undertaken. A desk based investigation to establish if there are any records relating to this pit is recommended, and would allow a decision to be made regarding whether intrusive investigations and remediation would be required, either in the near-term or at the site development stage.
- 1.14 Asbestos surveys of any buildings due to be demolished as part of any redevelopment of the site.

2.0 INTRODUCTION

- 2.1 My full name is David John Robotham. I am employed by ENGE0 Ltd as an Associate Environmental Consultant. I hold a BSc (Hons) degree in Environmental Control from the University of Greenwich (UK) as well as a Higher National Certificate in Industrial Microbiology from Sir John Moores University in Liverpool (UK).

- 2.2 I appear in relation to a private plan change request ('Proposed (Private) Plan Change 40: Wallaceville') to the Upper Hutt City District Plan made by Wallaceville Developments Limited to rezone approximately 63 hectares of former Wallaceville Ag-Research site and a small part of the Trentham Racecourse property for residential and commercial uses.
- 2.3 I have 20 years' experience as an environmental consultant assessing the presence of contaminants in land due to their past and present uses, including the impacts on human health and the environment.
- 2.4 I have undertaken assessment and provided technical advice in relation to the presence of contamination on sites throughout New Zealand. Examples of projects I have been involved with include the former Bridgestone tyre manufacturing facility in Papanui, the proposed Victoria Park Tunnel route in Auckland, the Mapua former Fruit Growers site near Nelson, the Devonport Naval Base in Auckland, a former Shell site in Invercargill and Wairau Road Pak n Save in Auckland. My involvement included assessment of the historical background of the sites, identification of contamination through intrusive investigation work or assessment of previous work, remediation and assessment of the risk to the potential developers and end users of the site.
- 2.5 Work in the UK included seven years for the National Nuclear Company (now called AMEC NNC) and Nuclear Safety Solutions (NSS) in Canada. During this time I became a qualified Radiological Protection Supervisor (RPS) and was involved on several projects on major nuclear installations in the UK including Sellafield.
- 2.6 I have also spent two years working for Auckland Council (formerly the Auckland Regional Council) reviewing consent applications for the Contaminated Sites Management Team. My responsibilities included reviewing consent applications to redevelop land with commercial or residential properties, assessing their adequacy in terms of impact on the environment and making recommendation on whether the consents should be permitted.
- 2.7 In February 2013 I gained Certified Environmental Practitioner status through the Environment Institute of Australia and New Zealand (Certificate No. 0516)
- 2.8 My involvement in the Wallaceville Plan Change commenced in 2014 and included assessing and peer reviewing the preliminary environmental site investigation work undertaken. Since then I have been involved with peer reviewing of the environmental investigation work both intrusive and desk based, for the site.
- 2.9 I am familiar with the subject site and its surrounds from the reports I have reviewed.
- 2.10 Although this is a Council hearing I note that I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note (2014) and agree to comply with the Code. Except where I state that I am relying upon the specified evidence of another person, my evidence in this statement is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions which I express.
- 3.0 SCOPE OF EVIDENCE
- 3.1 In my evidence I propose to:
- a) Describe my technical report submitted with the Plan Change Request and further information I have prepared post-lodgement

- b) Summarise and comment on the submissions received on the application that are relevant to my area of expertise;
- c) Provide comments on the recommendation of the Officer's s Section 42A Report related to my area of expertise; and,
- d) Provide my recommendation on the Plan Change Request

4.0 SUMMARY OF TECHNICAL REPORT

5.0 I have been asked by Wallaceville Developments Limited and Upper Hutt City Council to comment on the potential for human health risks to arise from potential residual microbiological, radiological and other contaminating substances at the former AgResearch facility at Ward Street, Wallaceville in relation to 'Plan Change 40'. In preparing my evidence I relied upon reports produced by Tonkin and Taylor in 2004 (Wallaceville Research Station: Ground Contamination Assessment), 2005 (Stage 2 Ground Contamination Investigation Report: Wallaceville Animal Research Centre, Upper Hutt, Wellington) and 2008 (Site Validation Report: Wallaceville Animal Research Facility, Upper Hutt), and reports produced by ENGEO in 2014 (Preliminary Site Investigation Report, Wallaceville Plan Change, Upper Hutt, Wellington) and 2015 (Detailed Site Investigation Report, Wallaceville Plan Change, Upper Hutt, Wellington). These reports are appended.

6.0 Additionally, information was taken from excerpts of the following reports and documents: Tonkin and Taylor 1996 (Wallaceville Research Campus: Former Laboratory Disposal Site Assessment of Environmental Effects), JD Tenquist 1991 (Wallaceville Veterinary Laboratory: A History), MAF Agricultural Research 1987 (Wallaceville Animal Research Centre Annual Report), Department of Agriculture 1960 (Animal Research Division of the New Zealand Department of Agriculture, Annual Report 1959-60) and 1962 (Wallaceville Animal Research Station, Guide to Field and Laboratory Research Work) and New Zealand Journal of Agriculture 1958 (Cobalt Bullets) Photos of relevant pages are appended.

7.0 Personal communication with Allen Heath and David Cole, both of whom are former AgResearch employees who worked at the site from the 1960s to the closure of the site. Email communication with Allen Heath and David Cole is appended.

8.0 ENGEO have also produced correspondence and a report detailing the response to the submission to UHCC has been appended.

9.0 In my evidence I address the issues brought up by the submission made to UHCC in relation to former activities at the site. These have been broken down into several specific areas which are as follows:

9.1 Human health risks from the concentrations of chemicals identified to have potentially been used on the site when compared against the soil contaminant standards as defined by the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011;

9.2 Human health risks arising from buried animal carcasses and residual pathogens on and in the land at the site.

9.3 Human health risks arising from "toxic waste" (clarified as referring to small miscellaneous items such as vials, syringes and other potentially hazardous waste items) on and in the land at the site.

9.4 Human health risks arising from potential residual radioactive substances on and in the land at the site.

10.0 The Preliminary Site Investigation Report produced by ENGEO Ltd in 2014 identified a number of potentially contaminating activities associated with the site's former use as an agricultural research centre. These include:

- Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application;
- Chemical manufacture, formulation or bulk storage;
- Commercial analytical laboratory sites;
- Livestock dip or spray race operations;
- Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds;
- Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges;
- Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products;
- Storage tanks or drums for fuel, chemical or liquid waste;
- Service stations including retail or commercial refueling facilities; and
- Landfill sites.

11.0 RESPONSE TO SUBMISSIONS

12.0 This document deals with the particular human health risk vectors described in Section 14.

13.0 Risks to human health from infected animal carcasses being buried at the site were found to not be credible based on testimony from former employees of the site Allen Heath and David Cole (described in Section 12). Personal communications from these individuals stated that the practice for carcasses of animals slaughtered at the site in the course of research activities was either incineration, or they were butchered and sold to the employees as meat.

13.1 Further, these individuals were able to confirm that the incinerator had been in operation since the inception of the site in the early 1900s, and during their period of employment (approximately 1960s to the closure of the site in 2007) had sufficient capacity to accept wastes from other government facilities.

14.0 Residual pathogens on the land were also deemed not to present a contemporary risk on the basis that a large proportion of the research was focused on diseases of direct relevance to the New Zealand agricultural industry rather than 'exotic' diseases i.e. diseases that naturally occurred in the livestock population, such as nematode diseases in sheep, many which are not subject to zoonosis (inter-species transfer of disease i.e. from animals to humans).

- 14.1 For diseases of interest to the agricultural industry that were subject to zoonosis, such as bovine tuberculosis, Allen Heath was able to confirm that pathogens were handled under very strict, controlled laboratory conditions with workers being regularly health-checked. Given that such systems were in place, it is not credible that dangerous pathogens were liberally applied to the land in any form.
- 14.2 Allen Heath was able to confirm that he had no recollection of animals grazing in the paddocks becoming ill at any point in his time working at Wallaceville that could be directly attributed as a result of the research work undertaken. If this was an issue animal illness would likely have occurred had large quantities of pathogens been applied liberally to the paddocks around the site and been persistent.
- 14.3 Further, Allen stated that informal lines of communications were very open at Wallaceville, so word of mouth would likely have made it widely known if any individual animals had been affected by disease organisms present in the soil, whether natural or not, or if general disease rates in livestock at the site had risen.
- 14.4 Overall, the testimony from former employees indicates that the human health risks due to the animal disease research carried out historically at the site are low because the research was focused on animal diseases, so human health risk vectors are likely to be limited, especially in light of the control of biohazards and the policy of incineration of carcasses.
- 15.0 The “toxic waste” described in the submission is assessed in the 2004, 2005 and 2008 Tonkin and Taylor reports, which identified that small miscellaneous items were present in the fill material excavated from the disposal pits as part of the remedial works.
- 15.1 Items identified included the syringes, vials and plastic bags identified in the submission, but other items including paint tins, wire, metallic items, concrete and brick fragments, timber, rubber and blocks of white salt-like substance were also identified. Tonkin and Taylor did not describe any animal remains being recovered from any of the disposal pits.
- 15.2 Sampling and analysis for chemical contaminants was carried out by Tonkin and Taylor in 2004 and 2005, which indicated that some of the pits contained contamination (including heavy metals, hydrocarbons and volatile organic compounds), some of which was in excess of environmental guidelines values in force at the time.
- 15.3 Remediation by excavation and disposal of soils to landfill was undertaken in the locations where this contamination had occurred. This was followed by validation at all of the remediated locations by Tonkin and Taylor in 2008 to ensure that no soil containing levels of contamination of concern to human health remained in any of the former disposal pits.
- 15.4 ENGEO Ltd undertook Preliminary and Detailed Site Investigations (P/DSI) for the site in 2014 and 2015. The PSI assessed the potential for contamination due to the former use of the site and the DSI assessed any remaining contamination in the context of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (‘NES’, introduced in 2012), which has been implemented since the Tonkin and Taylor work was carried out. For some contaminants of concern the NES has more stringent guideline concentrations with regards to soil contaminants.
- 15.5 The PSI identified areas where contaminants of concern remained above the NES Soil Contaminant Standards (SCS) and the DSI investigated these areas. The results in two areas remain above the SCS; remediation has been recommended in these areas.

- 15.6 Overall, the various stages of work undertaken with relation to the “toxic waste” identified in the submission will upon completion ensure that it is highly unlikely human health will be impacted by the soils and that the site is suitable for its residential end use.
- 16.0 RADIOACTIVITY DESK STUDY FINDINGS
- 17.0 Tonkin and Taylor (2004, 2005 and 2008), Tenquist (1991), MAF Agricultural Research (1987) and Department of Agriculture (1960 and 1962) all confirm that radioactive substances were applied in a number of different research activities at Wallaceville.
- 17.1 Nine different radionuclides (hydrogen-3 / tritium, carbon-14, phosphorus-32 sulphur-35, cobalt-60, selenium-75, iodine-125 / 131 and cerium-144) were identified as having been used at the site, along with a more limited description of their applications, from the reference material.
- 17.2 The ‘Radioactivity Desk Study’, which forms an attachment to the ‘Submission Response Document’, describes five credible scenarios for the application of the nine radionuclides. These are based on the partial descriptions of research activities in the reference material, statements made in the submission, and also inference based on professional judgment.
- 17.3 This desk study considers radioactive decay and biogeochemical behaviour to produce a high-level, conceptual assessment of the likely behaviour of radioactive substances at the site and their relevance to human health risks.
- 17.4 Given the lack of data on the applications, including the quantities of radionuclides and the dates of use, a number of conservative assumptions have been made for starting inventories, decay times and other crucial factors.
- 17.5 Even after employing multiple conservatisms, only three of the nine radionuclides (hydrogen-3 / tritium, carbon-14 and cobalt-60) are concluded as being relevant to the site and human health risks in the contemporary timeframe. This is because these radionuclides have medium-long half-lives of 12.3, 5700 and 5.3 years, respectively, in contrast to the very short half-lives of the other radionuclides considered (phosphorus-32, 0.0392; sulphur-35, 0.24; selenium-75, 0.33; iodine-125, 0.163; iodine-131, 0.0219 and cerium-144, 0.78 years).
- 18.0 The following describes the five potential scenarios considered in the ‘Radioactivity Desk Study’:
- 18.1 1) Spraying to surface (‘top-dressing’) of paddocks - radioactive substances were sprayed directly to the vegetated surfaces of paddocks.
- 18.2 2) Disposal of radionuclides directly to burial pits - waste scintillation fluid containing radioactivity was disposed to shallow, unlined pits and / or soakaways in the ground.
- 18.3 3) Burial of untreated animal carcasses containing radioactivity - animals with a large inventory of radionuclides in their bodies were buried in disposal pits without any further treatment (e.g. incineration).
- 18.4 4) Burial of ash containing radioactivity - ash produced from the incineration of animals, into which a large inventory of radionuclides had been injected, was buried in disposal pits.
- 18.5 5) Ruminant bullets containing radioactivity buried at shallow depth - ruminant bullets labelled with radioactivity were excreted by animals and have remained in the ground at shallow depth.

19.0 The following describes the key findings relating to each of the scenarios:

1. 1) Hydrogen and carbon are very biogeochemically active elements and tritium and carbon-14 have identical chemical behaviour to the stable isotopes of these elements. As such, following 'top-dressing' to the land these radionuclides would rapidly dilute and disperse into surrounding natural systems to levels of very low risk to human health. Cobalt-60 would likely be more persistent in soil due to the lower biogeochemical activity of this element. This radionuclide would be readily detectable if still present and would have been detected by the Geiger counter monitoring carried out by Tonkin and Taylor in 2004 and 2004 and the site testing undertaken by ENGEO within the week commencing 29th June 2015.
2. 2) Tonkin and Taylor (1996) highlights that waste toluene scintillation fluid contaminated with tritium was disposed to the disposal pits and / or soakaways at the site. This scenario makes some conservative assumptions about the total amount of tritium disposed, the period in which disposals took place and the means of disposal, and concludes that tritium may have reached the groundwater table but will have substantially decayed and dispersed. The toluene itself may however comprise an ongoing groundwater contamination issue. Investigation of groundwater quality is recommended.
3. 3) The tritium and carbon-14 would dilute and disperse in this scenario through biogeochemical interactions as in Scenario 1, though likely at a somewhat slower rate due to the subsurface environment of the disposal pit. The dilution and dispersion of cobalt-60 would also be slower and so this radionuclide would be more likely to persist in the disposal pit. Geiger monitoring of the pit surfaces and of excavated material did not however detect any elevated count rates, indicating that no significant concentrations of this radionuclide were present in the pits, and so therefore highly unlikely to present an unacceptable risk to human health.
4. 4) In this scenario the inventory of radionuclides was adjusted (reduced) to account for volatilisation during incineration. This adjustment was applied only to tritium and carbon-14 as cobalt-60 in either metallic, oxide or salt form would not readily volatilise. Even with this adjustment the same arguments as used in Scenario 3 apply, except that dilution and dispersion of tritium and carbon-14 would occur more extensively due to the lower starting inventory of these radionuclides. Again it is considered highly unlikely to present an unacceptable risk to human health.
5. 5) 'Ruminant –' or 'cobalt bullets' were developed to alleviate conditions in livestock that were caused by cobalt deficiency in pasture. They consisted of hard pellets of china clay and cobaltic oxide that were administered orally to sheep, and Tenquist (1991) provides evidence that these were sometimes labelled with cobalt-60. In this scenario conservative assumptions were made about the inventory of cobalt-60 in each bullet and decay times, and that they were excreted by sheep and remained in shallow soil at the site. If a house was then built over a bullet and an exposed person was subject to direct radiation emissions, the dose received by that person, using realistic assumptions was found to be trivial. The evidence in Tenquist (1991) also indicates that cobalt-60 labelled bullets were used at the secondary Kaitoke Site and not the main Wallaceville Site.

20.0 CONCLUSION AND RECOMMENDATIONS

21.0 The site at Ward Street, Wallaceville was used as an animal / veterinary research site from the early 1900s until 2007.

- 21.1 Investigation and remediation work has been carried out by Tonkin and Taylor (1996, 2004, 2005, and 2008) and ENGEO (2014 and 2015). The Tonkin and Taylor work assessed the distribution of contamination at the site, remediated waste disposal pits by excavating the waste and disposing to a licensed landfill and then validated that contamination had been removed. The Tonkin and Taylor work in 2008 indicated that the remediated waste pits did not contain levels of contamination at concentrations of concern to human health. The ENGEO work followed on to re-assess remaining contamination in light of the new legislation (NES for soil), which was introduced in 2012 and stipulates more stringent controls for some contaminants.
- 22.0 The submission in relation to 'Plan Change 40' made in 2015 alleges that human health risks persist from 'toxic waste' and microbiological and radiological contaminants.
- 23.0 A response has been made to this submission based on a detailed review of the Tonkin and Taylor work, multiple historical data sources and communications with former employees.
- 24.0 'Toxic waste', or miscellaneous small items consigned to disposal pits has been managed by Tonkin and Taylor in 2008, and remaining contamination issues associated with the disposal pits are currently being addressed by ENGEO.
- 25.0 Communication with Allen Heath and David Cole, long-term former employees at the site, indicate that practices at the site for handling animal carcasses and disease pathogens, namely incineration and strict laboratory conditions, mean that microbiological risks to human health are highly unlikely to be present at the site.
- 26.0 The Radioactivity Desk Study assesses five credible potential scenarios for use of radioactive substances, which indicate risks are likely to be very low even with conservative assumptions.
- 27.0 Based on the above, which includes assessment of Mr. Persico's submission, I consider the site is suitable for its intended plan change for residential and commercial use and development, and the areas identified requiring further work can be further investigated, managed or remediated during the sub-division consenting process.
- 28.0 I make the following recommendations for further work which can be addressed during the subdivision resource consent process:
- 29.0 ENGEO (2015) provides three options for the management of small areas of the site identified as containing soils in excess of Soil Contaminant Standards for arsenic. Two of the options involve removal of the soil and disposal to a suitable facility and the third involves using the relevant parts of the site for less sensitive land uses.
- 30.0 In respect of my recommendation below (paragraph 31.0), on site testing has been undertaken within the week commencing 29th June 2015, and results will be available to the Hearing Committee by the time of the Hearing.
- 31.0 Non-intrusive surface monitoring in the paddocks in the northern and western parts of the site in which 'top-dressing' trials using cobalt-60 labelled substances, and in which no monitoring was undertaken during previous investigations. This monitoring would look to identify any areas where there are gamma count rates significantly in excess of background, which could be indicative of residual concentrations of cobalt-60 in the upper part of the soil.

- 32.0 Investigation to determine whether tritiated waste toluene scintillation fluid has impacted groundwater beneath the site, potentially either on a wider site basis, or on a more localised scale. This would be on the basis of the potential groundwater quality impacts, rather than radiological risk and would use existing groundwater monitoring installations if appropriately located. New piezometers would have to be installed if existing ones are not suitable.
- 32.1 Although the historical disposal of toluene to ground could potentially have resulted in groundwater impact, the extent of the impact is likely to be limited. As identified in the ENGEO report 'Response to Request for Further Information: Wallaceville Soakage System' (2015) the groundwater surface in the Hutt Valley is below the base of the Hutt River, so groundwater does not discharge to this surface water feature. Instead, groundwater beneath the Wallaceville Site flows down the Hutt Valley to discharge in Wellington Harbour approximately 18km distant. Given that the host geology is gravel and Wallaceville is approximately 60m above sea level, the regional flow will likely provide a very large dilution factor for contaminants originating at the Wallaceville Site. Furthermore, a review of literature sources indicates that toluene microbial degradation occurs readily under aerobic conditions, and also under anaerobic conditions with a variety of electron receptors (Cervantes et al, 2001). As such, microbial degradation mechanisms will likely have reduced the toluene inventory in parallel to its dilution by large-scale groundwater flow. Therefore, although investigation for assurance purposes is warranted, it is judged unlikely that there are any significant contemporary groundwater issues due to this disposal practice.
- 33.0 Review of aerial photographs indicate that there is a waste disposal pit in the northern part of the site (adjacent to the railway line, close to another former pit of very similar appearance) for which no remediation appears to have been undertaken. A desk based investigation to establish if there are any records relating to this pit is recommended, and would allow a decision to be made regarding whether intrusive investigations and remediation would be required. This could be undertaken prior to the relevant stage of development in this location of the site.
- 34.0 Asbestos surveys of any buildings due to be demolished as part of any redevelopment of the site.

DATE

24th JUNE 2015

NAME

DAVID JOHN ROBOTHAM

POSITION

ASSOCIATE ENVIRONMENTAL CONSULTANT

SIGNED


