

UNEXPLODED ORDNANCE DESK STUDY

Lodge Hill Camp (LHC) & Lodge Hill Training Area (LHTA) Chattenden Kent

Prepared for: Environment & Infrastructure UK Ltd, AMEC Foster Wheeler

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CONTENTS

Title	Pages
Front Cover	
Distribution	i
Contents Page	ii
References	iii
Terms and Definitions	iv - v
Introduction	1
Determining the Likelihood of Encounter	1-2
The 'Site'	2
Future Intentions	2
Historical Information	2-3
Determining the Nature of Risk	3-5
Environmental Impact from UXO	6
Risk Assessment	7-9
Study Findings	9
Recommendations for Risk Mitigation	10-11
Post Mitigation Risk and Intent	12-13
Annexes:	
A. Quality Assurance UXO Search/Survey areas	
B. UXO Safety Information	
Appendix:	
1. Site Map	

REFERENCES

Publications

Sources of information used in the compilation of this study included:

German Air Raids on Britain 1914-18. Morris 1925
Unexploded Ordnance (UXO) – A guide for the Construction Industry. CIRIA C681
Dangerous Energy. Cocroft 2000
The Blitz Then and Now Volumes 1 to 3. Ramsey 1987
Advanced German Weapons WW2. Ford 2000
Dealing with Munitions in Marine Aggregates. UMA 2008
United Nations International Mine Action Standards (IMAS). UN 2010
Military Engineering Volume XII. War Office 1956
German Bomb Fuzes. USN 1945
Fields of Deception & Anti Aircraft Command. Dobinson 1988
Target Reconnaissance Photography. Luftwaffe 1939-44
Battle Stations Volume 3 DJ Smith 1980
Local Bomb Damage Maps

Internet Information

Additional information was provided through the following credible internet sites, their assistance is credited where appropriate:

Army EOD Incidents
RAF EOD Incidents & Air Situation Reports 1939-45
Luftwaffe Strategy & Tactics
Luftwaffe Bomber Specifications
WO Defence Arrangements 1939-45
News Reports Witness Accounts 1939-45
Latest News Reports

Project Information Acknowledgements

Project information was provided by Environment & Infrastructure UK Ltd, AMEC Foster Wheeler.

Additional information was provided by Defence Infrastructure Organisation (DIO) Explosive Ordnance Clearance (EOC) Group.

TERMS AND DEFINITIONS

Anti Aircraft Ammunition (AAA)

High Explosive shells ranging from 30mm to 155mm used by air defence batteries to attack or deter enemy air attack.

Air Dropped Munition

A bomb or container dropped from an aircraft which is designed to detonate at a pre-determined altitude, on impact or using a delay mechanism; after impact.

Air Dropped Sub-Munitions (Bomblet)

Small sub-munitions dispensed from a larger carrier which may be fixed to the aircraft or dropped as a single container munition which was designed to open above the target spreading its contents over a large area. Some designs are extremely dangerous and fitted with anti-handling devices.

Area Clearance

This is the term used for the systematic clearance of explosive ordnance from land, including military property, firing and bombing ranges, airfields and training areas. When the land is a former wartime battle ground, the term used is Battle Area Clearance (BAC)

Blast Zone

This term refers to the area around an explosive detonation where the explosive overpressure (Blast) can cause damage, injury or death.

Defence Infrastructure Organisation. Explosive Ordnance Clearance (DIO) EOC.

This organisation is part of the Ministry of Defence tasked with the responsibility of clearing existing and former MOD land of unexploded ordnance.

Explosive Ordnance (EO)

All manufactured or improvised items designed to contain explosive, propellant, pyrotechnic and fissionable material or biological or chemical agents or pre-cursors which when coupled with an initiation or dispersal system are designed to cause damage, injury or death.

Explosive Ordnance Disposal (EOD)

A series of recognised procedures and protocols which are used by specialists in the detection, identification, evaluation, risk assessment, render safe, recovery and disposal of any item of explosive ordnance or improvised explosive device.

Fragmentation Zone

This is the term which refers to the danger area in which a piece of an item of explosive ordnance will travel on detonation. This zone is normally greater than the blast zone.

Geophysical Survey

The use of magnetometers, ground penetrating radar or other geophysical data gathering systems, which is then used for evaluation, risk assessment and to quantify further mitigation requirements.

High Explosive (HE)

High explosives react/detonate at a rate of around 9,000 metres per second, to all intents and purposes, instantaneously.

Imperial War Museum (IWM)

Wartime records source based in Lambeth Road London.

Incendiary Bomb (IB)

Incendiary bombs ranged from 1kg in size to 500kg the larger sizes were designated as Oil Bombs. Fills range from Thermite mixtures, Phosphorus, Kerosene or other pyrotechnic mixtures.

Intrusive Search

This term refers to the process of introducing a specialist magnetometer by pushing or drilling the sensor in to the ground to a pre-determined depth, thus allowing construction activities such as: piling, soil testing and deep intrusive ground works to be conducted safely.

Land Service Ordnance (LSO)

LSA is a term that refers to all items containing explosives, pyrotechnic or noxious compounds which are placed, thrown or projected during land battles.

Local Records Office (LRO)

Wartime records source charged with maintaining the records for the Region, County, Borough or City.

National Archive (NA)

Wartime records source housed in Kew Gardens London.

Oil Bomb (OB)

Large airdropped bomb or modified ordnance container containing flammable material and accelerant, these weapons normally range in weight from 250 – 500kg.

Parachute Mine (PM)

Air-dropped mine designed to detonate at a pre-set altitude above the ground. Essentially a large blast bomb with an explosive content of 1600 kg commonly fitted with anti-handling or anti-removal fuzes.

Unexploded Bomb (UXB)

Any air dropped bomb that has failed to function as designed.

Unexploded Ordnance (UXO)

Explosive ordnance that has been primed, fused, armed or otherwise prepared for use or used. It may have been fired, dropped, launched or projected yet remains unexploded either through malfunction or design or for any other cause.

War Office (WO)

This was the United Kingdom Government department responsible for defence of the realm, forerunner of the Ministry of Defence (MoD).

White Phosphorus (WP)

Munitions filled with WP₄ are designed for signalling, screening and incendiary purposes. They achieve their effect by dispersing WP, which burns on contact with the air.

World War One or Two (WWI or WW2)

Period of multi-national conflict, specifically: WW1; 1914-1918 or WWII; 1939-1945.

1 INTRODUCTION

1.1 Instruction & Scope

MACC International Ltd (MACC) was commissioned by Environment & Infrastructure UK Ltd, AMEC Foster Wheeler (AMEC) to conduct an Unexploded Ordnance (UXO) risk assessment for Lodge Hill Camp and Training Area located off Lodge Hill Lane Chattenden Kent (the 'Site'). The scope of the assessment is to determine the likelihood of an encounter with UXO within the context of the execution of geotechnical investigations and subsequent building development works.

1.2 Methodology & Purpose

The methodology used in the study complies with the United Nations (IMAS) standards for UXO/Mine Level 1 Survey (Desk Top Study), the CIRIA C681 "Unexploded Ordnance (UXO) – A guide for the Construction Industry" and the recognised best practice advocated by the Health and Safety Executive (HSE). The quality and environmental aspects of the study comply with UKAS Accredited ISO 9001:2008 and ISO 14001:2004 standards. The purpose of the study is that of evaluation and to provide an aid in decision making by our client.

1.3 THE SITE

The 'Site' (See Appendix 1) has been in use by the military for a significant number of years and was originally a Naval Munitions Storage and Preparation Area before being used as a training facility for the Royal Engineers and other agencies. Prior to its closure, Lodge Hill Camp (LHC) was the home of 33 Engineer Regiment (EOD), the Defence Explosive Ordnance Disposal School (DEODS) and in later years the combined Ministry of Defence / Home Office sponsored National Search Centre (NSC).

During its active lifetime, Lodge Hill Training Area (LHTA), was used for a wide range of training and purposes including live explosive demolitions.

LHTA has become a site of special scientific interest (SSSI) with strict limitations on any potential impactor to the site's status.

It is our understanding that the land is currently owned by Defence Infrastructure Organisation (DIO).

1.4 FUTURE INTENTIONS

It is understood that, except for the SSSI and other designated areas, the intention is to develop the land for mixed residential use including the building of associated commercial/public facilities, services and infrastructure.

2 DETERMINING THE LIKELIHOOD OF ENCOUNTER

2.1 Aim, Research Restrictions & Indemnity

This study has drawn upon archive records which are within the public domain and official reports released to MACC for the purposes of evaluation and assessment. Such records are acknowledged to be incomplete and may contain errors. Consequently, some incidents may have occurred where the records no longer exist or could not be located. The Secretary of State of the United Kingdom and MACC International Ltd does not accept responsibility for the accuracy or completeness of the information contained within the records or reports. Records regarding the UXO situation on site may not have been released for evaluation by MACC International Ltd. Targeted research of the 'Site' history has been undertaken to establish (as far as it is reasonable practicable to achieve), the following:

- Potential UXO contamination from enemy action.
- Other sources of potential UXO contamination.
- The potential for UXO to remain on the 'Site'.
- Records of UXO removal activities and encounters.

2.2 Relevant Publications & Credible Internet Information

Published sources of information used in the compilation of this study are listed within the reference section of this study including those provided by the client and the DIO. Additional information was provided through credible internet sites, their assistance is credited where appropriate and details are listed within the reference section of this study.

2.3 National Archives

Prior to 1942 the United Kingdom did not operate a national recording system for EO/UXO incidents or military use of land. The records compiled during 1939-1942 were conducted under local arrangements and were only as detailed and accurate as the availability of time, personnel and the ease of access to information would allow.

2.4 Official Reports

With the DIO's permission AMEC released a report to MACC concerning prior work to search/clear the 'Site' of UXO. Specifically: Reference 2011/0002-3. Task Suspension Report issued by the Explosive Ordnance Clearance Group (EOC) dated 25th July 2014.

Nevertheless, it is generally acknowledged that MOD records concerning the day to day activities within its establishments are incomplete.

3 **CONTAMINATION VECTORS**

3.1 **Manned Air Raids & Unmanned Rocket Attack Reports**

WW I: No records were found to confirm that the 'Site' sustained a direct hit during this period. Consequently, this source of UXO contamination is not considered credible.

WW II: No records were found to confirm that the 'Site' sustained a direct hit during this period. Although the area did come under attack, some records gave only vague strike locations; e.g. "Fell in open fields". Given the relatively undeveloped nature of much of the 'Site', this source of UXO contamination is considered credible.

3.2 **Airdropped Sub-Munitions' Reports**

No records indicate that air dropped sub munitions (Cluster/Incendiary Bombs) fell within the 'Site' boundary although once again, some reports were vague on the exact strike positions. Given the relatively undeveloped nature of much of the 'Site', this source of UXO contamination is considered credible albeit unlikely.

3.3 **Abandoned UXB Reports**

No records were found to confirm or otherwise indicate that a UXB was abandoned within the 'Site'. Consequently, this scenario for UXO contamination to have occurred is not considered credible.

3.4 **Bombing Decoys**

There were no bombing decoys in the immediate area, with the nearest recorded some miles to the east of the 'Site'. Consequently, these are not considered to be a credible source of potential UXO contamination.

3.5 **Military Use**

Records confirm that the 'Site' has been in use by the military for a wide range of activities over many years including live explosive training and disposal (See the following paragraphs).

3.6 **EOD/Search Training Targets**

It is known that inert bombs, weapons and other munitions were positioned across the LHTA and LHC (Including within ponds and buildings) for use in EOD/Search training exercises. Some items were purposefully hidden to be difficult to find. Several were buried at significant depth (c.a. 7.0m) for use in deep bomb detection training particularly within the fence of LHC. Encounters with the training targets during development work has the potential to cause significant alarm and disruption.

3.7 **Anti-Aircraft Ammunition (AAA) Reports**

During both world wars a heavy anti-aircraft battery was located on the northern boundary of the 'Site'. Records indicated that combat engagements with enemy aircraft did take place during WWII, therefore this source of UXO contamination is considered credible.

3.8 **Anti-Invasion Defences**

Anti-Invasion defensive positions (Pillboxes) were located on and in proximity to the 'Site'. Occupation of these positions by armed soldiers during WWII does present a credible scenario for UXO contamination to have occurred.

3.9 **Defensive Mine / Demolition Charges**

No reports were found to indicate that local vulnerable points were fitted with demolition charges or Pipemines to deny them to the enemy in the event of compromise. Consequently, this source of UXO contamination is not considered to be credible.

3.10 **UXO Clearance Reports**

Review of the Official Report: Ref 2011/0002-3: A careful review of a Task Suspension Report issued by the Explosive Ordnance Clearance Group (EOC) dated 25th July 2014. The review resulted in observations being made in regards to the nature and scope of the search conducted by the EOC:

- Some of the land was searched by the EOC employing several methodologies to varying parameters including depth and thoroughness due to several limiting factors. During the search; fifty (50) items of Live UXO/LSO, one thousand one hundred and twenty (1,120) items of inert/expended LSO were found. Additionally, over fifty-five (55) tonnes of LSO/Domestic scrap was also recovered.
- Due to circumstances beyond the control of the EOC, the search was not completed and the task was suspended on 25th July 2014.
- No UXO/LSO Clearance Certificates were provided and the report's recommendations included that further work was required to provide 100% land clearance assurance.

Following the review, conclusions were reached and due account has been taken of them in this assessment:

- It is reasonable to assume that the overall risk posed by UXO/LSO has been reduced to some degree in the areas that were searched. Given the variables involved it is not possible to quantify how much of a risk reduction with any degree accuracy.
- From a H&SAW and due diligence standpoint, no practical assurance has been provided by the EOC that any of the areas that were searched are free from UXO/LSO.

It is considered highly likely that items of UXO/LSO remain on the 'Site' to this day (See paragraph 8.1 for recommendations on the way ahead).

3.10 Migration of UXO

It is considered possible; albeit unlikely, that a bomb was imported onto the 'Site' from other bomb sites or UXO contaminated areas. On balance this scenario for additional UXO contamination is not considered credible but cannot be ruled out entirely.

3.11 Downed / Crashed Military Aircraft

No records were found to confirm that an armed military aircraft crashed within the footprint of the 'Site'. This scenario for UXO contamination is not considered credible.

4 DETERMINING THE NATURE OF RISK

4.1 UXO Contamination Hazards

While munitions are very unlikely to detonate if left undisturbed they remain inherently dangerous and may function if subjected to suitable stimuli. The most common of these stimuli is shock, friction or heat which may cause the fuze to function or unstable explosive materials such as Picric Acid (2-4-6 Trinitrophenol (TNP)) to explode. However, in the case of incendiary bombs containing White Phosphorus (WP₄) exposure of the WP to the oxygen in the air will result in its violent ignition and combustion which may cause any HE content within the munition to detonate.

4.2 Potential Depth of UXO Contamination

The depth of potential UXO contamination will vary depending on the nature of deposition of the item. Deposition is considered to have been the result of one or more of the following delivery scenarios, with the resulting potential contamination depths shown.

Table 1 UXO Contamination Depths

Delivery Method	Land Depth Range	Water Depth Range
Air-dropped Steel Bombs	GL – 8.0m bgl	Bottom – 8.0m bgl
Air-dropped Sub-Munitions (Bomblets)	GL – 0.3m bgl	Bottom – 0.4m bgl
Anti-aircraft Projectiles (Fall Back)	GL – 0.5m bgl	Bottom – 0.8m bgl
Training / Firing / Discarding / Loss	GL – 0.3m bgl	Bottom – 0.2m bgl
Disposal / Dumping / Burial	GL – 8.0m bgl	Bottom – 0.2m bgl

4.3 **Potential Impact of Land Development on UXO Contamination**

The level of ground disturbance to which ground has been subjected since deposition of an item of UXO will have bearing on the likelihood of encountering UXO. In brief; the greater the ground disturbance, the greater the opportunity for such work to have encountered an item and afforded an opportunity for its removal / disposal. Consequently, there is a lesser likelihood of an encounter with UXO on developed/redeveloped parcels of land than on those that have remained undisturbed.

Conversely, where UXO contaminated material is used as fill on another part of the site or on another construction site, there is a danger of cross contamination. This scenario is generally referred to 'UXO Migration' and is most common when the material being used as fill is marine dredged aggregates.

5 **ENVIRONMENTAL IMPACT FROM UXO**

5.1 **Ground Contamination & Health Risk vectors**

The amount of explosive material within the most common bombs is not considered sufficient to pose a significant widespread environmental risk. Nevertheless, it should be noted that the following components are commonly used in the manufacture of a high explosive bomb and may pose a localised contamination risk to health:

- Heavy metals: Lead (Pb), Aluminium (Al) and Mercury (Hg)
- Zinc (Zn)
- Copper (Cu)
- Iron (Fe)
- Silver Fulminate (AgCNO)
- Trinitrophenol (C₆H₃N₃O₇)
- Trinitrotoluene (C₇H₅N₃O₆)
- Trimethylene (N(CH₃)₃)
- Trinitramine (C₃H₆N₆O₆)
- Ammonium (NH₄)
- Sodium Nitrate (NaNO₃)
- Nitro-glycerine (C₃H₅N₃O₉)
- White Phosphorus (WP₄). This chemical may pose a significant immediate risk of spontaneously combusting when exposed to the oxygen in the air. WP will generate large quantities of toxic white smoke when ignited.

5.2 It is recommended that specialist environmental and medical advice be sought to identify any health or other risks posed by these and other chemical compounds.

6 **RISK ASSESSMENT**

6.1 **Risk Source**

Multiple open source records and an official report contained sufficient information to confirm that the 'Site' was used by the Armed Forces and other agencies over a significant period and that UXO contamination has occurred.

UXO search operations were started but not completed and no UXO Clearance Certification was provided for any part or area of the 'Site'. A summary of the likelihood of an encounter from all potential sources can be seen in Table 2 below.

Table 2 Likelihood of Encounter

Likelihood Of UXO Encounter			
Potential Contamination Source	High Probability	Medium Probability	Low Probability
Air Dropped Enemy Bombs & Rockets			⊗
Air Dropped Enemy Sub-Munitions			⊗
Anti-Aircraft Projectiles		⊗	
Abandoned Enemy Bombs			⊗
Crashed Aircraft			⊗
Ammunition Accidents			⊗
Disposal - Explosive Demolitions	⊗		
Dumped / Discarded Ammunition	⊗		
Disposal - Burial / Burning Pits	⊗		
Trials, Testing and Training	⊗		
Rifle Firing Ranges			⊗

6.2 **Risk Pathway**

The critical risk pathways are; demolition of existing buildings, foundation removal, scrub/vegetation clearance, tree stumping and ground intrusive earth works including geotechnical investigations and new building foundation and infrastructure construction.

6.3 Consequence

The consequences of a UXO/LSO detonation on site during construction works are a factor of the size of the blast and the proximity of assets and individuals to the point of detonation. These will include potential to kill or seriously injure personnel, destroy or damage high value site assets, nearby public and private property and infrastructure.

6.4 Risk Rating

The risk rating (RR) is derived by considering several factors and attributing a numerical weight ($H \times W = L$) \times ($S \times P = C$) = RR. Where:

H = A figure derived from assessing the history of the 'Site' weighing up factors such as recorded bomb damage, threat weapon type, military use and the scope of any post conflict development.

W = A figure derived from assessing the type of the process to be undertaken without putting in place any UXO mitigation measures. A low figure is assigned where the process is relatively non-aggressive (minimal ground or point shock). A high figure is used where the work is considered aggressive (significant ground or point shock).

L = A figure derived by multiplying figures H and W to provide an overall likelihood of an encounter with UXO.

S = A figure derived by assessing the scope or extent of the works; a low figure is assigned where the volume of risk material is limited. A high figure is used where for example the volume of risk material is considerable such as "bulk digs" or shafting.

P = A Figure derived from assessing the result of an explosion, including primary and secondary risk pathways and receptors. A high figure is attributed for example in a gas works while a low figure is applied to a remote, rural open space.

C = A figure derived by multiplying figures S and P to provide an overall consequence of an encounter with UXO.

The current risk levels have been determined for the different construction procedures / methodologies and the results can be found in Table 3.

6.5 Table 3 Current Risk Levels

UXO Risk Level from Primary UXO Contamination Sources (Land Service Ordnance)			
Activity	High Risk	Medium Risk	Low Risk
Building Demolition, Foundation Removal & Hand Pitting	⊗		
Scrub Cutting, Tree Stumping & Fencing		⊗	
Limited Mechanical Excavations (Inspection Pits)		⊗	
Borehole Drilling & Window Sampling		⊗	
Mechanical Trenching & Foundation Construction	⊗		
Bulk Excavation, Land Profiling & Levelling	⊗		
Directional Drilling & Piling	⊗		
UXO Risk Level from Secondary UXO Contamination Sources (Airdropped Bombs)			
Activity	High Risk	Medium Risk	Low Risk
Building Demolition, Foundation Removal & Hand Pitting			⊗
Scrub Cutting, Tree Stumping & Fencing			⊗
Limited Mechanical Excavations (Inspection Pits)			⊗
Borehole Drilling & Window Sampling			⊗
Mechanical Trenching & Foundation Construction		⊗	
Bulk Excavation, Land Profiling & Levelling		⊗	
Directional Drilling & Piling		⊗	

7 STUDY FINDINGS

7.1 Risk Levels

The desk study has identified a credible UXO threat to works on the 'Site'. When viewed from likelihood versus consequence standpoint; it is considered prudent to recommend a suitable degree of UXO mitigation to permit the work to proceed in the safest "acceptable" (ALARP) manner in compliance with current legislation and best practices.

8 RECOMMENDATIONS FOR RISK MITIGATION

8.1 Overview

It is acknowledged that some degree of search was completed previously by the military. Unfortunately, UXO Clearance Certificates were not provided for the land that was searched. It is therefore recommended that a 12% Land Quality Assurance (QA) Search/Survey is conducted of selected areas within the previously searched ground (See Annex 'A').

The aim of the QA would be to confirm that the land was cleared to an acceptable level to permit the previously searched land to be excluded from further survey/clearance and or specialise EOD supervision.

Execution of the following Risk Mitigation Strategy is recommended:

All Risk Levels

- Risk Communication & Safety Planning: Stakeholders should be made aware that the risk of encounter is considered to vary from low increasing to high for some activities. Consequently, the possible impact on the project may be significant and wide reaching. It is recommended that a detailed site inspection be conducted by UXO specialists to gather sufficient up to date information regarding the current situation on the 'Site' to permit the design of a suitable UXO safety plan for inclusion within the Project Safety Plan.
- Surface Visual Search: It is recommended that a systematic visual search is carried out over the 'Site' footprint (Including areas where free public access is to be granted). The aim of this procedure is to locate, risk assess and when safe to do so, remove all UXO surface contamination. This should be conducted by trained EOD Search specialists prior to any ground works commencing.
- Structure / Building Search: It is recommended that a systematic visual search is carried out of all buildings or structures on the 'Site' to locate, risk assess and when safe to do so, remove all UXO surface contamination. This should be conducted by trained EOD Search specialists assisted by explosive search Dogs when required prior to any demolition work or building alteration works.
- Underwater Search: It is recommended that a systematic search is carried out of all ponds and open water tanks or reservoirs, the aim of which would be to locate, risk assess and when safe to do so, remove all UXO contamination. This should be conducted by trained EOD Clearance Divers using detection instruments.
- Safety Training: In keeping with CDM Regulations concerning all sub-surface hazards, UXO Safety Induction Training should be provided to everyone working or visiting the 'Site'. The training should be commensurate with the individual's responsibilities and duties on site. The training should be provided by a competent individual (preferably a trained EOD Engineer) and delivered as a separate module of the Site Safety Induction Course or as a Toolbox Talk.

Additional Mitigation Recommendations for Medium & High Risk Activities:

- Non-Intrusive UXO Survey & Investigation: This should be conducted on all suitable land using a specialist UXO Survey Array and Investigation Team. The survey should provide a detection depth to c.a. 2-3m depending on background contamination and anomaly mass/volume.

Where the ground is not suitable or accessible for UXO Non-Intrusive Survey:

- UXO Safety Supervision: Work should be monitored and (where possible) checked for UXO by an EOD Engineer equipped with a specialist magnetometer ahead of the drilling bit or excavator bucket.

Where Piling is to be carried out:

- Intrusive UXO Survey: Piling positions should be checked for UXO in advance of the piling commencing. This should be conducted by trained personnel using MAGCONE or similar detection system employing a 'Safe Look Ahead' technology to ensure testing can be carried out safely to the maximum bomb penetration depth (8.0m).

9 **POST MITIGATION RESIDUAL RISK**

9.1 **Overview**

Execution of the recommended risk mitigation strategy will reduce the UXO risks to an acceptable level (Low), however it is emphasised that zero risk is not achievable given the possible variables. The mitigation strategy will require detailed scoping to achieve the desired results. For further information please contact MACC International Ltd.

9.2 Table 4 Residual Risk Levels

UXO Risk Level from Primary UXO Contamination Sources (Land Service Ordnance)			
Activity	High Risk	Medium Risk	Low Risk
Building Demolition, Foundation Removal & Hand Pitting			⊗
Scrub Cutting, Tree Stumping & Fencing			⊗
Limited Mechanical Excavations (Inspection Pits)			⊗
Borehole Drilling & Window Sampling			⊗
Mechanical Trenching & Foundation Construction			⊗
Bulk Excavation, Land Profiling & Levelling			⊗
Directional Drilling & Piling			⊗
UXO Risk Level from Secondary UXO Contamination Sources (Airdropped Bombs)			
Activity	High Risk	Medium Risk	Low Risk
Building Demolition, Foundation Removal & Hand Pitting			⊗
Scrub Cutting, Tree Stumping & Fencing			⊗
Limited Mechanical Excavations (Inspection Pits)			⊗
Borehole Drilling & Window Sampling			⊗
Mechanical Trenching & Foundation Construction			⊗
Bulk Excavation, Land Profiling & Levelling			⊗
Directional Drilling & Piling			⊗

11.2 **Intent & Use**

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Previously Searched Land Quality Assurance

The 12% Quality Assurance UXO Search/Survey areas will be selected from the areas shown in blue. The areas will be selected based on the the following selection criteria:

- Ground conditions: Ensuring a fair representation of all ground types are included.
- Clearly distiguishable boundaries of the previously searched areas.
- Type of previous search: Ensuring a fair representation of all of the methodologies that were used previously.

Reg 12(5)(a)



EXPLOSIVE ORDNANCE SAFETY INFORMATION

1 UNEXPLODED ORDNANCE

Since WWII the number of incidents in the UK where EO has detonated has been minimal, though a significant number of bombs have been discovered and safely disposed of without serious consequences. More commonly on mainland Europe (France, Germany and Belgium) incidents have occurred where ground workers have been killed or injured because of striking buried UXO or mishandling items of UXO found during excavation and piling work.

The threat to any proposed investigation or development on the site may arise from the effects of a partial or full detonation of a bomb or item of ordnance. The major effects are typically; ground shock, blast, heat and fragmentation. For example, the detonation of a 50kg buried bomb could damage brick/concrete structures up to 16m away and unprotected personnel on the surface up to 70m away from the blast. Larger ordnance is obviously more destructive. Table B-1 shows the MOD's recommended safe distance for UXO. However, it should be noted that the danger posed by primary and secondary fragmentation may be significantly greater. Almost 60% of civilian casualties sustained in London during the blitz were the result of flying glass.

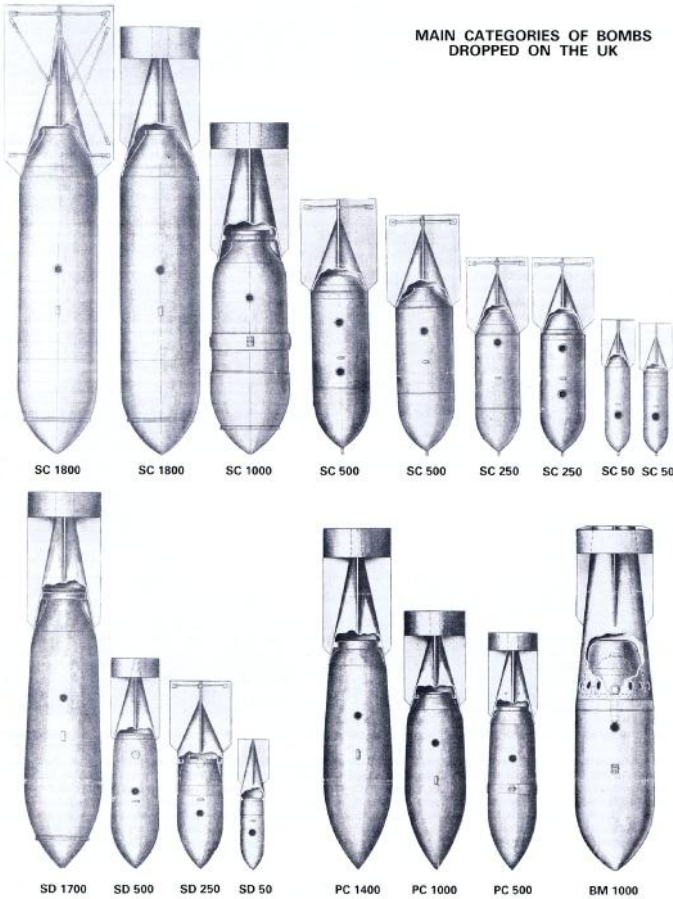
TABLE B-1 SAFETY DISTANCES FOR PERSONNEL

UXO (Kg)	Safety Distances (m)			
	Surface UXO		Buried UXO	
	Protected	Unprotected	Protected	Unprotected
2	20	200	10	20
10	50	400	20	50
50	70	900	40	70
250	185	1100	120	185
500	200	1250	140	200
1000	275	1375	185	275
3000	450	1750	300	450
5000	575	1850	400	575

Explosives rarely become inert or lose effectiveness with age. Over time some explosive materials can become more sensitive and therefore more prone to detonation. This applies equally to items that have been submersed in water or embedded in silt, clay, peat or similar materials.

2 TYPES OF GERMAN AIRDROPPED BOMBS & MINES

2.1 HE Bombs



German 250kg Bomb found by MACC below a pre-war cellar floor in Bethnal Green London
10 August 2015



2.2 Incendiary, Anti-Personnel Bombs & Parachute Landmines



1kg incendiary Bomblet (Top as found today)



Flam c500, c250 & c50 Oil Bombs



SD1 Anti-Personnel Bomblets



SD1 Container Bomb



Parachute Mines



10 Landmines

Examples of Anti-personnel and Anti-Tank Mines showing their varied shape and design some of which have been found within Lodge Hill Training Area (LHTA). It should be noted that some training versions are to be fitted with a noise or smoke charge to simulate the mine functioning.

L9 Anti-tank Barmine (c.a. 1.0m long)



Mk 7 Anti-tank Mine (c.a. 0.3m Ø)



Directional Off-Route Mine (c.a. 350mm long)



Hawkins Anti-vehicle mine (c.a. 250mm long)



ELSI Anti-personnel mine (c.a.90mm long)



Examples of Projectile (shell), Mortar Bomb and Hand Grenades of the type found on LHTA can be seen below.

3.7 Inch Projectile (c.a. 280mm long)



3" inch Mortar Bomb



Hand Grenades





**UNEXPLODED ORDNANCE
DESK TOP STUDY
Lodge Hill Camp & Training Area**

**APPENDIX 1
SITE DRAWING**

Reg 12(5)(a)

Key

-  Site boundary
-  Other land controlled by HCA (Blue land)



Scale at A3: 1:15,000

Client

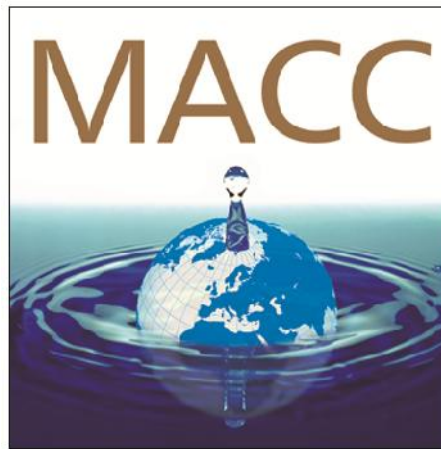
Lodge Hill



Site location

July 2016

37508-Lea08c.mxd parkj



UNEXPLODED ORDNANCE SITE INSPECTION REPORT

Lodge Hill Camp (LHC) & Lodge Hill Training Area (LHTA) Chattenden Kent

Prepared for: AMEC Foster Wheeler Environment & Infrastructure UK Ltd

Project Number: 4585

Version: 1.0

Dated: 28/03/2017

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CONTENTS

Title	Pages
Front Cover	
Distribution	i
Contents Page	ii
References & Acknowledgements	iii
Abbreviations	iv
Introduction	1
Conduct of Inspection	2
Inspection Findings	3-11
Conclusions	12
Recommendations	13
The Way Ahead	14
Closing Remarks	15
Annexes:	
A. Site Areas Layout Drawing	
B. Photographs	

REFERENCES

Publications

Sources of information used in the compilation of this report included:

UXO – Desk Top Report 4585 v1.0 MACC 2016.

EO Threat Assessment Ground Investigation Report – Chattenden Barracks MACC 1996.

Explosive Ordnance Clearance Task Suspension Report Reference 2011/0002-3.

Explosive Ordnance Clearance Group (EOC) July 2014.

New Lodge Hill Masterplan AA6437 – 1005 REV 0 Dated 01 February 2017.

ACKNOWLEDGEMENTS

Project information was provided by Environment & Infrastructure UK Ltd, AMEC Foster Wheeler.

Additional information was provided by Defence Infrastructure Organisation (DIO) Explosive Ordnance Clearance (EOC) Group.

ABBREVIATIONS

EO/UXO

Explosive Ordnance/Unexploded Ordnance.

Within the context of this report EO/UXO has been used for items of training, inert, expended or live unexploded ordnance (including Improvised Explosive Devices) where the items have not been subjected to a full identification and risk assessment to determine their specific nature and the risk they pose.

EOC

Defence Infrastructure Organisation. Explosive Ordnance Clearance DIO (EOC).

This organisation is part of the Ministry of Defence tasked with the responsibility of clearing existing and former MOD land of unexploded ordnance.

EOD

Explosive Ordnance Disposal

A series of recognised procedures and protocols which are used by specialists in the detection, identification, evaluation, risk assessment, render safe, recovery and disposal of any item of explosive ordnance or improvised explosive device.

NIS

Non-Intrusive UXO Survey

This is a computer/GPS linked specialist passive (nil emissions) magnetometer array which is used for searching large areas of open land. The system can be man portable or towed behind a vehicle.

LW120

Bomb Locator / Detector

This is a specialist passive (nil emissions) magnetometer used to detect ferrous objects down to c.a.5.0m. This is generally used to check for UXO during drilling operations or in areas of limited access due to vegetation, trees or other obstructions.

1 INTRODUCTION

1.1 Instruction & Scope

MACC International Ltd (MACC) was commissioned by Environment & Infrastructure UK Ltd, AMEC Foster Wheeler (AMEC) to conduct an Unexploded Ordnance (UXO) Site Inspection for Lodge Hill Camp and Training Area (the 'Site'). The scope of the inspection was to locate sources of UXO contamination, assess possible risks posed and thereafter make suitable recommendations to safely clear the site of potential UXO hazards prior to redevelopment and other associated eco-environmental works. The purpose of the report is to provide an aid in decision making, scoping and work scheduling to our client.

1.2 Methodology & Purpose

The methodology used to complete the inspection complies with:

- United Nations (IMAS) standards for UXO/Mine Level 2 Site Survey.
- CIRIA C681 "Unexploded Ordnance (UXO) – A guide for the Construction Industry".
- Recognised best practice advocated by the Health and Safety Executive (HSE).
- The quality and environmental aspects comply with ISO9001:2008 and ISO14001:2004.

1.3 Background

It is acknowledged that the site has been in use by the military for a significant number of years. Because of its use as a munitions depot and as a training area, much of the site was contaminated by live and inert items of EO. The training conducted on the site included specialist munitions and boobytrap training relating to numerous theatres of conflict ranging from Homeland Security, The Far East, The Falkland Islands, Baltic States, Kuwait, Iraq and Afghanistan to name but a few.

On its closure as an active facility, the site was subjected to a clearance operation by the military. However, the operation was suspended before it could be completed because of high priority clearance commitments elsewhere on the limited military EOC resources.

Consequently, items of inert EO and possibly live UXO remain within the site boundary to the present day. The presence of such items pose two main threats to the development of the land, specifically:

- Potential lethal consequence encounters from detonation of an item of live UXO.
 - Potential non-lethal disruption and delays to development works because of encounters with items of inert EO.
-

2 CONDUCT OF THE INSPECTION

2.1 Programme & Personnel

The inspection was conducted over a five-day period (13-17th March 2017) under a single mobilisation without incident or accident. Approximately 35% of the site could not be subjected to detailed inspection due to heavy vegetation. The inspection team comprised of two MACC Senior EOD Engineers both of whom had served as EOD Engineers and Instructors at different periods on the site:

- Reg.13(1) - (MACC Lead Inspector)
- Reg.13() - (MACC Assistant Inspector)

The inspection team was accompanied by the client's representative team and their assistance is acknowledged with thanks:

- Reg.13(1) - (AMEC Ecologist)
- Reg.13() - (SLP Topping Contractor)

The inspection team was assisted by a local guide; Reg.13(1) , a retired Royal Engineer Officer was an EOD Engineer and Instructor on the site for over 30 years between 1968 before retiring in 2009. His extensive knowledge of the site and the nature of the work and training that had been undertaken within it proved to be an invaluable source of additional information. His assistance is also acknowledged with thanks as is that of the UK commercial EOD community who provided additional information and confirmation of anecdotal reports.

2.2 Procedure

The inspection comprised of a systematic site walk-over visual inspection during which extensive notes and photographic records were made. For ease of recording the site was broken down into eight areas. Area boundaries were selected to follow existing geographic features (see map annex 'A'). Each area has been reported individually:

- AREA - A. Northern section of training area (outside northern security fence).
- AREA - B. Lodge Hill Training Area and Bridging Hard (within security fence).
- AREA - C. Lodge Hill Camp including the DEODS / NSC training area.
- AREA - D. Northern half of Lochat Road.
- AREA - E. Magazine/Ammunition Bunker area.
- AREA - F. Central wooded area including Northern and Central Terraces.
- AREA - G. Chattenden Barracks area.
- AREA - H. Southern section of training area.

3 INSPECTION FINDINGS

3.1 Overview

Surface EO/UXO Contamination: Ample evidence was evident on the site of extensive military earthworks, building, demolition and detritus. Evidence was also evident that most of the areas comprising the site are contaminated on the surface with inert EO, IED and suspect UXO to some degree (see Photographs annex 'B').

Buried EO/UXO Contamination: Evidence was found to indicate that the contamination extended below the surface to a typical depth of 0.2m where landmines had been buried and subsequently 'weathered out'. Deeper contamination (buried bomb) was also found to a depth of at least 3.5m at a location within the former Lodge Hill Camp DEODS / NSC training area.

Access Limitations: With a few exceptions such as tenant farmer land management and hard surfaced roads or existing structures; much of the site has been permitted to become overgrown. The level of overgrowth has, in some cases, become so dense that pockets have become impenetrable to normal foot access or transit. Specific parts of the areas were excluded from the inspection due to their status as SSSI (see Annex 'C').

Water Filled Features: The presence of at least one well with several other ponds, pools, emergency water supply tanks and water filled features are also evident. It is known that EO was placed within some of these features and that UXO has been recovered from them in the past (c.a.1990). The features appear to have gone unmaintained since the military's departure. Some of the features are located within or are themselves designated SSSI areas.

Underground Facilities: One confirmed and one unconfirmed underground tunnel system is known to be located on the site. The confirmed tunnel system was used in confined space training and has flooded since falling into disuse. The second suspected tunnel system was thought to be used for conducting Vietnamese boobytrapped tunnel clearance training in the early 1970's. This system's general location is known but it's current condition is not known at present.

Warning Signs & Fences: Warning signs remain in place on site. Some of the signs were undoubtedly placed as dummy warnings designed for training purposes only, while others clearly warn of a real and existing danger. The signs provide diverse types of warning ranging from the danger of landmines and booby traps to the presence of asbestos material and confined spaces.

3.2 Area 'A' Inspection Findings

Northern section of training area located outside northern security fence: This is the northern most area and comprises of c.a.50% open pasture land and 50% woodland/scrub.



- Open Pasture: This area was used for UXO explosive and burning disposal and trench warfare training although little evidence of such activity remains today. This area was scanned and searched by the EOC in 2012/2013 during which numerous items were found. No Clearance Certificate was provided by the EOC post search. This area is suitable for non-intrusive UXO survey (NIS).
- The woodland/scrub: This area was occupied by an Anti-Aircraft gun Battery during WWI – WWII. Parts of the area were used for Vietnamese village and tunnel clearance training in the 1970's and later for DEODS/NSC training. This area was not searched by the EOC and although access was limited at the time of the inspection, items of EO/UXO were found on the surface. This area is heavily overgrown and not suitable for non-intrusive UXO survey.
 - Recommendation A1: It is recommended that a 12.5% QA non-intrusive UXO survey of this area is conducted to determine the effectiveness of the EOC clearance and scope any further UXO clearance work that may be warranted.
 - Recommendation A2: It is recommended that a 100% visual search of the area is conducted to remove all items of EO/UXO from the surface and to locate any evidence of the tunnels. If the tunnels are found then they may be cleared using a LW120 search if intrusive development work is to be undertaken on their location.

3.3 Area 'B' Inspection Report

Lodge Hill Training Area and Bridging Hard located within security fence: This area comprises of c.a.20% road/hardstanding and 70% woodland/scrub.



- This area was used for the storage/use of munitions and training. It has an extensive road and tracks system and numerous buildings, some of which were boobytrapped for training purposes. It also has several wet features (ponds) and a tunnel system. Items of EO/UXO were present on the surface. Parts of the area were scanned and searched by the EOC in 2012/2013 during which numerous items were found. No Clearance Certificate was provided by the EOC post search. Due to heavy overgrowth, this area is currently not suitable for non-intrusive UXO survey (NIS). However, scrub cutting would allow c.a.50% of the area to be accessible to NIS.
 - Recommendation B1: It is recommended that areas (in which development is to be carried out or public access is to be permitted) are cleared of scrub to permit a visual search to be completed. The scrub cutting should be carried out under UXO safety supervision.
 - Recommendation B2: It is recommended that a 100% visual search of the area and structures is conducted to remove all items of EO/UXO from the surface.
 - Recommendation B3: It is recommended that the tunnel system is drained (pumped out) of water and searched for items of EO/UXO by confined space trained EOD Engineers.
 - Recommendation B4: It is recommended that a 12.5% QA non-intrusive UXO survey or LW120 search of the areas previously searched by the EOC is conducted to determine the effectiveness of the clearance and scope any further UXO clearance work that may be warranted.

3.4 **Area 'C' Inspection Report**

Lodge Hill Camp including the DEODS / NSC training area: Located within the camp fence, this area comprises the former buildings, facilities and areas used by the training school/centre and 33 Engineer Regt (EOD) RE.



This area was heavily involved in the storage and use of munitions as described in the desk study. During the inspection, c.a. 30% of the area was unsuitable for NIS due to dense vegetation. If cut to a suitable height c.a. 50% of the area could be surveyed. The remainder is wooded and would need to be searched using LW120 locators. EO/UXO contamination was visible in the woods and open ground across this area, including:

- Bomb location training areas. One such area still has detection boreholes in place and these were checked using a downhole LW120. Readings indicated the presence of a large steel mass (probably the training target bomb) at a depth of 3.5m.
- Building clearance training structures. Evidence was found to confirm that EO/UXO contamination (improvised booby traps) was present within the structures.
- Water training pond and wet features. These were known to have contained items of EO in the past. No indications were found to imply that the ponds and tanks were cleared of potential EO contamination.
 - Recommendation C1: It is recommended that areas are cleared of scrub to permit a visual search to be completed. The scrub cutting should be carried out under UXO safety supervision.
 - Recommendation C2: It is recommended that a 100% visual search of the area and structures is conducted to remove all items of EO/UXO from the surface.
 - Recommendation C3: It is recommended that the wet features are drained (pumped out) of water and searched for items EO/UXO by EOD Engineers.
 - Recommendation C4: It is recommended that a NIS UXO survey of the area is conducted with any deep targets investigated and removed.

3.5 **Area 'D' Inspection Report**

Northern half of Lochat Road: This area is marked on OS maps as "Great Chattenden Wood" and comprises of c.a.95% dense woodland/scrub.



This area is predominantly wooded with thick dense scrub and is dissected by a single road. Some historic disused/derelict structures are believed to be within the area. To access much of the area the dense vegetation will need to be removed. The area was used by the military for:

- Military training including the use of booby traps.
- The area to the south east is known to have been used as a military dumping area. This was for the dumping of general waste but the dumping of munitions waste cannot be excluded.

The area is now heavily wooded and any excavations will need to be searched or supervised. The remaining areas are not suitable for NIS and will therefore need to be cleared using LW120.

- Recommendation D1: It is recommended that areas are cleared of scrub to permit a visual search to be completed. The scrub cutting should be carried out under UXO safety supervision.
- Recommendation D2: It is recommended that a 100% visual search of the area and structures is conducted to remove all items of EO/UXO from the surface.
- Recommendation D3: All structures or suspected dumping pits found within the area are searched for items of EO/UXO by EOD Engineers.
- Recommendation D4: All intended excavation locations are searched or, where this is not practical, supervised by EOD Engineers.

3.6

Area 'E' Inspection Report:

Magazine/Ammunition Bunker: This area is marked on OS maps as "Depot" and is located within the security fence/wall.



Approximately 60% of the area is suitable for NIS survey and the remainder is heavy scrub and trees. These will need to be cut prior to clearance. It contains five ammunition bunkers which, at the time of the inspection, were being used by a Fireworks company for the storage of live fireworks. One of the smaller unlocked buildings appeared to be storage for empty firework bodies and packaging.

- Recommendation E1: It is recommended that areas are cleared of scrub to permit a visual search to be completed. The scrub cutting should be carried out under UXO safety supervision.
- Recommendation E2: It is recommended that a 100% visual search of the area and structures is conducted to remove all items of EO/UXO from the surface.
- Recommendation E3: It is recommended that a NIS UXO survey of the area is conducted with any targets investigated, thereafter any EO/UXO removed.

3.7 **Area 'F' Inspection Report**

Central Training Area: Marked on OS map as; "Round Top Wood". This wooded area is located to the west of Lodge Hill Lane and extends west to Lochat Road. Its southeast boundary follows the building limits of former Chattenden married quarters.



This area is for the most part (80%) woods which are believed to contain some dumping pits and is known to include the former Royal Navy Married Quarters at North and Central Terraces. The quarters were vacated in the 1970's and given over to use for boobytrap building clearance training. These buildings are now derelict, un-safe structures containing asbestos. Evidence of boobytraps and other EO/UXO was found during the inspection. Apart from the recreational fields (located in the south of the area next to Chattenden), the area is not suitable for NIS and would require a LW120 search to clear.

- Recommendation F1: It is recommended that areas are cleared of scrub to permit a visual search to be completed. The scrub cutting should be carried out under UXO safety supervision.
- Recommendation F2: It is recommended that a 100% visual search of the area and structures is conducted to remove all items of EO/UXO from the surface.

(Where asbestos is thought to be present, the search will be conducted by Asbestos Awareness trained EOD Engineers.)

- Recommendation F3: All structures or suspected dumping pits found within the area are searched for items of EO/UXO by EOD Engineers.
- Recommendation F4: All intended excavation locations are searched or, where this is not practical, supervised by EOD Engineers.

3.8 **Area 'G' Inspection Report**

Former Chattenden Barracks: Located to the west of Lodge Hill Lane extending west to Lochat Road, with most of its northern boundary occupied by the former married quarters.



The Barracks has been demolished to ground level resulting in c.a.75% of the area now covered by a 'demolition field' containing large areas of tarmac and concrete bases/roads. At this stage, the presence of asbestos resulting from the demolition work cannot be ruled out. No EO/UXO contamination was evident and given the level of development it's presence to the depth of the former building foundations is considered unlikely. Nevertheless, it would be prudent to conduct a visual search of the area. Much of the demolition field has become heavily overgrown and is unsuitable for clearance by NIS.

- In February 1996 MACC was commissioned to undertake limited investigations in the northeast corner of Chattenden Barracks. The aim was to locate UXO contamination resulting from suspected bunkers that were thought to have been built in the area. NIS was completed within the small area and no UXO was located. Findings were inconclusive concerning the location of the bunkers.
- What is believed to be a deep well was found during the inspection. This is not thought to be related to any underground bunkers or tunnels but warrants further investigation.
 - Recommendation G1: It is recommended that areas are cleared of scrub to permit a visual search to be completed. The scrub cutting should be carried out under UXO safety supervision.
 - Recommendation G2: It is recommended that a 100% visual search of the area and structures (including the suspected well) is conducted to remove all items of EO/UXO from the surface.

(Where asbestos is thought to be present, the search will be conducted by Asbestos Awareness trained EOD Engineers.)

3.9 Area 'H' Inspection Report

Southern Training Area: This area is to the south of the Chattenden Barracks. Its northeast boundary follows the Lochat Road and southern boundary the A228.



This area is a 50/50 mix of open and wooded land. The wooded areas are heavy with scrub and on steep slopes.

- The wooded areas were found to have significant amounts of scrap material including metal and the presence of EO/UXO cannot be ruled out. Most of the open areas are suitable to be cleared using NIS.
- Anecdotal reports including 1940's aerial imagery indicates defensive trenches were dug in the open area to the northwest and would warrant further investigation.
 - Recommendation H1: It is recommended that areas are cleared of scrub to permit a visual search to be completed. The scrub cutting should be carried out under UXO safety supervision.
 - Recommendation H2: It is recommended that a 100% visual search of the area and structures is conducted to remove all items of EO/UXO from the surface.
 - Recommendation H3: It is recommended that a NIS UXO survey of the northern (Trench) area is conducted with any targets investigated, thereafter any EO/UXO removed.

4 CONCLUSIONS

4.1 The inspection confirmed the current situation on site and allowed the following conclusions to be drawn:

- All areas of the site have items of EO/UXO present to some degree. The levels of contamination range from negligible presence to gross contamination.
- Other types of contamination and environments were found which will have impact on any subsequent clearance work. These sources included:
 - Domestic dumps and demolition scrap metal and rubble.
 - Asbestos.
 - Deep or potentially contaminated water.
- Approximately 50% the EO/UXO items found appear to be inert training aids posing little risk to life. However, this implies that 50% of the items pose a significant risk. The true nature and level of risk posed from an item will require detailed identification and risk assessment to be accurately determined.
- Given the land's intended end use, EO/UXO search and clearance of the land is warranted.
- Significant enabling work (mostly brashing/scrub cutting) will be required for access to carry out effective search/survey.
- Detailed planning involving all parties will be required to ensure the clearance work is completed in a timely cost effective manner.

5 RECOMMENDATIONS

- 5.1 That all current use of the land by the military/police for training and other commercial companies using the explosive bunkers for storage is halted to prevent any further contamination from EO/UXO or explosive material.
- 5.2 That the feasibility of suspending, migrating or removing the SSSI areas is explored to permit a EU/UXO clearance of the land to be carried out.
- 5.3 That implementation planning to conduct the following clearance operations is commenced immediately:
- To complete a 100% visual search and clearance of the land.
 - To complete a 12.5% Quality Assurance NIS/LW120 search of land previously searched by other agencies (EOC).
 - To complete a 100% NIS/LW120 survey and clearance of specific risk areas.
- 5.4 That the EO/UXO clearance operation is commenced as a matter of priority on completion of the planning to provide the required assurances and safety certifications to those who will carry out subsequent development and building works.

6 THE WAY AHEAD

6.1 The immediate way ahead is to carry out the planning to enable a suitable plan to be developed.

- Notes on EO/UXO Clearance Implementation Planning: Several factors must be considered when determining the level of risk posed from UXO within the different areas and the most appropriate methodologies available to mitigate the risk to an acceptably low level. This will require close collaboration and planning by all parties to ensure that the final plan is efficient, effective and timely. Factors which have bearing on the plan include:
 - Current UK legislation and regulation pertaining to transport and disposal of EO/UXO or explosive materials. This includes HSE licenses and permits regarding storage, transport and disposal.
 - Current UK legislation and regulation pertaining to environmental and ecological matters, concerns and intentions.
 - Invested party and public assuredness issues such as public perception and confidence.
 - Area specific scope of the development and construction methodologies to be used.
 - End use for the various areas including the degree of public access and public use.
 - The order of priority in which the EO/UXO clearance certification is required and time availability.
 - Level (if any) of MOD support and assistance which will be made available to assist in the project.

7. **CLOSING REMARKS**

This document has been produced in the United Kingdom by MACC International Limited. Enquiries regarding the contents of the report or further information should be addressed to the following address:

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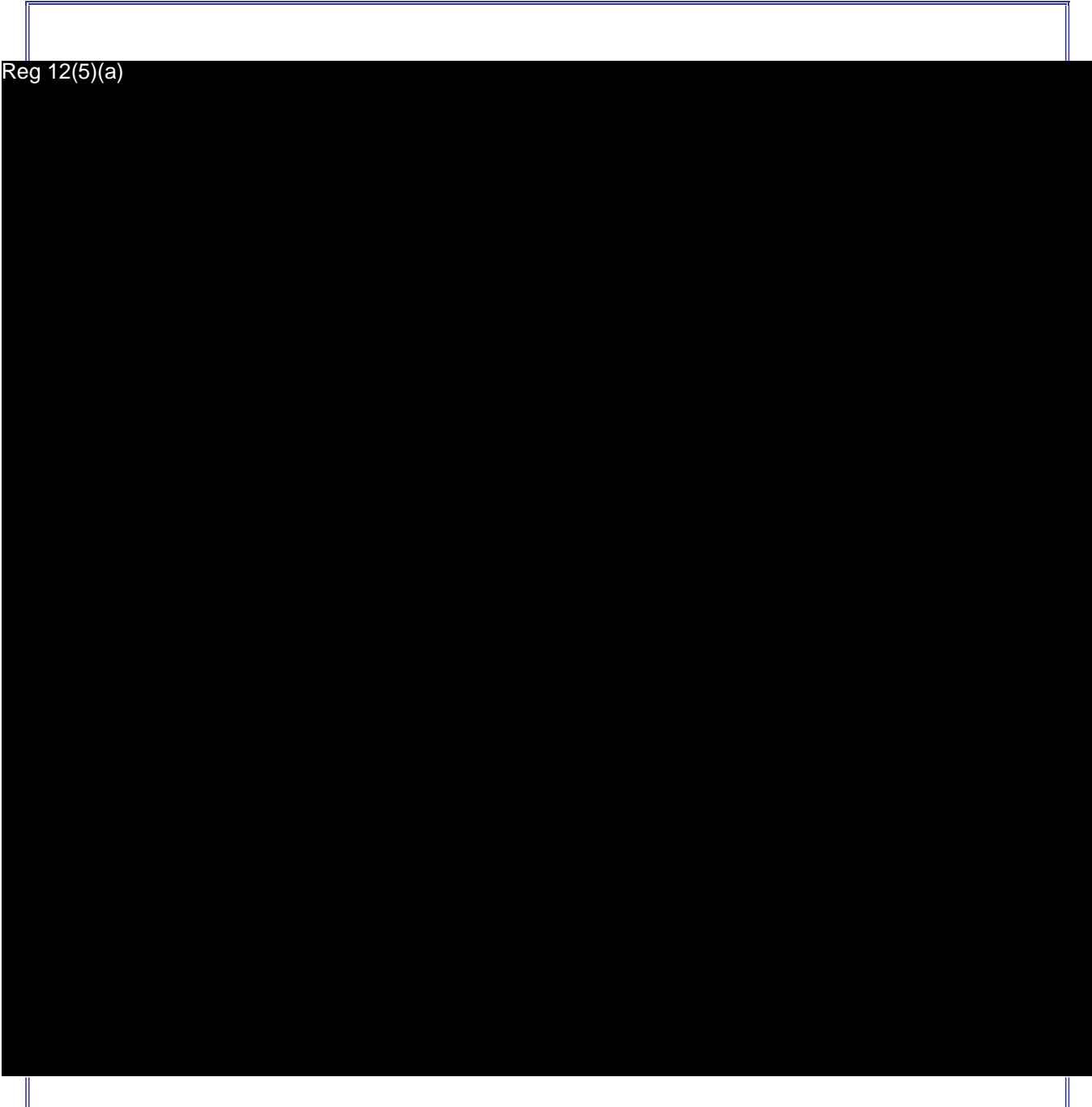
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Registered in England Company Registration Number 301447

Site Area Layout



Annex B

Inspection Photographs

Area 'A'

Open Pasture (Previously searched by EOC)



Livestock near the wartime HAA Gun Battery



Minefield Warning Sign



Live Anti-personnel Mine (Smoke Charge)



Annex B

Inspection Photographs

Area 'B'	
<p data-bbox="145 607 480 636">Medium woodland density</p> 	<p data-bbox="809 607 1158 636">Minefield Markers & Debris</p> 
<p data-bbox="145 1173 400 1202">Deep Water Hazard</p> 	<p data-bbox="809 1173 1286 1202">EO/UXO Booby Trap (within building)</p> 

Annex B

Inspection Photographs

Area 'C'

Buried Bomb Area (Steel mass at 3.5m depth)



EO/UXO Landmines (State not known)



Bosnia Style Trenches



EO/UXO



Annex B

Inspection Photographs

Area 'C' Continued

EO/UXO Landmines (Believed Live)



EO/UXO (State not confirmed)



EO/UXO Missile (Believed Inert)



EO/UXO Projectiles (State not confirmed)



Annex B

Inspection Photographs

Area 'D'	
<p data-bbox="145 584 635 618">EO/UXO Firing Switch (Believed Inert)</p>  A photograph showing a firing switch on a gravelly ground. The switch has a blue handle and a black body. A black pen is placed next to it for scale. There are some green leaves and small white flowers nearby.	<p data-bbox="810 584 1321 618">EO/UXO Grenade (State not confirmed)</p>  A photograph showing a cylindrical object, likely a grenade, lying on the ground. It is surrounded by dry sticks and green leaves. The object has some markings, including the number '100000'.
Area 'E'	
<p data-bbox="145 1218 475 1252">Fireworks (Believed Inert)</p>  A photograph showing the interior of a brick structure. There are several cardboard boxes and stacks of fireworks. One box is labeled 'DINK'S B.A.B.'. The structure has a brick wall and a wooden door frame.	<p data-bbox="810 1218 1158 1252">Explosives Storage Bunker</p>  A photograph showing the exterior of a brick structure, identified as an explosives storage bunker. It has a dark door and a small sign that says 'Proces'. The structure is surrounded by green grass and trees.

Annex B

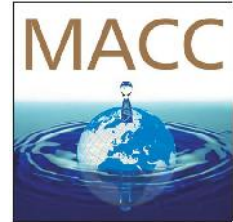
Inspection Photographs

Area 'F'	
<p>Boobytrapped Buildings</p> 	<p>Building Warning Signs</p>  
Area 'G'	
<p>Hazard Taped Area</p> 	<p>Deep Well</p> 

Annex B

Inspection Photographs

Area 'H'	
<p data-bbox="145 607 480 636">Medium woodland density</p>  A photograph showing a dense woodland with many bare trees, suggesting a late autumn or winter setting. The ground is covered with fallen leaves and some green undergrowth.	<p data-bbox="810 607 1082 636">NIS accessible areas</p>  A photograph of a grassy field with a single, weathered concrete pillar standing in the foreground. In the background, there is a line of trees under a clear sky.
<p data-bbox="145 1191 347 1220">Dumped Debris</p>  A photograph showing a pile of discarded materials on a dirt surface. The debris includes pieces of wood, metal rods, and other unidentifiable fragments.	<p data-bbox="810 1191 1123 1220">Defensive trenches area</p>  A photograph of a wooded area with several trees that have been cut down or are leaning over, possibly indicating a trench or a cleared path through the woods.



MACC International Ltd, Camilla Court, Nacton, Ipswich, Suffolk, IP10 0EU, UK

Reg.13(1)
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Homes England
Woodlands Manton Lane
Bedford MK41 7LW

Your Reference:

Our Reference: 4991/JM/45

Dated: 4th July 2018

Building Inspection Report - Unexploded Ordnance (UXO)
Lodge Hill Camp/Training Area, Chattenden

1. Introduction

- 1.1. MACC International was instructed to conduct a visual inspection of all previously identified buildings on the above areas for evidence of UXO and related items.
- 1.2. In the context of this report, the acronym UXO will be used to describe, Live, Expended, Inert or Training items of:
 - 1.2.1. All types of explosive ordnance including landmines
 - 1.2.2. Explosive demolition equipment and accessories
 - 1.2.3. Improvised explosive devices (IEDs), accessories and boobytraps
 - 1.2.4. Small arms ammunition (SAA) and close assault munitions (CAMs)

2. Scope of Inspection

- 2.1. The visual inspection was conducted by two MACC Explosive Ordnance Specialists over the period 8-25 May 2018. The inspection of the buildings was completed to the scope shown in table 1. The inspection of buildings was limited to those listed in table 1, no other buildings were inspected.
- 2.2. During the visual inspection various items of UXO were found, most were found to inert training natures and did not pose a risk, these were removed to secure on-site storage. A number were found to be live training natures (pyrotechnics, blanks), these were rendered inert and debris was removed to the secure on-site storage.

Table 1
Summary of Visual Inspection

References relate to building designation numbers as used on site drawings (Nr 4)
G5060.Pcment.Lodge.Asb.001.02, .03 & .04 (Enclosure 2)

Ref	Description	Remarks	Clear / Not Clear
LZ418	Store	Brick built - Attic not inspected	Clear
LZ416	Troop Shelter	Timber frame, metal clad - Collapsed Derelict	Clear
LZ419	Shelter	Brick built, Sprinkler Control	Clear
LC002	Brick Building	Former EODIC – Sealed safe room not inspected	Clear
LZ345	Brick Building	No access – Not inspected	Not Clear
LC010	Water Tank	Emergency Water Supply – full not inspected	Not Clear
LZ470	Fuel Tank	Outside inspected only	Clear
LZ489	Pillbox	Listed building	Clear
LD035	Diving Pond	Still full – Not inspected	Not Clear
LZ477	Pillbox	Concrete	Clear
LZ486	Office	Temporary Building (Portacabin)	Clear
LZ490	Shelter	Guard hut	Clear
LZ488	Security Office	Temporary Building (Portacabin)	Clear
LZ483	WC	Temporary Building (Portacabin)	Clear
LZ484	Office	Temporary Building (Portacabin)	Clear
LZ485	Shelter	Steel	Clear
LZ480	Hut	Afghan – Partially inspection due to vegetation	Not Clear
LZ481	Office/Store	Temporary Building (Portacabin)	Clear
LZ482	Compound	Transformer	Clear
LZ476	Office/Store	Temporary Building (Portacabin)	Clear
LZ478	Office	Temporary Building (Portacabin)	Clear
LZ479	Hut	Afghan – Partially inspection due to vegetation	Not Clear
LZ473	Cow Shed	Modern built	Clear
LZ474	Hut	Valve control unit	Clear
LZ475	Vehicle	Ground dumped body	Clear
LZ471	Gun Mount	Listed	Clear
LZ472	Gun Mount	Listed	Clear
LZ472.1	Loading Ramp	Concrete	Clear
LZ467.1	Building	Fuel Tank	Clear
LZ468	Office/store	Temporary Building (Portacabin)	Clear
LZ470	Pillbox	Listed building	Clear
LZ465	Store	Brick Gas Bottle Store	Clear
LZ466	Store	Brick	Clear
LZ467	Office/Store	Temporary Building (Portacabin)	Clear
LZ461.1b	Sanger	HD Block	Clear
LZ462	Building Foundation	Concrete Pad	Clear
LZ464	Shed & ISO	Fishing Club Store	Clear
LZ460.1	Store	Valve control	Clear
LZ461	Pillbox	Part of AAA Battery	Clear
LZ461.a	Sanger	HD Block	Clear
LZ459	Building	Part of AAA Battery	Clear
LZ459.1	Pillbox	Listed building	Clear
LZ460	Building	Part of AAA Battery	Clear
LZ457	Cow Shed	Steel Frame	Clear
LZ458	Store	Brick	Clear
LZ458.1	Stable	Brick	Clear
LZ452	Bunker	De-Armer Firing Range	Clear

Ref	Description	Remarks	Clear / Not Clear
LZ452	Office/Store	Temporary Building (Portacabin)	Clear
LZ453	Office/Store	Temporary Building (Portacabin)	Clear
LZ455	Shelter	Brick	Clear
LZ428	Store	Brick	Clear
LZ446	ISO Containers	CS Training – UXO removed	Clear
LZ449	Store	Steel	Clear
LZ424	Store	Concrete	Clear
LZ425	Shelter	Block	Clear
LZ426	Store	Block & Steel	Clear
LZ396	Bridge	Area inspected only, no access to bridge	Clear
LZ421	Store	Brick	Clear
LZ422	Store	Timber	Clear
LZ392	Store	Timber	Clear
LZ393	Store	Timber	Clear
LZ394	Store	Timber	Clear
LZ386	Shelter	Timber	Clear
LZ390	Store	Brick	Clear
LZ391	Store	Brick	Clear
LZ383	Shelter	Timber	Clear
LZ384	Fuel Tanks	Nr4 Above ground, inside of tanks not inspected	Clear
LZ385	Tank	Nr1 Above ground, inside of tanks not inspected	Clear
LZ376	Store	Steel	Clear
LZ379	Compound	Transformers	Clear
LZ382	Store	Steel	Clear
LZ372	Store	Brick & Steel	Clear
LZ373	Store	Brick	Clear
LZ374	Store	Brick	Clear
LZ309	Store	Brick	Clear
LZ370	Store	Brick	Clear
LZ371	Shelter	Timber	Clear
LZ351	Office/Store	Timber	Clear
LZ352	Building	Portaloos	Clear
LZ365	Pump House	2 Storey Brick	Clear
LZ348	Dog Kennel	Nr2	Clear
LZ349	Office/Store	Temporary Building (Portacabin)	Clear
LZ350	Dog Kennel	Nr3	Clear
LZ343	Store	Temporary Building (Portacabin)	Clear
LZ345	Building	Brick rear of LC002 (EODTIC)	Clear
LZ347	Dog Kennel	Nr1	Clear
LZ323	Amphitheatre	Outdoor Seating	Clear
LZ326	Store	Brick	Clear
LZ338	Store	Brick	Clear
LZ309	Office/Store	Temporary Building (Portacabin)	Clear
LZ311	Hard Standing	Gravel	Clear
LZ312	Derelict	Temporary Building (Portacabin)	Clear
LZ297	Pump Room	Brick	Clear
LZ298	North Terrace	Only partially inspected due to unsafe structures. UXO removed	Not Clear
LZ299	Nursery/Offices	Brick	Clear
LZ290	Shelter	Brick (Magazine Area)	Clear
LZ295	Shelter	Brick (Magazine Area)	Clear
LZ296	Shelter	Brick (Magazine Area)	Clear
LZ286	Store	Brick (Magazine Area)	Clear
LZ287	Shelter	Brick (Magazine Area)	Clear
LZ289	Office/Store	Brick (Magazine Area)	Clear
LZ133	Foundation	No remaining structure	Clear
LZ170	Switch Room	Brick	Clear

Ref	Description	Remarks	Clear / Not Clear
LZ285	Central Terrace	Only partially inspected due to unsafe structures. UXO removed	Not Clear
LH141 A	Infilled Pits	Heavily overgrown, only surface inspected.	Not Clear
LH141 B	Infilled Pits	Heavily overgrown, only surface inspected.	Not Clear
LH141 C	Shed	Concrete floor. It is suspected that weapon hides are concealed within the concrete floor.	Not Clear
LH152	Workshop	Brick	Clear
LH135	Shed	Brick, no access available	Not Clear
LH135 A	Vehicle Wash	Roller system	Clear
LH140	WC Block	Brick	Clear
LH125	Office	Brick	Clear
LH125.1	Cage	Nr6 Brick with cage doors	Clear
LH128	Stable	Brick	Clear
LH122	Workshop/Store	Brick	Clear
LH123	Riding School	Brick offices, workshop, classrooms and stables	Clear
LH124	Detection Equipment Training Complex	Brick workshop, classroom and gravel detection area. Gravel area was not inspected and is believed to have UXO buried within.	Not Clear
LH177	Workshop/Store	Brick	Clear
LH118	Workshop/Store	Brick including inspection pit	Clear
LH121	WC Block	Brick	Clear
LH114	Detection Equipment Training Complex	Brick workshop, classroom and indoor detection area. Indoor detection area was not inspected and is believed to have UXO buried within.	Not Clear
LH115 A	Lecture Complex	Brick Classroom and auditorium, inspection abandoned due to unsafe structure	Not Clear
LH116 A	Workshop/Store	Brick	Clear
LH112 E	No 2 & 4 Cupar Street	In use for Police training	Not Clear
LH112 F	No 1 & 3 Cupar Street	In use for Police training	Not Clear
LH115.1	WC Block	Brick	Clear
LH112 B	No 6 & 8 Cupar Street	In use for Police training	Not Clear
LH112 C	Garage	Brick	Clear
LH112 D	Cupar Street	Block of terraced houses, no access No5, In use for Police training	Not Clear
LH111	Confined Space training complex	Inspection incomplete due to poor and restrictive access, UXO removed	Not Clear
LH112	Newry Road	Block of terraced houses, inspection incomplete due to poor and restrictive access UXO removed	Not Clear
LH112 A	No 10 & 12 Cupar Str	In use for Police training	Not Clear
LH106	Store	Steel 'Twynham' type	Clear
LH110 A	Workshop/Store	Brick	Clear
LH107	Workshop/Store	In use by tenant farmer	Clear
LH103	Office	Brick	Clear
LH104	Office & WC	Brick	Clear
LH105	Store	Steel 'Twynham' type	Clear
LH100	Workshop/Store	In use by tenant farmer	Clear
LH101	Switchroom	Brick	Clear
LH102	Guardroom Complex	*Attic not inspected due to access	Clear*
LD024	Store	Brick	Clear
LD036	Office/Classroom	Brick	Clear
LD044	Office/Store	Brick	Clear
LD021	Nissin Hut	Steel UXO removed from surrounding area	Clear
LD022	Nissin Hut	Steel UXO removed from surrounding area	Clear
LD023	Marsden Building	High roof, Steel UXO removed	Clear
LD018	Syndicate Office/Store	Brick *Roof space not inspected due to access	Clear*
LD019	Nissin Hut	Brick & Steel	Clear
LD020	Office/Classroom Block	Brick	Clear

Ref	Description	Remarks	Clear / Not Clear
LD015 A	Syndicate Office/Store	Brick *Roof space not inspected due to access	Clear*
LD016 A	Syndicate Office/Store	Brick *Roof space not inspected due to access	Clear*
LD017	Syndicate Office/Store	Brick *Roof space not inspected due to access	Clear*
LD009	Classroom	Brick	Clear
LD010	Battery Store	Brick	Clear
LD014 A	Syndicate Office/Store	Brick *Roof space not inspected due to access	Clear*
LD006	Armoury	Brick, access not available	Not Clear
LD007	Store	Brick *Roof space not inspected due to access	Clear*
LD008	Rest Rooms	Temporary Building (Portacabin)	Clear
LD002	Office	Temporary Building (Portacabin)	Clear
LD003	Exhibition Hall	Brick *Some roof spaces not inspected due to access	Clear*
LD004	Hut	Wood	Clear
LD001	Guard Office	Brick	Clear
LD013	Office	Temporary Building (Portacabin)	Clear
LC014	Ablution Block	Brick	Clear
LC016	Armoury	Brick	Clear
LC018	Store	Brick	Clear
LC019	Store	Brick	Clear
LC021	Garage	Brick	Clear
LC022	Garage Area	Open sided hard standing	Clear
LC023	Double Garage	Brick	Clear
LC024	Store	Brick	Clear
LC026	Guard Hut	Brick	Clear
LC001	Office Complex	Brick *Roof space not inspected due to access	Clear*
Last Entry			

3. Results of Inspection

- 3.1. The detailed results of the inspection can be found within the EOD Engineers Search Records at enclosure 1.
- 3.2. As per the summary in table 1 the buildings inspected are considered clear of UXO within the limitations of the visual inspection.

4. Recommendations

- 4.1. Further inspections will be required to complete buildings that could not be inspected due to access, safety or ecological restrictions.
- 4.2. It is recommended that follow up inspections are carried out at an appropriate time alternatively, that the demolition / removal of buildings that have not been inspected should be carried out under supervision of a UXO specialist.

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BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 418	Photo Ref No	
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY. NOT ATTIC SPACE.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 416	Photo Ref No	
Description	COLLAPSED TROOP SHELTER		
Findings	VISUALLY SEARCHED ONLY. COLLAPSED BUILDING (METAL CLAD, WOODEN FRAME)		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 419	Photo Ref No	
Description	BRICK SHELTER (SPRINKLER CONTROL)		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	L C 002	Photo Ref No	
Description	EODTIC BUILDING.		
Findings	VISUALLY SEARCHED ONLY. SEARCHED SAFERm <u>NOT</u> SEARCHED. LEADS THROUGH TO LZ 345		
Clear / Not Clear	VISUALLY CLEAR SEE NOTES	IC Name & Signature	Reg.13(1)

Building Ref No	L C 010	Photo Ref No	
Description	EWS (EMERGENCY WATER SUPPLY)		
Findings	NOT SEARCHED. WATER FINISHED OUTSIDE EODTIC (L C 002)		
Clear / Not Clear	NOT CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 470	Photo Ref No	
Description	FUEL TANK FOR BOILER HOUSE		
Findings	VISUALLY SEARCHED ONLY. <u>NOT</u> IN TANK		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	L2 489	Photo Ref No	
Description	Pillbox - Listed Building.		
Findings	VISUALLY SEARCHED ONLY - LISTED BUILDING WITH SECURE MESH. SECURITY GATE WELDED IN.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	L2 477	Photo Ref No	
Description	WW2 Pillbox		
Findings	VISUALLY SEARCHED ONLY - CONCRETE PILLBOX		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LD 035	Photo Ref No	
Description	RN DIVING POND		
Findings	<u>NOT</u> SEARCHED. USED BY RN TO TRAIN ON MUNITIONS UNDERWATER.		
Clear / Not Clear	NOT CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 486	Photo Ref No	4991 LZ 486
Description	OFFICE PORTACABIN		
Findings	VISUALLY CLEARED/SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 490	Photo Ref No	4991 LZ 490
Description	SMALL GARDEN SENTRY HUT		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 488	Photo Ref No	
Description	SECURITY PORTACABIN		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 483	Photo Ref No	4991 483
Description	PORTACABIN LHO		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 484	Photo Ref No	4991 LZ 484
Description	PORTACABIN		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 485	Photo Ref No	4991 LZ 485
Description	STEEL SHELTER		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 480	Photo Ref No	4991 LZ 480
Description	AFGHAN TYPE HUT		
Findings	VISUALLY SEARCHED ONLY - AREA AROUND THIS STRUCTURE HEAVILY OVERGROWN AND REQUIRES FURTHER INVESTIGATION.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 481	Photo Ref No	4991 LZ 481
Description	PORTA CABIN		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 482	Photo Ref No	4991 LZ 482
Description	TRANSFORMER COMPOUND		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 476	Photo Ref No	4991 LZ 476
Description	PORTACABIN		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 478	Photo Ref No	4991 LZ 478
Description	PORTACABIN		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 479	Photo Ref No	4991 LZ 479
Description	AFGHAN TYPE HUT		
Findings	VISUALLY SEARCHED ONLY - FIND OF ONE 105MM SHELL IN HIDE IN FLOOR. NOTE THIS SHELL WAS A BLUE PRACTISE ROUND PAINTED AS A LIVE HE SHELL. AN FEK STICKER NUMBER WAS FOUND.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 473	Photo Ref No	4991 LZ 473
Description	COW SHED		
Findings	VISUAL SEARCH ONLY - MODERN COW SHED		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)


Building Ref No	LZ 474	Photo Ref No	4991 LZ 474
Description	SMALL BRICK VALVE CONTROL HUT		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)


Building Ref No	LZ 475	Photo Ref No	4991 LZ 475
Description	DISMOUNTED TRUCK BODY		
Findings	VISUALLY CLEAR / SEARCHED ONLY - <u>NOTE</u> ANTI / PERS MINE FOUND UNDER DOOR & ROCKEYE SUB-MUNITION FOUND INSIDE. AREA AROUND STRUCTURE WILL REQUIRE FURTHER INVESTIGATION		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

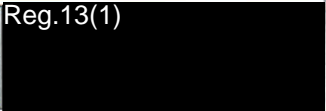
BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 471	Photo Ref No	4991 LZ 471
Description	CONCRETE GUN MOUNT / BACK - LISTED		
Findings	VISUAL SEARCH ONLY - LISTED BUILDING - PART OF WW1 ANTI AIRCRAFT BATTERY. SEARCH WAS CUT FOR SEARCH.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1) 

Building Ref No	LZ 472	Photo Ref No	4991 LZ 472
Description	CONCRETE GUN MOUNT / BACK - LISTED		
Findings	VISUAL SEARCH ONLY - LISTED BUILDING - PART OF WW1 ANTI AIRCRAFT BATTERY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1) 

Building Ref No	LZ 472-1	Photo Ref No	4991 LZ 472-1
Description	CONCRETE LOADING RAMP		
Findings	VISUALLY CLEAR / SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1) 

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 467-1	Photo Ref No	4991 LZ 467-1
Description	BUILDING FUEL TANK		
Findings	VISUALLY SEARCHED ONLY - <u>NOT</u> INSIDE		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 468	Photo Ref No	4991 - LZ 468
Description	PORTA CABIN		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 470	Photo Ref No	4991 LZ 470
Description	PIRE BOX - LISTED BUILDING		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 465	Photo Ref No	4991 LZ 465
Description	GAS BOTTLE STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 466	Photo Ref No	4991 LZ 466
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 467	Photo Ref No	4991 LZ 467
Description	PORTACABIN		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 461-1b	Photo Ref No	4991 LZ 461-1b
Description	BLOCK SANGER - TWO OF TWO		
Findings	VISUALLY SEARCHED ONLY - SECOND OF TWO BLOCK SANGERS IN CLOSE PROXIMITY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 462	Photo Ref No	4991 LZ 462
Description	CONCRETE BASE		
Findings	VISUAL SEARCH ONLY - CONCRETE BASE IN WOODED AREA.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 464	Photo Ref No	4991 LZ 464
Description	SHED - FISHING LAKE STORE AND ISO-CONTAINER		
Findings	VISUALLY SEARCHED ONLY - SHED USED AT FISHING LAKE AS STORE		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 460-1	Photo Ref No	4991 LZ 460-1
Description	BRICK STONE - SMALL - VALVE CONTROL		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 461	Photo Ref No	4991 LZ 461
Description	PINK BOX - PART OF WWI ANTI AIRCRAFT		
Findings	VISUALLY SEARCHED ONLY - SCHEDULED MONUMENT. WWI ANTI AIRCRAFT BATTERY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 461a	Photo Ref No	4991-LZ 461-1a
Description	BLOCK SANGER - ONE OF TWO		
Findings	VISUALLY SEARCHED ONLY. ONE OF TWO SANGERS IN CLOSE PROXIMITY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 459	Photo Ref No	4991 LZ 459
Description	BRICK BUILDING - ANTI AIRCRAFT BATTERY		
Findings	VISUALLY SEARCHED ONLY - PART OF SCHEDULED MONUMENT WW1 ANTI AIRCRAFT		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 459-1	Photo Ref No	4991-LZ459-1
Description	SECURITY PINK BOX - LISTED MONUMENT		
Findings	VISUAL SEARCH ONLY - INTERNAL MESH SECURITY BARRIER - SEE PICS. LOTS RUBBISH INSIDE.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 444 460	Photo Ref No	4991 LZ 460
Description	BRICK BUILDING - WW1 ANTI AIRCRAFT BATTERY		
Findings	VISUALLY SEARCHED ONLY - PART OF WW1 ANTI AIRCRAFT BATTERY - SCHEDULED MONUMENT		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 457	Photo Ref No	4991 LZ 457
Description	STEEL FRAME COW SHED		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 458	Photo Ref No	4991 LZ 458
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 458-1	Photo Ref No	4991 LZ 458-1
Description	STABLE BUILDING		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	L2 452	Photo Ref No	4991 L2 452
Description	CONCRETE SHELTER USED TO FIRE DE-ARMER		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	L2 453	Photo Ref No	4991 L2 453
Description	PORTAL CABIN STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	L2 455	Photo Ref No	4991 L2 455
Description	SMALL BRICK SHELTER		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 428	Photo Ref No	4991 LZ 428
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 446	Photo Ref No	4991 LZ 446
Description	TUNNEL TRAINING AREA.		
Findings	CONSISTED OF 150 CONTAINERS. COMBINATION SWITCHES FOUND SET UP INSIDE. VISUALLY SEARCHED ONLY. NOT SAND FLOOR.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 449	Photo Ref No	4991 LZ 449.
Description	STEEL BUILT STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 424	Photo Ref No	4991 LZ 424
Description	CONCRETE BUILT STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 425	Photo Ref No	4991 LZ 425
Description	BLOCK BUILT SHELTER		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 426	Photo Ref No	4991 LZ 426
Description	BLOCK & STEEL STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 396	Photo Ref No	4991 LZ 396
Description	TRAINING BRIDGE		
Findings	VISUALLY SEARCHED ONLY - ACCESS ONTO BRIDGE NOT AVAILABLE		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 421	Photo Ref No	4991 LZ 421
Description	BRICK SHELTER		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 422	Photo Ref No	4991 LZ 422
Description	WOODEN STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 392	Photo Ref No	4991 LZ 392
Description	WOODEN STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 393	Photo Ref No	4991 LZ 393
Description	WOODEN STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 394	Photo Ref No	4991 LZ 394
Description	WOODEN STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 386	Photo Ref No	4991 LZ 386
Description	WOODEN TROOP SHELTER		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 390	Photo Ref No	4991 LZ 390
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY. PARTIAL ROOF COLLAPSE TO ONE HALF.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 391	Photo Ref No	4991 LZ 391
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 383	Photo Ref No	4991 LZ 383
Description	TROOP SHELTER		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 384	Photo Ref No	4991 LZ 384
Description	SET OF 4 ABOVE GROUND FUEL TANKS		
Findings	VISUALLY SEARCHED AROUND TANKS - <u>NOT</u> INSIDE		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 385	Photo Ref No	4991 LZ 385
Description	LARGE BULK LIQUID STORAGE TANK. USED FOR WORKING IN CONFINED SPACE TRG.		
Findings	VISUAL SEARCH OF <u>OUTSIDE</u> ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 376	Photo Ref No	4991 LZ 376
Description	METAL STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 379	Photo Ref No	4991 LZ 379
Description	TRANSFORMER COMPOUND		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 382	Photo Ref No	4991 LZ 382
Description	METAL STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 372	Photo Ref No	4991 LZ 372
Description	BRICK & TIMBER STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 373	Photo Ref No	4991 LZ 373
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 374	Photo Ref No	4991 LZ 374
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 369	Photo Ref No	4991 LZ 369
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 370	Photo Ref No	4991 LZ 370
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 371	Photo Ref No	4991 LZ 371
Description	TREAD SHELTER		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 351	Photo Ref No	4991 LZ351
Description	TIMBER STORE/OFFICE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 352	Photo Ref No	4991 LZ 352
Description	PORTALOO BUILDING		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 365	Photo Ref No	4991 LZ365
Description	2 STOREY BRICK PUMP HOUSE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 348	Photo Ref No	4991 LZ 348
Description	DOG KENNELS x2		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 349	Photo Ref No	4991 LZ 349
Description	PORTAL CABIN		
Findings	VISUALLY CLEARED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 350	Photo Ref No	4991 LZ 350
Description	DOG KENNELS x3		
Findings	VISUALLY SEARCHED		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 343	Photo Ref No	4991 LZ 343
Description	PORTACABIN STORE - EDDTIC		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 345	Photo Ref No	4991 LZ 345
Description	BRIEK BUILDING - REAR OF LC002 EDDTIC		
Findings	VISUALLY SEARCHED ONLY. ACCESS GAINED THROUGH LC002 EDDTIC.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 347	Photo Ref No	4991 LZ 347
Description	DOG KENNEL		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 323	Photo Ref No	4991 LZ 323
Description	OUTDOOR SEATING AREA.		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 326	Photo Ref No	4991 LZ 326
Description	BRICK STORE - REAR OF KITCHEN		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 338	Photo Ref No	4991 LZ 338
Description	BRICK STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 309	Photo Ref No	4991 LZ 309
Description	PORTACABIN - RN AREA		
Findings	VISUALLY CLEAR		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 311	Photo Ref No	4991 LZ 311
Description	COVERED GRAVEL AREA - OPEN SIDED RN AREA		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 312	Photo Ref No	4991 LZ 312
Description	COLLAPSED PORTACABIN - BOSNIA TRENCH AREA.		
Findings	VISUAL SEARCH AROUND STRUCTURE. UNABLE TO CHECK IN OR UNDER. LEADS ONTO BOSNIA STYLE TRENCH TRAINING AREA. LIMITATIONS DUE TO ECOLOGY.		
Clear / Not Clear	VISUALLY CLEAR SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 297	Photo Ref No	4991 LZ 297
Description	BRICK PUMP ROOM		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 298	Photo Ref No	4991 LZ 298
Description	NORTH TERRACE - ROW OF TERRACE BUILDINGS USED FOR DERELICT BUILDING CLEARANCE/SEARCH		
Findings	NUMEROUS FINDS IN BUILDINGS. <u>NOT</u> COMPLETELY SEARCHED DUE TO UNSAFE STRUCTURE IN PARTS. VISUALLY SEARCHED. NO FIXED FLOOR-BOARDS REMOVED. ANY WORKS IN THIS STRUCTURE WILL NEED MONITORING/WATCHING BRIEF. NO ATTIC SPACES ENTERED.		
Clear / Not Clear	SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 299	Photo Ref No	4991 LZ 299
Description	BRICK KINDERGARTEN BUILDING - OFFICES		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 290	Photo Ref No	4991 LZ 290
Description	BRICK SHELTER - MAGAZINE AREA		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 295	Photo Ref No	4991 LZ 295
Description	BRICK SHELTER - MAGAZINE AREA		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 296	Photo Ref No	4991 LZ 296
Description	BRICK SHELTER - MAGAZINE AREA		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 286	Photo Ref No	4991 LZ 286
Description	BRICK STORE - MAGAZINE AREA		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 287	Photo Ref No	4991 LZ 287
Description	BRICK SHED - MAGAZINE AREA		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 289	Photo Ref No	4991 LZ 289
Description	SMALL BRICK OFFICE & TOILET - MAGAZINE AREA		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LZ 133	Photo Ref No	4991 LZ 133
Description	STRUCTURE REMOVED - ONLY CONCRETE PAD LEFT		
Findings	NO STRUCTURE FOUND		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 170	Photo Ref No	4991 LZ 170
Description	BRICK BUILDING - SWITCH ROOM		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LZ 285	Photo Ref No	4991 LZ 285
Description	CENTRAL TERRACE - ROW OF TERRACE HOUSES USED FOR DEZELT BUILDING CLEARANCE ETC		
Findings	NUMEROUS FINDS IN BUILDINGS. <u>NOT</u> COMPLETELY SEARCHED DUE TO UNSAFE STRUCTURES IN PARTS. VISUALLY SEARCHED. NO FIXED FLOORBOARDS REMOVED. ANY WORKS IN THIS STRUCTURE WILL NEED MONITORING/WATCHING BRIEF. NO ATTIC SPACES ENTERED		
Clear / Not Clear	SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH 141 A & B	Photo Ref No	
Description	CIND PITS FILLED WITH EARTH		
Findings	THERE ARE 3 CIND PITS - HEAVILY OVERGROWN VISUALLY SEARCHED ONLY. WILL NEED WATCHING BRIEF WHEN STRIPPED OUT. MAY CONTAIN DEEP BURIED ITEMS.		
Clear / Not Clear	VISUALLY CLEAR SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

Building Ref No	LH 141C	Photo Ref No	
Description	STEEL SITED BUILDING WITH CONCRETE FLOOR.		
Findings	BUILDING WAS USED TO TEST EQUIPMENTS. MAY HAVE "HIDES" CONSTRUCTED IN CONCRETE FLOORS. VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

Building Ref No	LH 152	Photo Ref No	
Description	BRICK WORKSHOP STORE		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH 135	Photo Ref No	4991 LH135
Description	SMALL BRICK STRUCTURE		
Findings	NO ENTRY AVAILABLE AT TIME		
Clear / Not Clear	NOT CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH 135A	Photo Ref No	4991 LH135A
Description	VEHICLE WASH ROLLER SYSTEM		
Findings	VISUALLY INSPECTED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH 140	Photo Ref No	4991 LH 140
Description	TOILET BLOCK		
Findings	VISUAL INSPECTION ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH125	Photo Ref No	4991 LH125
Description	BRICK OFFICE BUILDING		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH125-1	Photo Ref No	4991 LH125-1
Description	SIX VERY SMALL BRICK STORES. GATE DOORS		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH128	Photo Ref No	4991 LH128
Description	SINGLE BRICK STABLE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH122	Photo Ref No	4991 LH122
Description	BRICK WORKSHOP / STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH123	Photo Ref No	4991 LH123
Description	BRICK WORKSHOP BUILDING - CLASSROOMS, OFFICES & STABLES		
Findings	VISUALLY SEARCHED ONLY - NOT ANTSUSPENDED CEILING		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH124	Photo Ref No	4991 LH124
Description	BRICK WORKSHOP / STORE. CLASSROOMS AND OFFICES		
Findings	VISUALLY SEARCHED ONLY - <u>NOT</u> THE LARGE GRAVEL FILLED DETECTION AREA. THIS WILL NEED EQUIPMENT SEARCHING OR WATCHING BRIEF WHEN STRIPPING OUT, ESPECIALLY IF GRAVELS TO BE REUSED.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH 117	Photo Ref No	4991 LH 117
Description	BRICK WORKSHOP/STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH 118	Photo Ref No	4991 LH 118
Description	BRICK WORKSHOP WITH OFFICE & INSULATION PIT		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH 121	Photo Ref No	4991 LH 121
Description	BRICK TOILET BLOCK		
Findings	VISUALLY INSPECTED		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH 114	Photo Ref No	4991 LH 114
Description	BRICK WORKSHOP BUILDING. GARAGE METAL DETECTOR TRAINING AREA INSIDE		
Findings	VISUAL SEARCH ONLY. GARAGE TRAINING AREA <u>NOT</u> EQUIPMENT SEARCHED.		
Clear / Not Clear	VISUALLY CLEAR SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

Building Ref No	LH115A	Photo Ref No	4991 LH115A
Description	BRICK WORKSHOP BUILDING. CONTAINS CLASSROOMS AND AUDITORIUM AREA.		
Findings	VISUAL SEARCH ONLY BUT NOT COMPLETE DUE TO BUILDING BEING <u>UNSAFE</u> STRUCTUALLY		
Clear / Not Clear	NOT CLEAR. SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

Building Ref No	LH116A	Photo Ref No	4991 LH116A
Description	BRICK WORKSHOP / STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH 112 E	Photo Ref No	
Description	NO 2 & 4 CLYMAR ST. SEMI DETACHED HOUSES		
Findings	VISUALLY SEARCHED ONLY. USED BY POLICE FOR TRAINING. WILL NEED SEARCHING WHEN USE BY POLICE HAS ENDED.		
Clear / Not Clear	NOT CLEAR. SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

Building Ref No	LH 112 F	Photo Ref No	
Description	NO 1 & 3 CLYMAR ST. SEMI DETACHED HOUSES		
Findings	VISUAL SEARCH ONLY. USED BY POLICE FOR TRAINING. WILL NEED SEARCHING WHEN USE BY POLICE HAS ENDED.		
Clear / Not Clear	NOT CLEAR. SEE NOTES ABOVE.	IC Name & Signature	Reg.13(1)

Building Ref No	LH 115-1	Photo Ref No	4991 LH115-1
Description	TOILET BLOCK		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH112B	Photo Ref No	4991 LH112B
Description	N°6 & 8 CLIPAR ST SEMI DETACHED HOUSES		
Findings	VISUALLY SEARCHED ONLY. USED BY POLICE TRAINING. WILL NEED SEARCHING WHEN USE BY POLICE HAS ENDED.		
Clear / Not Clear	NOT CLEAR. SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

Building Ref No	LH112C	Photo Ref No	4991 LH112C
Description	GARAGE BLOCK.		
Findings	VISUALLY SEARCHED ONLY.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH112D	Photo Ref No	
Description	BLOCK OF TERRACE HOUSES - CLIPAR ST.		
Findings	VISUALLY SEARCHED ONLY. USED BY POLICE FOR TRAINING. WILL NEED SEARCHING WHEN USE BY POLICE HAS ENDED. NOTE: NO ACCESS AT TIME TO N°5 - ARMOURY TYPE SECURITY DOORS FRONT AND BACK.		
Clear / Not Clear	NOT CLEAR. SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH 111	Photo Ref No	4991 LH 111
Description	BACK WORKSHOP BUILDING. TWO TRAINING HOUSES AND UNFINISHED SPACE TRAINING AREA CONSTRUCTED INSIDE.		
Findings	VISUALLY SEARCHED ONLY. - NOT ALL AREAS UNDER TWO HOUSE FLOORS SEARCHED. POOR ACCESS BUT NUMEROUS IED & BOOBYTRAP ITEMS FOUND. FURTHER WORKS REQUIRED TO ACCESS UNDER FLOOR AREA. <u>POSS WATCHING BRIEF AT A LATER STAGE</u>		
Clear / Not Clear	SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

Building Ref No	LH 112	Photo Ref No	4991 LH 112
Description	NEWRY ROAD TERRACE		
Findings	VISUALLY SEARCHED ONLY. A NUMBER OF IED PARTS WERE FOUND INCLUDING MILAD SWITCHES STILL IN PLACE. <u>TWO</u> ITEMS WERE FOUND TO <u>LIVE</u> - 1x SOUND UNIT & 1x SMOKE-SIM EXPLORATION <u>POSS WATCHING BRIEF AT A LATER STAGE</u>		
Clear / Not Clear	* VISUALLY CLEAR BUT SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

Building Ref No	LH 112A	Photo Ref No	4991 LH 112A
Description	NO 10 & 12 CLAPAR ST. SEMI DETACHED HOUSES.		
Findings	VISUALLY SEARCHED. USED BY POLICE FOR TRAINING. WILL NEED SEARCHING WHEN USE BY POLICE HAS ENDED.		
Clear / Not Clear	NOT CLEAR. SEE NOTES ABOVE	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH 106	Photo Ref No	4991 LH 106
Description	STEEL FRAME TWYNHAM HLT STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH 110A	Photo Ref No	4991 LH 110A
Description	BRICK WORKSHOP STORE BUILDING		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH 107	Photo Ref No	
Description	BRICK WORKSHOP STORE BUILDING - NOW FARM STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH103	Photo Ref No	4991 LH103
Description	OFFICE BUILDING		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH104	Photo Ref No	4991 LH104
Description	BRICK OFFICE & TOILET BLOCK.		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH105	Photo Ref No	4991 LH105
Description	STEEL TWYNHAM HULT STORE		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LH 100	Photo Ref No	4991 LH 100
Description	DOUBLE WORKSHOP BUILDING - NOW FARM STORE		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH 101	Photo Ref No	4991 LH 101
Description	BACK BUILT ELECTRICAL SWITCHROOM		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LH 102	Photo Ref No	4991 LH 102
Description	MAIN GUARD ROOM / OFFICE FOR SITE		
Findings	VISUALLY SEARCHED ONLY - <u>NOT</u> ATTIC SPACE.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LDD24	Photo Ref No	4991 LDD24
Description	BRICK STORE BUILDINGS		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LDD36	Photo Ref No	4991 LDD36
Description	RN OFFICE & CLASSROOM BUILDING		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LDD44	Photo Ref No	4991 LDD44
Description	OFFICE & STORE BUILDING		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CHECKED	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LD 021	Photo Ref No	4991 LD 021
Description	BLOCK 2 STEEL NISSAN HUT		
Findings	VISUALLY SEARCHED ONLY - NUMEROUS ITEMS FOUND IN WOODED AREA ADJASCENT		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LD 022	Photo Ref No	4991 LD 022
Description	BLOCK 2 STEEL NISSAN HUT		
Findings	VISUALLY SEARCHED ONLY - NUMEROUS ITEMS FOUND IN WOODED AREA ADJASCENT		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LD 023	Photo Ref No	4991 LD 023
Description	STEEL HIGH ROOF MARSDEN SHELTER/BUILDING		
Findings	VISUALLY SEARCHED ONLY. PRIMED COMINATION SWITCH FOUND SECURED TO UPRIGHT & H & WEAPON PARTS.		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LD018	Photo Ref No	4991 LD018
Description	BRICK SYNDICATE ROOM & STORE		
Findings	VISUALLY SEARCHED - NOT SUSPENDED CEILINGS		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LD019	Photo Ref No	4991 LD019
Description	BLOCK & STEEL NISSAN HUT		
Findings	VISUAL SEARCH ONLY - NUMEROUS ITEMS FOUND IN WOODLAND AROUND THIS STORE		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LD020	Photo Ref No	4991 LD020
Description	BRICK CLASSROOM & OFFICE BLOCK		
Findings	VISUALLY CHECKED ONLY. NUMEROUS LED PARTS FOUND IN WOODED AREA ADJASLENT		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LDDISA	Photo Ref No	4991 LDDISA
Description	BRICK SYNDICATE ROOM & STORE		
Findings	VISUALLY CHECKED - NOT SUSPENDED CEILING		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LDDIBA	Photo Ref No	4991 LDDIBA
Description	BRICK SYNDICATE ROOM & STORE		
Findings	VISUALLY CHECKED - NOT SUSPENDED CEILING		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LDDIFA	Photo Ref No	4991 LDDIFA
Description	BRICK SYNDICATE ROOM & STORE		
Findings	VISUALLY SEARCHED - NOT SUSPENDED CEILING		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	L0009	Photo Ref No	4991 L0009
Description	DEONS CLASSROOM BUILDING		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	L0010	Photo Ref No	4991 L0010
Description	BRICK BATTERY STORE/CHARGING Rm		
Findings	VISUALLY SEARCHED		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	L0014A	Photo Ref No	4991 L0014A
Description	BRICK SYNDICATE ROOM & STORE		
Findings	VISUALLY CHECKED - NOT SUSPENDED CEILING		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LD006	Photo Ref No	4991 LD006
Description	ARMOURY TYPE BUILDING		
Findings	<u>NOT CHECKED</u> . UNABLE TO CUT OPEN DOORS AT TIME OF WORKS.		
Clear / Not Clear	<u>NOT CHECKED</u>	IC Name & Signature	Reg.13(1)

Building Ref No	LD007	Photo Ref No	4991 LD007
Description	DROPS STORES BUILDING		
Findings	VISUAL SEARCH ONLY. SUSPENDED CEILING COLLAPSING AND NOT CHECKED		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LD008	Photo Ref No	4991 LD008
Description	PORTALABIN REST ROOMS		
Findings	VISUALLY SEARCHED ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	L0002	Photo Ref No	4991 L0002
Description	OFFICE PORTACABIN		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	L0003	Photo Ref No	4991 L0003
Description	DRODS EXHIBITION HALL		
Findings	VISUALLY SEARCHED. SOME LOW CEILINGS UNABLE TO SEARCH		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	L0004	Photo Ref No	4991 L0004
Description	WOODEN HUT		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD
Project 4991 Lodge Hill

Building Ref No	LC001	Photo Ref No	4991 LC001
Description	DEODS GUARD HUT		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LC013	Photo Ref No	4991 LC013
Description	OFFICE PORTACABIN		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LC014	Photo Ref No	4991 LC014
Description	SHOWER & TOILET BLOCK		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LCD16	Photo Ref No	4991 LCD16
Description	NSC ARMOURY BUILDING		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LCD18	Photo Ref No	4991 LCD18
Description	SMALL BRICK STORE		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LCD19	Photo Ref No	4991 LCD19
Description	SMALL BRICK STORE		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

Building Ref No	LC021	Photo Ref No	4991 LC021
Description	BRICK GARAGE BUILDING		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LC022	Photo Ref No	4991 LC022 LC023
Description	OPEN SIDED GARAGE AREA.		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LC023	Photo Ref No	4991 LC022 LC023
Description	DOUBLE FRONTED BRICK GARAGE BUILDING		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

BUILDING SEARCH RECORD

Project 4991 Lodge Hill

Page _____ of _____

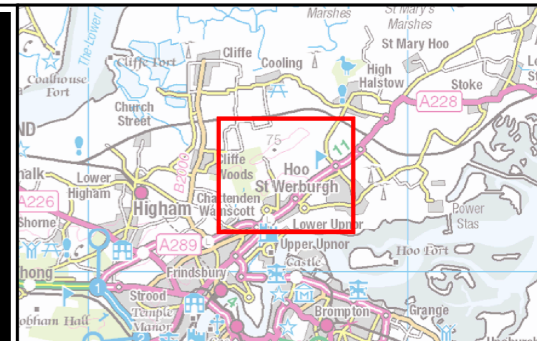
Building Ref No	LC024	Photo Ref No	4991 LC024
Description	SMALL BRICK STORE		
Findings	VISUAL SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LC026	Photo Ref No	4991 LC026
Description	DEODS GUARD HUT		
Findings	VISUALLY CLEAR / SEARCH ONLY		
Clear / Not Clear	VISUALLY CLEAR	IC Name & Signature	Reg.13(1)

Building Ref No	LD001	Photo Ref No	4991 LD001
Description	DEODS MAIN OFFICE COMPLEX		
Findings	VISUAL SEARCH ONLY - SUSPENDED CEILING NOT CHECKED		
Clear / Not Clear	VISUALLY ONLY	IC Name & Signature	Reg.13(1)

MACC





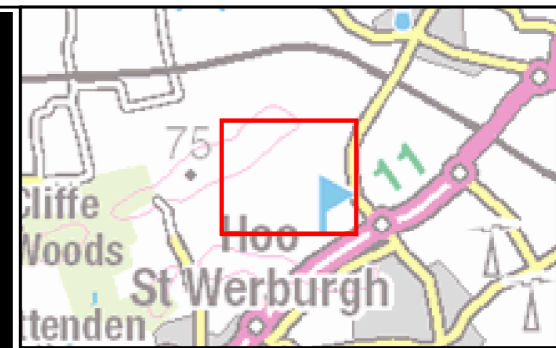
- Key**
- Site Boundary
 - Building or Structure

Revision:	Drawn:	Checked:	Approved:	Date:

THE ENVIRONMENT PARTNERSHIP
 Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
 Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

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Project: Lodge Hill Asbestos Survey Tender	
Title: Building Location Plan - Overview	
Drawing No: G5060.Pcment.LodgeAsb.001.01	
Scale: 1:12,500 @ A3	Date: 09/04/2018
Drawn: R	Checked: R Approved: R



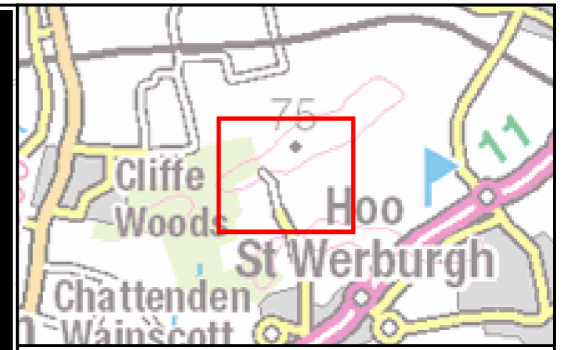
- Key**
- Site Boundary
 - Building or Structure

Revision:	Drawn:	Checked:	Approved:	Date:

THE ENVIRONMENT PARTNERSHIP
Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
 Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

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Project: Lodge Hill Asbestos Survey Tender	
Title: Building Location Plan - North	
Drawing No: G5060.Pcment.LodgeAsb.001.02	
Scale: 1:4,000 @ A3	Date: 09/04/2018
Drawn: R	Checked: R Approved: R



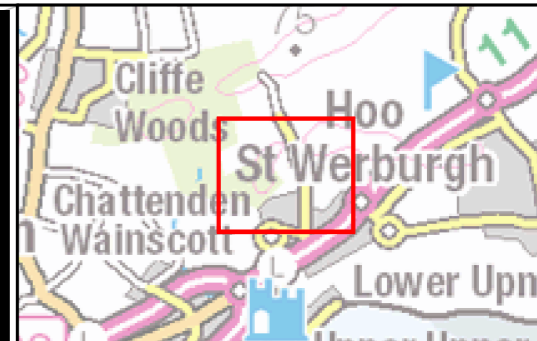
- Key**
- Site Boundary
 - Building or Structure

Revision:	Drawn:	Checked:	Approved:	Date:



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Project: Lodge Hill Asbestos Survey Tender	
Title: Building Location Plan - Central	
Drawing No: G5060.Pcment.LodgeAsb.001.03	
Scale: 1:4,000 @ A3	Date: 09/04/2018
Drawn: R	Checked: R Approved: R




Key

-  Site Boundary
-  Building or Structure

Revision:	Drawn:	Checked:	Approved:	Date:

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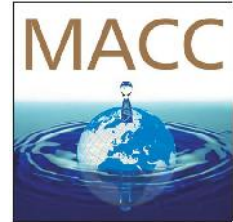
Project: Lodge Hill Asbestos Survey Tender

Title: Building Location Plan - South

Drawing No: G5060.Pcment.LodgeAsb.001.04

Scale: 1:4,000 @ A3 Date: 09/04/2018

Drawn: 	Checked: 	Approved: 
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MACC International Ltd, Camilla Court, Nacton, Ipswich, Suffolk, IP10 0EU, UK

Reg.13(1)

Your Reference:

Reg.13(1)

Our Reference: KW/4991/60

Homes England
St George's House
Kingsway
Team Valley
Gateshead, NE11 0NA

Date: 29/08/2018

Email: Reg.13(1) @homesengland.gov.uk

NON-INTRUSIVE UNEXPLODED ORDNANCE (UXO) SURVEY REPORT
LODGE HILL FOOTBALL FIELD

1. Introduction

- 1.1 MACC International Limited was commissioned by Homes England to conduct a Non-Intrusive UXO Survey of an area of land within their Lodge Hill site, prior to intrusive works being carried out.
- 1.2 The Non-Intrusive Survey was conducted in accordance with the current industry best practices and previously submitted MACC RAMS accepted by the client.
- 1.3 The Non-Intrusive Survey was completed in one day the 20th August 2018 and consisted of specialist magnetometer survey (Ebinger 6 Channel Towed Array fitted with GPS Tracking) of all available areas identified by the client (see Earth Map Supplement).

2. Survey Conduct and Results

- 2.1 The work was conducted in accordance with the RAMS submitted to and accepted by the client prior to work commencing. The scope of work was completed without incident or accident and with minimal environmental impact.
- 2.2 The data gathered was of a high quality and gave clear indications of discreet anomalies with the survey footprint.

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Registered in England: No. 3014471



2.3 On analysis of the data, one hundred and thirty-three anomalies were initially identified within the survey footprint.

3. Limitations

3.1 Large static ferrous objects (i.e. fence lines, gates, machinery and services) within the survey footprint may obscure anomalies under or in close vicinity causing them to remain undetected.

4. Conclusion

4.1 The project site was compatible with the equipment used by MACC International Limited.

4.2 Once all obvious items of ferromagnetic influence had been removed from the survey data, there were found to be ninety anomalies of a depth and size that warrant further investigation (see Anomaly List Supplement).

5. Recommendations

5.1 It is recommended that an anomaly investigation is carried out to ascertain the nature of the anomalies detected and determine the level of risk posed by UXO to future intrusive ground works.

5.2 Prior to an anomaly investigation and clearance report being issued, it is recommended that all intrusive works within the survey footprint are monitored by a suitably qualified Explosive Ordnance Supervisor.

Reg.13(1)

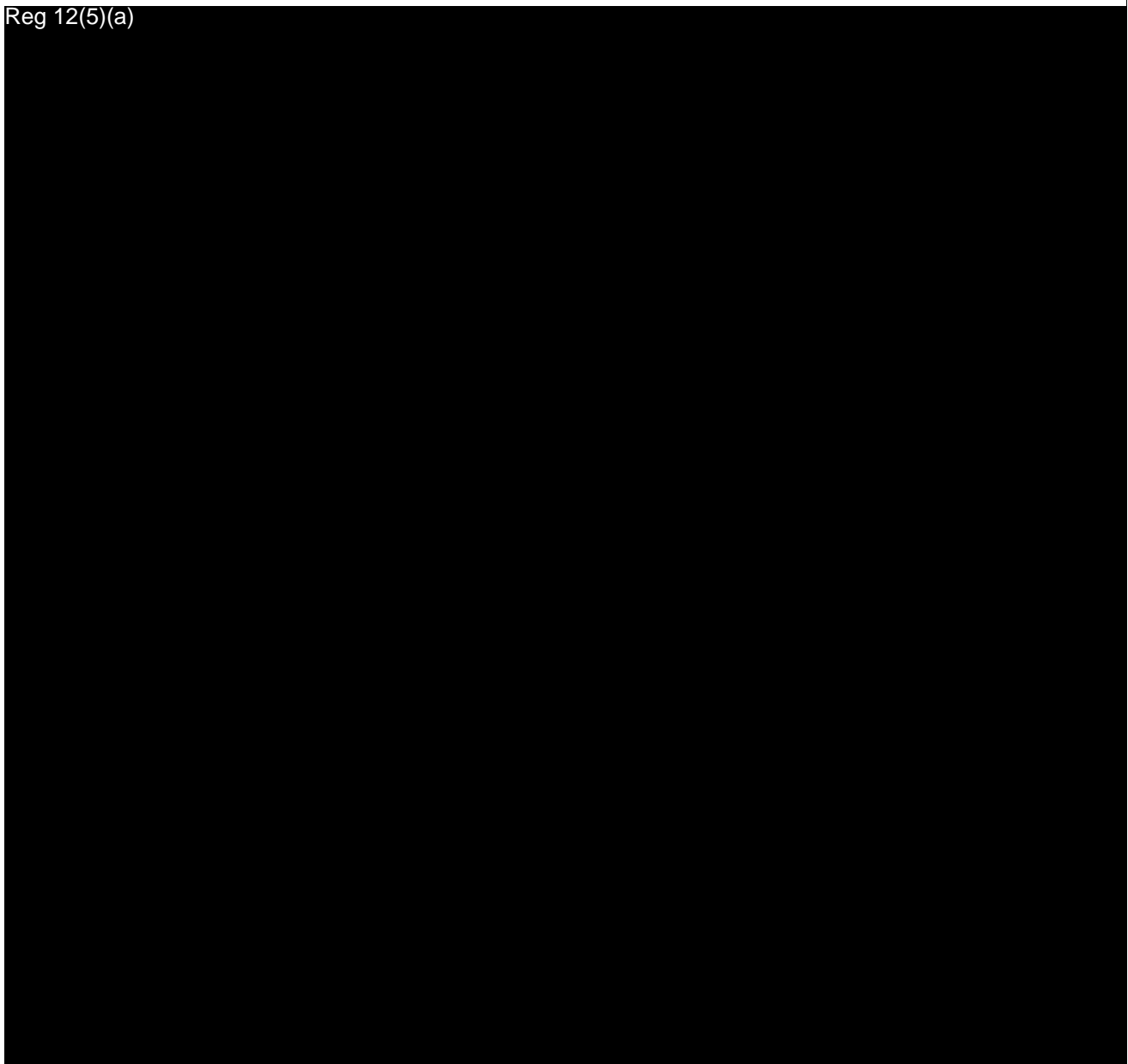
Reg.13(1)

Reg.13(1)

MACC International Ltd


Earth Map Data Overlay Supplement

Reg 12(5)(a)



Anomaly Map Supplement

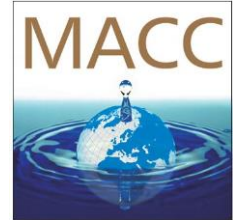
Reg 12(5)(a)



Anomaly List Supplement

Non-Intrusive UXO Survey			Lodge Hill Football Field Anomaly List		
OSGB 1936					
ID	Easting (m)	Northing (m)	Depth calc (m)	Vol mag (I)	Remarks
1	Reg 12(5)(a)	172,769.91	0.6	58.877	
2		172,793.23	0.8	2.503	
6		172,660.62	0.8	25.021	
7		172,663.52	0.5	0.627	
8		172,633.72	0.7	5.833	
9		172,633.85	0.3	0.626	
11		172,635.62	0.6	1.130	
12		172,651.46	0.3	3.352	
13		172,662.36	0.3	57.367	
14		172,669.95	0.3	1.270	
15		172,678.83	0.4	1.306	
17		172,722.51	0.6	1.171	
18		172,734.11	0.6	1.889	
19		172,752.70	1.0	8.020	
20		172,738.80	0.6	4.397	
21		172,648.80	0.5	14.548	
22		172,676.43	0.6	0.795	
25		172,690.82	0.3	0.505	
26		172,745.49	0.6	18.331	
27		172,648.80	0.5	14.553	
30		172,800.40	0.6	1.048	
32		172,798.22	1.3	43.387	
38		172,674.00	0.7	1.974	
39		172,635.92	0.6	1.563	
40		172,655.42	0.8	45.379	
43		172,701.04	0.5	2.697	
44		172,771.10	2.2	706.050	
46		172,718.48	0.5	1.190	
47		172,786.20	2.1	937.651	
48		172,659.53	0.4	0.435	
50		172,768.80	1.5	6.716	
51		172,647.66	0.7	13.201	
53		172,651.27	0.8	49.533	
54		172,754.22	0.5	3.314	
55		172,724.58	0.7	1.292	
56		172,686.81	0.4	0.795	
57		172,741.60	0.7	25.890	
58		172,660.72	0.5	1.495	
59		172,696.80	0.7	3.796	
61		172,702.10	0.7	1.916	
62		172,760.03	0.5	0.979	
65		172,720.06	0.9	6.280	
66		172,692.32	0.5	0.825	
67		172,695.00	0.6	8.246	
68		172,656.90	0.2	2.252	
69		172,669.33	0.6	1.154	
71		172,741.40	0.7	27.065	
72		172,713.72	0.6	19.074	

73	Reg 12(5)(a)	172,693.90	0.2	0.558	
74		172,708.04	0.7	16.024	
75		172,713.28	0.4	5.848	
77		172,770.40	0.5	1.690	
78		172,719.48	0.4	1.111	
79		172,691.31	0.5	5.784	
80		172,682.90	0.5	0.888	
81		172,668.28	0.5	12.779	
82		172,669.11	0.4	0.626	
83		172,695.09	0.5	1.036	
84		172,650.55	0.5	1.990	
85		172,668.30	0.6	14.597	
86		172,681.06	0.5	1.467	
87		172,649.22	0.3	0.552	
88		172,705.68	0.4	0.873	
95		172,714.33	0.6	2.063	
96		172,722.76	0.9	5.571	
97		172,693.74	0.7	1.589	
98		172,709.82	0.7	1.787	
99		172,714.13	0.6	3.929	
100		172,707.43	1.1	6.438	
101		172,687.21	0.4	0.752	
102		172,685.79	0.5	0.502	
103		172,685.40	1.0	4.384	
104		172,696.91	0.6	1.029	
105		172,698.09	0.6	0.728	
106		172,690.52	1.0	2.488	
107		172,705.29	1.0	2.988	
108		172,687.37	0.9	3.911	
109		172,661.96	0.6	5.411	
110		172,668.10	1.0	15.932	
112		172,735.90	0.7	38.692	
117		172,718.02	0.3	0.295	
120		172,638.05	0.5	0.486	
123		172,761.62	0.6	0.924	
124		172,774.82	0.5	0.711	
125		172,649.45	0.5	0.823	
129		172,722.06	0.5	0.824	
130		172,682.10	0.6	1.814	
131		172,694.83	0.6	1.221	
132		172,687.98	1.3	4.915	
133		172,661.02	0.6	1.284	



MACC International Ltd, Camilla Court, Nacton, Ipswich, Suffolk, IP10 0EU, UK

Reg.13(1)

Your Reference:

Reg.13(1)

Our Reference: KW/4991/85a

Homes England
St George's House
Kingsway
Team Valley
Gateshead, NE11 0NA

Date: 21/02/2019

Email: Reg.13(1)@homesengland.gov.uk

NON-INTRUSIVE UNEXPLODED ORDNANCE (UXO) SURVEY REPORT
AA SITE BUILDINGS LODGE HILL

1. Introduction

- 1.1 MACC International Limited was commissioned by Homes England to conduct a Non-Intrusive UXO Survey of an area of land within their Anti-Aircraft Gun site in Lodge Hill, prior to archaeological investigations.
- 1.2 The Non-Intrusive Survey was conducted in accordance with the current industry best practices and previously submitted MACC RAMS accepted by the client.
- 1.3 The Non-Intrusive Survey was completed in one day on the 13th February 2019 and consisted of specialist magnetometer survey (Ebinger M120L-2 Single Channel survey system fitted with GPS Tracking) of all available areas identified by the client (see Earth Map Supplement).

2. Survey Conduct and Results

- 2.1 The work was conducted in accordance with the RAMS submitted to and accepted by the client prior to work commencing. The scope of work was completed without incident or accident and with minimal environmental impact.
- 2.2 All accessible areas were surveyed to a satisfactory level achieving a probe spacing not exceeding 500mm.

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2.3 Analysis of the survey data found the site to be grossly contaminated with FE anomalies. Seventy-six (nr76) anomalies were identified ranging in depth and size (see Anomaly List Supplement).

3. Limitations


3.1 Large static ferrous objects (i.e. fence lines, gates, machinery and services) within the survey footprint may obscure anomalies under or in close vicinity causing them to remain undetected.

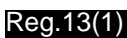
4. Conclusion

4.1 The number and density of the anomalies was such that meaningful data on discreet FE objects could not be obtained, consequently their nature remains undetermined.

5. Recommendations

5.1 Due to the findings covered previously; it is recommended that all intrusive works within the survey footprint are monitored by a suitably qualified explosive ordnance engineer.

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MACC International Ltd


Earth Map Data Overlay Supplement

Reg 12(5)(a)



Anomaly Map Supplement

Reg 12(5)(a)



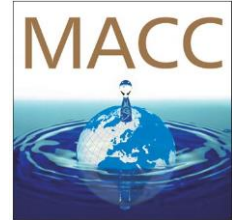
Reg 12(5)(a)

Anomaly List Supplement

Non-Intrusive Survey 1CH			AA Site Buildings Lodge Hill Anomaly List		
OSGB 1936		GPS			
ID	Easting (m)	Northing (m)	Depth_calc (m)	Vol_mag (l)	Remarks
1	Reg 12(5)(a)	174,027.10	0.8	730.087	
2		174,024.30	0.1	326.534	
3		174,026.86	0.5	350.814	
4		174,024.60	0.0	117.428	
5		174,026.60	0.5	206.504	
6		174,027.80	1.4	985.073	
7		174,030.80	0.1	17.066	
8		174,029.44	0.4	30.742	
9		174,031.00	1.5	928.579	
10		174,032.59	0.8	173.177	
11		174,031.25	0.2	100.800	
12		174,036.90	4.2	802.733	
13		174,035.60	0.6	195.014	
14		174,035.59	0.4	321.412	
15		174,030.93	0.3	435.109	
16		174,039.58	1.7	76.424	
17		174,040.83	0.2	791.374	
18		174,039.80	0.4	32.536	

19	Reg 12(5)(a)	174,037.30	0.3	2.825	
20		174,036.17	0.4	111.600	
21		174,035.33	1.0	966.639	
22		174,042.46	0.3	113.859	
23		174,043.20	1.2	891.311	
24		174,043.55	0.1	49.624	
25		174,041.05	0.0	0.898	
26		174,040.70	2.2	713.813	
27		174,037.87	1.4	48.656	
28		174,038.30	0.3	89.471	
29		174,042.10	0.6	62.121	
30		174,042.27	0.6	66.559	
31		174,041.43	0.1	257.951	
32		174,039.20	0.1	428.491	
33		174,039.81	0.8	139.900	
34		174,048.20	0.6	701.773	
35		174,047.10	0.5	258.124	
36		174,051.90	0.3	65.728	
37		174,056.80	0.2	965.524	
38		174,055.50	1.3	966.758	
39		174,054.10	0.7	381.815	
40		174,053.50	0.6	218.373	
41		174,052.95	0.4	119.252	
42		174,048.00	1.7	811.233	
43		174,045.40	1.0	63.431	
44		174,046.90	0.3	22.360	
45		174,047.46	0.1	3.970	
46		174,050.40	0.7	142.835	
47		174,048.40	1.4	22.380	
48		174,045.03	0.1	20.122	
49		174,046.60	0.7	177.005	
50		174,051.23	0.2	4.392	
51		174,049.97	0.7	34.849	
52		174,049.20	0.5	202.658	
53		174,054.60	0.8	622.961	
54		174,052.31	0.3	210.519	
55		174,056.40	1.0	136.900	
56		174,058.06	0.0	10.680	
57		174,060.71	0.3	37.136	
58		174,063.04	0.6	100.834	
59		174,059.20	0.4	78.042	
60		174,063.77	0.2	89.666	
61		174,056.27	0.5	153.130	
62		174,053.30	1.3	741.226	
63		174,054.79	0.4	85.637	
64		174,051.10	0.4	112.365	
65		174,049.20	0.2	425.509	
66		174,045.44	0.7	257.573	
67		174,040.44	0.4	194.162	
68		174,054.72	0.4	42.078	
69		174,054.79	0.4	85.605	
70		174,057.10	0.9	183.672	
71		174,059.30	1.1	101.745	
72		174,026.00	0.7	207.120	

73	Reg 12(5)(a)	174,051.00	1.3	396.912	
74		174,044.90	0.4	23.820	
75		174,047.30	0.4	6.861	
76		174,045.43	0.7	250.344	



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Reg.13(1)

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NON-INTRUSIVE UNEXPLODED ORDNANCE (UXO) SURVEY REPORT
LODGE HILL AA SITE FIELDS

1. Introduction

- 1.1 MACC International Limited was commissioned by Homes England to conduct a Non-Intrusive UXO Survey of an area of land within their Anti-Aircraft Gun site fields, in an aim to achieve UXO clearance.
- 1.2 The Non-Intrusive Survey was conducted in accordance with the current industry best practices and previously submitted MACC RAMS accepted by the client.
- 1.3 The Non-Intrusive Survey was completed in one day on 13th February 2019 and consisted of specialist magnetometer survey (Ebinger 6 Channel Towed Array fitted with GPS Tracking) of all available areas identified by the client (see Earth Map Supplement).

2. Survey Conduct and Results

- 2.1 The work was conducted in accordance with the RAMS submitted to and accepted by the client prior to work commencing. The scope of work was completed without incident or accident and with minimal environmental impact.
- 2.2 The data gathered was of a high quality and gave clear indications of discreet anomalies with the survey footprint.

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2.3 On analysis of the data, three hundred and sixteen (nr316) anomalies were initially identified within the survey footprint.

2.4 A number of linear features were identified. These may relate to old service runs, fence lines or redundant tracks/paths. There also appears to be a number of building footprints in the shallow subsurface that are not apparent on the surface.

3. Limitations

3.1 Large static ferrous objects (i.e. fence lines, gates, machinery and services) within the survey footprint may obscure anomalies under or in close vicinity causing them to remain undetected.

4. Conclusion

4.1 The project site was compatible with the equipment used by MACC International Limited.

4.2 Once all obvious items of ferromagnetic influence had been removed from the survey data, there were found to be two hundred and fifty-two (nr252) anomalies of a depth and size that warrant further investigation (see Anomaly List Supplement).

5. Recommendations

5.1 It is recommended that an anomaly investigation is carried out to ascertain the nature of the anomalies detected and determine the level of risk posed by UXO to future intrusive ground works.

5.2 Prior to an anomaly investigation and clearance report being issued, it is recommended that all intrusive works within the survey footprint are monitored by a suitably qualified Explosive Ordnance Supervisor.

Reg.13(1)

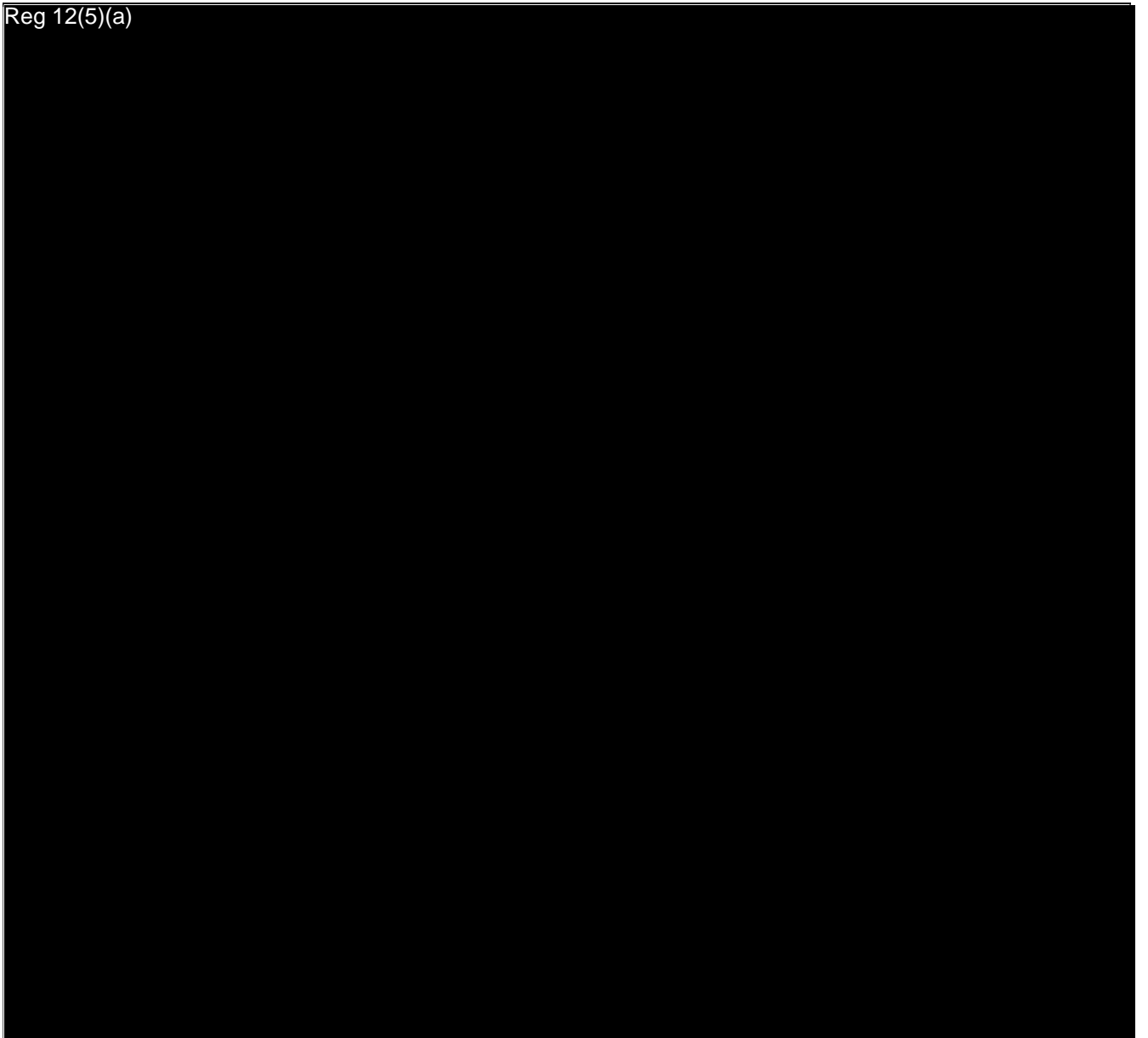
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MACC International Ltd

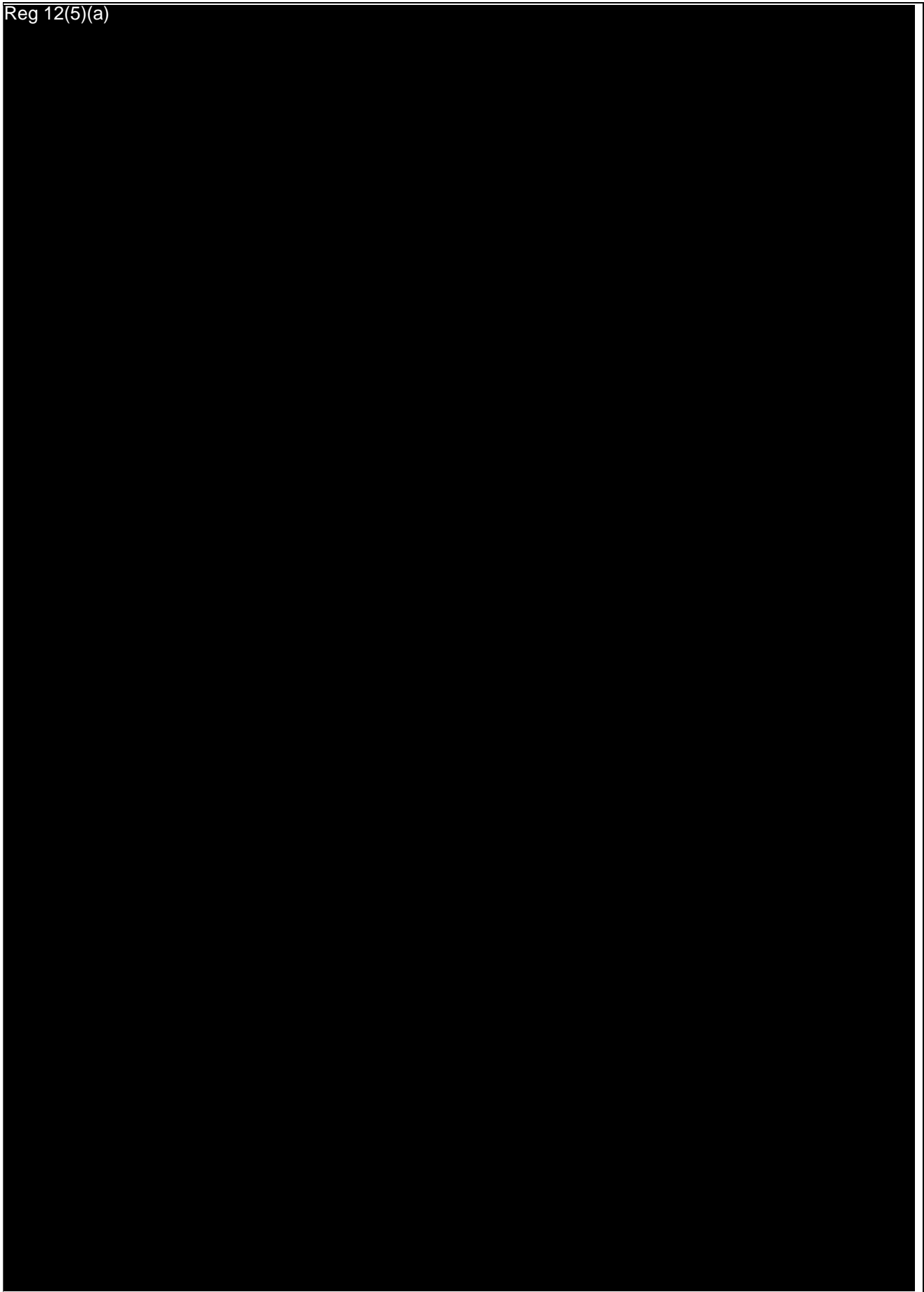
Earth Map Data Overlay Supplement

Reg 12(5)(a)



Anomaly Map Supplement

Reg 12(5)(a)



Anomaly List Supplement

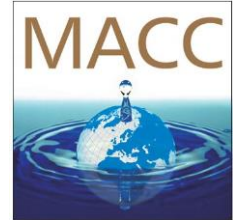
Non-Intrusive Survey 6CH			AA Site Field Lodge Hill Anomaly List		
OSGB 1936		GPS			
ID	Easting (m)	Northing (m)	Depth calc (m)	Vol mag (I)	Remarks
2	Reg 12(5)(a)	174,024.49	1.2	136.616	
3		174,023.30	1.4	306.517	
4		174,021.80	0.4	132.882	
5		174,014.85	0.5	3.723	
6		174,006.80	0.3	2.066	
7		174,059.61	0.8	15.838	
8		174,013.20	0.7	34.820	
9		174,022.30	0.7	1.598	
10		174,050.81	0.3	0.528	
11		174,048.86	0.3	0.366	
12		174,045.26	0.7	1.871	
13		174,031.20	1.1	18.512	
14		174,008.92	0.3	0.695	
15		174,020.98	1.4	227.724	
16		174,018.54	0.5	3.997	
51		174,069.41	0.4	1.684	
52		174,077.00	0.7	11.060	
57		174,087.78	0.2	4.048	
58		174,078.00	0.4	8.705	
59		174,093.31	0.4	1.275	
60		174,056.81	0.4	2.202	
61		174,095.30	0.9	73.400	
69		174,130.50	0.5	1.725	
71		174,130.50	0.5	1.725	
72		174,108.37	1.3	18.820	
73		174,120.06	0.5	1.037	
74		174,083.59	0.6	10.184	
75		174,135.48	0.6	5.525	
76		174,064.79	0.6	8.385	
77		174,031.22	1.1	15.579	
78		174,026.00	1.2	11.047	
79		174,026.80	1.2	113.716	
80		174,028.93	0.7	1.681	
81		174,015.46	0.0	0.481	
83		174,037.31	0.7	62.753	
84		174,039.60	3.8	740.504	
85		174,049.83	0.5	3.598	
86		174,030.70	4.7	881.414	
87		174,046.00	4.5	757.244	
88		174,014.28	0.4	1.375	
89		174,019.09	0.4	0.481	
90		174,022.88	1.4	32.910	
91		174,068.64	1.0	40.131	
92		174,060.95	0.0	0.158	
93		174,064.38	1.0	37.144	
94		174,068.44	1.2	73.839	
95		174,070.88	0.6	27.292	
96		174,062.32	0.0	0.404	

97	Reg 12(5)(a)	174,102.50	0.9	4.253	
98		174,075.68	0.8	2.862	
99		174,074.90	0.7	3.283	
100		174,116.00	1.0	19.343	
101		174,108.23	0.9	13.683	
102		174,067.68	0.4	5.306	
103		174,019.78	0.5	3.874	
104		174,015.28	0.4	0.474	
105		174,028.20	1.1	57.100	
106		174,015.50	1.2	38.757	
107		174,050.79	1.3	26.357	
108		174,059.70	3.6	508.387	
109		174,016.62	0.8	26.240	
110		174,029.00	1.0	5.331	
111		174,040.60	1.4	33.196	
112		174,044.07	1.7	31.413	
113		174,061.46	0.4	0.903	
114		174,016.81	0.2	0.574	
115		174,035.10	3.1	296.133	
117		174,065.02	4.5	284.322	
118		174,014.77	0.2	1.149	
119		174,041.82	1.0	14.640	
120		174,062.85	0.5	3.348	
121		174,064.18	0.3	0.647	
122		174,071.50	0.9	53.094	
123		174,083.84	0.4	0.541	
124		174,094.52	0.3	22.000	
125		174,078.53	0.0	0.228	
126		174,086.70	0.5	5.938	
127		174,124.39	0.7	3.147	
128		174,117.11	0.5	0.422	
129		174,074.25	1.5	11.670	
130		174,062.71	0.3	9.005	
131		174,029.90	1.5	49.141	
132		174,026.70	0.8	6.416	
133		174,023.76	0.5	2.416	
135		174,027.20	1.8	52.189	
136		174,012.73	0.5	2.084	
137		174,022.80	0.0	0.160	
138		174,029.90	0.7	4.129	
139		174,050.77	1.3	27.832	
140		174,060.10	2.5	266.007	
141		174,073.90	1.2	43.244	
142		174,074.00	0.5	1.690	
143		174,022.88	1.4	33.707	
145		174,079.10	0.4	2.306	
146		174,091.86	0.4	2.223	
147		174,032.61	0.3	2.207	
148		174,070.87	0.6	25.349	
149		174,050.00	0.9	16.380	
150		174,066.41	1.3	13.417	
151		174,125.03	1.2	41.153	
152		174,129.20	0.9	3.306	
153		174,103.00	1.5	22.879	

154	Reg 12(5)(a)	174,128.36	0.6	1.528	
155		174,062.75	0.6	12.568	
156		174,128.97	0.5	3.968	
157		174,127.90	0.5	1.214	
158		174,032.94	0.5	0.323	
160		174,062.36	0.7	4.618	
162		174,063.27	0.6	9.143	
163		174,063.91	1.3	40.848	
164		174,064.05	0.8	15.786	
165		174,062.15	0.3	0.391	
166		174,060.10	1.6	11.504	
168		174,058.92	0.5	6.506	
169		174,027.57	0.6	3.357	
170		174,035.39	0.5	1.578	
171		174,058.54	0.7	7.154	
172		174,060.66	0.1	0.626	
173		174,058.64	0.4	1.838	
174		174,057.38	0.7	14.374	
175		174,053.14	0.6	1.323	
176		174,056.43	0.8	19.011	
177		174,039.25	0.4	0.432	
178		174,054.53	1.0	8.064	
179		174,039.30	0.5	1.877	
180		174,053.41	0.8	16.575	
181		174,052.38	0.8	19.852	
182		174,051.44	1.0	16.244	
183		174,055.59	0.6	0.910	
184		174,050.00	0.9	16.370	
185		174,059.71	0.9	1.858	
186		174,054.99	0.4	2.702	
187		174,055.00	1.0	28.814	
188		174,057.00	4.0	772.483	
189		174,067.62	0.6	1.697	
190		174,062.40	1.0	5.825	
191		174,052.90	0.0	0.356	
192		174,057.30	4.3	748.282	
193		174,065.02	1.0	11.607	
194		174,084.87	0.6	0.962	
195		174,064.40	6.0	572.985	
196		174,087.73	1.2	7.753	
197		174,095.01	1.1	8.633	
198		174,058.90	5.6	1,158.171	
199		174,096.99	1.0	6.298	
200		174,099.80	1.3	28.480	
201		174,088.36	0.1	0.184	
202		174,086.10	0.4	0.970	
203		174,105.64	1.4	29.578	
204		174,075.45	0.5	1.103	
205		174,070.83	1.0	163.642	
206		174,073.30	2.0	494.920	
207		174,081.46	0.5	0.694	
208		174,115.60	1.1	19.612	
209		174,077.00	0.6	120.289	
210		174,071.44	0.6	7.682	

211	Reg 12(5)(a)	174,084.89	0.1	0.127	
212		174,069.93	0.6	1.821	
213		174,075.82	0.7	2.538	
214		174,076.84	2.7	385.976	
215		174,095.20	1.6	123.448	
216		174,073.88	0.6	4.128	
218		174,092.09	0.5	0.567	
219		174,081.30	3.9	707.250	
220		174,088.04	0.5	23.902	
221		174,087.64	0.7	3.163	
222		174,089.32	2.6	111.184	
223		174,076.79	0.6	1.377	
224		174,103.64	1.0	1.787	
225		174,085.16	0.7	4.352	
226		174,079.15	0.4	2.059	
227		174,093.08	0.7	2.816	
228		174,095.65	0.5	0.592	
229		174,079.10	0.4	2.307	
230		174,100.62	0.6	0.576	
231		174,090.01	0.7	3.148	
232		174,082.80	0.7	2.039	
233		174,091.65	0.7	1.975	
234		174,099.38	1.3	3.313	
235		174,108.78	1.4	14.977	
236		174,099.47	0.3	0.320	
237		174,096.30	0.4	0.716	
238		174,089.10	0.5	0.432	
239		174,087.75	0.5	0.671	
240		174,087.70	2.1	52.614	
241		174,092.30	0.7	3.890	
242		174,096.28	0.3	0.606	
243		174,101.38	0.2	0.139	
244		174,103.03	0.2	0.147	
245		174,104.24	0.2	0.181	
246		174,115.91	0.6	1.203	
247		174,084.97	0.1	0.758	
248		174,089.20	0.7	64.304	
249		174,089.66	0.6	5.966	
250		174,119.10	0.7	2.106	
251		174,105.51	0.6	1.661	
252		174,099.42	0.4	3.627	
253		174,118.21	0.5	2.566	
254		174,083.90	0.8	2.668	
255		174,098.06	0.3	0.695	
256		174,090.84	0.6	16.305	
257		174,096.52	0.6	4.310	
258		174,094.80	1.6	60.623	
259		174,092.96	0.5	1.330	
260		174,093.72	0.8	13.767	
261		174,093.36	3.6	743.767	
262		174,113.20	0.6	4.275	
263		174,115.05	0.5	0.960	
264		174,095.60	1.5	27.486	
265		174,094.24	0.2	1.135	

266	Reg 12(5)(a)	174,121.14	0.4	0.613	
267		174,099.58	0.4	0.807	
268		174,096.52	0.6	4.301	
269		174,105.61	0.4	0.663	
270		174,098.61	0.6	0.888	
271		174,102.60	0.5	4.737	
272		174,124.31	0.6	8.580	
273		174,130.04	0.6	2.526	
275		174,015.00	1.0	20.313	
283		174,020.70	3.3	704.233	
284		174,059.40	4.5	915.157	
285		174,132.10	5.7	684.491	
286		174,022.60	2.4	689.335	
287		174,070.00	1.9	136.108	
288		174,083.10	0.9	2.564	
289		174,108.19	1.2	16.509	
291		174,022.00	2.0	90.286	
292		174,050.76	1.3	29.192	
293		174,068.60	4.8	796.400	
294		174,061.70	3.4	615.375	
295		174,053.79	0.9	3.168	
296		174,055.30	3.9	245.648	
297		174,037.20	2.2	63.152	
298		174,090.10	1.5	20.105	
299		174,100.20	1.3	31.853	
300		174,104.80	2.1	66.061	
301		174,074.80	2.2	691.117	
302		174,093.40	2.4	250.491	
303		174,078.86	0.8	5.855	
304		174,105.50	6.0	695.627	
305		174,072.70	2.1	124.715	
306		174,075.84	0.7	2.378	
307		174,082.27	0.6	2.649	
308		174,102.58	0.7	1.081	
309		174,082.29	0.0	0.239	
310		174,106.80	0.3	0.137	
311		174,107.70	0.5	0.222	
312		174,118.50	2.4	5.101	
313		174,120.80	5.1	46.273	
314		174,092.50	0.7	3.482	
315		174,105.60	0.6	1.655	
316		174,127.29	0.3	0.329	



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NON-INTRUSIVE UNEXPLODED ORDNANCE (UXO) SURVEY REPORT
LODGE HILL WOODLAND ASBESTOS CLEARANCE

1. Introduction

- 1.1 MACC International Limited was commissioned by Homes England to conduct a Non-Intrusive UXO Survey of an area of land within their Lodge Hill site, prior to asbestos removal.
- 1.2 The Non-Intrusive Survey was conducted in accordance with the current industry best practices and previously submitted MACC RAMS accepted by the client.
- 1.3 The Non-Intrusive Survey was completed in one day the 14th February 2019 and consisted of specialist magnetometer survey (Ebinger 3 Channel survey array) of all available areas identified by the client (see Earth Map Supplement).

2. Survey Conduct and Results

- 2.1 The work was conducted in accordance with the RAMS submitted to and accepted by the client prior to work commencing. The scope of work was completed without incident or accident and with minimal environmental impact.
- 2.2 The data gathered was of a high quality and gave clear indications of discreet anomalies with the survey footprint.

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2.3 On analysis of the data, eleven (nr11) anomalies were identified within the survey footprint.

2.4 The majority of the large anomalies indicated fall within the area of plastic sheet covering the asbestos contamination.

3. Limitations

3.1 Large static ferrous objects (i.e. fence lines, gates, machinery and services) within the survey footprint may obscure anomalies under or in close vicinity causing them to remain undetected.

4. Conclusion

4.1 The project site was compatible with the equipment used by MACC International Limited.

4.2 The survey data clearly indicates an area of high ferrous contamination, the nature of which cannot be determined without further intrusive investigation.

5. Recommendations

5.1 It is recommended that an anomaly investigation is carried out to ascertain the nature of the anomalies detected and determine the level of risk posed by UXO to future intrusive ground works.

5.2 Prior to an anomaly investigation and clearance report being issued, it is recommended that all intrusive works within the survey footprint are monitored by a suitably qualified Explosive Ordnance Supervisor.

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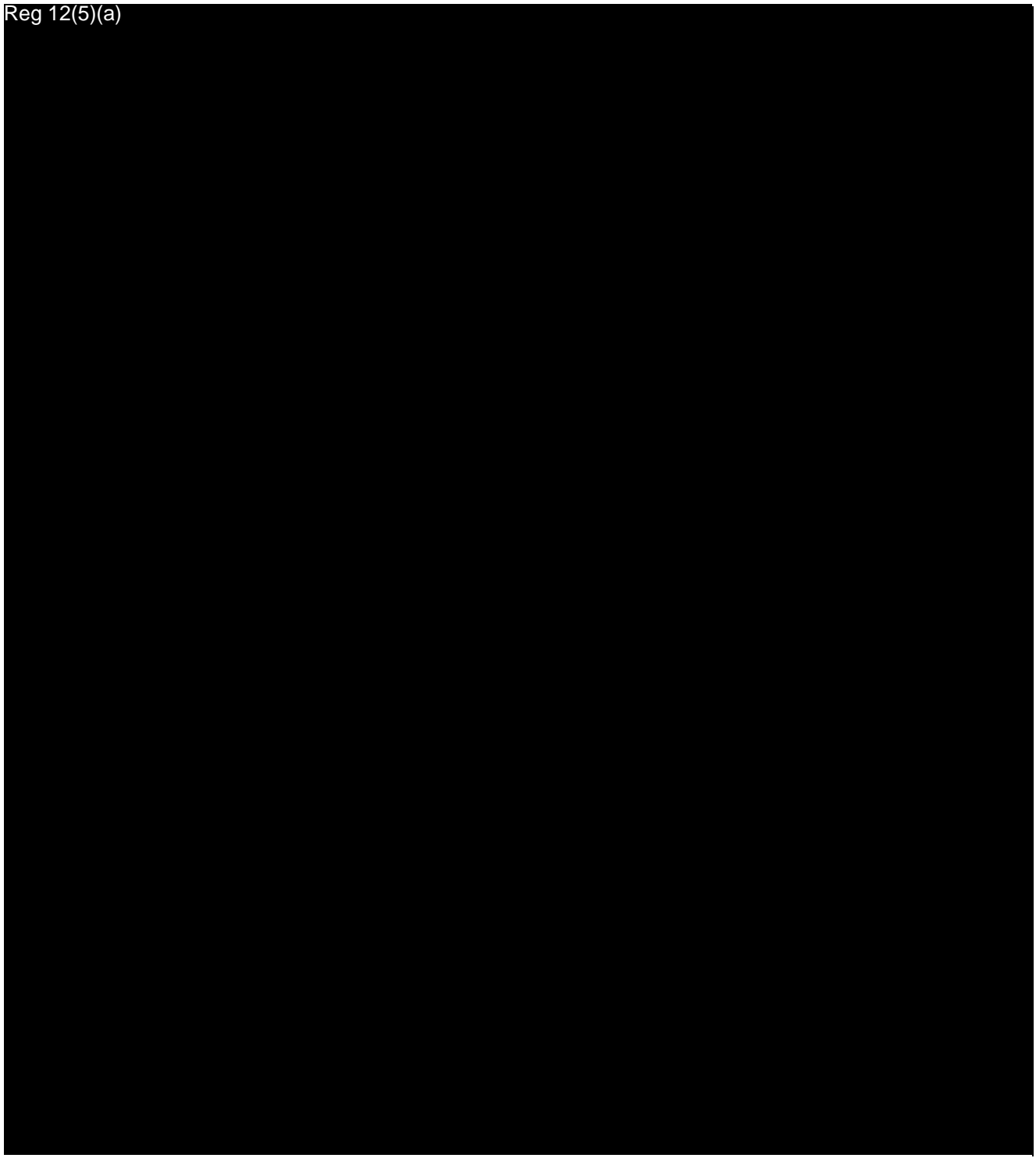
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MACC International Ltd

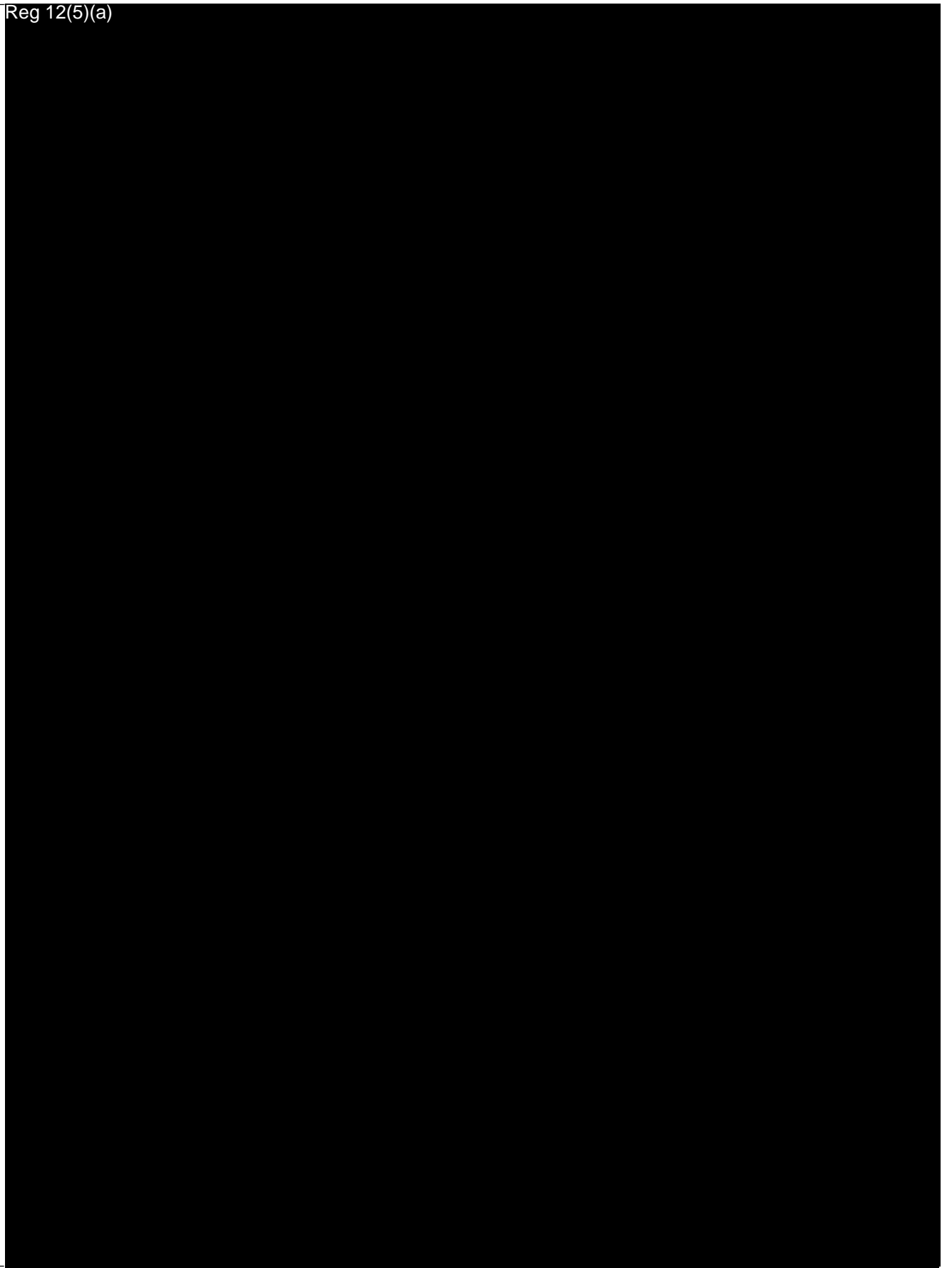
Earth Map Data Overlay Supplement

Reg 12(5)(a)



Anomaly Map Supplement

Reg 12(5)(a)



Anomaly List Supplement

Non-Intrusive Survey 3CH			Woodland Asbestos Clearance Anomaly List		
OSGB 1936		Non-GPS			
ID	Easting (m)	Northing (m)	Depth calc (m)	Vol mag (l)	Remarks
1	Reg 12(5)(a)	173,515.58	0.1	0.953	
2		173,511.81	0.1	0.224	
3		173,518.97	0.6	18.765	
4		173,515.21	0.3	1.436	
5		173,516.82	0.4	8.849	
6		173,520.40	0.4	88.441	
7		173,518.60	0.4	20.052	
8		173,520.63	0.4	293.927	
9		173,520.40	0.5	665.442	
10		173,517.57	0.3	85.492	
11		173,512.82	0.1	0.312	