

Site Condition Report for Wolfmet
Environmental Permit Application
M&I Materials Trafford Park

November 2017

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EXECUTIVE SUMMARY

This document represents the Site Condition Report (SCR) for M&I Materials Ltd, Trafford Park submitted as part of the application to the Environment Agency for a permit to operate an installation under the Environmental Permitting (England and Wales) Regulations 2016 (EPR). The objective of the SCR is to provide information on the activities and substances used in the installation, to identify any substances in, on or under the land that could present a pollution risk now or in the future.

The application is for a Low Impact Bespoke installation under Section 2.2. Part A(1)(a) "Unless falling within Part A(2) of this Section, producing non-ferrous metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic activities."

M&I Materials currently operates a number of other permitted and non-permitted activities at the site, including the manufacture of Midel (BL9640IM), Apiezon (BS4952IP) and as a registered lower tier waste carrier/broker.

M&I have operated an existing facility at the Trafford site for the production of tungsten alloy components since 2003. Following the operator completing an EA questionnaire in July 2017 and further communication with the local inspector, the view of the EA with respect to regulation of the facility has changed. Through dialogue with the operator the EA have determined that the Wolfmet manufacturing process should be regulated and drawn in to the Environmental Permitting regime.

The process takes place inside an existing secure building with sealed drainage. The activity will produce no emissions to surface waters, noise or odour. The only emissions to air are exhaust air from LEV which is installed for the protection of workers during the powder mixing operations, and extraction of waxy vapours from the furnaces.

Raw materials used in the process include metal powders. A small amount of waste is produced by the process, all movements of waste to and from the site will be undertaken by a licenced waste carrier. This report further demonstrates that the activities will be carried out over 200m from any designated conservation site and 50m from any borehole. The underlying geology of the installation is classed as major-aquifer. The site is not located within a source protection zone or at risk of flooding.

An inspection of the proposed area of the new installation was carried out and records for the site and surrounding areas have been reviewed, along with operational Environmental Management System and associated records. Pollution prevention measures have been identified and an assessment of pollution to land and groundwater has been undertaken.

The operation of the proposed activities within a secure internal part of the site means that the installation will have inherently low impact and therefore there is little possibility for land pollution as a result of operations within the installation.

The findings of the desk study and site reconnaissance have been used to develop the site conceptual model, which is based on the source-pathway-receptor linkages that may be present at the site.

Key future potential contaminant sources relevant to the installation include:

- *External storage of waste*
- *Internal storage of raw materials and wastes*

The potentially sensitive receptors to current and future contamination from the installation include:

- *On-site workers;*
- *Employees of neighbouring firms; and*
- *Controlled waters;*

In accordance with the criteria set out in the Environment Agency's technical guidance the following conclusions can be drawn in relation to the installation's activities and pollution control measures:

- *There are existing pollution prevention measures for the process and associated activities, including: primary containment; secondary containment in the form of tertiary containment afforded by concrete hardstanding and an external sealed drainage system connected to an interceptor. All bulk and non-bulk materials are stored internally with all drains from the manufacturing areas discharging to sewer under consent;*

- *The proposed preventative measures in place are deemed adequate to prevent the emissions to land or groundwater of substances stored within the installation. There are no subsurface structures on the site drainage system. All primary containment will be regularly inspected. Adequate secondary and tertiary containment in the form of concrete hardstanding is provided to all storage areas;*
- *A recent desktop study reported that the local authority stated that the site is not registered as contaminated under the Environmental Protection Act 1990 and that the site's proposed use means that it has been classified as a low priority for further investigation. The site has been purposely built for industrial occupation and redeveloped in the last 15 years and there have been no significant incidents relating to spills from the site or immediate surroundings since M&I have occupied the site;*
- *All facilities necessary for the operation are fit for purpose. This is deemed adequate with regard to integrity testing of facilities. The facilities will be maintained in line with the company's planned preventative maintenance procedures during the life of the permit.*
- *Formal substance acceptance, storage, handling and spill procedures are implemented as part of the Environmental Management System (EMS). The EMS also includes provision of environmental training to employees. The company has already gained certification to BS EN ISO 14001 at the site.*

It is considered that there is little possibility for future land or groundwater pollution to occur within the proposed installation that could be associated with the prescribed process or directly associated activities. Therefore, no further intrusive investigation is required.

Once permitted, the company will implement the requirements of the operational phase of the site condition report, ensuring that land and groundwater are protected and will be left in a satisfactory condition.

1. INTRODUCTION

EHS Projects were instructed by M&I Materials Ltd (M&I) to complete a Site Condition Report for the permitting of the existing Wolfmet activity at Trafford Park for the purpose of assisting them in their application under the Environmental Permitting (England and Wales) Regulations 2016. This report has been prepared for the exclusive use of M&I.

The operator currently operates listed activities at the site subject to EPR in addition to non-permitted operations. Following the operator completing an EA questionnaire in July 2017 and further communication with the local inspector, the view of the EA with respect to regulation of the facility has changed. Through dialogue with the operator the EA have determined that the Wolfmet manufacturing process should be regulated and drawn in to the Environmental Permitting regime under Section 2.2 Part A(1)(a) Non-ferrous Metals.

The installation will comprise the existing Wolfmet activity including storage of raw materials and packaging, powder mixing, pressing, forming and sintering, and storage of wastes. The process is completely dry and takes place entirely within the building, apart from the storage of waste metal packaging externally. The activities are carried out over 200m from any designated conservation site and 50m from any borehole.

The operation of the proposed activities within a secure internal part of the site means that the installation will have inherently low impact and therefore there is little possibility for land pollution as a result of operations within the installation. The operator is applying for a Low Impact permit.

An inspection of the proposed area of the new installation was carried out and records for the site and surrounding areas have been reviewed, along with operational Environmental Management System and associated records. Pollution prevention measures have been identified and an assessment of pollution to land and groundwater has been undertaken.

The information presented within this report is based on observations made on site, discussions with staff from M&I and a review of available historical, geological and hydrogeological sources. Further information has been provided by a Landmark Envirocheck Report, the British Geological Survey, the Environment Agency and the local authority.

EHS Projects has endeavoured to assess all information provided to them during this investigation, but makes no guarantees or warranties as to the accuracy or completeness of this information.

2. OBJECTIVES

This report has been developed with reference to the following Environment Agency guidance documents:

- *Guidance for Applicants H5 Environmental Permitting Regulations Site Condition Report – Guidance and Templates (formally withdrawn)*; and
- *European Commission Guidance concerning baseline reports.*

The overall aim of the report is to describe the condition of the site of the installation and to identify any substance in, on or under the land which may constitute a pollution risk.

The specific objectives of this report are to:

- Identify the environmental setting and land pollution history of the obligated installation;
- Identify activities that will be conducted at the installation that may lead to land or groundwater pollution;
- Identify and assess the preventative measures that are in place to protect the land and groundwater; and
- Assess whether there is:
 1. little likelihood that land or groundwater pollution or leaks to land will occur during the future life of the installation; or
 2. a reasonable possibility that there is potential for current or future land or groundwater pollution from the installation.

3. INSTALLATION DESCRIPTION

3.1 SITE LOCATION

The site is an existing process within an existing industrial facility located at National Grid Reference SJ 7896 3829, off Hibernia Way, Trafford Park, Manchester and occupies part of a wider site operated by M&I. The property comprises a main unit and associated external facilities. The installation is centred on the main manufacturing building which is divided into a number of discrete operational functions areas depending on the activity taking place. The installation comprises the remaining areas of the factory which do not currently fall under the existing Midel installation boundary.

The wider site is bordered by other industrial facilities with the Bridgewater Canal to the north. The site location is presented in Drawing 1 in Appendix A. Both the internal and external areas at the site are covered in concrete hardstanding.

3.2 DETAILS OF INSTALLATION

The site occupies an area of approximately 1.5 hectares. The wider property comprises a main manufacturing unit and external hard standing facilities. The main unit is divided into discrete product manufacturing facilities each comprising materials bulk and non-bulk storage, manufacturing, product storage, and warehousing. External facilities include delivery and dispatch areas, waste storage, security and car parking serving the entire site.

It is understood that the installation boundary for the permit application covers the internal areas of the building not currently part of the Midel installation boundary, and also the external parts of the yard where waste is stored. The boundary does not include the office areas (see Drawing 1). The only external activity related to the installation is the storage of waste drums in a skip in the yard area. All raw materials and packaging are stored in the warehouse area of the building and all processing operations take place internally. The building has concrete hardstanding with sealed construction joints. Any spillage of liquid materials in this area would pass through the site interceptor before being discharged to sewer, however there are no liquid raw materials or liquids involved in the process. The only liquid waste stored within the boundary is coolant waste which is associated with the wider site as well as the permitted process. The

installation will therefore have inherently low impact and therefore there is little possibility for land pollution as a result of operations within the installation.

The installation boundary is illustrated in Drawing 2.

3.2.1 Process Description

Wolfmet manufacture is a powder metallurgy process which involves the mixing of precise amounts of raw material in the form of tungsten and other secondary alloying powders to produce a homogeneous blend and applying exacting temperatures at different stages to create specific alloys. The process involves:

- Powder mixing
- Pressing
- Forming
- Sintering
- Machining
- Storage of raw materials and wastes
- Quality control

Emissions to air from the process consist of exhaust air from LEV extraction which is in place on powder mixing areas for the protection of employees, and the furnaces. There are no emissions of effluent, noise or odour, and the likelihood of fugitive emission to air and water is very low as the process operates entirely within the building.

A further process description is given in the main application.

3.2.2 Environmental Licences and Consents

Discharge Consent

M&I operate a discharge consent for the disposal of process effluent and drainage from the wider site. IN addition, the site holds an Environmental Permit for the Midel activity (BL9640IM), and Apiezon production (BS4952IP).

4. SITE SETTING

4.1 INTRODUCTION

This section details the condition of the installation and the potential for substances to be present in, on or under the land associated with present and past uses of the installation and the surrounding area.

4.2 INSTALLATION SURROUNDINGS

The facility is located within a wider industrial park approximately 6km west of Manchester city centre. Potentially contaminative land uses within the vicinity of the site from have been identified using an Envirocheck report and from site reconnaissance and are summarised below:

- There are recorded two active Environmental Permits, relating to the former Integrated Pollution Prevention and Control (IPPC) regime at the site operated by M&I Materials and a further permitted site with 500m of the installation operated by J1 Technologies for the production of organic chemicals;
- There are no active Environmental Permits, relating to the former Local Authority Air Pollution Control (LAAPC) regime within a 500m radius of the site.;
- There are no active Registered Radioactive Substances consents within a 500m radius of the site;
- There is a record of one recorded (historical) landfill sites recorded landfill 280m northwest of the site;
- There are two licensed waste management facilities within 200m with a further two transfer and two treatment sites registered within 500m of the site;
- There are three registered planning hazardous substance consents within a 500m radius of the site;
- There is one active COMAH site within 250m of the site;
- The site is not located within a Nitrate vulnerable zone.

4.3 NATURE CONSERVATION DESIGNATIONS

Details of Nature Conservation designations were sourced from the government website (www.magic.gov.uk) which has information from Natural England and the Environment Agency.

There are no nationally or internationally designated sites within 2km of the installation.

4.4 SITE HISTORY

Historical maps show the site as being continuously undeveloped since at least the mid 1970s with the building as can be seen today only being identified on the latest map published in 1991. According to the 1842 historical map, the surrounding area was predominantly undeveloped farmland bisected by the Bridgewater canal with the Cheshire railways running approximately east west. The area was generally developed for a range of industrial uses from 1909 onwards with the establishment of the Westinghouse Works and subsequent encroachment of engineering, chemical, dye and steel works between 1925 and 1954 when further infrastructure (roads and extension of railway sidings) which make much of the layout of the industrial estate that can be seen today The M&I site was one of the last remaining areas of undeveloped land to be built on with the erection of what appears to be isolated buildings from 1971 before the comprehensive redevelopment of the site and wider industrial estate from 1991.

Relevant site history is shown in chronological order in Table 1.

Table 1: History for the subject site

Source	Scale	Site ^a	Surrounding Land Use ^a
OS Map 1848-1854	1:2,500 1:10,560	Undeveloped land.	Surrounding area predominantly undeveloped with the Bridgewater Canal running immediately north of the site.
OS Map 1896	1:2,500 1:10,560	No significant change.	No significant change. Cheshire Lines Railway to SE
OS Map 1908-1909	1:2,500 1:10,560	No significant change.	Westinghouse Works Development within 750m east of the site
OS Map 1925	1:2,500 1:10,560	No significant change.	Dye works, steel works and engineering works developed in the general area within 500m of the site
OS Map 1938,	1:2,500 1:10,560	No significant change.	Residential developments to the south.
OS Map 1954	1:2,500 1:10,560	No significant change.	Extension to works and railway infrastructure.
OS Map 1976	1:2,500 1:10,000	Development of isolated buildings within the site boundary	Extension to the works to the SE boundary.
OS Map 1983-84	1:2,500 1:10,000	No significant change.	Further warehouses shown within 100m of eastern boundary of the site.
OS Map 1991-93, 2000, 2006	1:2,500 1:10,000	Main factory building erected to its current form and access road.	Layout and infill developments of wider industrial estate.
OS Map 2013	1:10,000	No significant change	No significant change

4.5 GEOLOGY

Geological information for the site was obtained from the following sources: British Geological Survey BGS 1:625,000 Solid Geology and Landmark Envirocheck Report.

4.5.1 General Geology and Ground Conditions

The British Geological Society Map for the area indicates that the site is underlain by the Permian and Triassic Sandstone.

4.5.2 Economic Geology and Landfills

Information on economic geology has been extracted from historical maps. Details of landfills within 1km of the installation are shown in Table 2 and mineral sites in Table 3.

Table 2: Summary of landfills identified in the vicinity (500m) of the site

Organisation	Location	Status	Typical Description	Waste Type
Trafford Metropolitan Council	280m north west	lapsed/cancelled/defunct/not applicable/surrendered	Registered Landfill Site / BGS Recorded Landfill Site	Deposited Waste and Inert

Table 3: Summary of mineral sites identified in the vicinity of the site

Organisation	Location	Status	Typical Description
Unknown	975m northwest	Ceased	Opencast, sandstone, BGS Recorded Mineral Site

According to the Envirocheck Landmark Report the installation is registered as being in an area affected by coal mining but is not in an area affected by instability.

4.6 CONTROLLED WATERS

4.6.1 Surface Waters

Information on surface water bodies was obtained from the Envirocheck Report and OS plans of the site and surroundings. Details of water bodies identified in the vicinity of the site are summarised in Table 4.

Table 4: Summary of surface water bodies identified in the vicinity of the site

Water Body	Location	Direction of Flow	Quality*	Comment
Bridgewater Canal	Northeast	Canal	N/A	Graded 'C'

There are eight recorded water abstractions within a 250m radius of the site with the nearest borehole abstraction 195m northeast of the site.

According to current EA data, the site is not considered to be at risk from fluvial or tidal flooding.

There are no record of cautions related to the site. There has been no other recorded pollution incident to controlled waters in the last 10 years within a 1km radius of the site. There were 16 incidents within 1000m of the site three of which occurred within 250m of the site involving oils, acids and washwater occurring between 1994-99. These and other incidents are not considered to be of material relevance to the subject site.

4.6.2 Groundwater

The Environment Agency (EA) Groundwater Vulnerability Map for the area indicates that the underlying geology is classified as a Major Aquifer.

The nearest active groundwater abstraction is located approximately 195 northeast of the site and is registered to Imperial Chemical Industries Ltd for industrial purposes.

There is a Groundwater Source Protection Zones (Zone III) approx. 2000m to the north of the site.

4.7 CONSULTATION

The agencies and individuals who have been contacted and/or their records reviewed during the course of this study are listed in Table 5.

Table 5: List of parties consulted during this study

Institution	Consultee	Response
Envirocheck Report	---	Written (Ref no. 50367014_01)

According to information provided by site during the site inspection, there has been no requirement to complete soil or groundwater investigation as a condition of the planning permissions.

4.8 PREVIOUS SITE INVESTIGATIONS

No prior investigation has been made of the site.

4.9 EMERGENCY RESPONSE

M&I have in place adequate emergency response procedure and formal environment procedures for addressing on-site environmental emergencies such as spillages, leaks and abnormal occurrences.

5. SITE RECONNAISSANCE

5.1 INTRODUCTION

The site reconnaissance was undertaken on 6th September 2017 by EHS Projects Ltd.

The purpose of the reconnaissance was to inspect the installation and surrounding area for indications of potential land and groundwater pollution.

5.2 STORAGE TANKS, PIPE WORK, BUNDS, TESTING AND HARDSTANDING

5.2.1 Storage Tanks

There are no storage tanks associated with the installation.

5.2.2 Non-Bulk Storage of Raw Materials

All materials delivered to the installation will be stored internally received in drums or other containers. The waste will be stored on hardstanding which was noted to be of high integrity. There is no runoff to surface waters or the surface water drainage system from internal areas.

5.2.3 Water and Effluent Treatment

There is no trade effluent generated or surface water management required by the operation of the installation.

5.2.4 Hardstanding

Hardstanding throughout the installation is high integrity concrete construction and was noted to have no sign of spillage or cracking. Joins between hardstanding slabs are sealed.

5.3 VEGETATION AND SURFACE WATER FEATURES

There are no vegetation or surface water features within the installation.

5.4 NATURE OF THE STORAGE AND HANDLING OF MATERIALS

Housekeeping at the installation will follow prescriptive procedures already in place for the wider site. The company will extend the operating and handling procedures already set down in the company's management system.

5.5 OTHER OBSERVATIONS

M&I currently has operates existing permitted and non-permitted activities at the wider facility. There have been no issues of non-compliance or complaint.

6. ASSESSMENT OF LAND POLLUTION POTENTIAL

Based on information obtained during the site inspection and from review of associated information, the risk of land pollution has been assessed with respect to:

- Pre-existing land pollution (i.e. historical contamination); and
- Adequacy of planned infrastructure to prevent / minimise the release of potentially polluting substances in the future.

6.1 POTENTIALLY POLLUTING SUBSTANCES

A list of all materials and wastes to be handled and stored at the installation is contained in the EPR application and reproduced below.

Table 6: Raw Materials

Schedule 1 Activity	Material	Maximum amount stored on site (Kgs)	Annual throughput (Kgs per annum)	Description including any hazard code
Section 2.2. Part A(1)(a)	Tungsten Powder	20,000Kgs	Up to 120,000kgs	No hazard classification
"	Nickel Powder	2500Kgs	Up to 10,000kgs	H317, H351, H372, H412
"	Iron Powder	1500Kgs	Up to 2,000kgs	No hazard classification
"	Copper Powder	1500Kgs	Up to 5,000kgs	H228, H400, H412
"	Molybdenum Powder	250Kgs	Up to 500kgs	No hazard classification
"	Chromium Powder	50Kgs	Up to 500kgs	No hazard classification

Table 7: Waste Streams

Description	Weight (t)	Disposal/Recovery Code
Nickel drums	0.043	R4 – recycling of metals
Carbonyl Iron drums	0.016	R4 – recycling of metals
Copper drums	0.097	R4 – recycling of metals
Molybdenum drums	0.005	R4 – recycling of metals
Tungsten drums	2.710	R4 – recycling of metals
Tungsten swarf returned	22.5	R4 – recycling of metals
Chromium drums	0	R4 – recycling of metals
Coolant IBC's (hazardous)	18	R9 – recovery of waste oil
Coolant 205 litre drums (hazardous)	4.305	R9 – recovery of waste oil

6.2 HISTORIC LAND POLLUTION POTENTIAL

The installation is part of a wider site that was subject to redevelopment as a purpose built manufacturing facility in 1991 from land that was only partially developed for industrial use in the 1970's.

6.3 CURRENT LAND POLLUTION POTENTIAL

All infrastructure associated with the receipt and storage of raw materials, processing, despatch and storage of associated wastes takes place above ground. Tertiary containment is provided in the form of concrete hard standing of adequate integrity. All primary and tertiary containment will be visually inspected on a regular basis and further checks undertaken periodically as part of the company's planned preventative maintenance system. Only trained personnel are permitted to operate the installation or oversee waste movements, deliveries and handling of materials.

Therefore, there is little potential for land pollution from proposed activities.

6.4 OFF-SITE LAND POLLUTION POTENTIAL

The installation is located on a wider industrial estate that has had continuous industrial occupation since the early 1900's and has substantially been redeveloped since that time to create the layout of the industrial estate seen today. There are a number of installations operating prescribed processes within 500m of the installation. The local authority has no evidence of hazardous ground gas impacting on the site.

6.5 ASSESSMENT OF THE LIKELIHOOD OF LAND POLLUTION

The likelihood of contamination from hazards identified at the installation and in the surrounding area is detailed in Table 8 below. This is based on an assessment of any equipment in place at the time of the survey and information provided by M&I.

Table 8: Potential contamination hazards identified in the installation

Source	Location	Pathway	Risk and Likely extent of contamination	Justification
From Historical Activities				
				Land has not been previously developed.
From Observations and Discussion				
Storage and handling of raw and waste materials	Internal dedicated waste storage/handling	Direct release to concrete hard standing and vertical migration of materials through any cracks in bunding/hard standing.	Little likelihood of contamination.	Raw materials are brought to site in drums or containers. These are stored internally in dedicated storage areas depending on the nature of the material. There are no surface water or process drains in internal areas. Hardstanding in these areas was of high integrity. Coolant waste is stored internally in a bunded area. Delivery procedures and infrastructure inspection procedures are in place as part of the company's management system to minimise the potential for uncontrolled release and ensure that the integrity of the primary, and tertiary containment remains adequate. All equipment and tertiary containment will be subject to the company's planned preventative maintenance procedure. The risks to human health and environmental receptors is considered to be low as the site is extensively hard-surfaced.
Storage and handling of waste materials	External dedicated waste storage/handling	Run-off from waste storage area to drains/concrete hard standing and vertical migration of materials through any cracks in bunding/hard standing.	Little likelihood of contamination.	Waste drums are stored externally on an area of hardstanding. All drainage from the yard area runs through the site interceptor. The installation is isolated from surface water and over 150m from the nearest borehole.
From Off-Installation/on site sources				
Other site based activities – storage, processing and warehousing	Site	Direct release to concrete hard standing and vertical migration of released liquids through any cracks in bunding/hard standing.	Little likelihood of contamination	The same approach to the protection of ground and groundwater resources are afforded to all areas of the wider site – higher risk activities are also covered by EPR regulation.

Source	Location	Pathway	Risk and Likely extent of contamination		Justification
From Off-Installation					
Surrounding industrial activities	Adjacent industrial park.	On-site migration via groundwater flow	Little likelihood of contamination		Adjacent to the site are other industrial or commercial units. The potential risk to human health and environmental receptors.

^b Assessment of likelihood of contamination based on the following criteria:

- **High** – Known contamination identified through intrusive investigation and sampling;
- **Moderate** – Contamination likely, based on known or probable accidental releases to ground but no intrusive investigation conducted;
- **Low** – Environmental risk minimal and/or containment measures considered sufficient to minimise risk of contamination

7. CONCEPTUAL SITE MODEL

7.1 SUMMARY OF SITE AND INSTALLATION SETTING

The installation is located in area of environmental sensitivity. The underlying geology of the installation is classed as major-aquifer. The site is not located within a source protection zone or a flood plain. There are no sites designated as RAMSAR/SPA/SAC/SSSI sites within 2km of the installation.

7.2 SENSITIVE RECEPTORS

Sensitive receptors identified on this site in relation to ground and groundwater contamination are detailed in 9 below:

Table 9: Environmental receptors potentially at risk from the identified hazards

Category	Receptor	Location	Comments
Humans	Installation workers, users and visitors	Whole Installation	The presence of hardstanding across the installation minimises the likelihood of direct contact with ground or groundwater contamination; there is little possibility for land pollution.
	Workers on neighbouring properties	Adjacent to site	The presence of hardstanding across the installation minimises the likelihood of direct contact with ground or groundwater contamination; there is little possibility for land pollution.
Controlled Waters	Bridgewater Canal	Adjacent to site	There is no process effluent generated by the installation nor surface water runoff discharges to controlled water. The wider site is served by Interceptors on the surface water drainage system. An interceptor inspection program is in place, as well as delivery, storage, handling and spillage procedures, minimise the potential for runoff to the controlled waters.

7.3 ZONING

It is not possible to differentiate the site into separate discrete areas of potential environmental concern. Based upon the site setting and the location of potentially polluting substances the whole installation has been determined to represent the same risk in terms of current and future likelihood of contamination.

7.4 SUMMARY CONCEPTUAL SITE MODEL

The findings of the desk study and site reconnaissance have been used to develop the site conceptual model, which is based on the source-pathway-receptor linkages that may be present at the site.

The key pathways by which contaminants could be transported to potentially sensitive receptors are identified in Table 8 and 9.

The potentially sensitive receptors to current and future contamination from the installation include:

- On-site workers;
- Employees of neighbouring firms; and
- Controlled waters.

7.5 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions can be drawn in relation to the installation's activities and pollution control measures:

- Pollution prevention measures are in place for the process and associated activities, including: primary containment and tertiary containment afforded by concrete hardstanding and a sealed surface water drainage system connected to interceptors. All raw materials will be stored internally isolated from drains. The installation facilities are consistent with BAT for this type of operation;
- The preventative measures are deemed adequate to prevent the emissions to land or groundwater of substances stored within the installation and are therefore considered to be represent BAT. There are no subsurface structures within the installation. All primary containment will be regularly inspected with no significant issues reported. Adequate tertiary containment in the form of concrete hardstanding is provided; and
- Formal materials, receipt, storage and handling procedures are implemented as part of the Environmental Management System (EMS). The EMS also includes provision of environmental training to employees. The company are committed to maintaining ISO 14001 certification for the site.

It is considered that there is little possibility for future land or groundwater pollution to occur within the installation that can be associated with the prescribed process or directly associated activities. Therefore no further intrusive investigation is required.

Once permitted, the company will implement the requirements of the operational phase of the site condition report, ensuring that land and groundwater are protected and will be left in a satisfactory condition.

It should be noted that the installation conceptual model has the following limitations:

1. Although EHS Projects has endeavoured to assess all information provided to them during this investigation, the accuracy or completeness of information provided by third parties cannot be guaranteed;
2. Intrusive sampling has not been undertaken as part of this report, and as such geological and hydrogeological conditions beneath the site are interpreted from previous investigations and regional maps. Local fluctuations may be present which significantly alter the installation conceptual model.

GLOSSARY

For the purpose of this report the following terms and definitions apply (see BS 10175:2001).

Conceptual model	Textual and or schematic hypothesis of the nature and sources of contamination, potential migration pathways (including description of the ground and groundwater) and potential receptors, developed on the base of the information from the preliminary investigation and refined during subsequent phases of investigation and which is an essential part of the risk assessment process. Note 1: The conceptual model is initially derived from the information obtained by the preliminary investigation. This conceptual model is used to focus subsequent investigations, where these are considered to be necessary, in order to meet the objectives of the investigations and the risk assessment. The results of the field investigation can provide additional data that can be used to further refine the conceptual model.
Contamination	Presence of a substance which is in, on or under land, and which has the potential to cause harm or to cause pollution of controlled water. Note 1: There is no assumption in this definition that harm results from the presence of the contamination. Note 2: Naturally enhanced concentrations of harmful substances can fall within this definition of contamination. Note 3: Contamination may relate to soils, groundwater or ground gas.
Controlled water	Inland freshwater (any lake, pond or watercourse above the freshwater limit), water contained in underground strata and any coastal water between the limit of highest tide or the freshwater line to the three mile limit of territorial waters. Note 1: See Section 104 of The Water Resources Act 1991.
Harm	Adverse effect on the health of living organisms, or other interference with ecological systems of which they form part, and, in the case humans, including property.
Hazard	Inherently dangerous quality of a substance, procedure or event.
Pathway	Mechanism or route by which a contaminant comes into contact with, or otherwise affects, a receptor.
Receptor	Persons, living organisms, ecological systems, controlled water, atmosphere, structures and utilities that could be adversely affected by the contaminant(s).
Risk	Probability of the occurrence of, and magnitude of the consequences of, an unwanted adverse effect on a receptor.
Risk assessment	Process of establishing, to the extent possible, the existence, nature and significance of risk.
Sampling	Methods and techniques used to obtain a representative sample of the material under investigation.
Soil	Upper layer of the earth's crust composed of mineral parts, organic substance, water, air and living matter. Note 1: In accordance with BS 10175:2001 the term soil has the meaning ascribed to it through general use in civil engineering and includes topsoil and subsoil; deposits such as clays, silt, sand, gravel, cobbles, boulders and organic deposits such as peat; and material of natural or human origin (e.g. fills and deposited wastes). The term embraces all components of soil, including mineral matter, organic matter, soil gas and moisture, and living organisms.
Source	Location from which contamination is, or was, derived. Note 1: This could be the location of the highest soil or groundwater concentration of the contaminant(s).

Appendix A DRAWINGS

- o **DRAWING 1 INSTALLATION LAYOUT**
- o **DRAWING 2 SITE LOCATION**