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This document is intended to accompany your Contaminated Land Screening Report. The purpose of this document is to provide an explanation of the different sections of the report, including:

- The purpose of the Report;
- An explanation of the Assessment;
- The limitations of the Assessment;
- Definitions of the terms used to describe the data in the maps and tables;
- Descriptions of the datasets used in the report; and
- Next Steps.

1 Introduction

1.1 Purpose of the report

The purpose of the Lotsearch Contaminated Land Screening Report (the Lotsearch Report) is to assist the customer in assessing the potential for contamination to be present on (or in the vicinity) of the subject property (the site). To support the customer in this decision-making process, the first page of each report contains a Contaminated Land Screening Assessment (the Assessment). The assessment is automatically generated from an algorithm prepared by contaminated land consultants at GHD Pty Ltd (GHD).

2 Understanding the Assessment

2.1 Purpose of the Assessment

The Assessment has been prepared to assist the customer to:

- Understand whether the Lotsearch Report contains data which indicates that the subject site is, or may be, affected by contamination;
- Highlight whether further professional services, such as those of a contaminated land consultant, should be obtained; and/or
- Identify whether further information should be requested from other parties.¹

2.2 How has the algorithm within the Assessment been prepared?

The Assessment has been automatically generated based solely on:

- The information contained within the Lotsearch Report; and
- GHD's knowledge and industry experience in relation to land uses with the potential to cause contamination and the activities which are typically associated with contamination. Although it should be noted that the screening report is the

¹ Such as a vendor, neighbour, occupier or borrower.

product of an automated system, with individual sites not reviewed by a contaminated land professional.

The Assessment has been generated by an automated system which utilises a risk screening model developed by GHD. The model takes into consideration the available data, as presented within the Lotsearch Report, in assessing the likelihood that contamination may affect the subject site. The model has been developed by a specialised team of contaminated land professionals within GHD, which has been the subject of rigorous quality control checks.

It is however important to note that:

- The Assessment is the product of an automated system, with individual sites not reviewed by a contaminated land professional;
- As a consequence, no assessment has been made relating to whether contaminated land or notifiable activities which have occurred or are occurring on land meet the 'duty to notify' obligations under the QLD Environmental Protection Act 1994;
- The Assessment does not take into consideration current site activities which are not listed within the datasets utilised within the report, including for example the potential presence of asbestos;
- Identifying whether contamination is actually present, and if so, whether it presents any risks or has other adverse impacts, is beyond the scope of this Assessment. Assessment of the potential consequences of contamination requires the specialised services of a contaminated land professional; and
- This Assessment has not been prepared with reference to any physical site inspections, investigations, assessments or remediation works which may have been carried out at the subject site.

2.3 Duty to Notify

According to the Environmental Protection Act 1994, an owner or occupier, an auditor who has been commissioned to certify a Contaminated Land Investigation Document (CLID) and a local government has the 'duty to notify' contaminated land or notifiable activities which have occurred or are occurring on land. This includes where there are new notification requirements to report events or changes in condition that relate to contaminated land or notifiable activities that have occurred or are occurring on land. In addition, a suitably qualified person (SQP) has a 'duty to notify' their employer or potentially the administering authority of an event related to contaminated land that has occurred.

However as the Assessment within this report is the product of the automated system with individual sites not reviewed by a contaminated land professional, no assessment has been made relating to whether contaminated land or notifiable activities have occurred or are occurring on land meet the 'duty to notify' under the QLD Environmental Protection Act 1994. Further information relating to the 'duty to notify' is detailed here -

<https://www.qld.gov.au/environment/pollution/management/contaminated-land/assessing/notifications>.

Where further clarification is required relating to notifiable activities which have the potential to cause land contamination, the customer should consult the listed activities detailed by the Queensland Government -

<https://www.qld.gov.au/environment/pollution/management/contaminated-land/registers/notifiable-activities>.

2.4 Contaminated Land Screening Assessment Page

2.4.1 What does Item A – ‘Potential for contamination to affect the site’ mean?

Item A of the Assessment rates the potential for soils, vapour, surface water and/or groundwater underlying the subject site to be affected by contamination.

Using GHD’s specialised knowledge and experience, a likelihood descriptor has been allocated based on the algorithm model output. This includes current regulated activities and historic land uses/activities at, and in the vicinity of, the subject site. Historical land uses/activities have been risk ranked based on the potential for that use or activity to cause contamination. It should be noted that the rating has been allocated based on a limited number of historic data sources.

Please note, the assessment result does not take into consideration whether the site is included on the Contaminated Land Register (CLR) or Environmental Management Register (EMR).

It is recommended that these searches are completed separately.

The subject site will be classified as one of the following:

Likelihood that the subject site may be affected by contamination	Classification	What does it mean?
Likely	Likely Contamination Source Identified	The available information indicates that the subject site: <ul style="list-style-type: none"> • Is currently identified as being on a database of sites maintained by government agencies/authorities or private entities the inclusion of which suggests that the site was or is likely to be contaminated; or • Is or has been the subject of an activity which is frequently associated with contamination; or • Has groundwater borehole records indicating a likely potential for contamination.

Likelihood that the subject site may be affected by contamination	Classification	What does it mean?
Possible	Possible Contamination Source Identified	<p>The available information indicates that the subject site:</p> <ul style="list-style-type: none"> • Is or has been the subject of an activity which in some circumstances is known to be associated with contamination; <p>or</p> <ul style="list-style-type: none"> • Has groundwater borehole records indicating a potential for contamination. <p>The available information indicates that land within 50 m of the subject site:</p> <ul style="list-style-type: none"> • Is currently identified as being on a register of sites maintained by government agencies/authorities or private entities the inclusion of which suggests that the site was or is likely to be contaminated; <p>or</p> <ul style="list-style-type: none"> • Is or has been the subject of an activity which in some circumstances is known to be associated with contamination; <p>or</p> <ul style="list-style-type: none"> • Has groundwater records indicating the potential for contamination.
Unlikely	Contamination Source not likely to be present	<p>The available information does not indicate that the subject site, or land within 50 m of the subject site:</p> <ul style="list-style-type: none"> • Is currently identified as being on a register of sites maintained by government agencies/authorities or private entities the inclusion of which suggests that the site was or is likely to be contaminated; • Is or has been the subject of an activity which is frequently associated with contamination; • Has groundwater records indicating the potential for contamination.

2.4.2 What does Item B – ‘Inclusion of the site or surrounding area (2 km) on a PFAS (per and polyfluoroalkyl substances) investigation and monitoring program’ mean?

Commonwealth site managers have instigated programs to investigate or manage the potential presence of PFAS on or under sites, arising from historic or current site activities. If the subject site has been included as part of a program, or is within a 2 km radius of a site that is part of a program, there is the potential for the subject site to contain a PFAS source or to be impacted by PFAS migrating within groundwater from surrounding sites. Further information relating to PFAS in QLD is detailed here – <https://www.qld.gov.au/environment/pollution/management/disasters/investigation-pfas>

2.4.3 What does Item C – ‘Identification of an on-site, adjacent or nearby potential contamination source(s)’ mean?

Item C of the Assessment shows whether the subject site contains any identified potential on-site sources of contamination and the proximity of an off-site potential source of contamination to the subject site.

Assessing contamination associated with potential off-site sources is an important factor when considering potential contamination at a site, however, it does not necessarily mean that the subject site is contaminated. Whether or not this is the case is dependent on a range of factors outside of the scope of the Assessment, including the nature and extent of the contamination source, the age, whether the source has been subject to remedial activities and the rate/direction of groundwater flows (if any) and/or hazardous ground gas migration (if any).

2.5 What is the Environmental Data Summary Table?

The Environmental Data Summary Table within the report provides a summary of the data used to derive the Assessment. The table lists all of the datasets used in the report, along with the number of features from each dataset on, adjacent and in the surrounding area² of the site. The Dataset Buffer field shows the maximum distance from the site boundary (in metres) that was used to search for features within each dataset. The search distances have been selected by experienced GHD contaminated land consultants based on their experience of contaminated site investigations across Australia.

The datasets and buffers are not all encompassing and cannot feasibly account for all potential off-site contamination sources. No information on aquifer characteristics has been evaluated within the Assessment, which means that the degree and extent of contamination to migrate within groundwater has not been assessed.

For further details of each dataset refer to Section 3 Understanding the maps and data tables.

2.6 Want further advice?

Seeking the advice of a professional contaminated land consultant such as GHD and/or obtaining additional information is generally recommended for sites classified as having either a ‘**Likely**’ or ‘**Possible**’ potential for contamination to affect the site.

If you have any questions, or need further advice please email support@lotsearch.com.au or call our customer support team on (02) 8287 0680

² The definition for the surrounding area will vary depending on the dataset buffer associated with an individual dataset and shown in the Environmental Data Summary Table.

2.7 Limitations of the Assessment

This Assessment has been prepared based on the datasets collated and presented in the Lotsearch report. The datasets in the Lotsearch report were selected to provide an indication of the presence of contamination on and surrounding the site, but may not identify all current and historical uses and activities which may have caused the site and/or its surrounds to become contaminated. In particular, many sites are impacted by the presence of fill material containing asbestos or other contaminants from unknown sources usually associated with poor demolition practices, for which a dataset is not available.

The Assessment is based on datasets which were available at the date of the Assessment. These datasets are not necessarily exhaustive of all data which existed at the date of the Assessment and are continually updated as more information becomes available, and additional data obtained in the future may change the outcome of the Assessment.

The Assessment is based on a model developed by contaminated land consultants from GHD, however each individual site has not been reviewed by a contaminated land consultant. In addition, the Assessment has not been prepared in accordance with guidelines written or endorsed by an environmental regulator.

The Assessment provides an indication of the potential for contamination to be present at the site and does not constitute advice as to the value of the site, or the suitability of the site for a particular use or activity. It also does not take into account any environmental investigations, assessments or remediation works which may have been undertaken at the site.

The Assessment is the product of an automated system, with individual sites not reviewed by a contaminated land professional. As a consequence, no assessment has been made relating to whether contaminated land or notifiable activities which have occurred or are occurring on land meet the 'duty to notify' under the QLD Environmental Protection Act 1994.

3 Understanding the maps and data tables

3.1 Definitions

Useful definitions within the report are detailed in the table below.

Term	Definition
UBD / Universal Business Directory Records	<p>UBD records were published in QLD between 1948 and 1994 providing a comprehensive list of businesses operating at the time. The UBD directories provide nationwide coverage across Australia and New Zealand, listing the business activity being undertaken, the business name and an address. The UBD records were originally published as public directories (prior to 1985), with the intention to be used by both businesses and the general public. From 1985 onwards the UBD records were published with the intention to be used by businesses seeking the products or services of other businesses.</p> <p>Lotsearch has a licence agreement to use this data in its reports. Lotsearch extracts the information from each directory into a digital format. Once in a digital format, Lotsearch map each business record to its location as listed in the directory.</p> <p>The report currently includes eight years of UBD records for the majority of the Brisbane region, specifically 1994, 1986, 1980, 1974, 1968, 1961, 1950 and 1941. The selected years were chosen to give an even temporal spread of business activity data.</p>
Direction	<p>The value given in the direction field is the direction from the subject site boundary to the relevant data record. If the data record falls within the subject site boundary, the value of the direction field will be given as 'onsite'.</p>
Distance	<p>The value given in the distance field is the distance from the subject site boundary to the relevant data record. It should be noted that the distances provided in the tables vary depending on how the different datasets are mapped.</p> <p>For all datasets, with the exception of the UBDs used in Section 4 of the Report, the distance given in the data tables is the shortest distance between the subject site boundary and the boundary of a data record (metres (m)). If the data record falls within or is directly adjacent to the subject site, the distance will be given as 0m.</p> <p>For the UBD datasets used in Section 4, the historical business activity records are represented by data points on a map. If a data point falls within a current plan boundary, the distance given is the shortest distance between that plan boundary and the subject site. Note. Some addresses are made up of multiple plans, so the plan boundary the point falls within, may not be the full extent of the property that the business activity related to. If the data point falls outside a current property boundary, for example if the historical activity has been mapped to a road intersection, the distance given is the shortest distance between the data point and the subject site boundary. Again, if the data record falls within or is directly adjacent to the subject site, the distance will be given as 0 m.</p>
Location Confidence	<p>Where Lotsearch has mapped data records based on a supplied address or location, a location confidence has been assigned to the data record. This provides an indication of the positional accuracy of the record.</p> <p>Lotsearch undertakes due care in mapping records as accurately as possible. However, in some cases complete or detailed location information is not available. Mapping historical data provides many challenges, as suburbs and roads can be renamed, roads are realigned, areas are redeveloped, and streets are renumbered. Whilst Lotsearch utilises a variety of historical resources, such</p>

Term	Definition
	<p>as historical maps, to identify the correct location of historical records, it is not always possible to map every record to a specific building or address. As a consequence the following location confidences appear in the report:</p> <ul style="list-style-type: none"> • Premise match: this indicates the record has been mapped to a specific address or premise. • Road intersection: this indicates the record has been mapped to the intersection of two or more roads. The supplied data may specify an address such as ‘corner of x and y roads’. Alternatively, Lotsearch may not be able to determine which side of an intersection an address should be assigned. • Road match: this indicates the record has been mapped to a specific road. The supplied data may not provide an address number, or Lotsearch may not be able to determine a specific building or premise from the supplied address. • General area or Suburb match: Lotsearch has not been able to determine a specific building or road from the supplied address, but they have been able to map it to a general area or suburb. <p>Lotsearch has mapped the location of each dataset provider record based on the information available at the time the data was extracted. Where the dataset provider has not provided any additional documentation (e.g. maps showing the boundary of the record), Lotsearch has inferred the location of the record based on the address or property information supplied.</p>
LS Ref	The LS Ref is a unique identifier for each record in a dataset, used internally by Lotsearch.
PFAS	Poly- and per-fluoroalkyl substances (PFAS) are a group of chemical compounds that are widely used in a range of products in Australia and internationally. PFAS are an emerging contaminant.
Prescribed ERAs / Environmentally Relevant Activities	Prescribed ERAs are industrial or intensive agricultural activities that have potential environmental risks and for which, an Environmental Authority (EA) is required from the State Government. Examples include chemical manufacturing, sewage treatment, cement manufacturing and poultry farming. These activities are listed in schedule 2 of the Environmental Protection Regulation 2019.

3.2 Report Sections

3.2.1 Section 1: Sites on the QLD Environmental Authorities Register

The maps and tables in Section 1 of the report detail sites which are on the QLD Environmental Authorities register.

The Department of Environment and Science’s Environmental Authorities Register (EAR) provides details about current and former licences (environmental authorities) issued for resource activities (mining and petroleum and gas) and prescribed ERAs / environmentally relevant activities issued under the *Environmental Protection Act 1994*. The environmental authorities include conditions requiring the developments to conduct these activities in an environmentally responsible manner.

Lotsearch have undertaken a project to link the features on the register to current and historical cadastre parcels and mining leases in order to map them. A limitation of this dataset is that not all records on the EAR have specific or current location details and due to changes in the cadastre dataset, not all records on the register are able to be

mapped. In addition, some mapped features may not exactly represent the locations described in environmental authority documentation.

For further information, please refer to the following website:

<https://apps.des.qld.gov.au/env-authorities/>

3.2.2 Section 2: Sites part of a PFAS Investigation or Management Program

PFAS Investigation & Management Programs.

The Dept. of Defence & Airservices Australia have been undertaking national programs to review, investigate and implement a comprehensive approach to manage the impacts of PFAS on, and in the vicinity of, some of their sites around Australia.

Queensland Fire and Emergency Services (QFES) have also tested soil and water held in the in-ground water tanks at several of their sites. Testing was conducted to identify the concentration of a range of PFAS and the results were to be used to inform proactive actions by QFES. More information regarding the PFAS concentration results can be found on the QFES PFAS webpage, accessible via the link below.

For further information, please refer to the following webpages:

[Department of Defence – PFAS webpage](#)

[Airservices Australia – PFAS webpage](#)

[QFES - PFAS Webpage](#)

Lotsearch has mapped the location of each PFAS area using the information available at the time the data was extracted from the relevant website. Where there is no specific documentation detailing the boundary of the area (e.g. maps), Lotsearch has inferred the location of the record based on the address or property information supplied.

3.2.3 Section 3: Specific Land Uses with High Potential to Cause Contamination

The maps and tables in Section 3 of the report detail sites which, based on the historical site activities known to have occurred at the property, have a high potential to cause contamination. These include:

The National Waste Management Facilities Database. Geoscience Australian maintains a database of the locations of known landfills, waste transfer stations and waste reprocessing facilities in Australia. The data is compiled from various government, council and industry databases. For further information, refer to the Australian Government website:

<https://data.gov.au/dataset/waste-management-facilities>

National Liquid Fuel Facilities. Geoscience Australia maintains a database of the locations of known petrol stations, fuel depots, fuel terminals, and fuel refineries in Australia. Geoscience Australia compiled the data from various owner/operator websites and validated against aerial imagery. The list is not all encompassing and does not necessarily include the locations of all fuel facilities. For further information, refer to the following Australian Government webpages:

- [Petrol Stations](#)
- [Fuel Depots](#)
- [Fuel Refineries](#)
- [Fuel Terminals](#)

3.2.4 Section 4: Potentially contaminative historical activities

The maps and tables in Section 4 of the report detail published current and historical features and business activities.

Universal Business Directories (UBD). The Universal Business Directories (UBDs) were published in QLD between 1948 and 1994, providing a comprehensive list of businesses operating at the time. There are many challenges with mapping historical data, as suburbs and roads can be renamed, road alignments can change, and streets can be renumbered. Lotsearch undertakes quality assurance steps to ensure that the businesses are mapped to the correct location, using a variety of resources to achieve this, including historical maps.

Each business has been mapped as a spatial data point. Records that are listed with the same address will appear as a single point on the map. Each point is labelled with a number that corresponds to the *Map Id* shown in the accompanying data table. The data table lists all records for each point on the map.

Contamination Risk. The classification of business activities and features in terms of the potential contamination risk they pose, has been determined by contaminated land specialists from GHD, based on their extensive experience of contaminated sites across Australia, and with reference to the following documents:

- *Potentially Contaminated Land, General Practice Note (PPN30)*, Victorian Department of Sustainability and Environment 2005; and
- *Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land*, NSW EPA 1998.

The report automatically identifies any moderate or high risk businesses or features, as pre-categorised by GHD (refer to section 2.2) that are located within the relevant dataset buffers. Low risk business activities and features have not been included in the report as they are not considered to represent a significant potential for contamination.

3.2.4.1 Limitations of the historical business directory data

Addresses from the historical business directories have been used to derive a spatial point for each record. Where possible, these points use the extent of the current property parcel they are mapped within for reporting purposes. However, point-based data has the limitation that representing the whole extent of the relevant address is not always possible. For instance, some addresses are made up of multiple property parcels.

Mapping historical data has many challenges. In addition to re-named and re-numbered roads, property boundaries can also change over time as sites are sub-

divided or merged together. Current properties may have formed part of a larger site historically and some historical records may not match current addresses.

The limitations of point-based data and mapping historical records means that some data records that could relate to or impact on the report property, may be mapped outside the site boundary or the report buffer. Users should refer to data records mapped outside the site boundary to consider whether they could relate to or impact on the site.

3.2.5 Section 5: Groundwater records indicating the potential for contamination

The maps and tables in Section 5 of the report contains registered water bore data.

The Groundwater Database provided by QLD Department of Natural Resources, Mines and Energy (DNRME), contains registered water bore data from private water bores and Queensland Government groundwater investigation and monitoring bores.

The presence of groundwater wells at a site may be an indication of contaminative activities or that previous environmental investigations have been undertaken, particularly if multiple wells have been installed. For this reason, the report only lists groundwater bores which were installed for the purposes of mining exploration, injection and monitoring; petroleum/gas exploration and monitoring; sub-artesian monitoring; or other exploration/investigation.

The dataset does not contain a comprehensive list of all groundwater bores in QLD.

For further information regarding the groundwater bore database, refer to:

<http://qldspatial.information.qld.gov.au/catalogue/custom/search?q=%22Groundwater%20Database%20-%20Queensland%22>.

3.2.6 Dataset listing table

The dataset listing table provides details of the datasets used in the report, and includes the following fields:

- **Dataset Name** – the full name of the dataset;
- **Custodian** – the authority responsible for maintaining the dataset;
- **Supply Date** – the date the dataset was last retrieved from the custodian by Lotsearch;
- **Currency Date** – the date the dataset was last updated by the custodian; and
- **Update Frequency** – the frequency at which Lotsearch checks for updates to the dataset.

4 Next Steps

If you have any questions or require further advice/review of additional datasets, please send an email to support@lotsearch.com.au or call our customer team on (02) 8287 0680.

Additional datasets which can be reviewed include, but are not limited to:

- EMR / CLR search;
- Title searches;
- Council property searches/certificates;
- Historical maps;
- Historical aerial photographs;
- Dangerous goods search;
- Acid sulfate soil potential; and
- Levels of soil salinity.