


Application Site Condition Report

Real Alloy (UK) Ltd
Waunarlwydd, Swansea
EPR/EP3935UC

Date:
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SOL1910RA01

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1	First Issue to Natural Resources Wales	July 2015	SMB
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Contents

INTRODUCTION

This Application Site Report has been prepared by Sol Environment Ltd on behalf of Real Alloy (UK) Ltd (hereafter referred to as "the Applicant") in support of a 'Normal' Variation of their existing Permitted Installation (EPR/EP3935UC/V006) to increase the installation boundary of the Part A(1) Activity to include an additional area within the salt slag storage building on site.

The document represents the Application Site Condition Report (ASCR) submitted as part of the Application package to Natural Resources Wales (NRW) (Sol Environment Ref. SOL1910RA01) and has relied on information supplied by the site and various third party information sources (See Section 2) submitted as part of the original permit application.

Real Alloy (UK) Ltd ('the Site') is located at Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF.

The secondary aluminium recycling is permitted as an Installation as defined by Schedule 1, Section 2.2 '*Non Ferrous Metals*,' paragraph A(1)(b)(i) of the EPR Regulations namely;

'Melting, including making alloys, of non-ferrous metals, including recovered products and the operation of non-ferrous metal foundries where -

i) The pant has a melting capacity of more than 4 tonnes per day for lead or cadmium or 20 tonnes per day for all other metals'

The site is currently permitted under the conditions established by Environmental Permit EPR/EP3935UC/V006.

Under the requirements of the Environmental Permitting Regulations, any change of the Installation Boundary triggers the need to provide an Application Site Condition Report (ASCR).

Sol Environment was engaged by Real Alloy (UK) Ltd to produce an updated ASCR in accordance with the EA's / NRW Guidance Document H5 Site Condition Reports Guidance and Templates (Version 2.0, dated 04/08/08).

1. Site Details

Name of the Applicant	Real Alloy (UK) Ltd
Activity Address	Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF
National Grid Reference	OS X (Eastings) 260058 OS Y (Northings) 196193

Document References and dates for the Site Condition Report at permit application and surrender	Document Title: EP Application Site Condition Report, Real Alloy (UK), Swansea. Sol document reference and date: SOL1910RA01_ASCR
Document Reference and Site Plans	• Annex A1 – Site Location • Annex A2 – Proposed Installation Boundary • Annex B: Historic Maps • Annex C: Geological and Hydrogeological Maps • Annex D: Landmark Report • Annex E: Phase 2 Environmental Permit Baseline Assessment • Annex F: Site Investigation Data • Annex G1: Sample Analysis 2017_V1 • Annex G2: Sample Analysis 2017_V2 • Annex H1: Sample Analysis 2019_V1 • Annex H2: Sample Analysis 2019_V2

2. Condition of Land at Permit Issue

2.1 Environmental Setting

2.2.1 Site Location

The location of the Site is shown on Figure A1, Annex A, centred at approximate National Grid Reference for the centre of the site is OS X (Eastings) 260058 OS Y (Northings) 196193. The proposed changes are shown in Figure A2.

The site is accessed from Titanium Road and forms part of the Westfield Industrial Park, approximately 6km northwest of Swansea City Centre. The site is irregular in shape and has an area of approximately 20,000m^2 (occupied area 9,000m^2).

With the exception of Alcoa's retained and unused industrial buildings, all occupied manufacturing buildings within the wider Waunarlwydd site are used for large scale industrial operations that fall under the definitions of 'Installations' as defined by Schedule 1 of the Environmental Permitting Regulations (formerly Integrated Pollution Control and Integrated Pollution Control Regulations) and associated regimes.

The remaining manufacturing facilities, namely Timet, and KanCoat all occupy buildings that were built as part of the original ICI and Alcoa's development of the site.

The closest residential receptor is the residential area of Bridge Road which is located approximately 250m to the south of the site.

Table 2.1 provides details of the further details as required:

Table 2.1 Site Setting

Direction	Description
North	Offsite: Grassland, B4560, A484.
East	Onsite (within Alcoa's wider site boundary): Timet (Titanium Melting and Extrusion) Off site: Afon Llan
South East	Onsite (within Alcoa's wider site boundary): Former Alcoa mill and Warehousing, Alcoa Extrusion buildings, Former Aluminium remelting and foundry buildings (now unused), Alcoa manufacturing buildings, Unused 'Playing field'; Offsite: Railway, beyond which lies small businesses 'Road Haulage

	Services', B4295, A483, Fforest-fach local businesses, Cwmllwyd Wood, Waunarlwydd.
South	Onsite (within Alcoa's wider site boundary): Former Aluminium Extrusions Plant, Remelting and foundry buildings (now unused); Offsite: Railway, beyond which lies residential buildings (Oak Drive) and some smaller commercial developments (Petrol Filling Station, Garage Services, Laundry Equipment, Sales and Service).
South West	Offsite: Grassland, Gors Fawr Brooke, Gowerton Campus
West	Offsite: Grassland, Gowerton, Allt-wen Wood
North West	Offsite: Grassland, Afon Lian, Glanymore Park

The Environment Agency flood zone database indicates that the site is not situated within a designated flood zone and therefore is considered an area of low probability with regards to flooding (the chance of flooding each year is estimated at 0.1% (1 in 1000) or less).

2.2.2 Geology, Hydrogeology and Surface Waters

Desk-based research of the local geology, hydrogeology and surface waters has been carried out in order to establish the potential for migration of contamination onto or away from the Site, and to assess the surface water and groundwater sensitivity of the Site area. Information was obtained from a number of sources, namely:

- Environment Agency Groundwater Vulnerability Digital Maps;
- Information provided by an environmental database report (Envirocheck);
- Geological maps produced by the British Geological Survey (BGS) and the BGS Geology of Britain Viewer;
- MAGIC (http://maps.bgs.ac.uk/geologyviewer);
- BGS Borehole Record Viewer (http://www.bgs.ac.uk/data/boreholescans/home.html);
- Information provided by previous ground investigations undertaken at the site by: Applied Geology: Hydrological Study Phase 1, February 1992; Geraghty & Miller (G&M): Site Wide Hydrogeological Survey, Waunarlwydd Works, Swansea, February 1994; ExCAL Limited: Site Investigation, September 2002; Natural Solutions: Addendum to the ENVIRON Site Condition Report (2003);
- ENVIRON Report ref 64-C11647: Site Surrender Report: Part 2 – Surrender Data (July 2007);
- Baseline data summary provided by ENVIRON date 22nd November 2011,

Geology

The geological sequence beneath the site is as follows:

- Made Ground.
- Swansea Valley Fill.
- Alluvium.
- Boulder Clay.
- Coal Measures.

The existing operations are within buildings which were constructed by Alcoa in the 1970's. These buildings are known to be constructed on significant concrete foundations.

The Made Ground has been observed to range from 0.45m bgl to 6.5m bgl beneath the proposed installation. The Made Ground can be found as black, clayey ground or hardcore and hardstanding known to contain Swansea Valley Fill (SVF) materials from the 1930'. SVF has been shown to comprise cobble size fragments of slag, furnace brick, concrete and wood fragments.

The Alluvium clays, sands and gravels are classified as a minor aquifer. Shallow groundwater may be present within these deposits at a depth of 3.3m bgl.

The Boulder Clay on site has been proven to comprise grey sandy gravelly clays or stiff orange brown

mottled grey sandy gravelly clay. The Boulder Clay is reported to be a negligibly permeable non-aquifer. The Boulder Clay is present throughout the site at depths of 8.0m.

The Coal Measures comprise weathered mudstones and sandstones and are classified as a minor aquifer. In some locations on site they are less than 1m from the surface. The Coal Measures are present beneath the site to depth (13.0m bgl).

The site is located in an area which may be affected by coal mining activity. There is a low-moderate risk from shallow mine hazards on site, a moderate hazard potential for compressible ground stability, very low hazard potential for landslide ground stability and very low/low hazard potential for running sand ground stability. There is also very low hazard potential for shrinking or swelling clay ground stability hazards. The site is located in an area where no radon protective measures are necessary.

Hydrogeology

Information taken from the 1:100,000 West Glamorgan (Sheet 35) Groundwater Vulnerability Map and the Environmental Agency website indicates that the site lies on a minor aquifer of variable permeability.

These are further described as rocks that can be fractured or potentially fractured, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstractions, they are important for local supplies and in supplying base flow to rivers.

The overlying drift deposits are low permeability drift deposits occurring at the surface and overlying the Minor Aquifer below are head, clay-with-flints, brickearth, peat, river terrace deposits and marine esturine alluvium.

The overlying soils have been classified as having a high leaching potential, as soil information for restored mineral workings and urban area is based on fewer observations than elsewhere, a worse case vulnerability classification (H) is assumed or as otherwise proved.

There are no groundwater abstractions within 1km metres of the site.

According to the EA website, the site does not lie within a Groundwater Source Protection Zone.

Surface Water

There are no surface water features located on site.

The Gors Fawr Brook is located c. 700m west of the site at its closest point and flows in a north westerly direction. This watercourse is not classified under the Environmental Agency's General Quality Assessment Scheme. No flow data for this watercourse was available. Groundwater beneath

the site is not in hydraulic conductivity with the culverted tributary of the Gors Fawr Brook.

The Afon Llan is located c. 200m north of the site at its closest point. And flows in a westerly direction. The Afon Llan is classified as Grade A for chemical quality in 2000. According to the EA website, the Afon Llan was classified as Grade C for chemical quality in 2006. The flow of the Afon Llan at this point is reported to be less than 0.62 cubic metres per second (cumecs).

The Environment Agency flood zone database indicates that the site is not situated within a designated flood zone and therefore is considered an area of low probability with regards to flooding (the chance of flooding each year is estimated at 0.1% (1 in 1000) or less).

The publicly available third party database, Envirocheck, holds two records of licensed surface water abstractions within 2km of the site. The closest abstraction is located c. 300m east of the site from the Afon Llan for the abstraction of cooling water for non-evaporative cooling processes within the metals industry. This abstraction is licensed to Alcoa Manufacturing (GB) Ltd and the details are shown in Table 2.2 below.

Table 2.2. Licensed Water Abstractions within 2km of the Site

Details		Dist from Site	Location (NGR)
Operator:	Alcoa Manufacturing (GB) Ltd	300	260350
Licence Number:	22/59/4/0029		196530
Location:	Afon Llan Near Waunarlwydd		
Authority:	Environment Agency, Welsh Region		
Abstraction:	Metal: Non-Evaporative Cooling		
Abstraction Type:	Water may be abstracted from a single point		
Source:	Surface		
Daily Rate (m^3):	Not Supplied		
Yearly Rate (m^3):	Not Supplied		
Details:	Afon Llan Near Waunarlwydd		
Authorised Start:	01 January		
Authorised End:	31 December		
Permit Start Date:	28th February 1966		
Permit End Date:	Not Supplied		
Positional Accuracy:	Located by supplier to within 100m		

The above Licensed Water Abstraction is associated with the former site activities and is known to be unused.

The only other abstraction is located c. 1.5km north west of the site, from the Afon Llan for the abstraction of make up or top up water (amenity). This abstraction is licensed to Bromham Leisure Ltd.

2.2.3 Designated Sites

The Environment Agency's H1 and H5 guidance states that the potential impacts of the site should be assessed for the following habitat sites within 10km of the Installation:

- Special Areas of Conservations (SAC's and candidate (cSACs) designated under the EC Habitats Directive;
- Special Protection Areas (SPAs) and potential SPAs designated under the EC Birds Directive.
- Ramsar Sites designated under the Convention of Wetlands of International Importance.

It is also stated that within 2km of the Source:

- Sites of Special Scientific Interest (SSSI) established by the 1981 Wildlife and Countryside Act;
- National Nature Reserves (NNR);
- Local Nature Reserves;
- Local Wildlife sites;
- Ancient Woodland.

Information from the Countryside Council for Wales (CCW) website (http://ccw.gov.uk) has been used to obtain the above information.

According to the CCW website, there are two RAMSAR Sites, Special protection Areas (SPA's) or Special Areas of Conservation (SAC's) within a 10km radius of the site.

Table 2.3. Prosecutions Relating to Controlled Waters

Name		Dist from Site	Site References:
Name: **Designation:** **Reason:**	Burry Inlet RAMSAR & SPA The Burry Inlet is a large estuarine complex located between the Gower Peninsula and Llanelli in South Wales. It includes extensive areas of intertidal sand and mud flats, together with large sand dune systems at the mouth of the estuary. The site contains the largest continuous area of saltmarsh in Wales The Burry Inlet regularly supports large numbers of wildfowl and waders, and is especially important for Oystercatchers, Pintail and Shoveler.	4.5km West	**Unitary Authorities:** City and County of Swansea, Carmarthenshire **Site Reference:** UK14001 **Site Area:** 6,672.95 ha
Name: **Designation:** **Reason:**	Crymlyn Bog RAMSAR & SAC Crymlyn Bog is a large wetland site situated in a	9.5km South East	**Unitary Authorities:** City and County of Swansea, Neath and Port

	glacial depression on the eastern edge of Swansea. The site includes the adjacent Pant-y-Sais Fen and consists of a complex mosaic of vegetation types made up of communities' characteristic of both nutrient-rich and nutrient-poor conditions. The presence of significant areas of saw sedge swamp is notable in extensive stands of this uncommon vegetation type. The site also supports a large population of the nationally-rare slender cotton grass. The area is important for its rich invertebrate fauna, including many nationally rare or highly localized species associated with mires.		Talbot **Site Reference:** UK14006 **Site Area:** 267.56 ha
Name: **Designation:** **Reason:**	Gower Ash Woods/ Coedydd Ynn Gŵyr SAC SAC The steep sided limestone valleys of South Gower provide ideal conditions for the ash woodlands to thrive. The woods have a great diversity of trees and shrubs, including ash, sycamore, pedunculate oak, small-leaved lime, field-maple, dogwood and spindle. The ground flora is rich, with fine displays of damsons and bluebells in spring. This site is considered one of the best areas of ash woodland in the UK.	4.5km South / SW	**SAC Code:** UK0030157 **Unitary Authority:** City and County of Swansea **Area:** 233.15 ha
Name: **Designation:** **Reason:**	Gower Commons/ Tiroedd Comin Gŵyr SAC SAC This site was selected as a SAC because of the presence of such large areas of lowland heathland and marshy grassland vegetation and for the presence of populations of the rare marsh fritillary butterfly and the southern damselfly which these habitats support.	4.5km South / SW	**SAC Code:** UK0012685 **Unitary Authority:** City and County of Swansea **Area:** 1,776.72 ha

There are no Sites of Special Scientific Interest (SSSI's) within 2km.

The site is not located within a Nitrate Vulnerable Zone.

The site is not located within an Air Quality Management Area.

It is the conclusion of this assessment that the proposed operations are not likely to have any significant effects on any designated sites.

2.2 Pollution History

2.2.1 Environmental Database Records

The following information has been obtained from a search of a publicly available database of environmental information (Envirocheck data sheets, produced by Landmark Ltd).

The database contains records of information from public registers held by environmental regulatory authorities and can be used to assess the site's sensitivity, the potential for neighbouring activities to pose a risk to the site and to determine whether specific records of pollution relate to the subject site.

Pollution Incidents

At the time of this submission, the Applicant reports that there have been no significant pollution incidents at the site.

The environmental database (Envirocheck) does not hold any records of pollution incidents relating to the Site.

There have been three incidents recorded on the substantial pollution incident register, within a 1km radius of the site. The closest of these occurred c. 700m east and was deemed to be a category 2 incident – significant incident with regards to land impact – and a category 3 incident – minor incident with regards to air impact. The pollutant involved was specified to be ammonia solutions.

According to the Envirocheck database there has been one pollution incident to controlled waters within a 250m radius of the site. The incident occurred on 24th July 1997 at a point approximately 200m east of the site and involved the release of chlorinated water to a tributary of the River Llan. It was designated as a category 3 – minor incident. A further 25 incidents have occurred within a 1km radius, of which the majority were classified as category 3 incidents.

Prosecutions

There are two records of prosecutions relating to Controlled Waters within 1km of the Site. The details of which are shown in Table 2.4 below:

Table 2.4. Prosecutions Relating to Controlled Waters

Details		Dist from Site	Location (NGR)
Location:	Llewitha Road Bridge, Llewitha, Fforestfach, Swansea, West Glamorgan, SA	200	260300 196000
Prosecution Text:	Environment Times June 97, Polluting the Afon Llan with chlorinated water. Offence committed 01/08/1996. WRA91 s85(1) : SAFFA75 s4		
Prosecution Act:	24th March 1997		

Hearing Date: Verdict: Fine:	Guilty £4000 £2524		
Location: Prosecution Text: Prosecution Act: Hearing Date: Verdict: Fine: Cost: Positional Accuracy:	Keepers Lodge Farm, Imco Access Road, Waunarlwydd Works,Swansea,Sa5 4sh Aluminium Salt Slag Deposited On Land Without A Wml Epa90 S33(1)(B) 19th February 2004 Guilty £10000 £7753 Manually positioned within the geographical locality	600	261270 196180

None of the above incidents have the potential to impact the ground conditions beneath the installation.

Licensed Waste Management Facilities

There are two registered landfill sites within a 1km radius of the site:

- Alcoa Manufacturing (GB) Ltd – License Number 34021. This landfill was recorded as being inactive as of November 1988 and was a medium sized industrial landfill and is now closed and redeveloped as the Aleris Facility which forms part of the wider application site. The licences for this landfill have been surrendered.
- Timet Landfill – License Number 34005. This license is currently active and is an industrial waste landfill. Sludge Lagoon.

There is one registered waste treatment or disposal facility operated by I. M. I (Titanium) Ltd as an operational large storage lagoon. The site is authorised to dispose treated effluent sludges to land.

Discharge Consents

The Envirocheck database holds ten records of current discharge consents within a 1km radius of the site. The closest of which is held by Alcoa Manufacturing (GB) Ltd at a point c. 100m south east of the site to an unnamed tributary of the Gors Fawr Brook.

Authorised or Permitted Processes

The most significant industrial processes located in the vicinity of the site are;

- Timet Ltd; A Titanium Alloy Manufacturer.
- KanCoat Ltd – A Steel Coil Coating Facility.

With the exception of the buildings retained by Alcoa, all occupied manufacturing buildings within the wider Waunarlwydd site are used for large scale industrial operations that fall under the definitions of

'Installations' as defined by Schedule 1 of the Environmental Permitting Regulations (formerly Integrated Pollution Control and Integrated Pollution Prevention Control Regulations) and associated regimes.

The EnviroCheck Report is provided within Annex D.

2.2.2 Historical Land Uses and Site History

Available historic maps for the site have been obtained and reviewed to determine if there is the potential for contamination to be present on Site associated with the Sites historical uses. The historical maps are presented within Annex B of this report and a summary of the historical development of the Site and surroundings is included below.

The land use chronology shown on the historical plans generally correlates with information obtained from Alcoa personnel on the sites historical development. The following overview has been formed from the available information.

- The original Alcoa plant was opened in the late 1930s by ICI for the manufacture of non-ferrous metals. The initial plant building was the main central area of the existing Alcoa plant.
- At about the same time, land to the north end east of the ICI buildings was raised using Lower Swansea Valley Fill material (SVF) and the TIMET Ltd (formerly IMI Titanium) plant was built on marshland north of the ICI plant, again on raised ground using SVF.
- During the late 1940's the extrusion plant buildings were developed on raised land and used as part of the wider Alcoa site.
- Further site expansion occurred in 1974. Resulting in the Alcoa plant buildings extending northward and eastward to house the hot mill, cold mill, coil preparation line, original coil coating line and shrink pack line. Further expansion took place in 1988/9 during which time a new Coil Coating and Slitter line was constructed.
- At the peak of the site operations the site was the largest manufacturer of rolled products and extruded aluminum profiles in the UK and operation an aluminum remelting foundry operation with a capacity greater than 200,000 tonnes per annum.
- All aluminum processes and ancillary manufacturing operations at the site were regulated by the Environmental Agency (as Part A(1) processes) until closure and surrender of the permit in 2007.
- The southern external area of the existing Installation Boundary site historically formed an external yard and materials handling area for the extrusion plant and has not been directly used for industrial processing. However given the close proximity and down-gradient location of the site to the main extrusion processes the site has been impacted with petroleum hydrocarbons, polyaromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), BTEX compounds, semi-volatile organic compounds (SVOCs), Phenols and Phthalates.

- The proposed new area of the site comprises the former Alcoa extrusion plant building. The building is constructed with impermeable / sealed concrete floor slabs and will be used for the storage of dry salt slag / salt cake only. The internal storage of this material in a dry condition, upon sealed concrete hardstanding presents a low risk to the environment and does not have the potential for underlying soil and groundwater pollution.

Baseline contamination data for the site provided within Section 2.3. Although the site has not been used for any industrial and potentially contaminating uses since the closure in 2003, new round of groundwater baseline data will be collected and forwarded to the NRW during the permit determination period.

Historical Maps are provided within Annex B.

2.2.3 Site Reconnaissance

Visual/Olfactory Evidence of Existing Contamination

The new proposed area is entirely constructed of concrete hardstanding. All areas of the Installation have been subject to a visual inspection at the time of this application document.

The inspection was carried out in conjunction with the applicant for the purposes of inspecting as assessing the following:

- Physical condition of hardstanding;
- Condition and adequacy of containment bunds;
- Housekeeping and Pollution prevention measures; and
- Condition and adequacy of underground drainage and containment systems.

The hardstanding was observed to be in general good condition. The only pollution source within the salt slag storage building is salt slag pile but there is no pathways due to the building being sealed.

The following measures are incorporated into the facility:

- The building is constructed of sealed reinforced concrete floor slabs which will be at least 300 - 450mm thickness.
- There are no storage tanks, process pipelines or potentially polluting equipment within the storage building.
- There are no underground structures, pipelines or transfer ducts.
- Any vulnerable surface water drains will be sealed and protected.

2.3 Evidence of Historic Contamination

Previous Site Investigation

The site has been extensively investigated throughout the life of the industrial activities at site and as part of Alcoa's site closure and divestiture process.

A summary of the all data relating to the most recent testing and sampling within the 'new' areas of the site has been provided in Annex G3 and G4.

The most recent Site Investigation was carried out on the behalf of Alcoa Manufacturing (GB) Ltd by ENVIRON UK Limited (ENVIRON) for the purposes of collecting site investigation data.

At the time, the site investigation, testing and sampling was undertaken in accordance with the Environment Agency (EA) IPPC H8 Guidance and Template and relates to Section 5.7 to 7.1 of the H8 guidance[1].

The site investigation consisted of the advancing of boreholes and the recovery of soil and groundwater samples which were subsequently submitted to an independent MCERTS and UKAS accredited laboratory for chemical analysis.

Analysis was undertaken for a range of potential contaminants appropriate to Permitted activities in each of the PPC Zones.

The determinants included petroleum hydrocarbons, polyaromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), BTEX compounds, semi-volatile organic compounds (SVOCs), Phenols and Phthalates.

A summary of the investigation and analysis undertaken:

Table 2.5. Summary of Laboratory Analysis Undertaken

Analytical Suite	Comment	No. Of soil samples	No. of ground water samples
Metal Suite	Target analysis for metals	14	3
pH	General parameter	23	5
EPH (C10 – C40)	Target analysis for oils, lubricants and coolants	13	3

1 The H8 guidance has now been superseded by the H5 guidance, however the principles are largely similar and applicable for the purpose of this baseline assessment.

PAH Suite	Target analysis for PAHs	22	-
TPH CWG Suite	Target analysis for oils, lubricants and coolants	4	-
BTEX Suite	General analysis for fuel constituents	6	-
VOC Suite	General analysis	13	5

Determinant		Comparison Data (mg/kg)				
			Min	Max	Ave	Upper 95%ile
	pH	Baseline Data	6	10.5	7.58	0.44
PAH	Naphthalene	Baseline Data	<.0.02	2.2	0.22	0.19
PAH	Acenaphthylene	Baseline Data	<0.02	<0.15	0.09	0.02
PAH	Acenaphthene	Baseline Data	<0.02	<0.15	0.09	0.02
PAH	Fluorene	Baseline Data	<0.02	<0.15	0.09	0.02
PAH	Phenanthrene	Baseline Data	<0.02	0.91	0.19	0.09
PAH	Anthracene	Baseline Data	<0.02	0.18	0.10	0.26
PAH	Fluoranthene	Baseline Data	<0.02	2.80	0.39	0.27
PAH	Pyrene	Baseline Data	<0.02	4.30	0.42	0.38
PAH	Benzo(a)-anthracene	Baseline Data	<0.02	1.4	0.22	0.13
PAH	Chrysene	Baseline Data	<0.02	1.5	0.25	0.15
PAH	Benzo(b)-flouranthracene	Baseline Data	<0.025	0.85	0.22	0.10
PAH	Benzo(k)-fluoranthene	Baseline Data	<0.02	0.82	0.23	0.07
PAH	Benzo(a)pyrene	Baseline Data	<0.025	1.3	0.20	0.12
PAH	Indeno(1,2,3-cd)pyrene	Baseline Data	<0.04	0.52	0.16	0.06
TPH	Aliphatic C12-C16	Baseline Data	<0.01	12	6.10	4.89
TPH	Aliphatic C16-C21	Baseline Data	<0.01	15	6.75	6.08
TPH	Total Aliphatics (C5-C35)	Baseline Data	<0.01	110	58.78	58.26
TPH	Aromatic C16-C21	Baseline Data	<0.01	7.0	2.98	29.2
TPH	Total aromatics (C5-C35)	Baseline Data	<0.1	120	41.53	54.29
TPH	Extractable Hydrocarbons (C12-C35)	Baseline Data	<0.1	150	57.0	66.22
TPH	Total Hydrocarbons (C5-C35)	Baseline Data	<0.1	230	65.00	108.02
Phenols	Phenol	Baseline Data	<0.02	0.29	0.09	0.05
Phenols	2-Chlorophenol	Baseline Data	<0.02	<0.15	0.09	0.05
Phenols	2-Methyphenol	Baseline Data	<0.02	<0.20	0.12	0.07
Phenols	2-Nitrophenol	Baseline Data	<0.02	<0.30	0.16	0.11
Phenols	2,4-Dimethylphenol	Baseline Data	<0.02	<0.25	0.15	0.09
Phenols	2,4-Dichlorophenol	Baseline Data	<0.02	<0.20	0.12	0.07

	2,6-Dichlorophenol		<0.02	<0.20	0.12	0.07
	4-Chloro-3-methyl phenol		<0.02	<0.15	0.09	0.05
	2,4,6-Trichlorophenol		<0.02	<0.15	0.09	0.05
	2,4,5-Trichlorophenol		<0.02	<0.20	0.12	0.07
	4-Nitrophenol		<0.05	<0.30	0.21	0.11
	2,3,4,6-Tetrachlorophenol		<0.03	<0.25	0.16	0.09
	Pentachlorophenol		<0.06	<0.25	0.17	0.08
Phthalate	Dimethyl Phthalate		<0.02	<0.20	0.12	0.07
	Diethyl Phthalate		<0.03	<0.20	0.13	0.07
	Di-n-butyl Phthalate		<0.03	<0.20	0.11	0.06
	Butyl benzyl Phthalate		<0.06	<0.15	0.11	0.04
BTEX	Benzene		<0.010	<0.010	<0.010	-
	Toluene		<0.010	<0.010	<0.010	-
	Ethylbenzene		<0.010	0.011	0.0105	0.015
	Xyelene		<0.010	0.30	0.155	0.21

The detailed report showing the available site investigation data from the former Alcoa Extrusions and End Products (EEP) facility including borehole logs and analytical data is shown in Annex F.

As part of the permit variation in 2017 to include additional areas of site, a round of groundwater monitoring of existing boreholes was undertaken. As part of this, groundwater from 5 boreholes were monitored and analysed for a range of contaminants including heavy metals, PAHs, TPH, phenols, PCBs, VOCs, SVOCs, cyanide, sulphate, ammoniacal nitrogen and pH. The results are provided in Annex G, and a summary is provided in the table overleaf.

Following this, as part of a permit variation in 2019 to include an additional area of the existing building for the storage of salt slag, a further round of groundwater monitoring of the existing boreholes was undertaken analysing a range of similar contaminants. The results from this investigation can be found in Annex H, and a summary is provided in the table overleaf.

Determinant			Groundwater Analysis (2017)				Groundwater Analysis (2019)		
			Unit	Min	Max	Ave	Min	Max	Ave
	pH	Baseline Data	pH units	6.2	7.5	7.0	6.2	7.4	6.78
PAH	Naphthalene	Baseline Data	ug/l	<0.02	<0.02	<0.02	<0.01	0.004	0.025
PAH	Acenaphthylene	Baseline Data	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH	Acenaphthene	Baseline Data	ug/l	<0.01	0.025	0.018	<0.01	<0.01	<0.01
PAH	Fluorene	Baseline Data	ug/l	<0.01	0.014	0.014	<0.01	<0.01	<0.01
PAH	Phenanthrene	Baseline Data	ug/l	<0.01	0.014	0.013	<0.01	<0.03	0.014
PAH	Anthracene	Baseline Data	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH	Fluoranthene	Baseline Data	ug/l	<0.01	0.013	0.013	<0.01	<0.04	0.016
PAH	Pyrene	Baseline Data	ug/l	<0.01	<0.01	<0.01	<0.01	0.04	0.015
PAH	Benzo(a)-anthracene	Baseline Data	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH	Chrysene	Baseline Data	ug/l	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
PAH	Benzo(b)-flouranthracene	Baseline Data	ug/l	<0.01	0.223	0.1495	<0.01	<0.01	<0.01
PAH	Benzo(k)-fluoranthene	Baseline Data	ug/l	<0.01	0.106	0.0805	<0.01	<0.01	<0.01
PAH	Benzo(a)pyrene	Baseline Data	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH	Indeno(1,2,3-cd)pyrene	Baseline Data	ug/l	<0.01	<0.01	<0.01	<0.01	0.03	0.013
TPH	C5 – C6	Baseline Data	mg/l	<0.1	5.5	5.5	<0.01	<0.01	<0.01
TPH	>C6-C7	Baseline Data	mg/l	<0.1	0.6	0.6	<0.01	<0.01	<0.01
TPH	>C7-C8	Baseline Data	mg/l	<0.1	1	1	<0.01	<0.01	<0.01
TPH	>C8-C10	Baseline Data	mg/l	<0.1	5.2	5.2	<0.01	<0.01	<0.01
TPH	Total GRO	Baseline Data	mg/l	<0.1	19.1	19.1	<0.01	<0.01	<0.01
TPH	Total Aliphatics (>C8-C40)	Baseline Data	mg/l	<0.01	0.022	0.022	<0.01	0.719	0.142
TPH	Total Aromatics (>C8-C40)	Baseline Data	mg/l	0.013	0.036	0.0207	0.018	0.37	0.103
Phenols	Phenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	<0.02	0.118	0.0563
Phenols	2-Chlorophenol	Baseline Data	mg/l	<0.05	<0.05	<0.05	<0.020	<0.080	0.05
Phenols	2-Methyphenol	Baseline Data	mg/l	<0.05	<0.05	<0.05	<0.005	<0.020	0.0125
Phenols	2-Nitrophenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	<0.020	<0.080	0.05
Phenols	2,4-Dimethylphenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	<0.020	<0.080	0.05
Phenols	2,4-Dichlorophenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	<0.020	<0.080	0.05
Phenols	2,6-Dichlorophenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	-	-	-
Phenols	4-Chloro-3-methyl phenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	<0.005	<0.020	0.0125
Phenols	2,4,6-Trichlorophenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	<0.020	<0.080	0.05
Phenols	2,4,5-Trichlorophenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	<0.020	<0.080	0.05
Phenols	4-Nitrophenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	<0.005	<0.20	0.125
Phenols	2,3,4,6-Tetrachlorophenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	-	-	-
Phenols	Pentachlorophenol	Baseline Data	mg/l	<0.02	<0.02	<0.02	0.050	0.200	0.125

BTEX	Benzene		mg/l	<0.005	0.825	0.825	<0.005	<0.005	<0.005
	Toluene		mg/l	<0.005	3.604	3.604	<0.005	<0.005	<0.005
	Ethylbenzene		mg/l	<0.005	0.398	0.398	<0.005	<0.005	<0.005
	m/p-Xyelene		mg/l	<0.005	1.56	1.56	<0.01	<0.01	<0.01
	o-Xylene		mg/l	<0.05	0.474	0.474	<0.005	<0.005	<0.005
	PCBS		ug/l	<0.01	<0.01	<0.01	-	-	-

2017

Some analysis from the groundwater from GM201 was analysed separately as an oil, due to the viscous nature and concentration of free product within this borehole. In this borehole, a concentration of 32.1 mg/kg total PAHs was identified and fractions of TPH identified as 1.49% aliphatic >C8–C40 and 0.85% aromatics >C8-C40.

As part of this analysis, boreholes GM07 and E2 were analysed and the data compared to that from 2007. This showed a general improvement in groundwater quality since that time in regard to total Sulphur as SO4 (GM07: 34 mg/l in 2017, 41 mg/l 2007) and heavy metals such as nickel (GM07: 0.008 mg/l in 2017, 0.026 in 2007) and zinc (GM07: 0.015 mg/l in 2017, 0.12 mg/l in 2007).

Please refer to Annex G1 and G2 for the complete 2017 reports.

2019

Some of the boreholes analysed in 2017 where not analysed in 2019 due to site constraints, namely, borehole GM201. Consequently, there are limitations when comparing datasets directly from 2017 and 2019. Nevertheless, it can be seen that there is no significant change in groundwater conditions at the site since last analysed in 2017.

The results show that there has been no significant overall change in groundwater quality from 2017 to 2019, emphasising that the existing activities carried out by Real Alloy Ltd are not having a negative impact on groundwater quality.

Please refer to Annex H1 and H2 for the complete 2019 reports.

2.4 Supporting Information

Figures detailing the location and boundary of the Installation are shown in Annex A1 and A2.

Historical Ordnance Survey plans of the site and surrounding area are reproduced in Annex B.

Geology and Hydrogeology Maps are provided within Annex C.

Information from the Envirocheck environmental database (provided by Landmark Information Group) identifying the environmental setting and pollution incidents are reproduced in Annex D.

The Phase II Environmental Permit Baseline Assessment for the external area (the subject of the previous site permit variation) carried out by EAME Ltd is provided in Annex E.

Applicable Extracts from the site investigation report carried out as part of Alcoa Site Surrender Investigation and Extrusions Plant Site Divestiture investigations is provided within Annex F.

Groundwater monitoring of existing boreholes were sampled in 2017. The results are provided within Annex G.

Groundwater monitoring of existing boreholes were sampled in 2019. The results are provided within Annex H.

3. Permitted Activities

3.1 Permitted Activities Undertaken at the Installation

3.1.1 Existing Activities

Real Alloy (UK) Ltd ('Real Alloy' hereafter) are permitted to operate an existing Part A(1) 'Non Ferrous Metals' Installation for their secondary aluminum recycling facility.

The secondary aluminum recycling process meets the description of an Installation as defined by Schedule 1, Section 2.2 '*Non Ferrous Metals*,' paragraph A(1)(b)(i) of the EPR Regulations namely;

'Melting, including making alloys, of non-ferrous metals, including recovered products and the operation of non-ferrous metal foundries where - The plant has a melting capacity of more than 4 tonnes per day for lead or cadmium or 20 tonnes per day for all other metals'

The site is currently permitted under the conditions established by Environmental Permit

EPR/EP3935UC/V006.

3.1.2 Description of the Proposed Changes

Real Alloy (UK) Ltd ('*Real Alloy*' or '*The Applicant*' hereafter) is making this application to carry out a 'Normal' Variation of their existing EPR permit under The Environmental Permitting (England and Wales) Regulations 2018 (as amended) to increase the installation boundary of the Part A(1) Activity to include an additional area within the salt slag storage building on site.

3.1.3 Substances Used and Produced at the Installation

The majority of material stored within the building will be salt slag wastes. Although this material exhibits hazardous properties, the storage of salt slag in a dry internal environment upon sealed hardstanding does not present any additional pollution risk. All storage will be in a dry, secured building. Additionally, during periods of bad weather small quantities of clean scrap and ingots may be stored within the building in order to keep them dry.

The storage quantities within the building will be as follows:

- Salt slag at a maximum of 15,000 tonnes;
- Scrap at a maximum of 3,000 tonnes; and
- Ingots at a maximum of will be 3,000 tonnes.

Scrap and ingots will only be stored within the building if there is sufficient capacity.

3.1.4 Drainage Systems

All drainage systems on the main site are as per the original permit application document and discharge under consent to the Gors Fawr Brook.

All site drainage associated with the new external area of the site are discharged directly to Aleris' oil water interceptor prior to discharge to the Gors Fawr Brook.

All waste processing areas within the Installation Boundary will be hard surfaced and impermeable.

There are no internal drains or identified pathways to the controlled waters associated with this installation.

Hardstanding

All internal processing areas and areas used for storage comprise impermeable concrete hardstanding which is designed in accordance to the load bearing requirements of the processing equipment and vehicles used at the facility.

The new storage area has introduced approximately 1.25 acres of new concrete hardstanding which

drains to the Gors Fawr Brook. All surface water emissions discharge from the site via the existing authorized release point WA1 and are controlled by an oil/water interceptor.

3.1.5 Potential for Fugitive Releases to Soil, Groundwater and Surface Water

The design and management of the facility ensures that the risk of contamination to either the underlying ground or groundwater has been fully mitigated.

The key control measures in place on site are as follows:

- All materials stored at site are subject to inspection and acceptance criteria to ensure that the materials are free from contamination.
- All storage areas are protected with concrete hardstanding;
- All surface water drains are protected by a 3 stage surface water interceptor.

In addition, the site operates an environmental management system which is described in Section 2 of the main Application document. The management system includes regular visual inspections of:

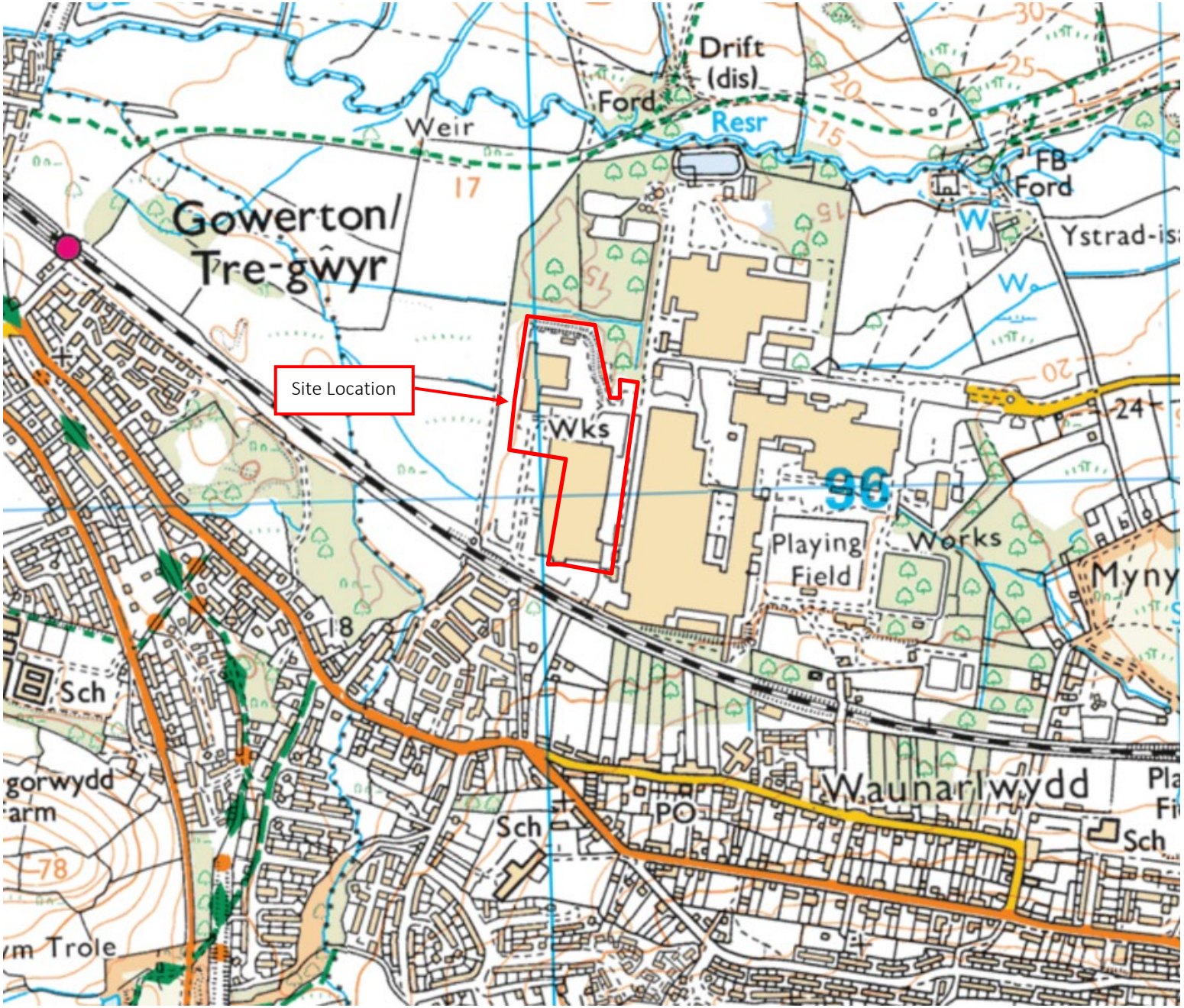
- All hard surfaced areas to detect any signs of deterioration, leaks, spillage or blockage. Any corrective action required is reported to and implemented by the Site Manager; and
- Inspection and testing of the surface water drainage system and associated effluents to ensure compliance to the permit and associated discharge conditions.

Site management operate an environmental management system conforming to the requirements of ISO 14001:2004 and EMAS.

Based on this, there is no potential for the new activity to impact soil and groundwater underlying the installation.

Non-permitted activities undertaken at the Installation	Not applicable
Plan showing site location	Refer to Figure A1, Annex A
Environmental Risk Assessment	See Application Support Document SOL1710RA01.

Annex A – Figures



1. Do not scale off this drawing
2. All dimensions to be confirmed on site
3. This drawing is copyright of Sol Environment Ltd
4. This drawing is to be read in conjunction with relevant consultant drawings and specifications

Rev:	Date:	Desc:
0	NOV 19	Original

Client:	REAL ALLOY (SWANSEA) LTD	Job No:	SOL1910RA01	Drawing No:	RA01
Project:	ALUMINIUM RECYCLING FACILITY	Date:	NOV 19	Revision:	0
Drawing Title:	SITE LOCATION	Drawn By:	SOPHIE PERRIN	Scale:	NTS

Sol Environment Ltd
2nd Floor,
10 The Lees, Malvern,
Worcestershire WR14 3HT
t: +44(0)1684 572727
e: enquiries@sol-environment.co.uk
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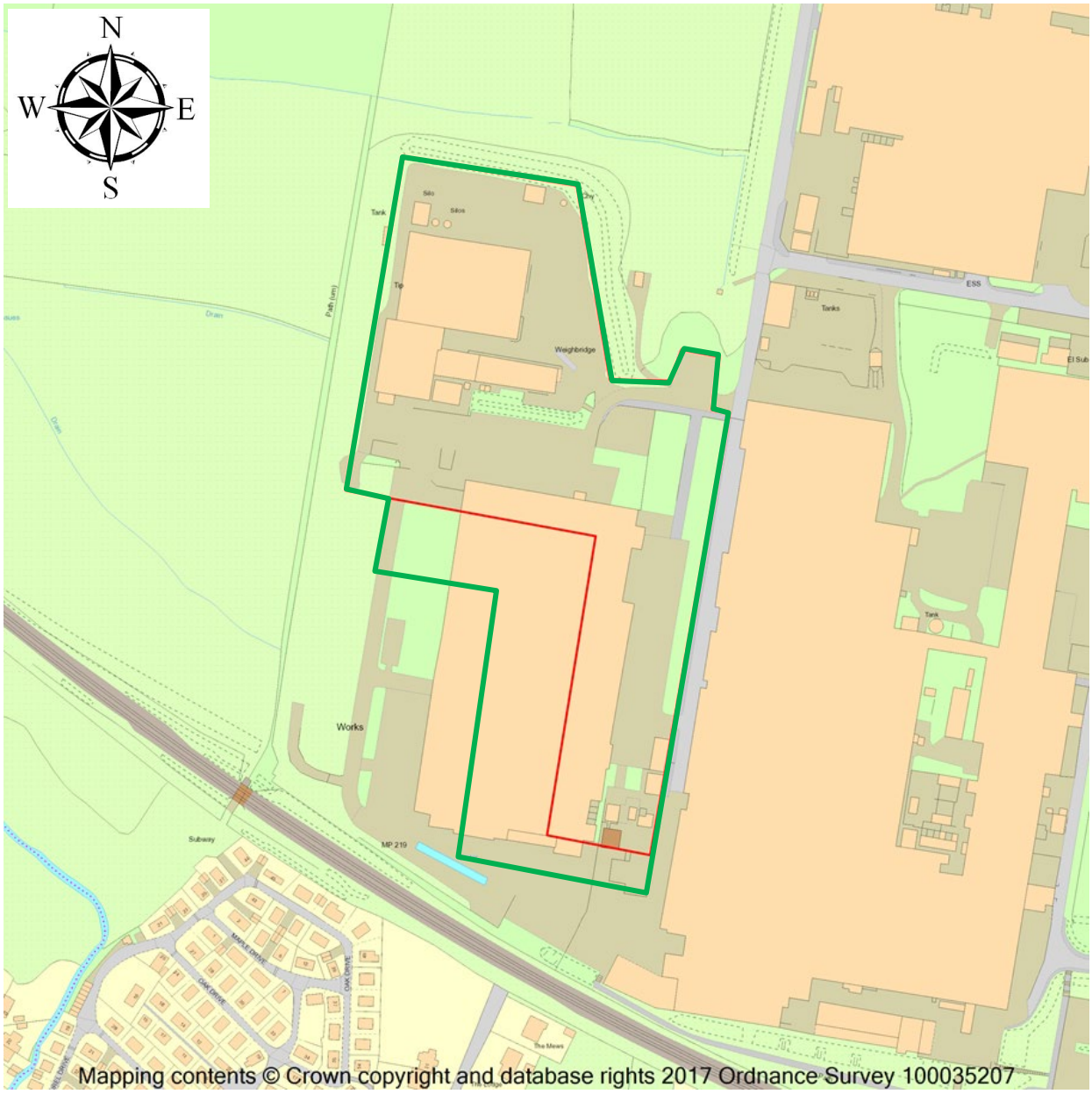

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3. This drawing is copyright of Sol Environment Ltd
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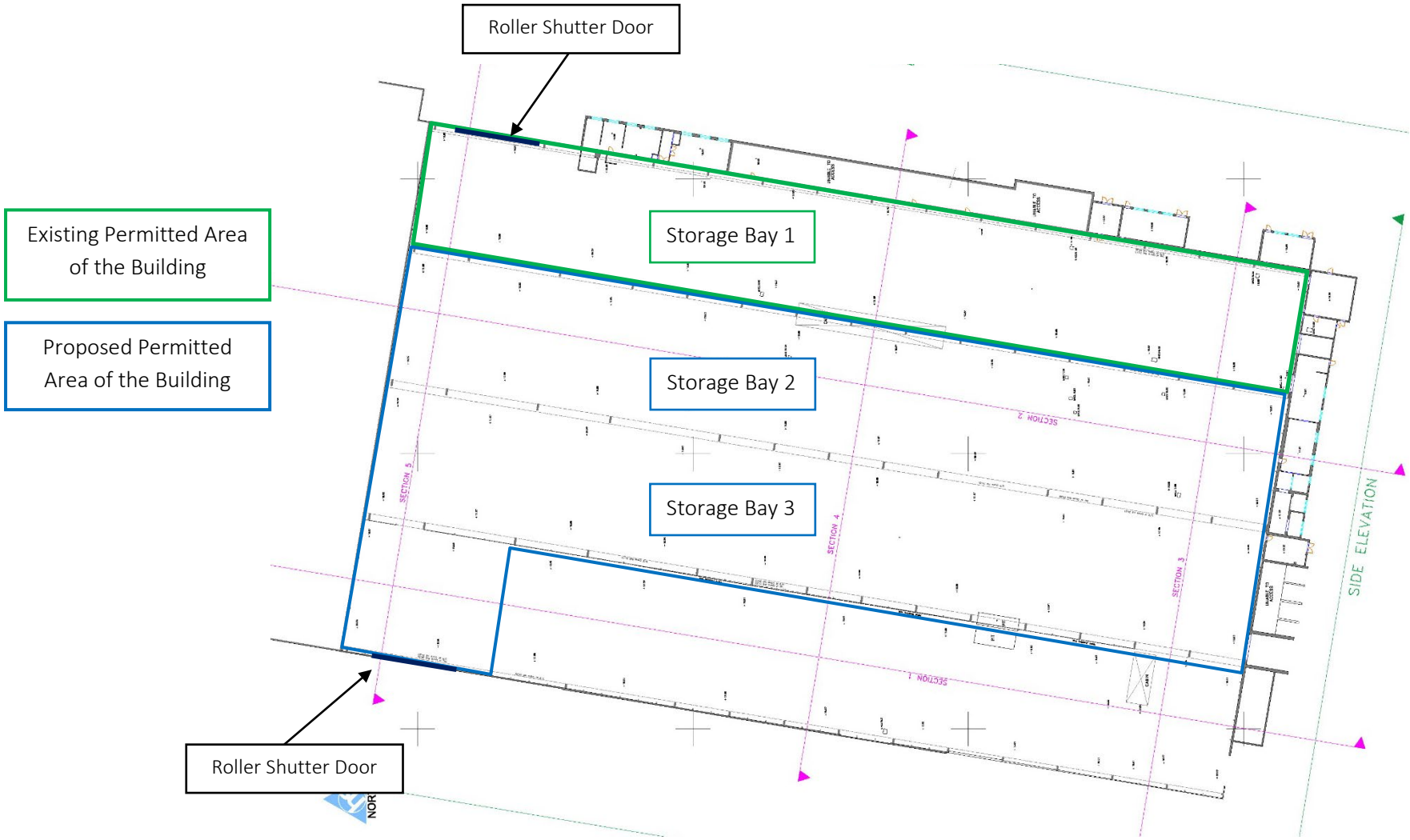
Rev:	Date:	Desc:
0	NOV 19	Original

Client:	REAL ALLOY (UK) LTD	**Job No:**	SOL1910RA01	**Drawing No:**	RA02
Project:	PERMIT VARIATION	**Date:**	NOV 19	**Revision:**	1
Drawing Title:	REVISED INSTALLATION BOUNDARY	**Drawn By:**	SOPHIE PERRIN	**Scale:**	1:2500



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Rev:	Date:	Desc:
0	NOV 19	Original

Client:	REAL ALLOY (UK) LTD	**Job No:**	SOL1910RA01	**Drawing No:**	RA03
Project:	PERMIT VARIATION	**Date:**	NOV 19	**Revision:**	0
Drawing Title:	PROPOSED SALT SLAG STORAGE BUILDING	**Drawn By:**	SOPHIE PERRIN	**Scale:**	NTS

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Annex B – Historical Maps

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

- Gravel Pit
- Sand Pit
- Other Pits
- Quarry
- Shingle
- Orchard
- Osiers
- Reeds
- Marsh
- Mixed Wood
- Deciduous
- Brushwood
- Fir
- Furze
- Rough Pasture
- Arrow denotes flow of water
- Trigonometrical Station
- Site of Antiquities
- Bench Mark
- Pump, Guide Post, Signal Post
- Well, Spring, Boundary Post
- ·285 Surface Level
- Sketched Contour
- Instrumental Contour
- Main Roads (Fenced / Un-Fenced)
- Minor Roads (Fenced / Un-Fenced)
- Sunken Road
- Raised Road
- Road over Railway
- Railway over River
- Railway over Road
- Level Crossing
- Road over River or Canal
- Road over Stream
- Road over Stream
- County Boundary (Geographical)
- County & Civil Parish Boundary
- Administrative County & Civil Parish Boundary
- Co. Boro. Bdy. County Borough Boundary (England)
- Co. Burgh Bdy. County Burgh Boundary (Scotland)
- R.D. Bdy. Rural District Boundary
- Civil Parish Boundary

Ordnance Survey Plan 1:10,000

- Chalk Pit, Clay Pit or Quarry
- Gravel Pit
- Sand Pit
- Disused Pit or Quarry
- Refuse or Slag Heap
- Lake, Loch or Pond
- Dunes
- Boulders
- Coniferous Trees
- Non-Coniferous Trees
- Orchard
- Scrub
- Coppice
- Bracken
- Heath
- Rough Grassland
- Marsh
- Reeds
- Saltings
- Building
- Direction of Flow of Water: Shingle, Sand
- Glasshouse
- Pylon
- Sloping Masonry
- Electricity Transmission Line
- Pole
- Cutting
- Embankment
- Standard Gauge Multiple Track
- Road Under, Road Over, Level Crossing, Foot Bridge
- Standard Gauge Single Track
- Siding, Tramway or Mineral Line
- Narrow Gauge
- Geographical County
- Administrative County, County Borough or County of City
- Municipal Borough, Urban or Rural District, Burgh or District Council
- Borough, Burgh or County Constituency — Shown only when not coincident with other boundaries
- Civil Parish — Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

- Gravel Pit
- Refuse tip or slag heap
- Rock
- Rock (scattered)
- Boulders
- Boulders (scattered)
- Shingle
- Mud
- Sand
- Sand Pit
- Slopes
- Top of cliff
- General detail
- Underground detail
- Overhead detail
- Narrow gauge railway
- Multi-track railway
- Single track railway
- County boundary (England only)
- Civil, parish or community boundary
- District, Unitary, Metropolitan, London Borough boundary
- Constituency boundary
- Area of wooded vegetation
- Non-coniferous trees
- Non-coniferous trees (scattered)
- Coniferous trees
- Coniferous trees (scattered)
- Positioned tree
- Orchard
- Coppice or Osiers
- Rough Grassland
- Heath
- Scrub
- Marsh, Salt Marsh or Reeds
- Water feature
- Flow arrows
- MHW(S) Mean high water (springs)
- MLW(S) Mean low water (springs)
- Telephone line (where shown)
- Electricity transmission line (with poles)
- BM 123.45 m Bench mark (where shown)
- Triangulation station
- Point feature (e.g. Guide Post or Mile Stone)
- Pylon, flare stack or lighting tower
- Site of (antiquity)
- Glasshouse
- General Building
- Important Building

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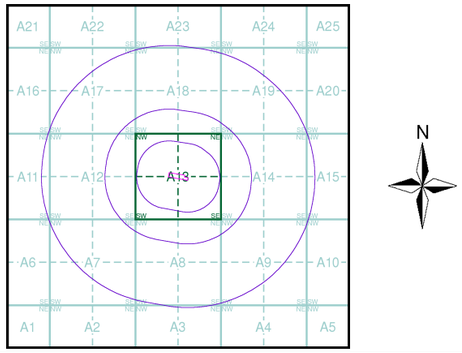
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:10,560	1884	3
Carmarthenshire	1:10,560	1889	4
Glamorganshire	1:10,560	1900	5
Carmarthenshire	1:10,560	1907	6
Carmarthenshire	1:10,560	1921	7
Glamorganshire	1:10,560	1921	8
Carmarthenshire	1:10,560	1936	9
Glamorganshire	1:10,560	1936	10
Carmarthenshire	1:10,560	1938	11
Glamorganshire	1:10,560	1938	12
Historical Aerial Photography	1:10,560	1949	13
Glamorganshire	1:10,560	1951 - 1953	14
Carmarthenshire	1:10,560	1951	15
Ordnance Survey Plan	1:10,000	1964	16
Ordnance Survey Plan	1:10,000	1968 - 1969	17
Ordnance Survey Plan	1:10,000	1972 - 1974	18
Swansea	1:10,000	1976	19
Ordnance Survey Plan	1:10,000	1982 - 1989	20
Ordnance Survey Plan	1:10,000	1993 - 1995	21
10K Raster Mapping	1:10,000	2006	22
10K Raster Mapping	1:10,000	2013	23

Historical Map - Slice A



Order Details

Order Number: 45945406_1_1
Customer Ref: SOL0113AL01
National Grid Reference: 260040, 196100
Slice: A
Site Area (Ha): 0.5
Search Buffer (m): 1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Fireproof Building
- Prominent Fireproof Building
- Non-fireproof Building
- Non-fireproof Building (non-dwelling)
- Factory, mill, and flour mill, with chimneys
- Factory, mill, and flour mill, without chimneys
- Power Station, drawn to scale (эл.ст.)
- Hydroelectric Power Station (ГЭС)
- Radio Station, drawn to scale
- Telephone Station, drawn to scale
- Abandoned Open-pit Mine or Quarry
- Open-pit Salt Mine (сол.)
- Pit (−1,5)
- Oil Deposit or Well (нефть)
- Oil Seepage (нефть)
- Tailings Pile (+7,0 отвал)
- Fuel Storage Tanks (скл. гор.)
- Natural Gas Tank (газг.)
- Bench Mark (125,4 / 125,1)
- Drill Hole (бур.)
- Burial Mound (+2.0)
- Triangulation Point on Burial Mound (+1.2 67.8)
- Single-track Railroad (Fill, раз., Cut, платф.)
- Double-track Railroad and Station Building (Small Bridge, ст., Tunnel, тун., Pipe (Culvert))
- Coniferous Forest (сосна 24 / 0.30)
- Deciduous Forest (клен 12 / 0.20)
- Mixed Forest (ель береза 20 / 0.25)
- Lawns
- Citrus Orchard
- Wet Ground
- Scattered Vegetation

243,8	Values for prominent elevations
186,0	Numbers for spot elevations, depth soundings, contour lines, etc.
0,2	Velocity of the current, width of river bed, depth of river
180/12 180/12	Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	ъ (–)
Д д (D)	Л л (L)	У у (U)	ы (Y)
Е е (E)	М м (M)	Ф ф (F)	ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Partly Demolished Buildings
- Demolished Buildings
- Built-Up Area with Fireproof Buildings Predominant
- Built-Up Area with Non-Fireproof Buildings Predominant
- Individual Fireproof Building
- Prominent Industrial Building
- Individual Dwelling, Fireproof
- Ruins of an Individual Dwelling
- Factory or Mill Chimney
- Factory or Mill with Chimney (бум.)
- Factory or Mill without Chimney (скип.)
- Mine or Open Pit Mine (медн.)
- Operating Shaft or Mine (кам. уг.)
- Non-Operating Shaft or Mine
- Salt Mine (сол.)
- Tailings Pile
- Pit (−1.7)
- Stone Quarry (гл. пес. кам.)
- Gas Pump or Service Station
- Fuel Storage or Natural Gas Tank
- Oil or Natural Gas Derrick
- Small Hydroelectric Power Station
- Power Station
- Transformer Station (б.тр.)
- Cemetery
- Burial Mound (height in metres) (+8.1)
- Triangulation Point on Burial Mound (95.7)
- Triangulation Point (92.6)
- Bench Mark (52.1)
- Bench Mark (monumented) (71.1)
- Telegraph Office
- Telephone Station
- Radio Station
- Radio Tower
- Airfield or Seaplane Base
- Landing Strip
- Main Highway (Cut, Fill, Km Post, Plantings, Telegraph/Telephone Lines)
- Highway under Construction
- Improved Dirt Road (former truck road) (Width of Road, Steep Grade)
- Double-track Railroad with First Class Station (Small Bridge, ст., Pipe (Culvert), Tunnel)
- Dismantled Railroad
- Railroad Under Construction
- Shore Embankment
- River or Ditch with Embankment (+2.4)
- Direction and velocity of current (Water Gauge, 0.2, 135.1, Water Level Mark)
- Well (К. 125,0 / 44,8м (г.-сол.))
- Water Reservoir or Rain Water Pit (вдхр.)
- Spring (156,2 кл.)
- Isobath with value (20)
- Heavy (Index) Contour Line
- Contour Line and Value (20)
- Half Contour Line
- Spot Elevation Value (347.1)
- Coniferous
- Deciduous
- Mixed
- Scrub

Key to Numbers on Mapping

SS59NE_Swansea

No.	Description
43	Chemical Plant

SS69NW_Swansea

No.	Description
38	Factory (Non-Ferrous Metals)
72	Post Office

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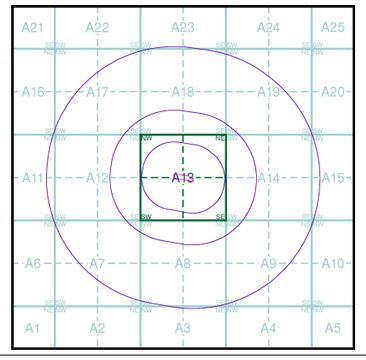
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:10,560	1884	3
Carmarthenshire	1:10,560	1889	4
Glamorganshire	1:10,560	1900	5
Carmarthenshire	1:10,560	1907	6
Carmarthenshire	1:10,560	1921	7
Glamorganshire	1:10,560	1921	8
Carmarthenshire	1:10,560	1936	9
Glamorganshire	1:10,560	1936	10
Carmarthenshire	1:10,560	1938	11
Glamorganshire	1:10,560	1938	12
Historical Aerial Photography	1:10,560	1949	13
Glamorganshire	1:10,560	1951 - 1953	14
Carmarthenshire	1:10,560	1951	15
Ordnance Survey Plan	1:10,000	1964	16
Ordnance Survey Plan	1:10,000	1968 - 1969	17
Ordnance Survey Plan	1:10,000	1972 - 1974	18
Swansea	1:10,000	1976	19
Ordnance Survey Plan	1:10,000	1982 - 1989	20
Ordnance Survey Plan	1:10,000	1993 - 1995	21
10K Raster Mapping	1:10,000	2006	22
10K Raster Mapping	1:10,000	2013	23

Russian Map - Slice A



N

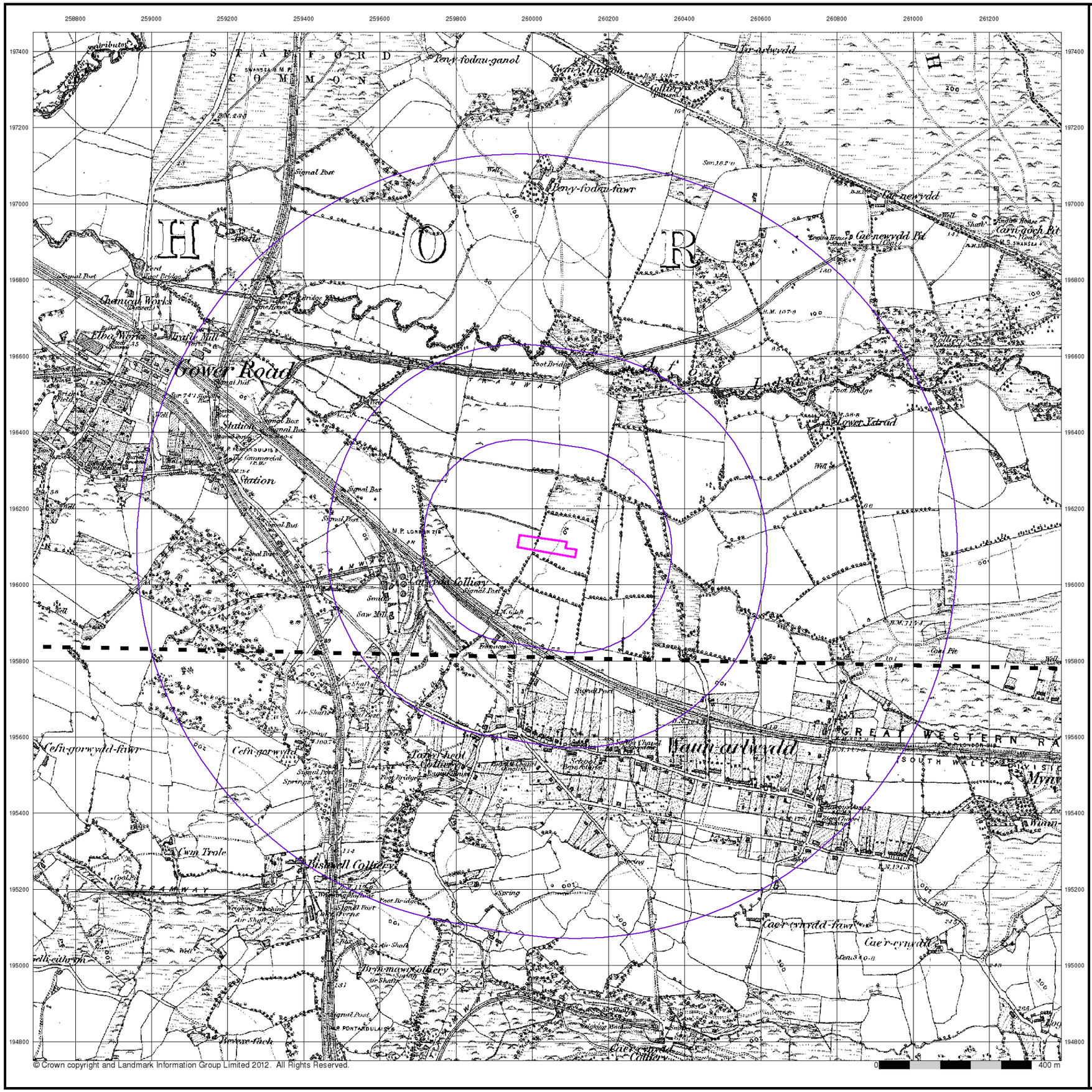
Order Details

Order Number: 45945406_1_1
Customer Ref: SOL0113AL01
National Grid Reference: 260040, 196100
Slice: A
Site Area (Ha): 0.5
Search Buffer (m): 1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



sol environment

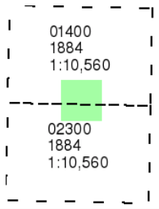
Glamorganshire

Published 1884

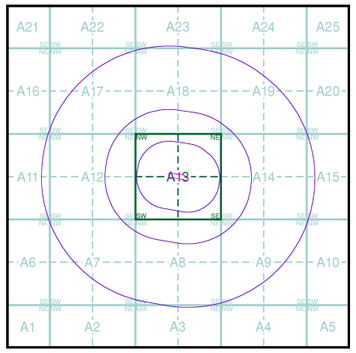
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

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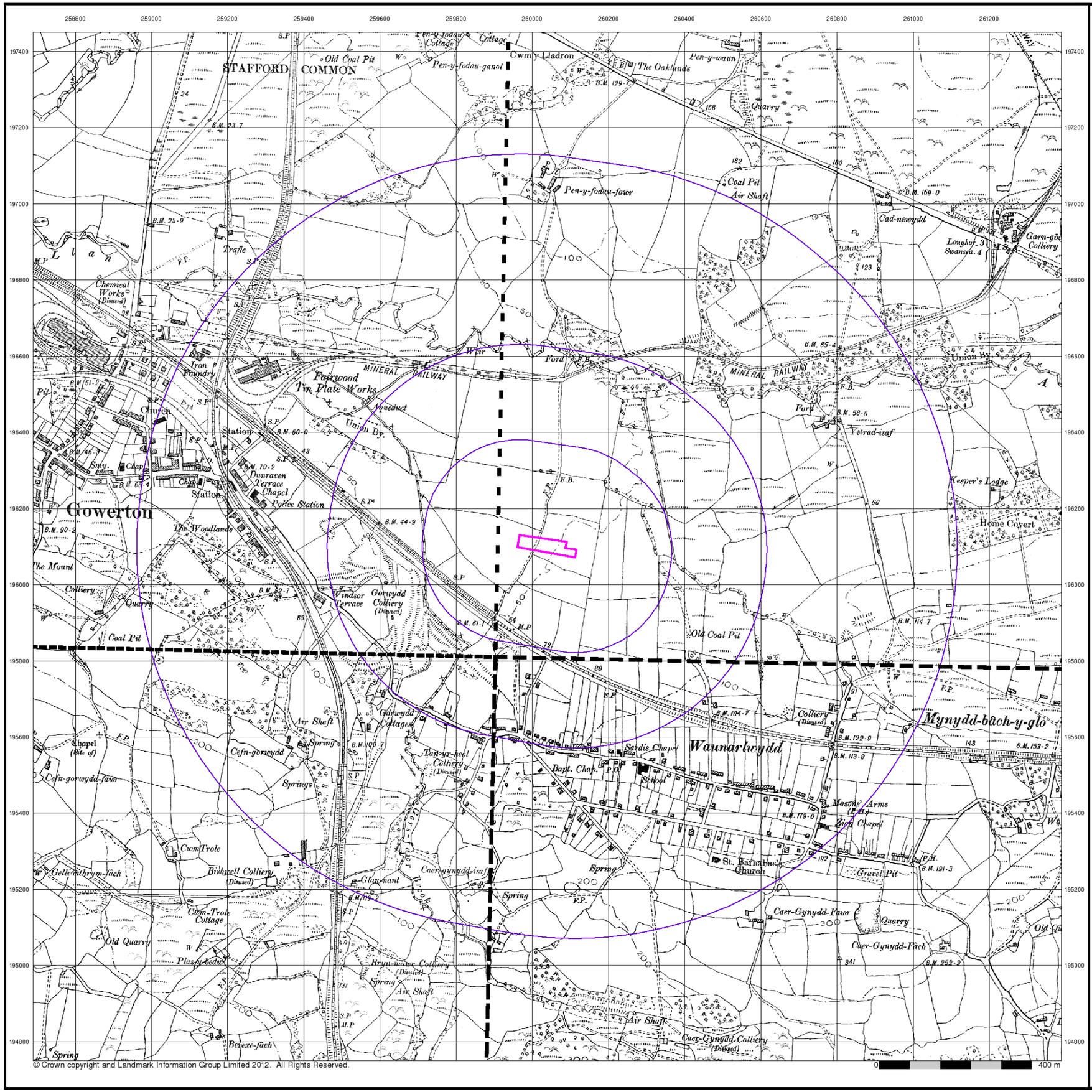

sol environment

Glamorganshire

Published 1900

Source map scale - 1:10,560

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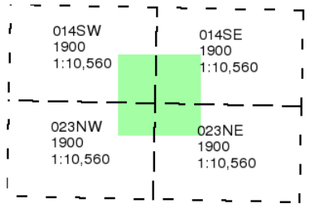
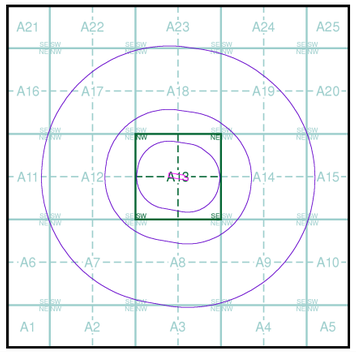
Map Name(s) and Date(s)



Historical Map - Slice A



N

Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

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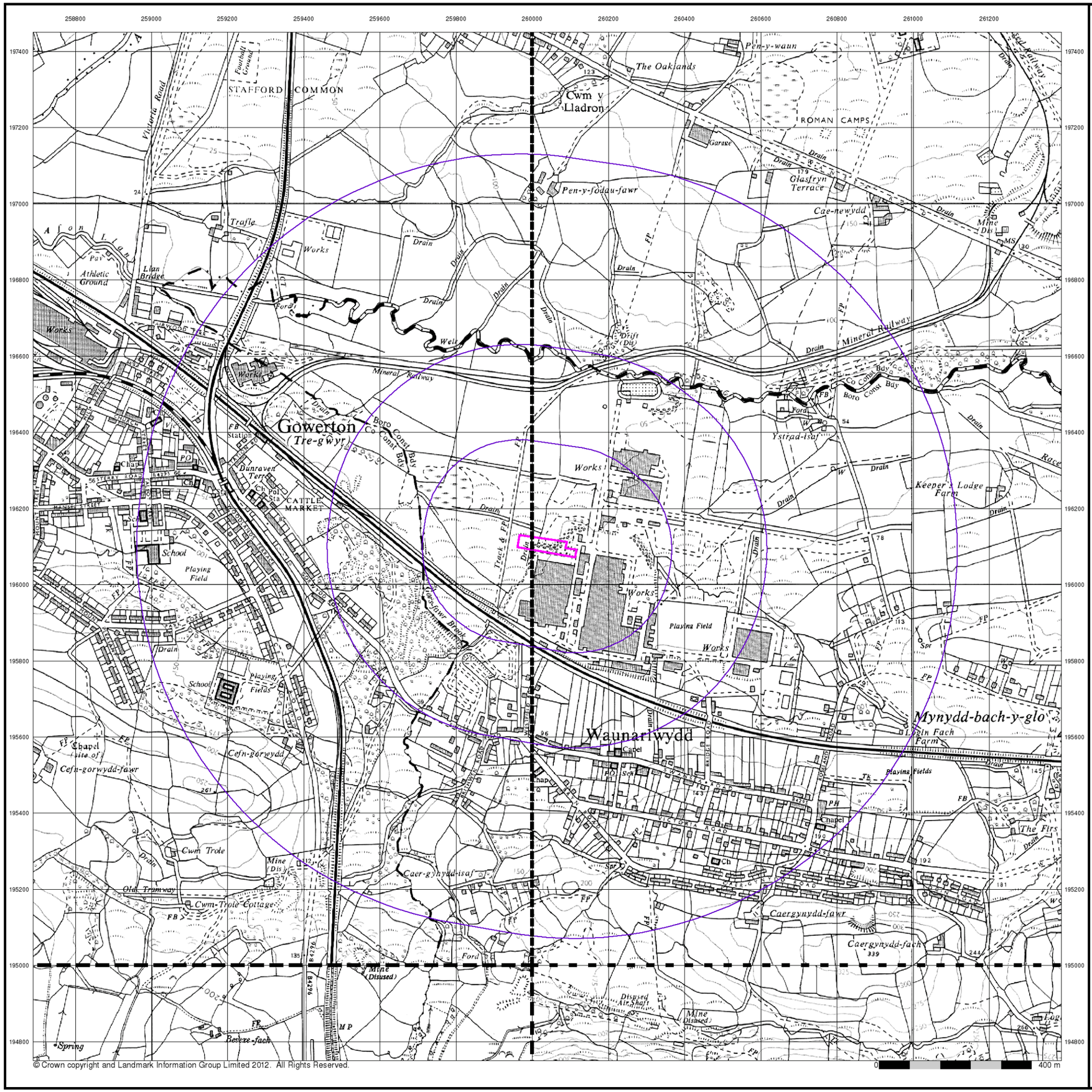


sol environment

Ordnance Survey Plan

Published 1964

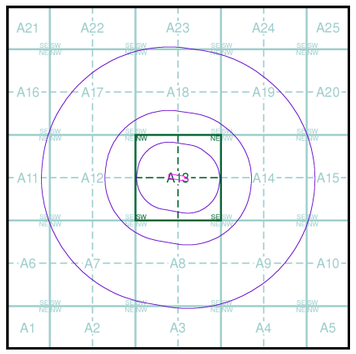
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SS59NE 1964 1:10,560	SS69NW 1964 1:10,560
SS59SE 1964 1:10,560	SS69SW 1964 1:10,560

Historical Map - Slice A



N

Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

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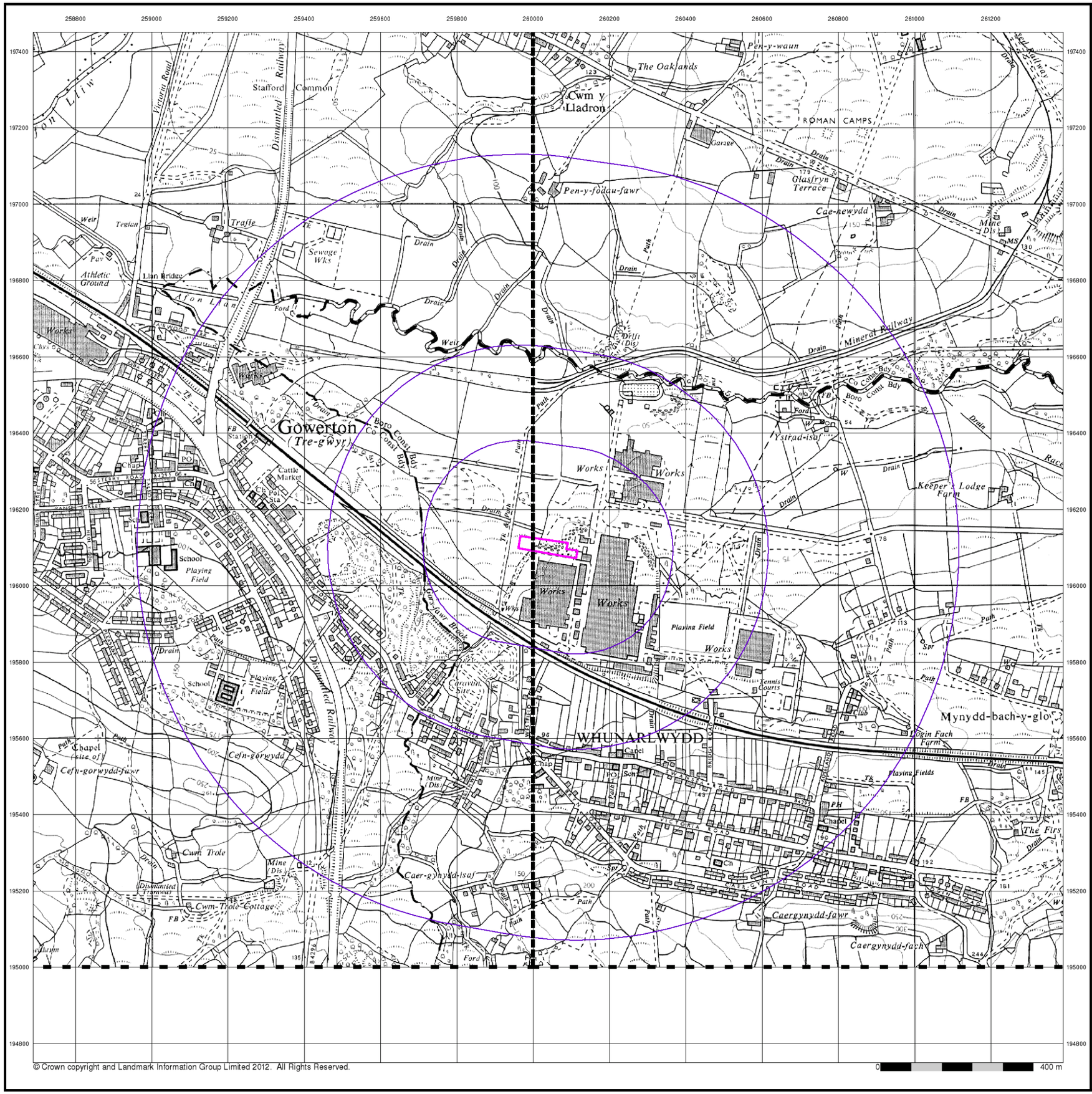


sol environment

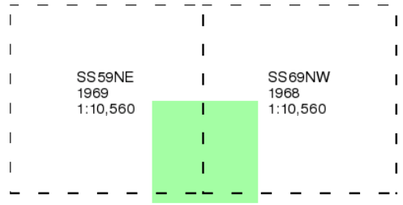
Ordnance Survey Plan

Published 1968 - 1969

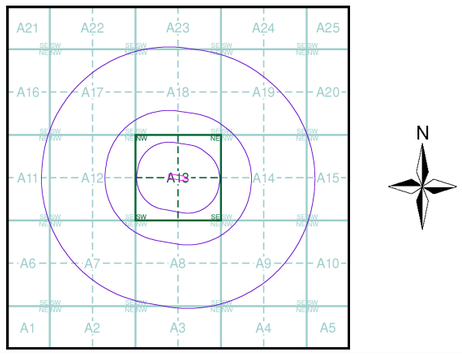
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group

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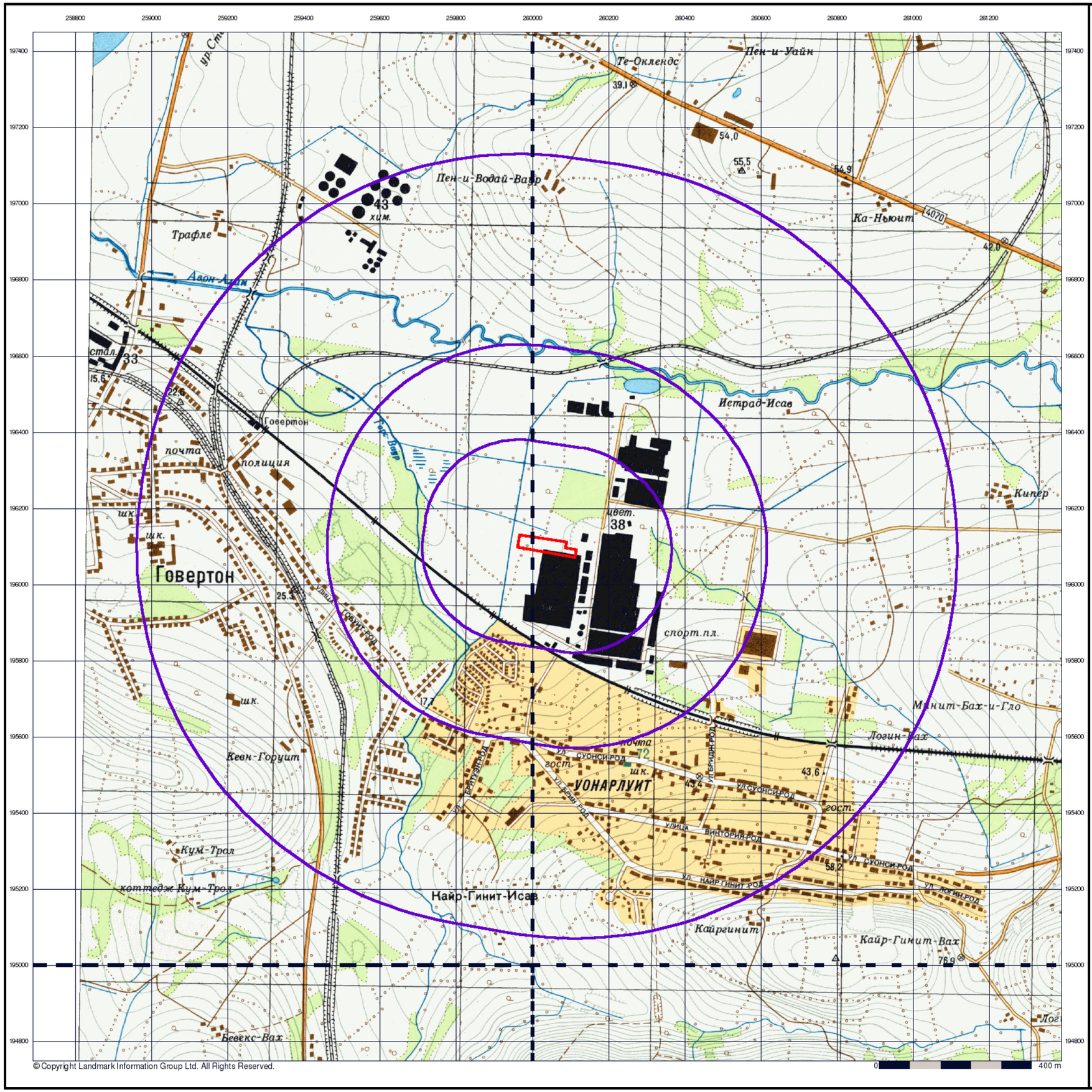


sol environment

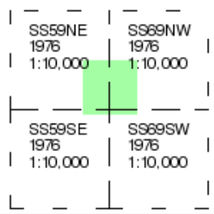
Swansea

Published 1976

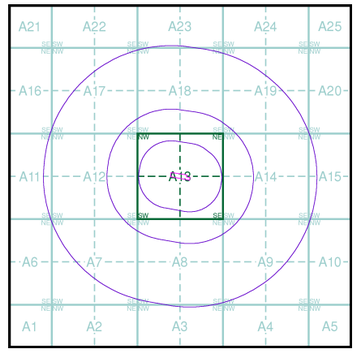
Source map scale - 1:10,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



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Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

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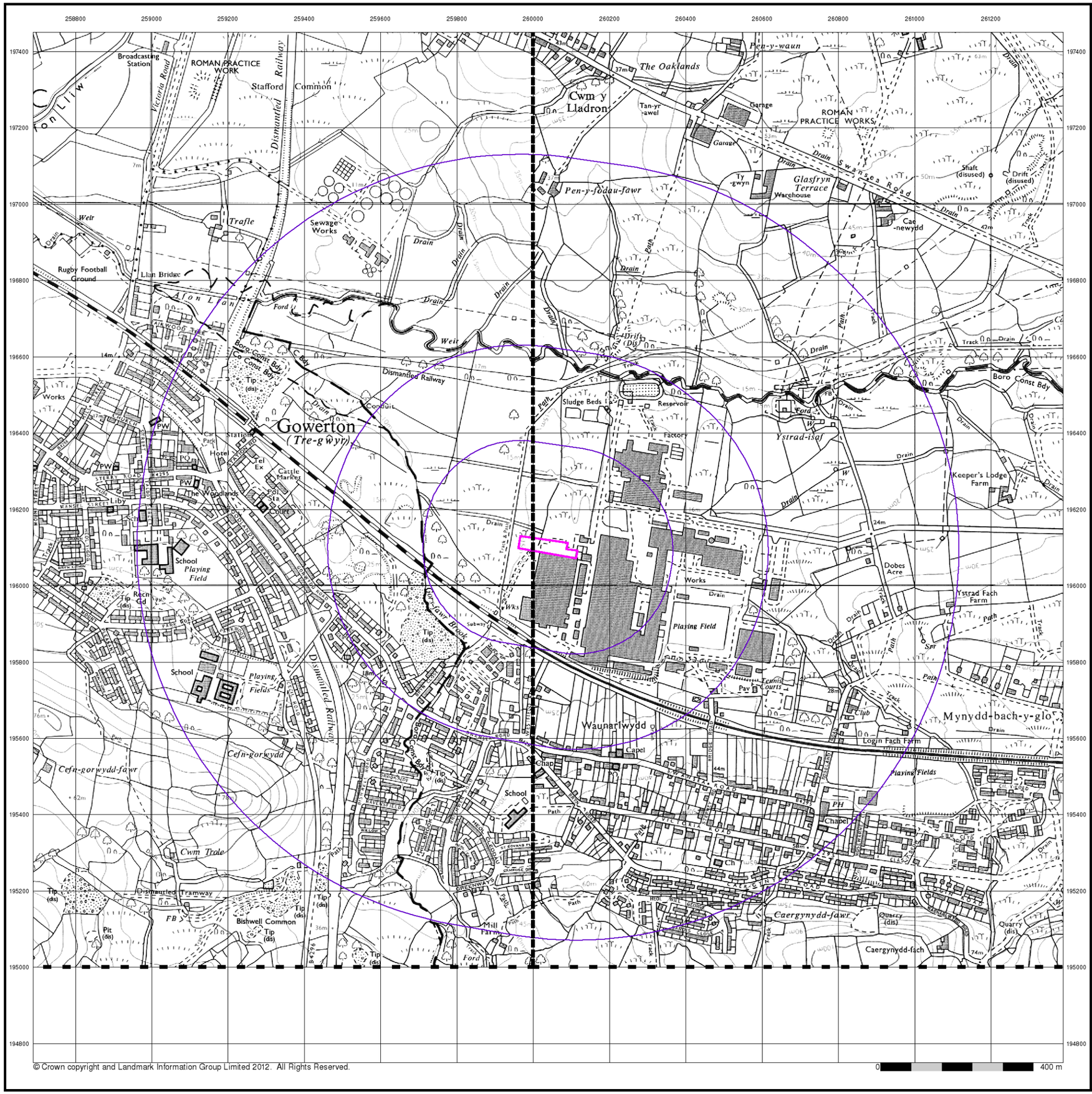

sol environment

Ordnance Survey Plan

Published 1982 - 1989

Source map scale - 1:10,000

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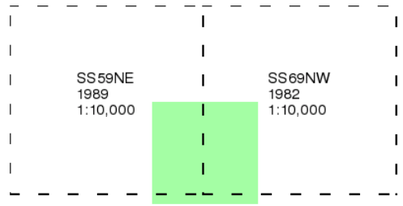
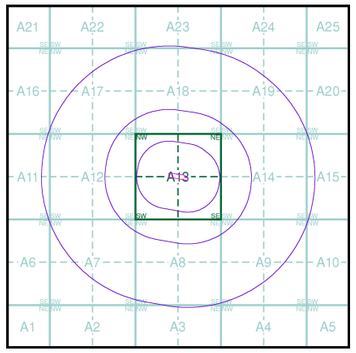
Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
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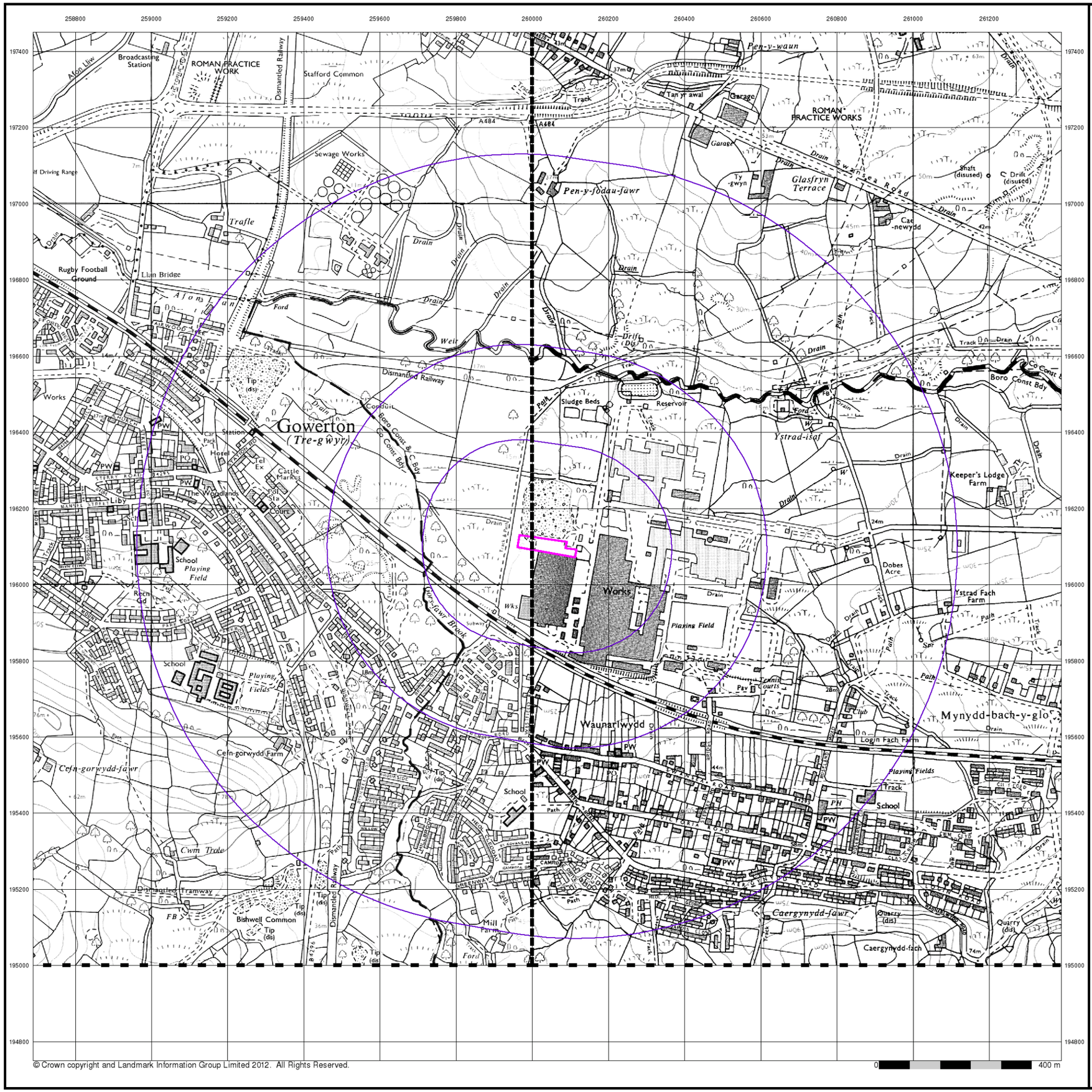
Web: www.envirocheck.co.uk



sol environment

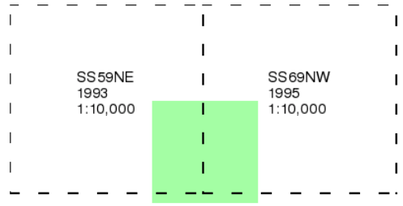
Ordnance Survey Plan

Published 1993 - 1995

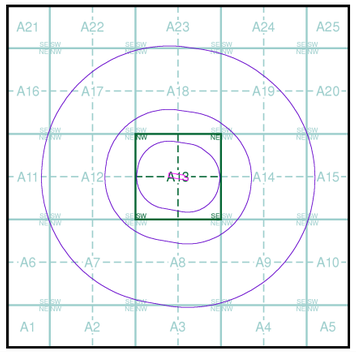
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



N

Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

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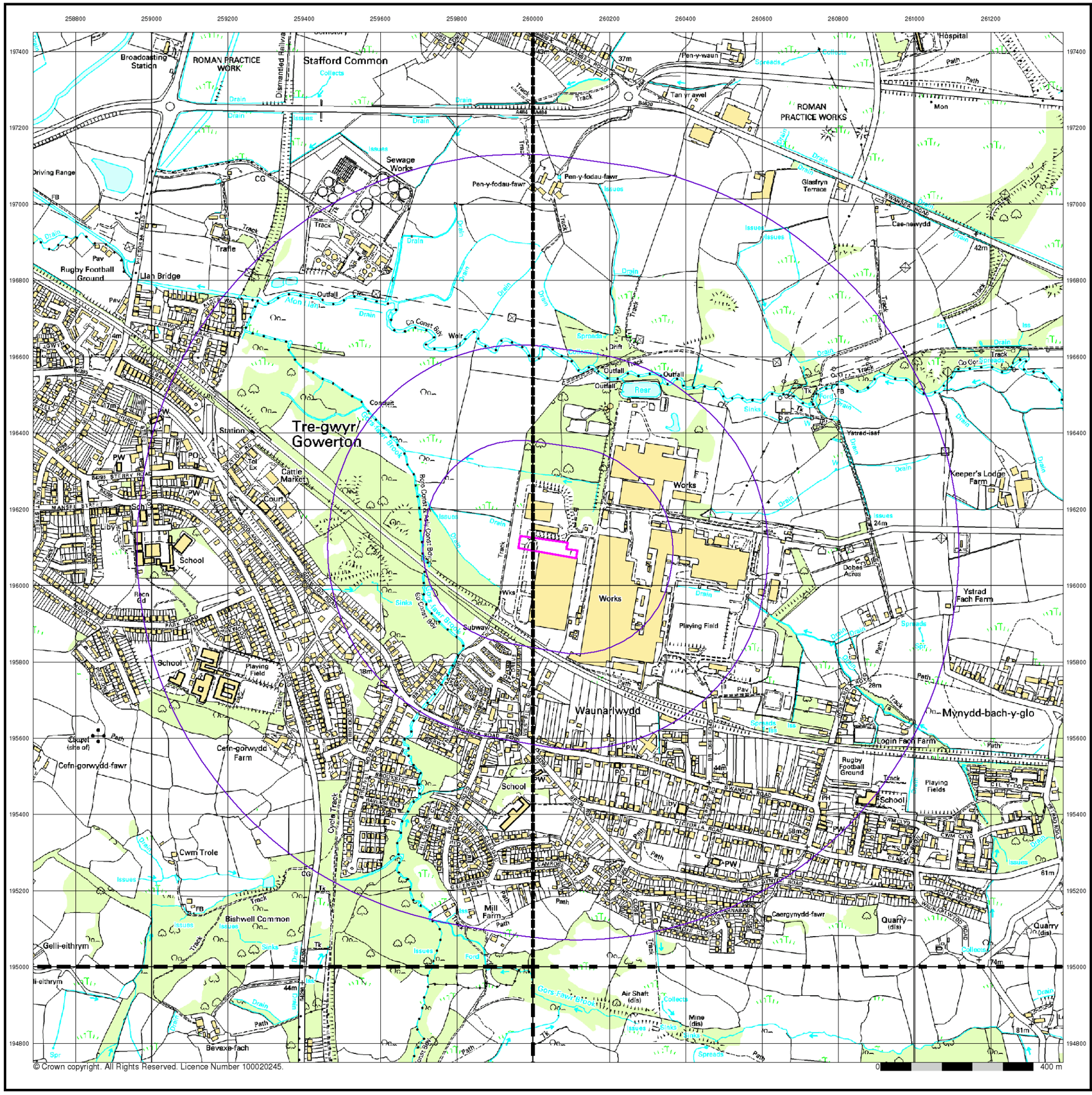


sol environment

10k Raster Mapping

Published 2006

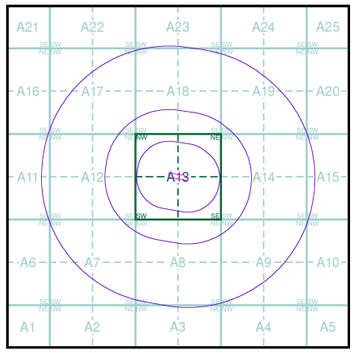
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SS59NE 2006 1:10,000	SS69NW 2006 1:10,000
SS59SE 2006 1:10,000	SS69SW 2006 1:10,000

Historical Map - Slice A



Order Details

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Site Area (Ha):	0.5
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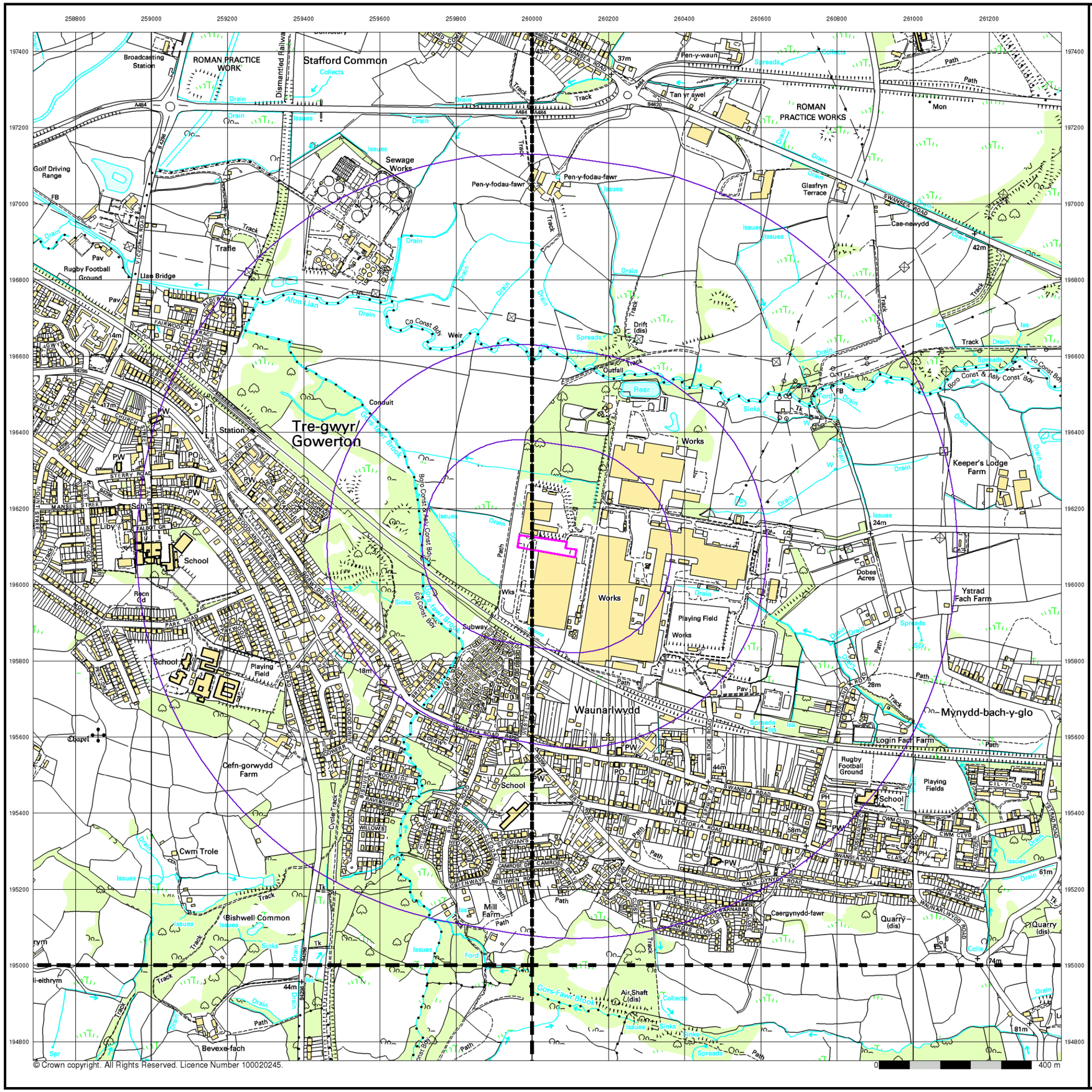


sol environment

10k Raster Mapping

Published 2013

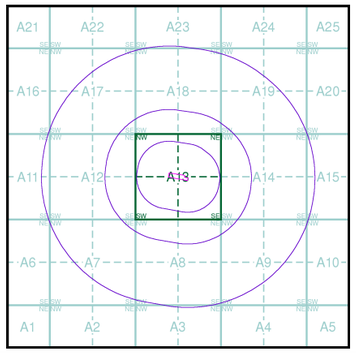
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SS59NE 2013 1:10,000	SS69NW 2013 1:10,000
SS59SE 2013 1:10,000	SS69SW 2013 1:10,000

Historical Map - Slice A



Order Details

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Search Buffer (m):	1000

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Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

Quarry
Gravel Pit
Sand Pit
Clay Pit
Shingle
Refuse Heap
Sloping Masonry
Flat Rock
Marsh
Reeds
Osiers
Rough Pasture
Furze
Wood
Mixed Wood
Brushwood
Orchard
Fir
Ford
Stepping Stones
Ferry
Waterfall
Lock

Trig. Station
507 Altitude at Trig. Station
B.M.325·9 Bench Mark
342 Surface Level
Arrow denotes flow of water
Antiquities (site of)

Cutting
Embankment
Railway crossing Road
Level Crossing
Road crossing Railway
Railway crossing River or Canal
Road over single stream
Road over River or Canal

County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

Inactive Quarry, Chalk Pit or Clay Pit
Active Quarry, Chalk Pit or Clay Pit
Rock
Boulders
Cliff
Slopes
Top
Roofed Building
Glazed Roof Building
Sloping Masonry
Archway
Non-Coniferous Tree (surveyed)
Coniferous Tree (surveyed)
Non-Coniferous Trees (not surveyed)
Coniferous Trees (not surveyed)
Orchard Tree
Scrub
Bracken
Coppice, Osier
Reeds
Marsh, Saltings
Rough Grassland
Heath
Culvert
Direction of water flow
Bench Mark
Antiquity (site of)
Cave Entrance
Triangulation Station
Electricity Pylon
Electricity Transmission Line

County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250

Cliff
Slopes
Top
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Positioned Boulder
Scree
Non-Coniferous Tree (surveyed)
Coniferous Tree (surveyed)
Non-Coniferous Trees (not surveyed)
Coniferous Trees (not surveyed)
Orchard Tree
Scrub
Bracken
Coppice, Osier
Reeds
Marsh, Saltings
Rough Grassland
Heath
Culvert
Direction of water flow
Triangulation Station
Antiquity (site of)
Electricity Transmission Line
Electricity Pylon
BM 231.60m Bench Mark
Buildings with Building Seed
Roofed Building
Glazed Roof Building

Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

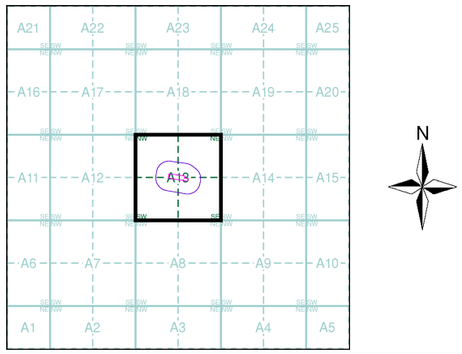
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

sol environment

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1878 - 1879	2
Glamorganshire	1:2,500	1898 - 1899	3
Glamorganshire	1:2,500	1915 - 1916	4
Glamorganshire	1:2,500	1935 - 1940	5
Ordnance Survey Plan	1:2,500	1959	6
Ordnance Survey Plan	1:2,500	1966 - 1972	7
Supply of Unpublished Survey Information	1:2,500	1973	8
Ordnance Survey Plan	1:2,500	1975 - 1984	9
Additional SIMs	1:2,500	1986 - 1989	10
Additional SIMs	1:2,500	1990	11
Large-Scale National Grid Data	1:2,500	1993	12
Large-Scale National Grid Data	1:2,500	1993 - 1995	13

Historical Map - Segment A13



Order Details

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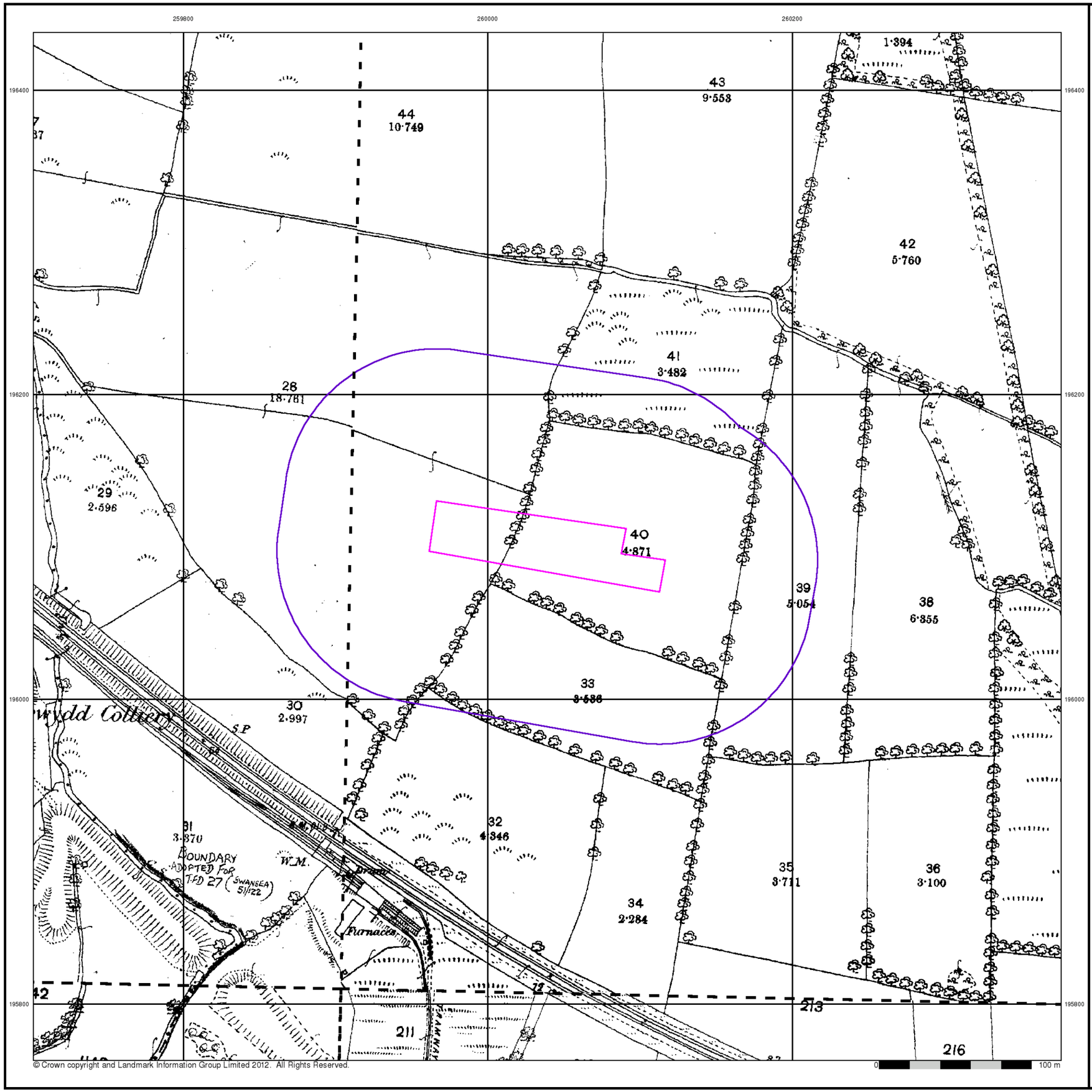
Customer Ref: SOL0113AL01
National Grid Reference: 260040, 196100
Slice: A
Site Area (Ha): 0.5
Search Buffer (m): 100

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



sol environment

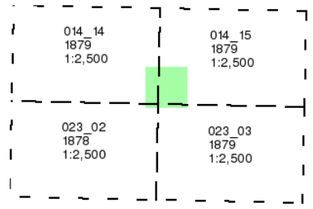
Glamorganshire

Published 1878 - 1879

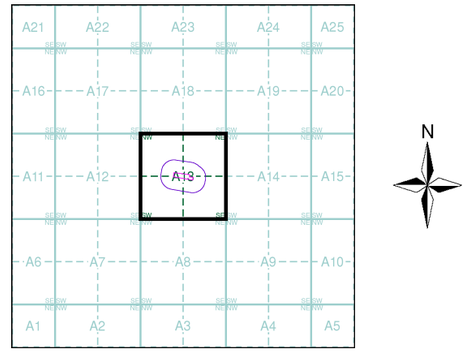
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
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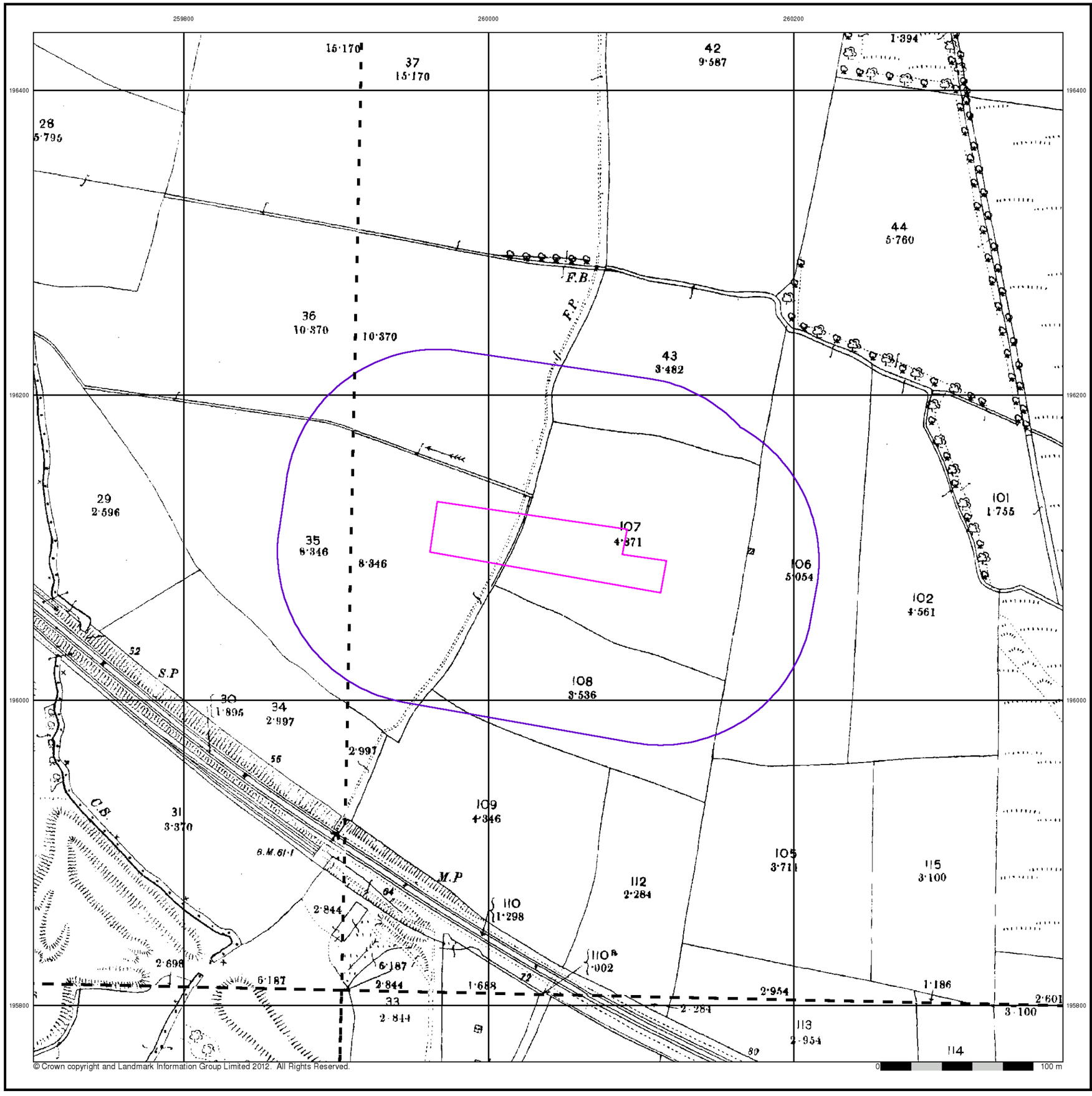

sol environment

Glamorganshire

Published 1898 - 1899

Source map scale - 1:2,500

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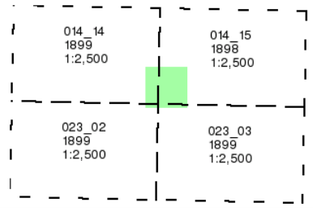
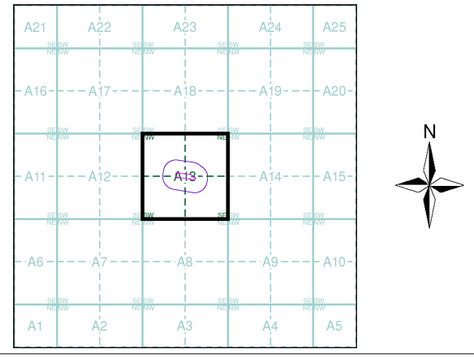
Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

Site at, Waunarlwydd, Swansea

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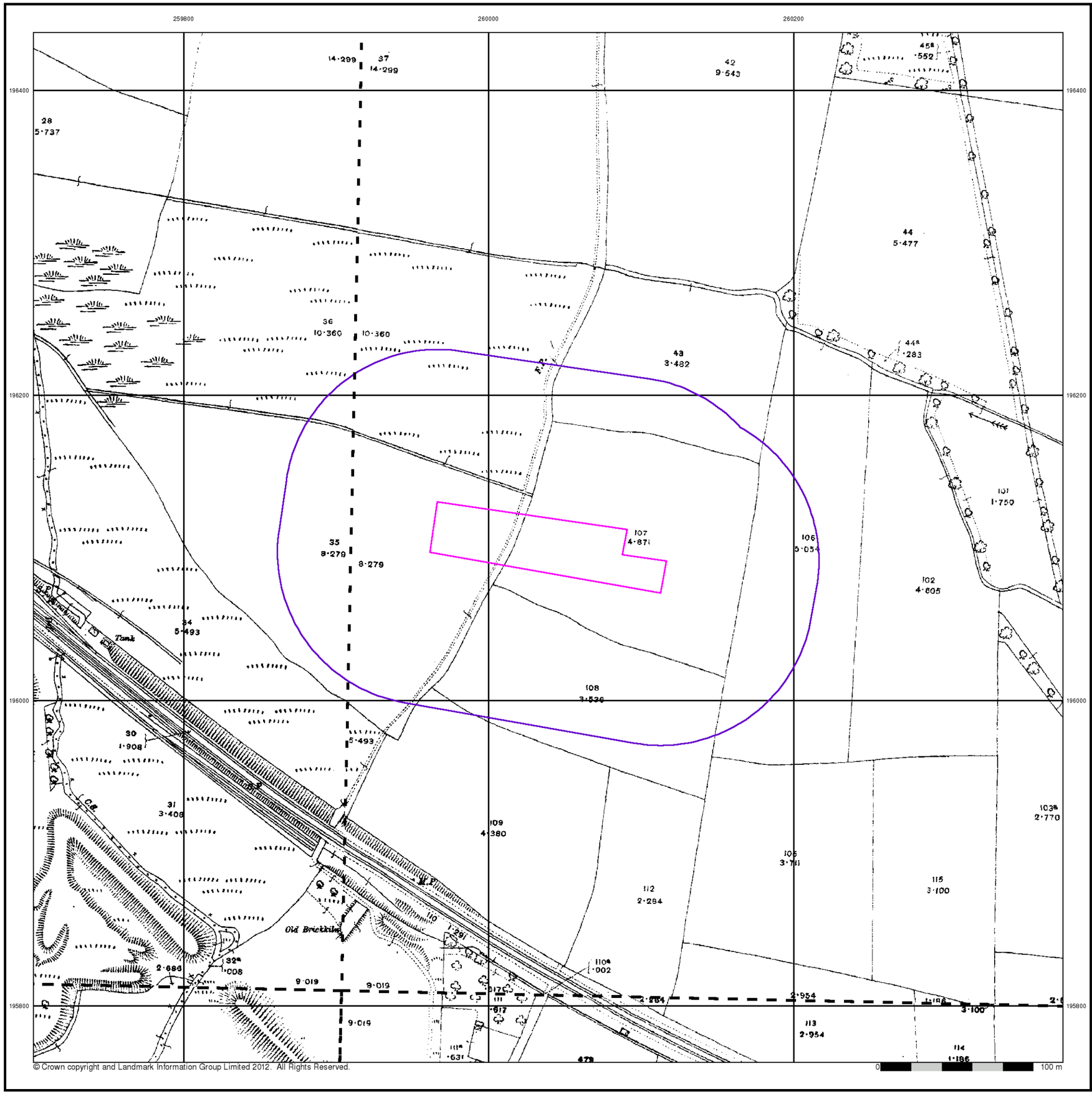


sol environment

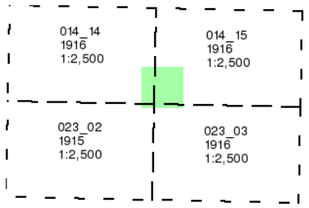
Glamorganshire

Published 1915 - 1916

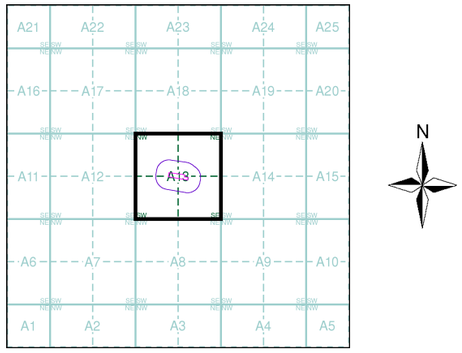
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

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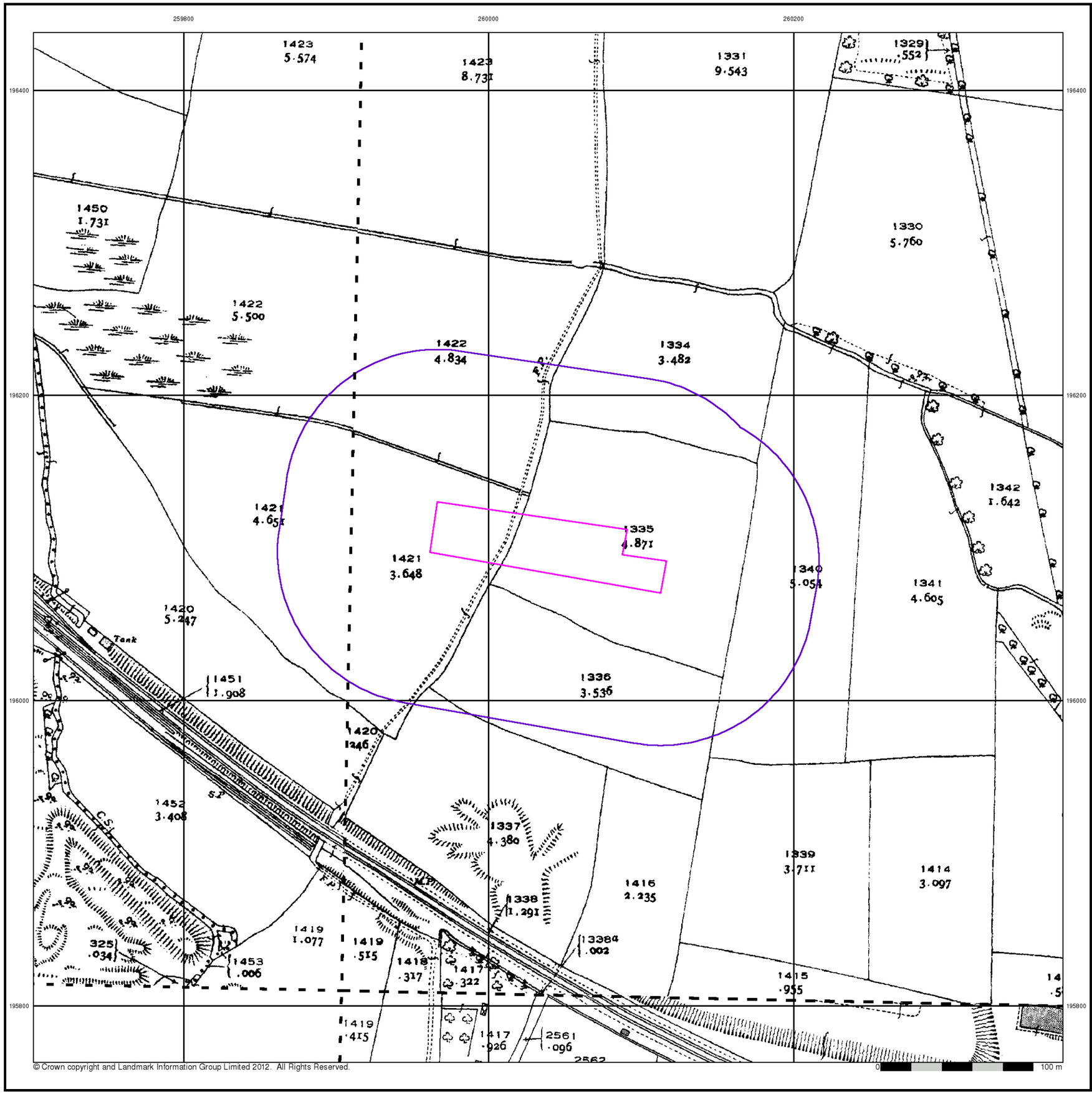


0 100 m

sol environment

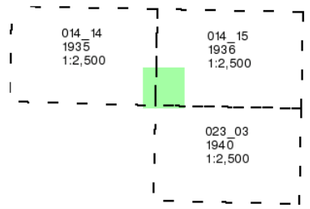
Glamorganshire

Published 1935 - 1940

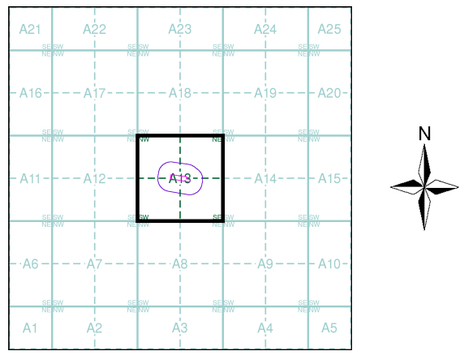
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

Site at, Waunarlwydd, Swansea

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sol environment

Ordnance Survey Plan

Published 1959

Source map scale - 1:2,500

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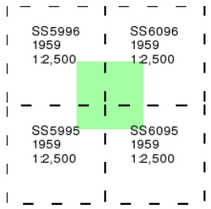
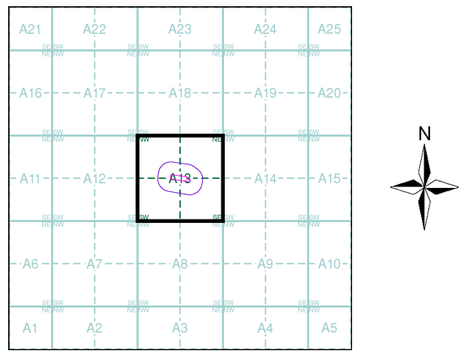
Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

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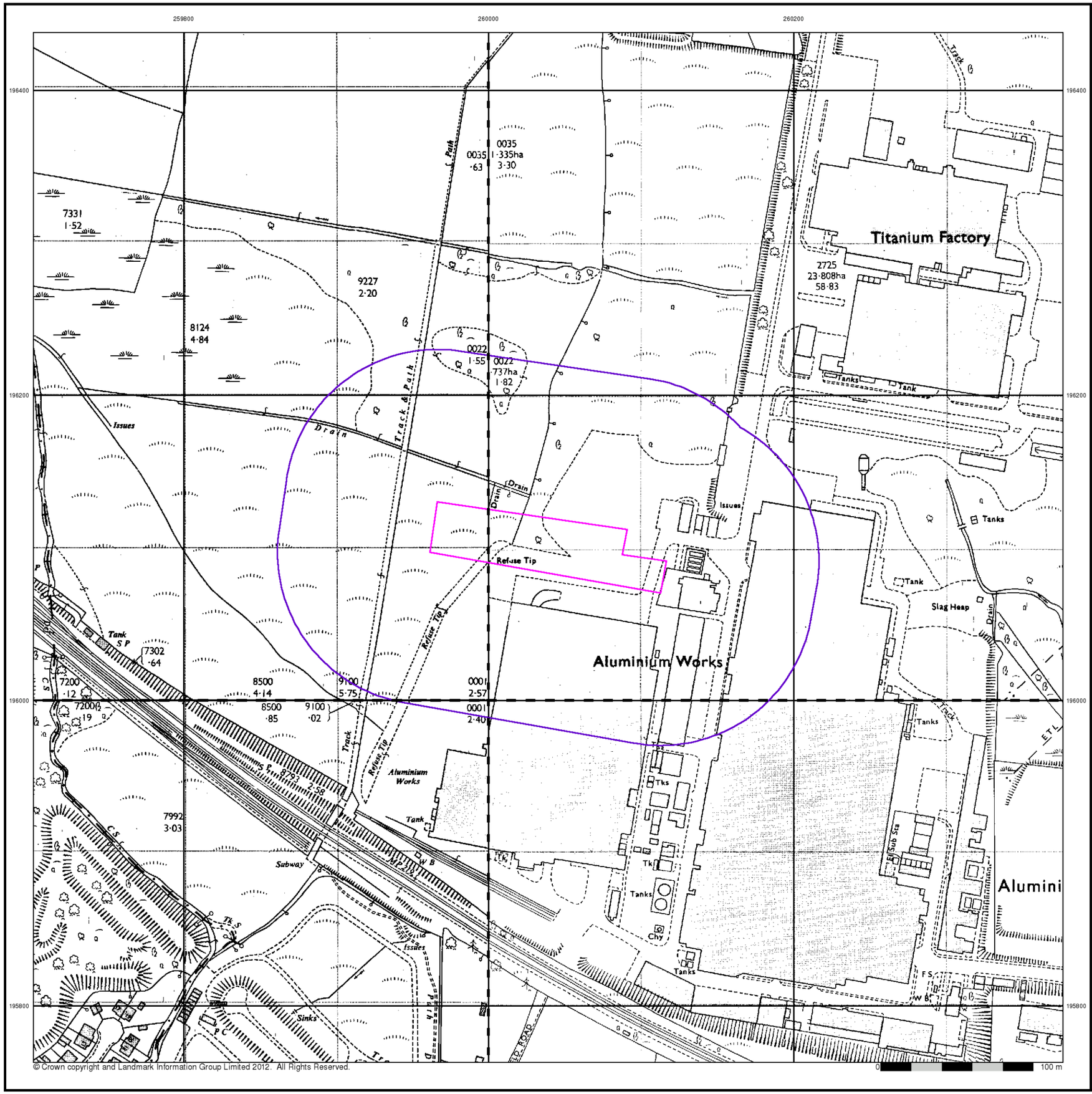


sol environment

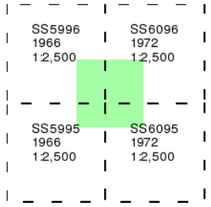
Ordnance Survey Plan

Published 1966 - 1972

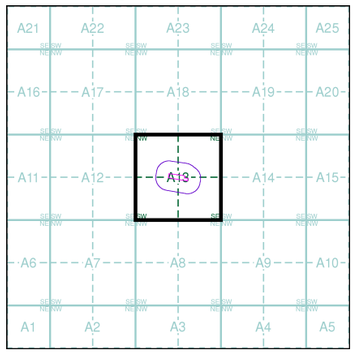
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
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Search Buffer (m):	100

Site Details

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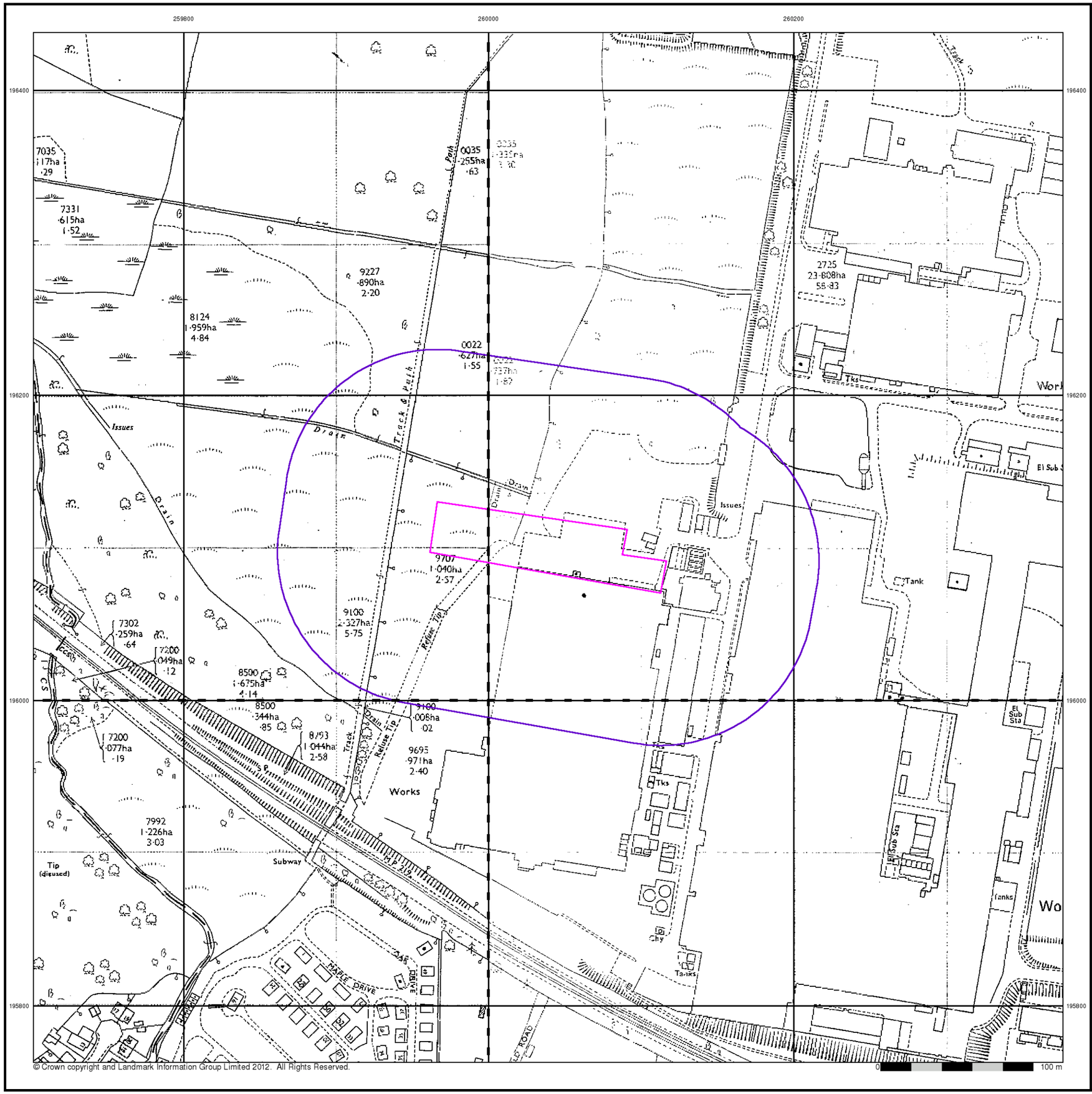


sol environment

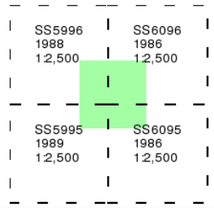
Additional SIMs

Published 1986 - 1989

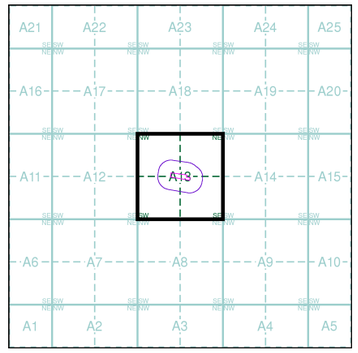
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

Site at, Waunarlwydd, Swansea

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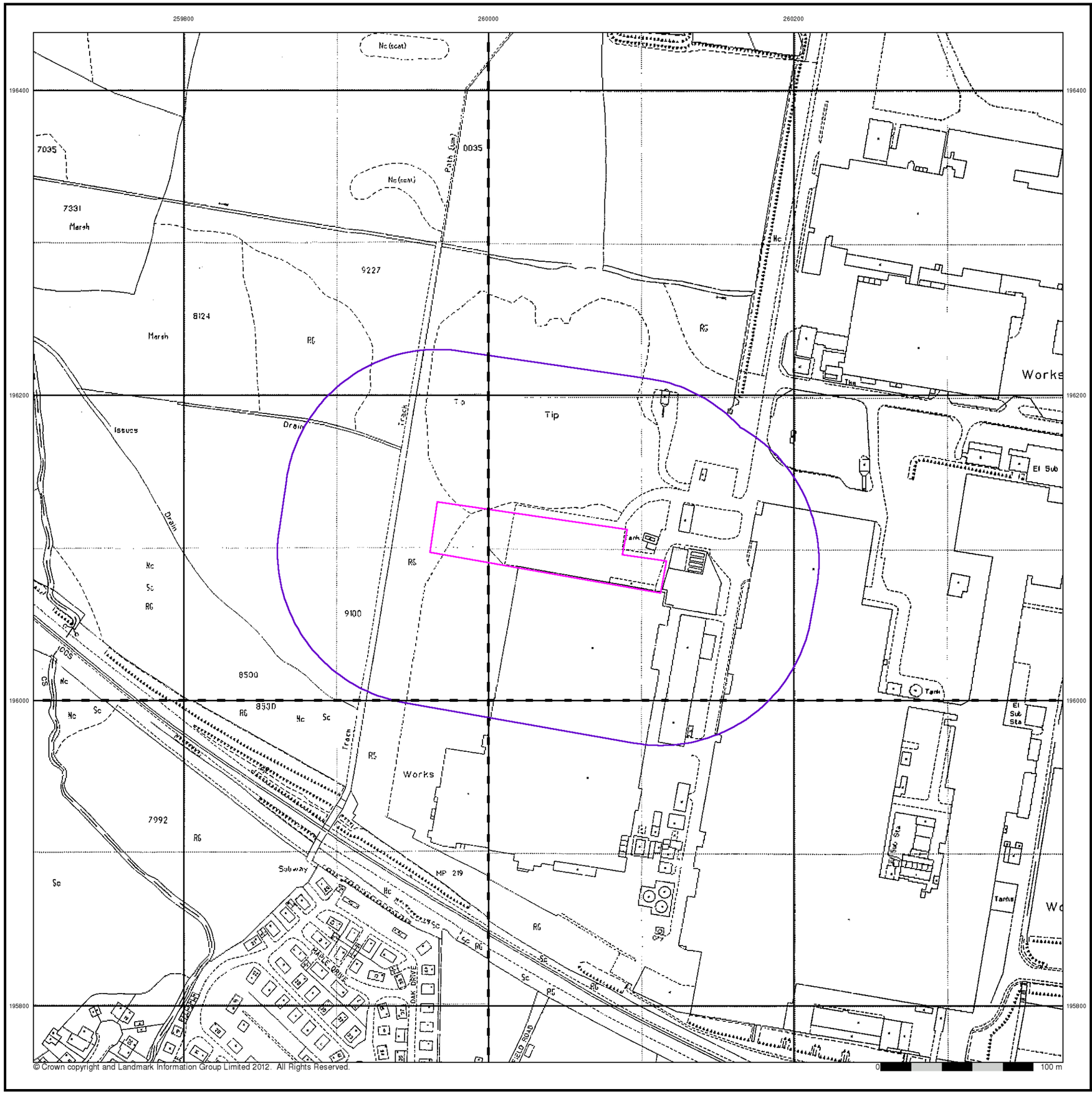


sol environment

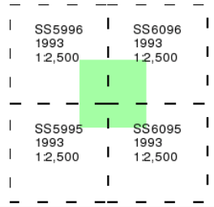
Large-Scale National Grid Data

Published 1993

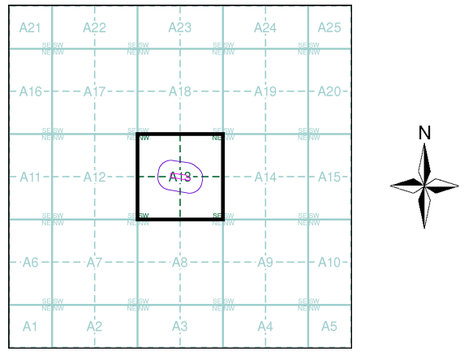
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

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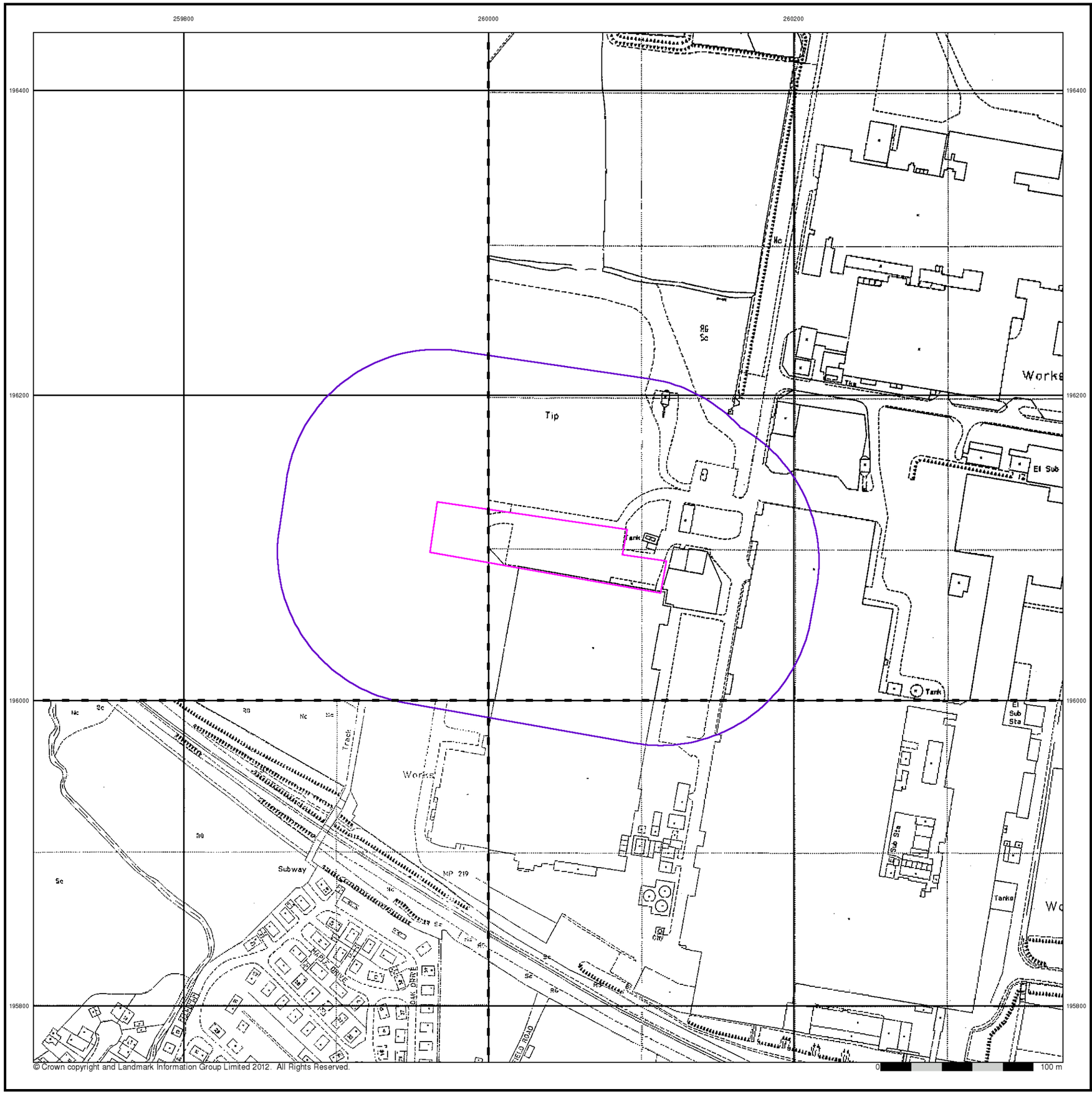


sol environment

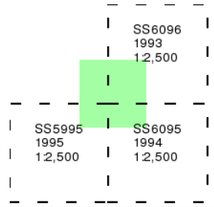
Large-Scale National Grid Data

Published 1993 - 1995

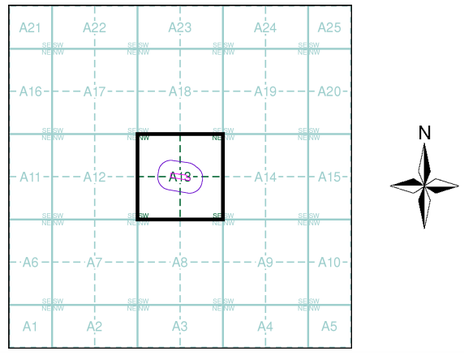
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group

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Annex C – Geology and Hydrogeology Maps

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WMGR	Infilled Ground	Artificial Deposit	Present Day - Present Day
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	LSGR	Landscaped Ground (Undivided)	Unknown/Unclassified Entry	Holocene - Holocene
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Applicable - Not Applicable
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Flandrian
	TILLD	Till, Devensian	Diamicton	Devensian - Devensian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	GDB	Grovesend Formation	Sandstone	Westphalian D - Westphalian D
	GDB	Grovesend Formation	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	SW	Swansea Member	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	H	Hughes Member	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	SW	Swansea Member	Sandstone	Westphalian D - Westphalian D
	H	Hughes Member	Sandstone	Westphalian D - Westphalian D
	BD	Brithdir Member	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	BD	Brithdir Member	Sandstone	Westphalian D - Westphalian D
	Rock			
	Fault			

sol environment

Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

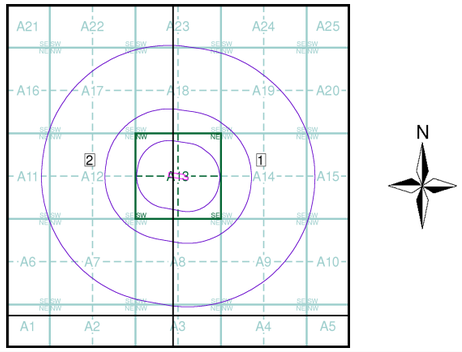
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:		**Map ID:**	1
Map Name:	SS59SE	**Map Name:**	SS69NW
Map Date:	1970	**Map Date:**	1969
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Available	**Faults:**	Available
Landslip:	Not Available	**Landslip:**	Available
Rock Segments:	Available	**Rock Segments:**	Available
Map ID:		**Map ID:**	2
Map Name:	SS69SW	**Map Name:**	SS59NE
Map Date:	1970	**Map Date:**	1969
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Available	**Faults:**	Available
Landslip:	Not Available	**Landslip:**	Not Available
Rock Segments:	Available	**Rock Segments:**	Available

Geology 1:10,000 Maps - Slice A



Order Details

Order Number: 45945406_1_1
Customer Ref: SOL0113AL01
National Grid Reference: 260040, 196100
Slice: A
Site Area (Ha): 0.5
Search Buffer (m): 1000

Site Details

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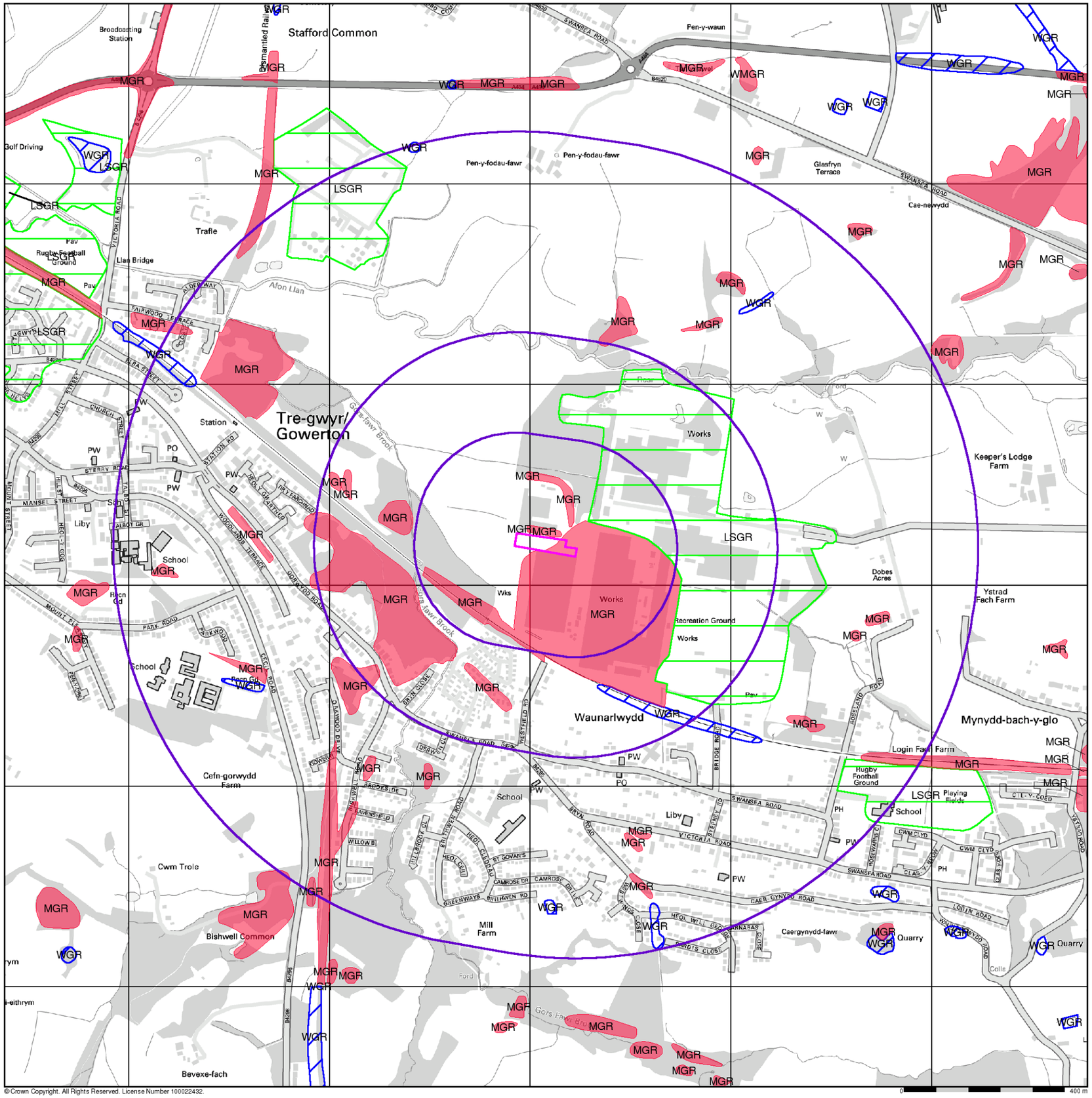


0 400 m

sol environment

Artificial Ground and Landslip

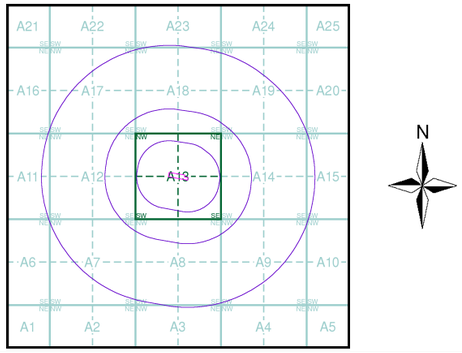
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details

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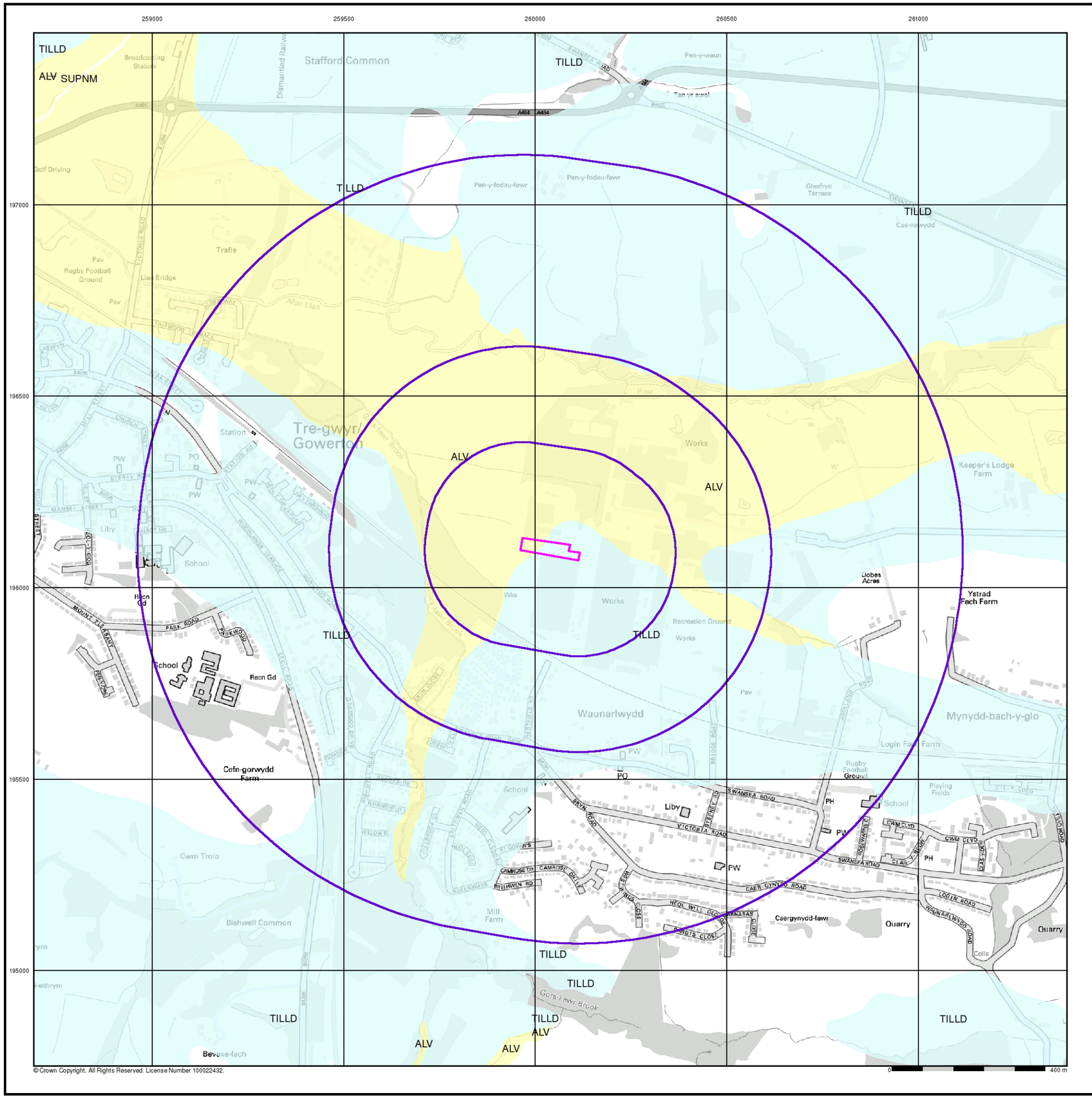
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



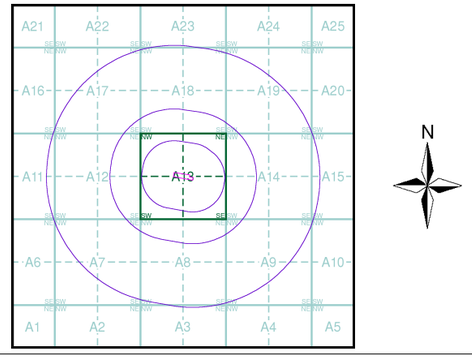
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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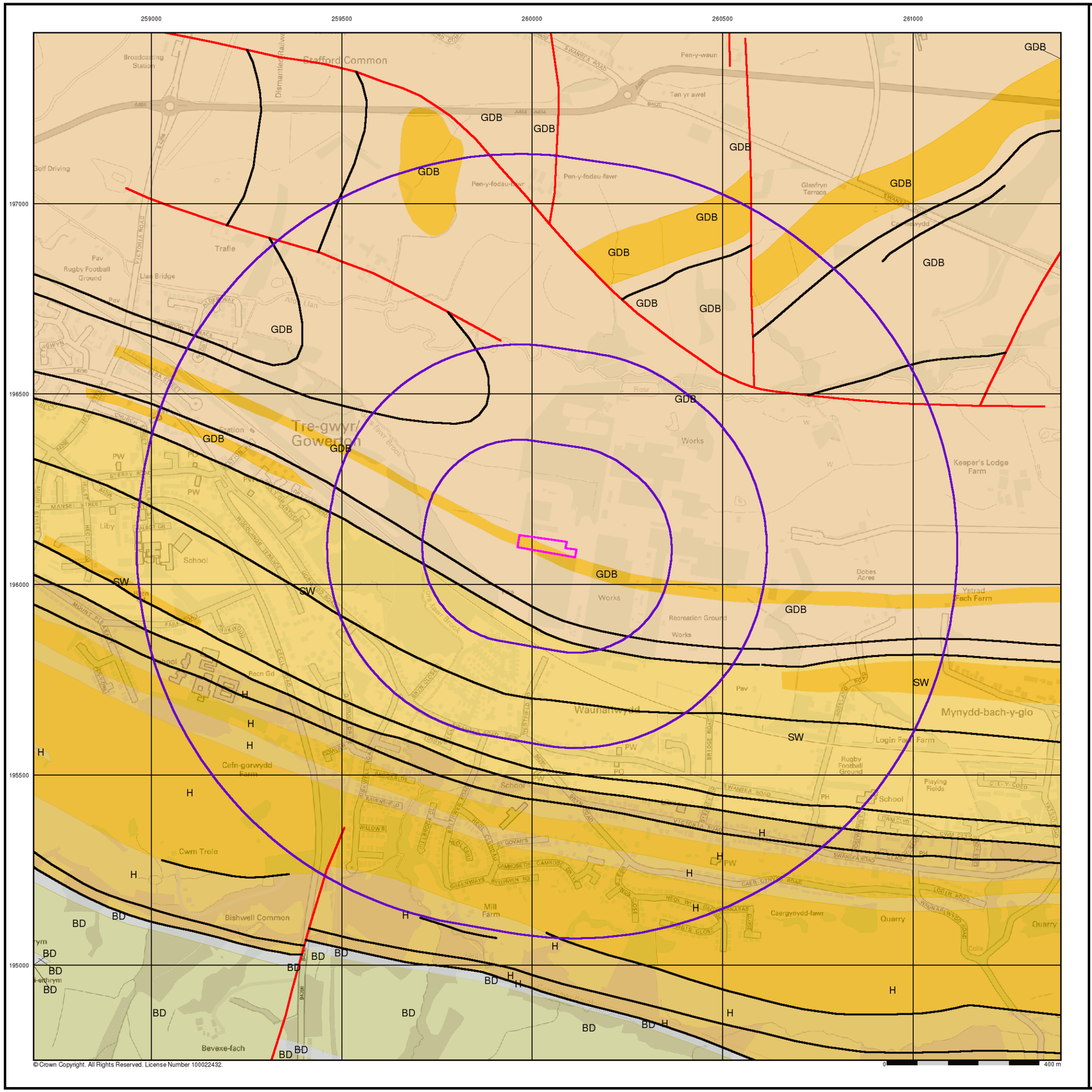


sol environment

Bedrock and Faults

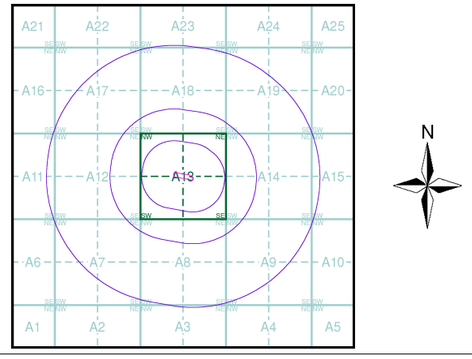
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A



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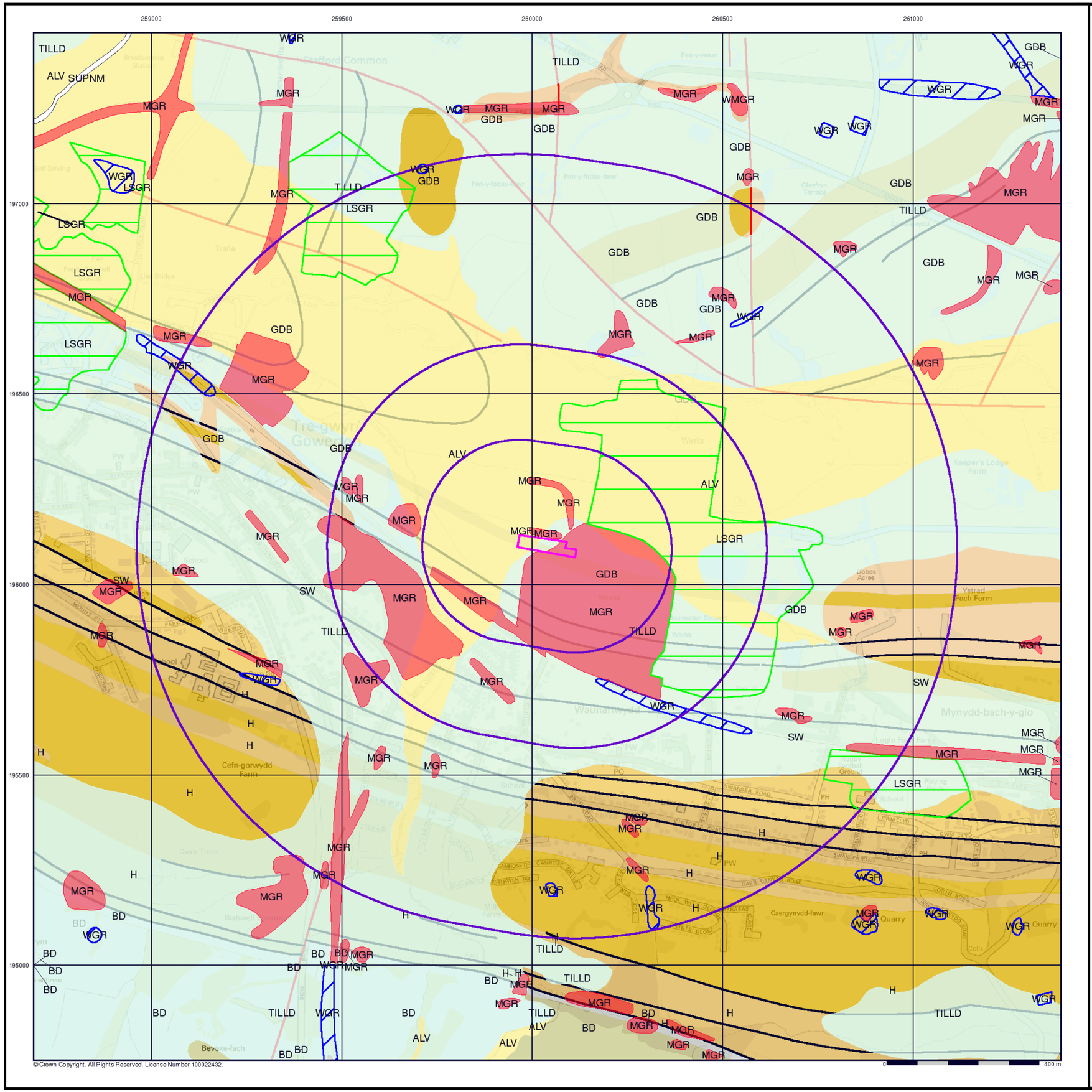


sol environment

Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

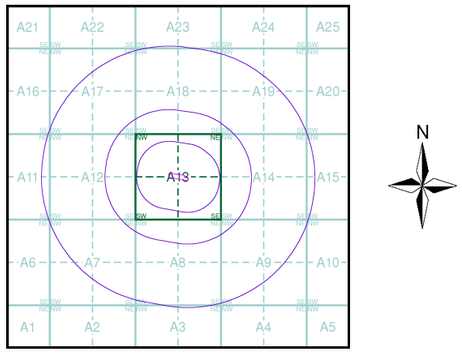
Additional Information

More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



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Geology 1:50,000 Maps Legends

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Flandrian
	TILLD	Till, Devensian	Diamicton	Devensian - Devensian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Devensian - Devensian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	GDB	Grovesend Formation	Sandstone	Westphalian D - Westphalian D
	GDB	Grovesend Formation	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	SW	Swansea Member	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	H	Hughes Member	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	SW	Swansea Member	Sandstone	Westphalian D - Westphalian D
	H	Hughes Member	Sandstone	Westphalian D - Westphalian D
	LLRB	Llynfi Member, Rhondda Member and Brithdir Member (Undifferentiated)	Sandstone	Bolsovian (Westphalian C) - Bolsovian (Westphalian C)
	LLRB	Llynfi Member, Rhondda Member and Brithdir Member (Undifferentiated)	Mudstone, Siltstone and Sandstone	Bolsovian (Westphalian C) - Bolsovian (Westphalian C)
	LLFB	Llynfi Member	Sandstone	Bolsovian (Westphalian C) - Bolsovian (Westphalian C)
	LLFB	Llynfi Member	Mudstone, Siltstone and Sandstone	Bolsovian (Westphalian C) - Bolsovian (Westphalian C)
		Rock Segments		
		Faults		

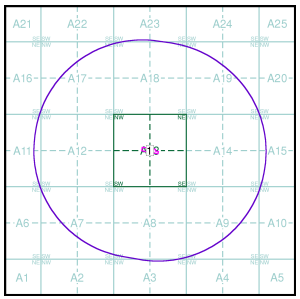
Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**1**
Map Sheet No:	**247**
Map Name:	**Swansea**
Map Date:	**1977**
Bedrock Geology:	**Available**
Superficial Geology:	**Available**
Artificial Geology:	**Available**
Faults:	**Available**
Landslip:	**Available**
Rock Segments:	**Available**

Geology 1:50,000 Maps - Slice A



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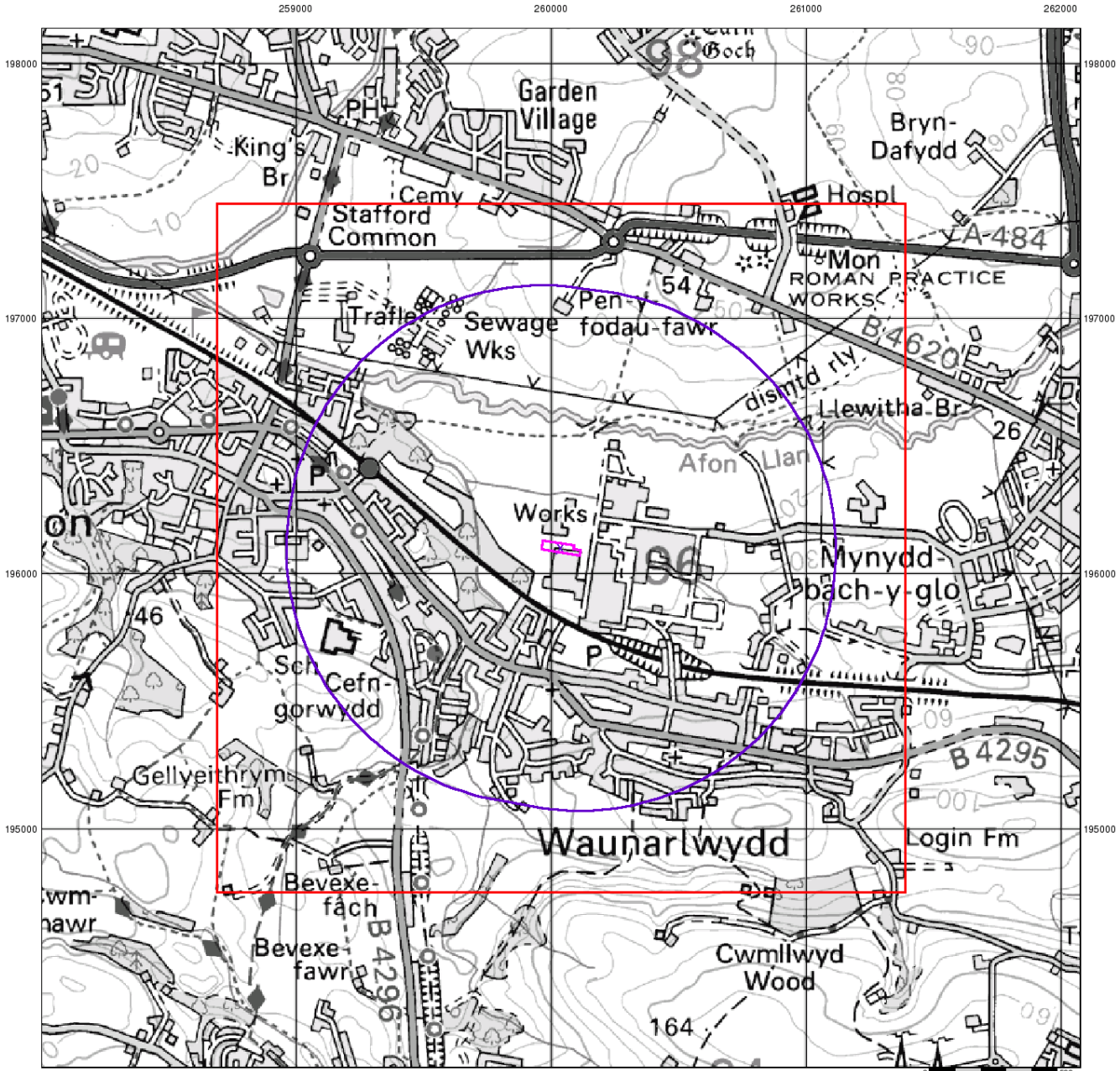

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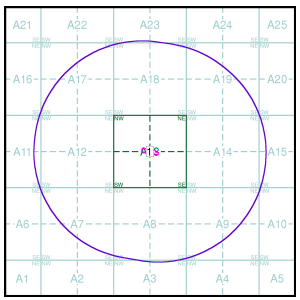

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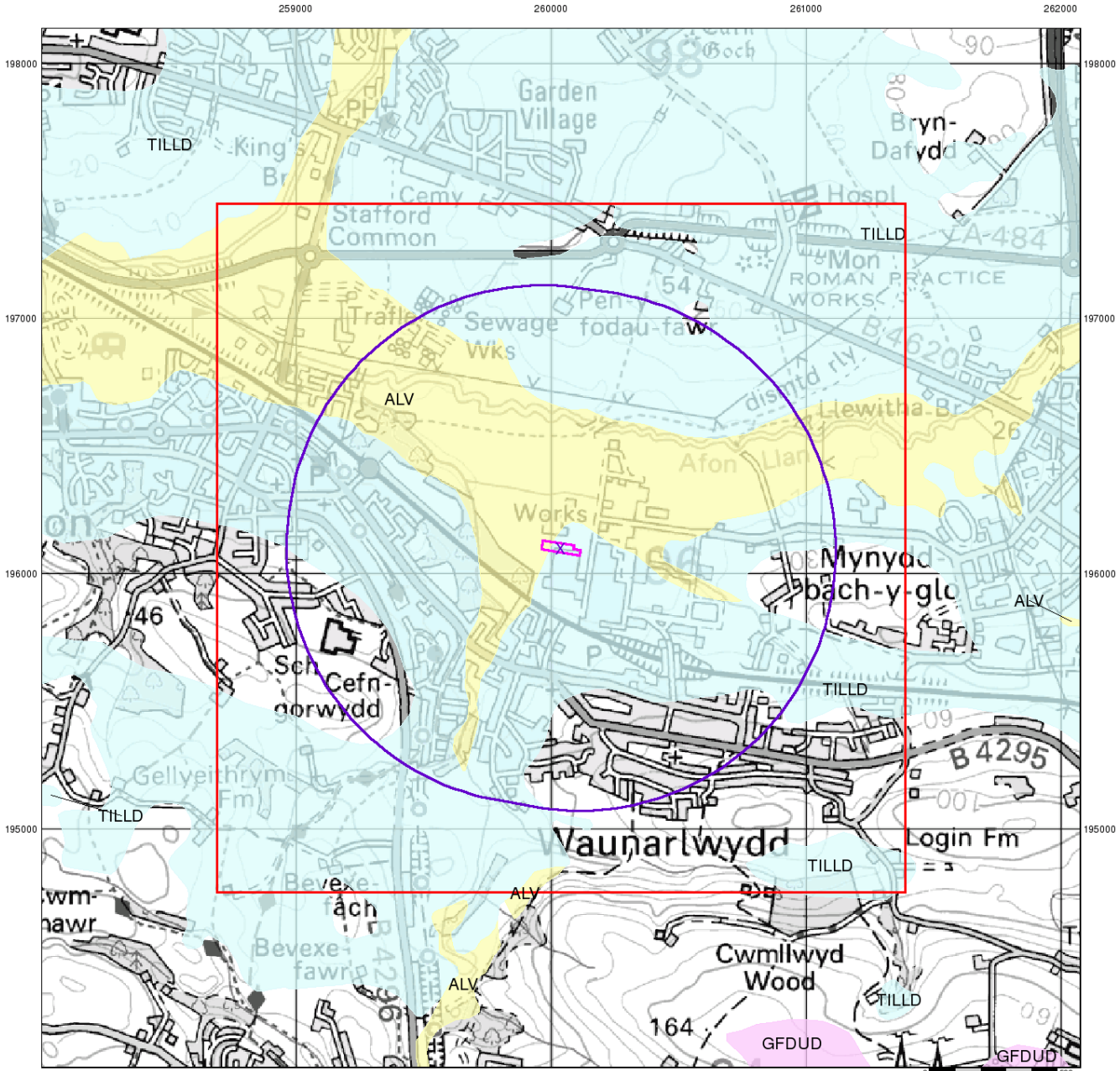

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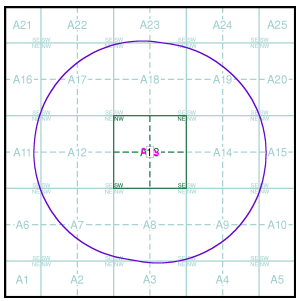
Superficial Geology Map - Slice A



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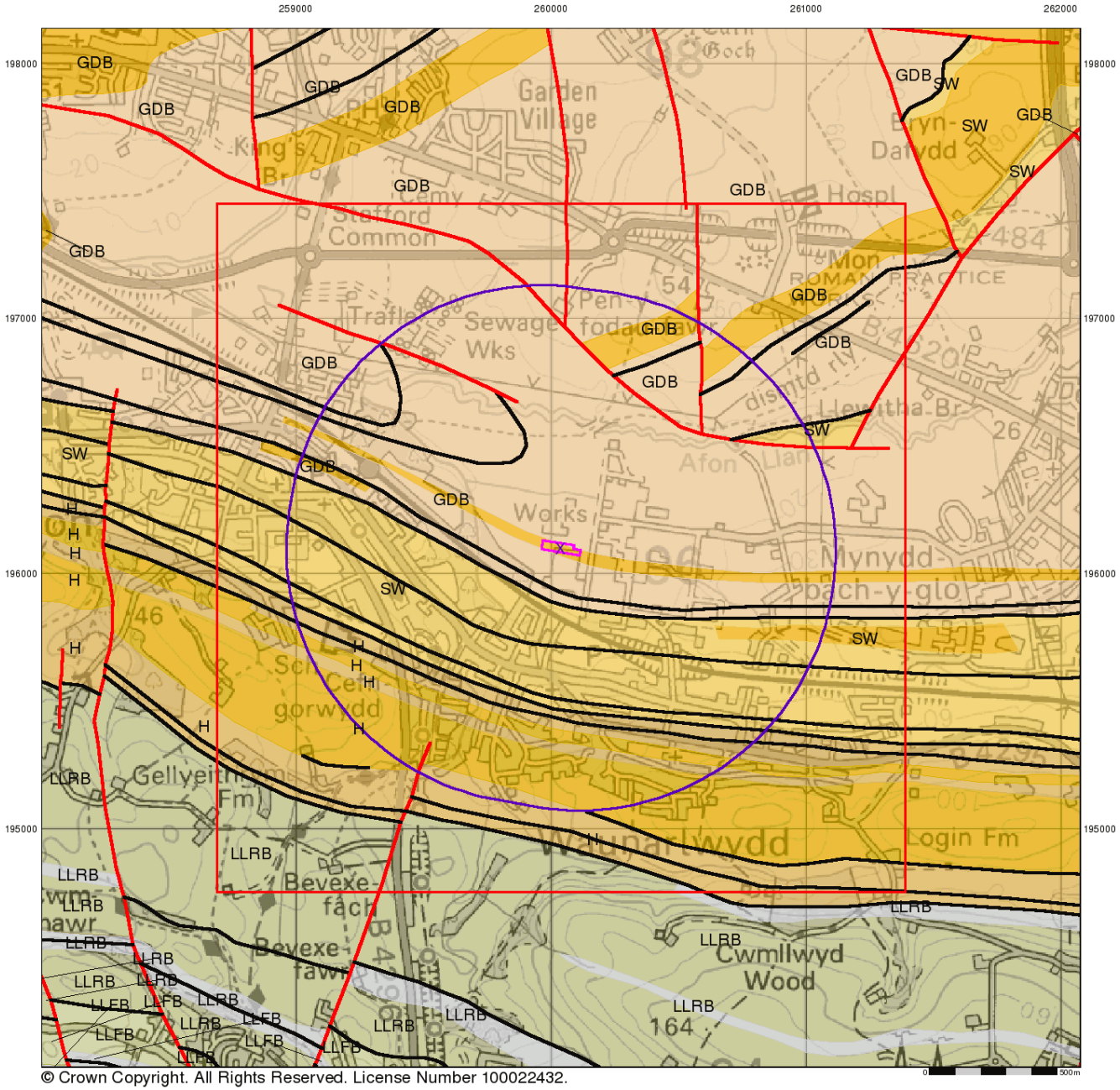

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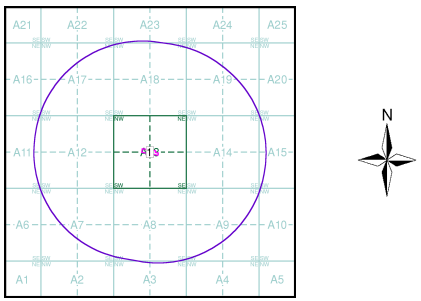
The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



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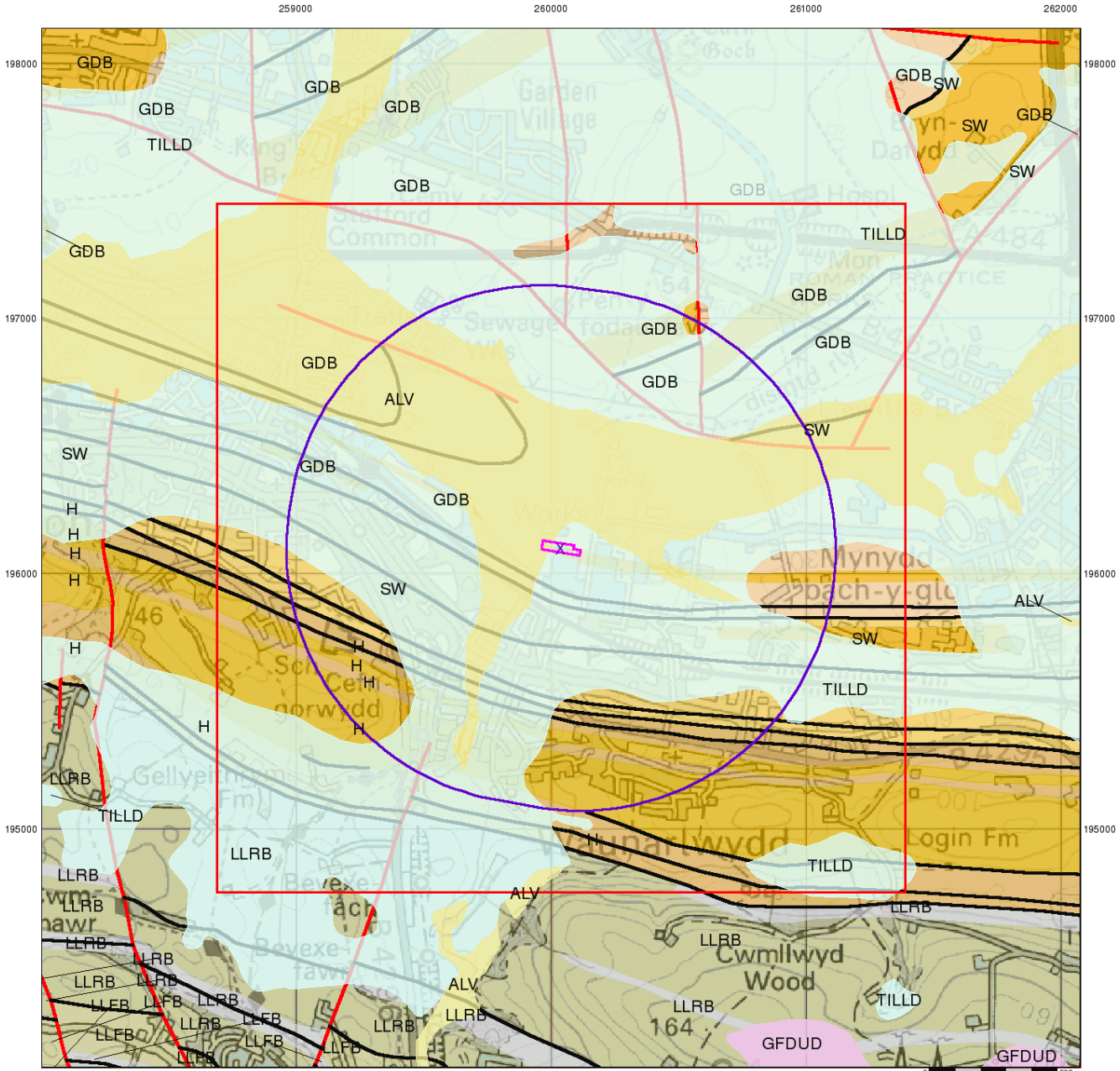

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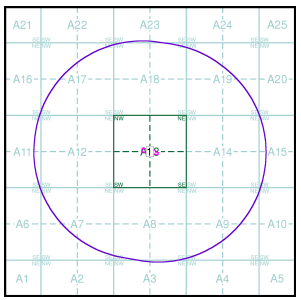
Combined Geology Map - Slice A



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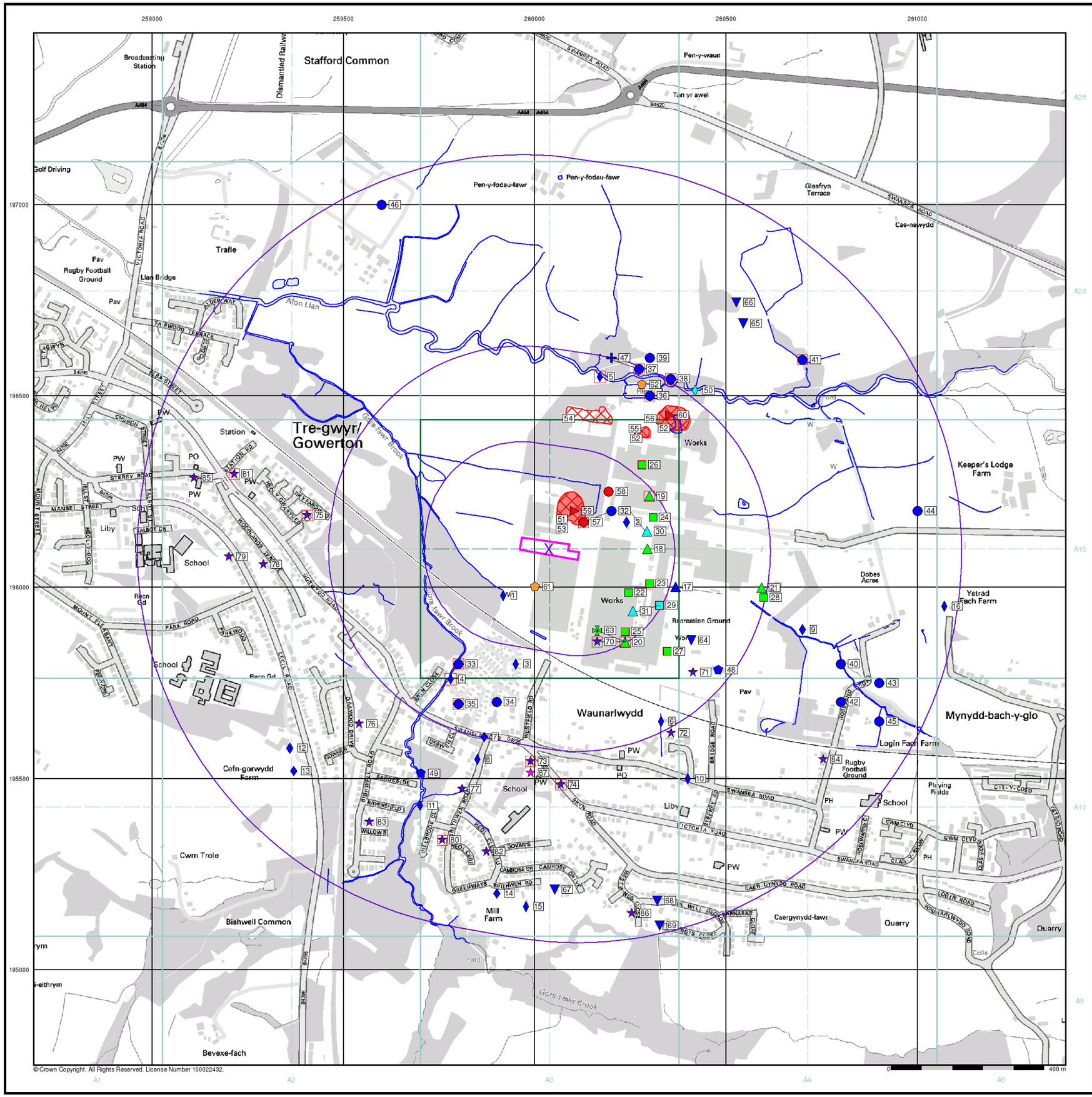


A1 A2 A3 A4 A5

sol environment

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

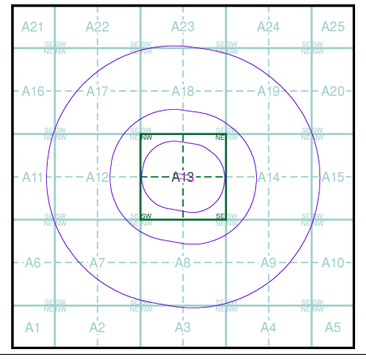
Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Slice A



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Site Details

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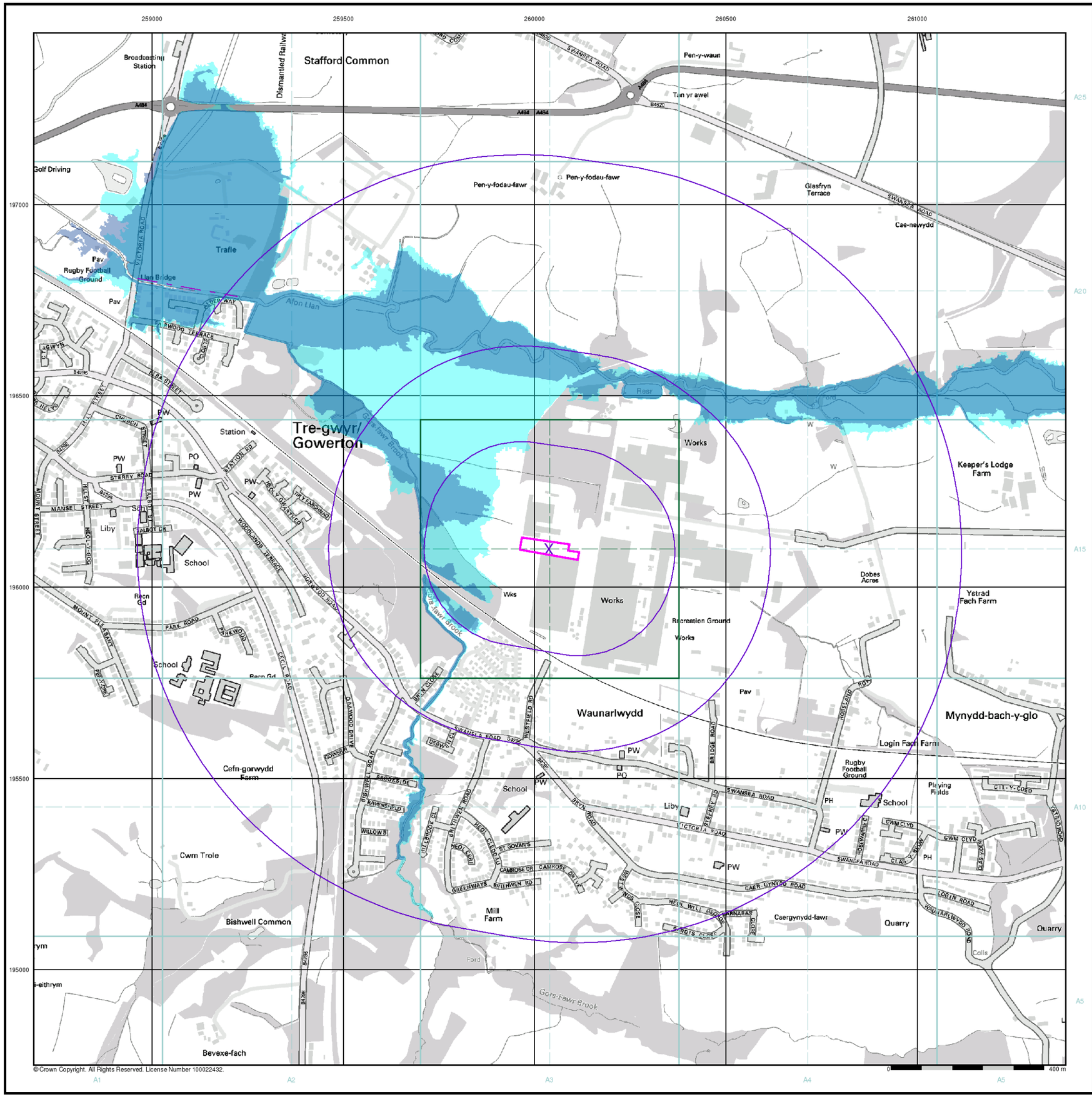


sol environment

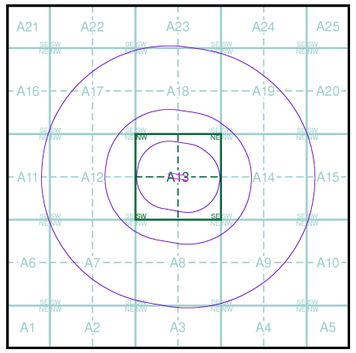
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



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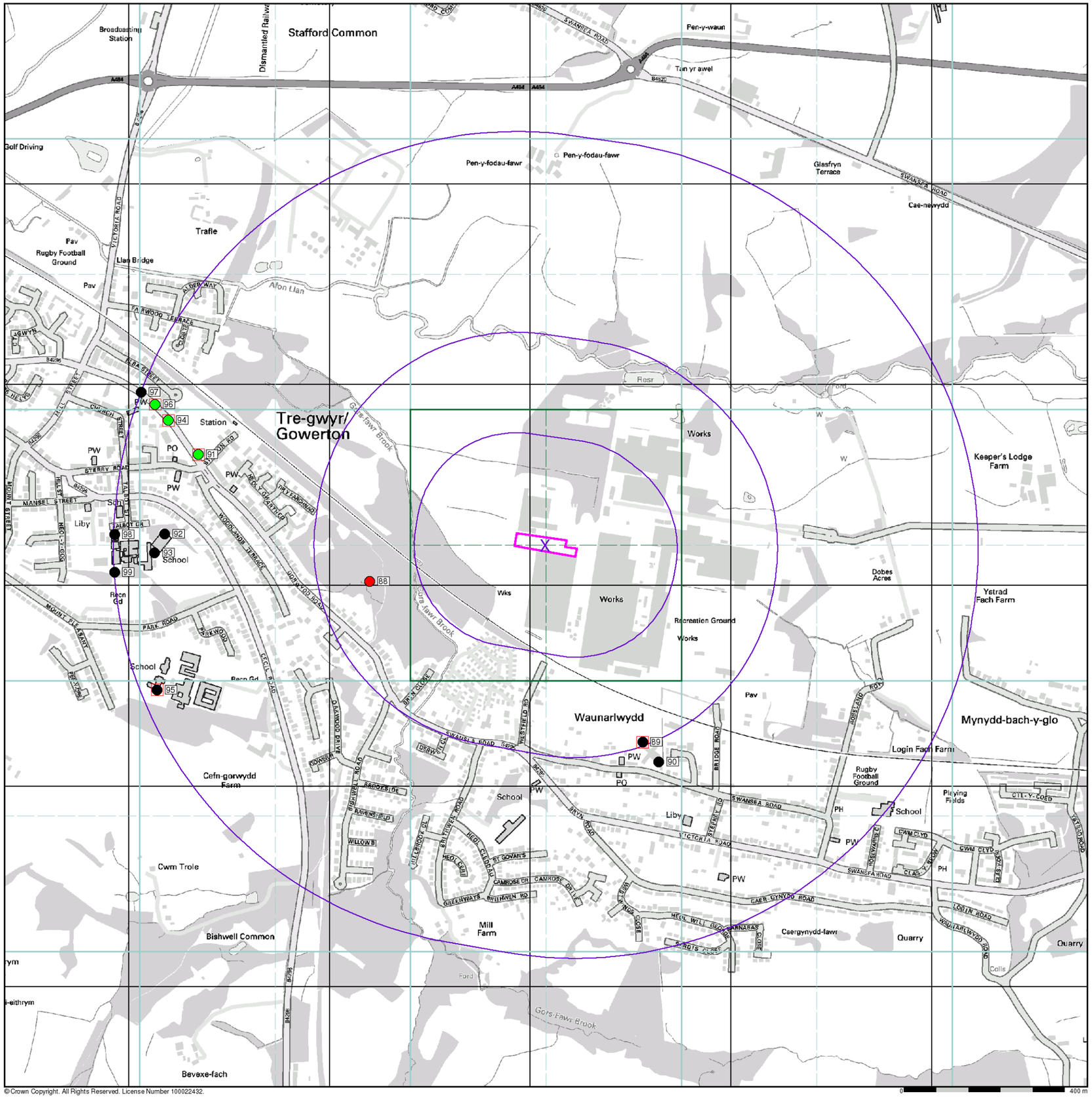


sol environment

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

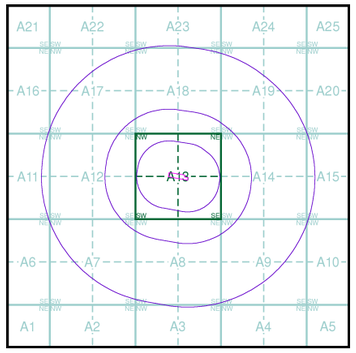
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



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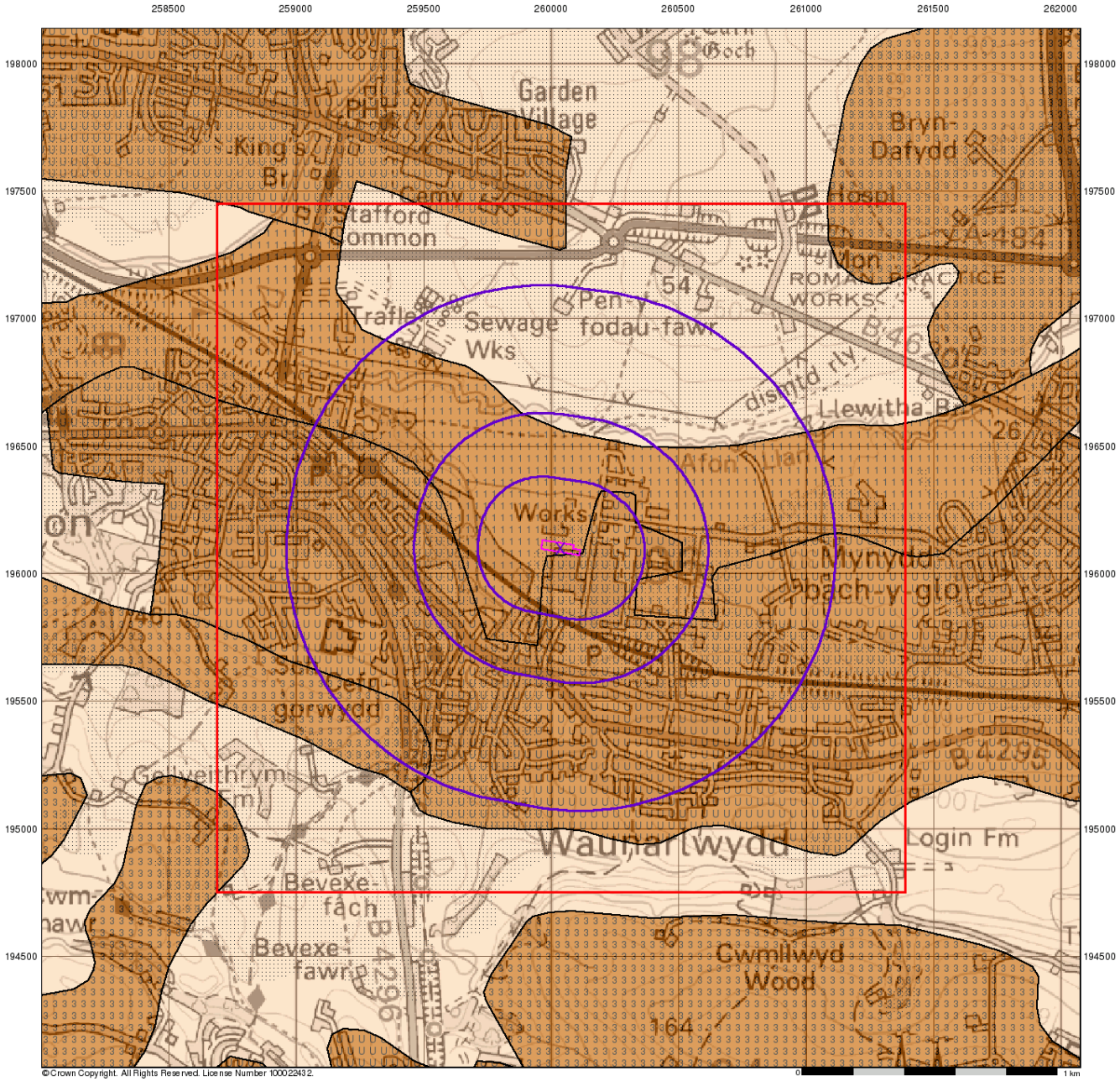


solo environment

Groundwater Vulnerability

General

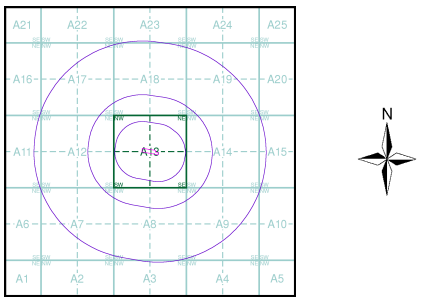
Specified Site | Specified Buffer(s) | Bearing Reference Point

Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice A



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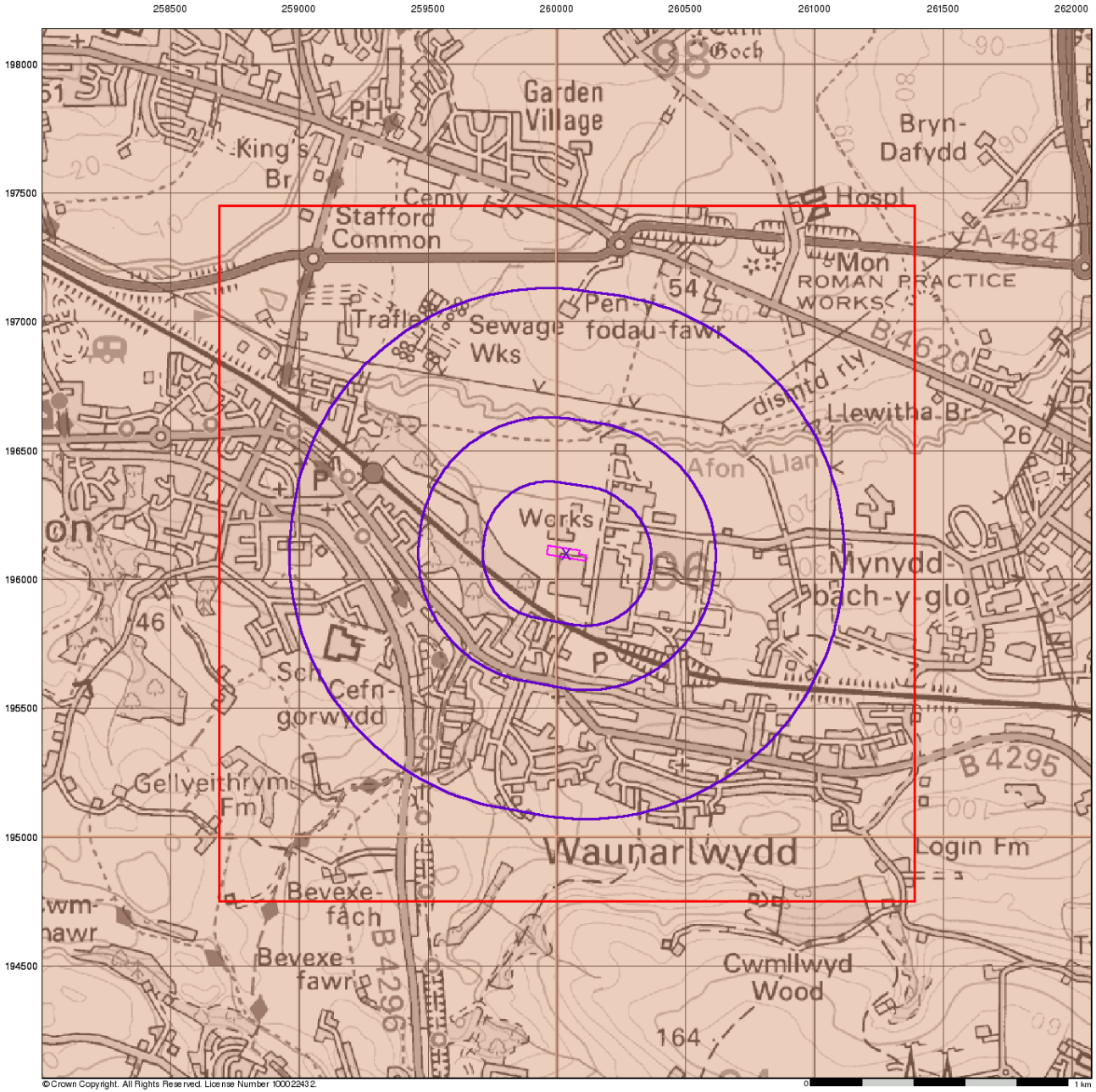


Bedrock Aquifer Designation

General

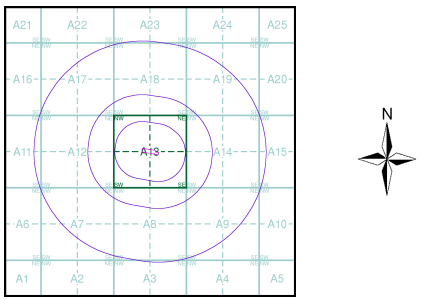
Specified Site
Specified Buffer(s)
Bearing Reference Point
Slice
Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



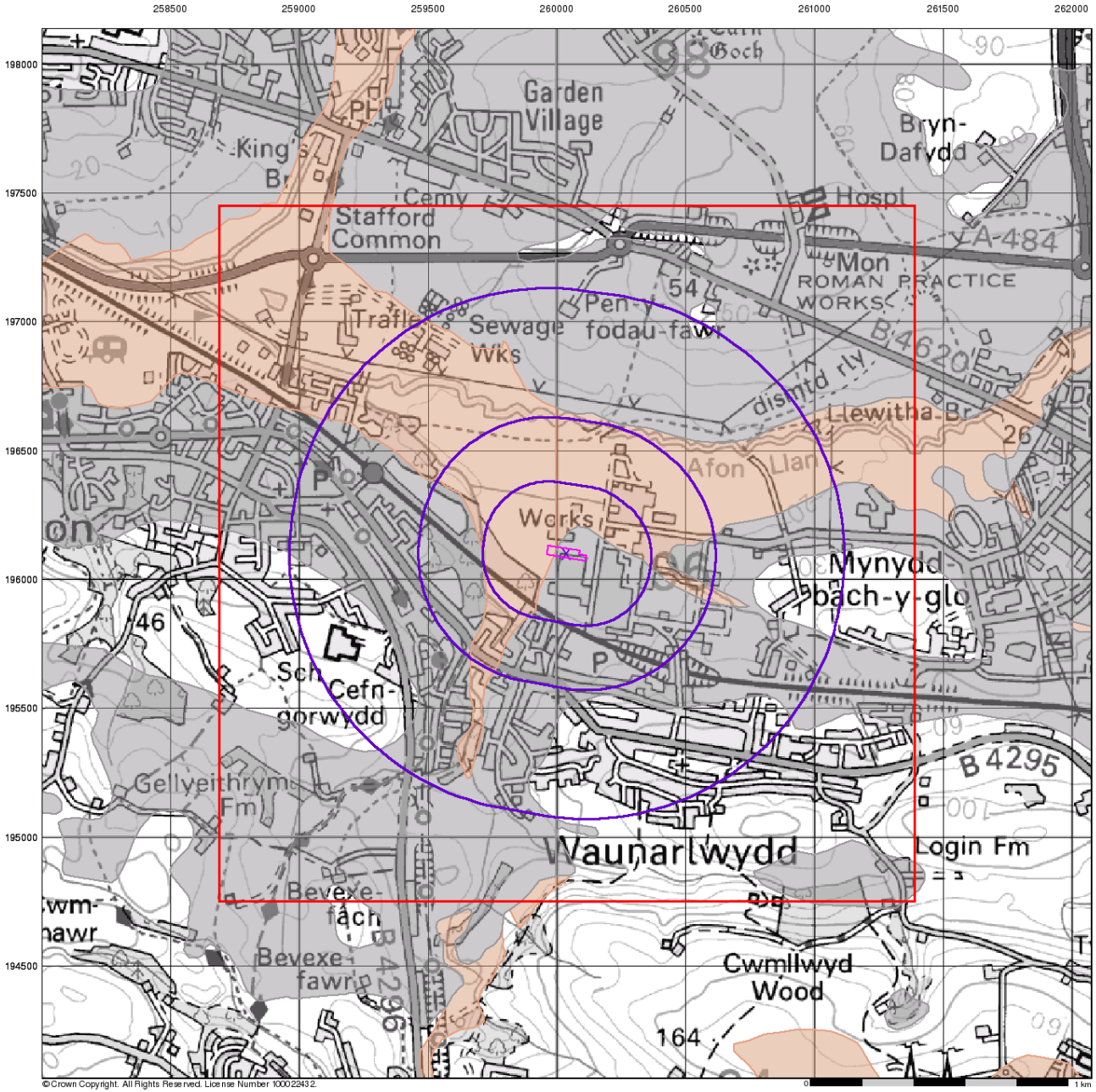
Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



solo environment

Superficial Aquifer Designation

General

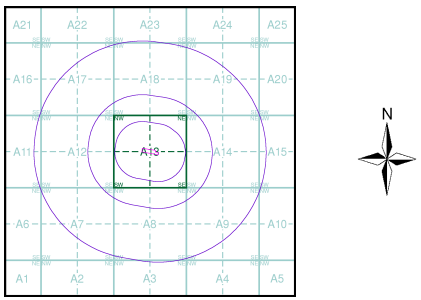
Specified Site
Specified Buffer(s)
Bearing Reference Point
Slice
Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



Order Details

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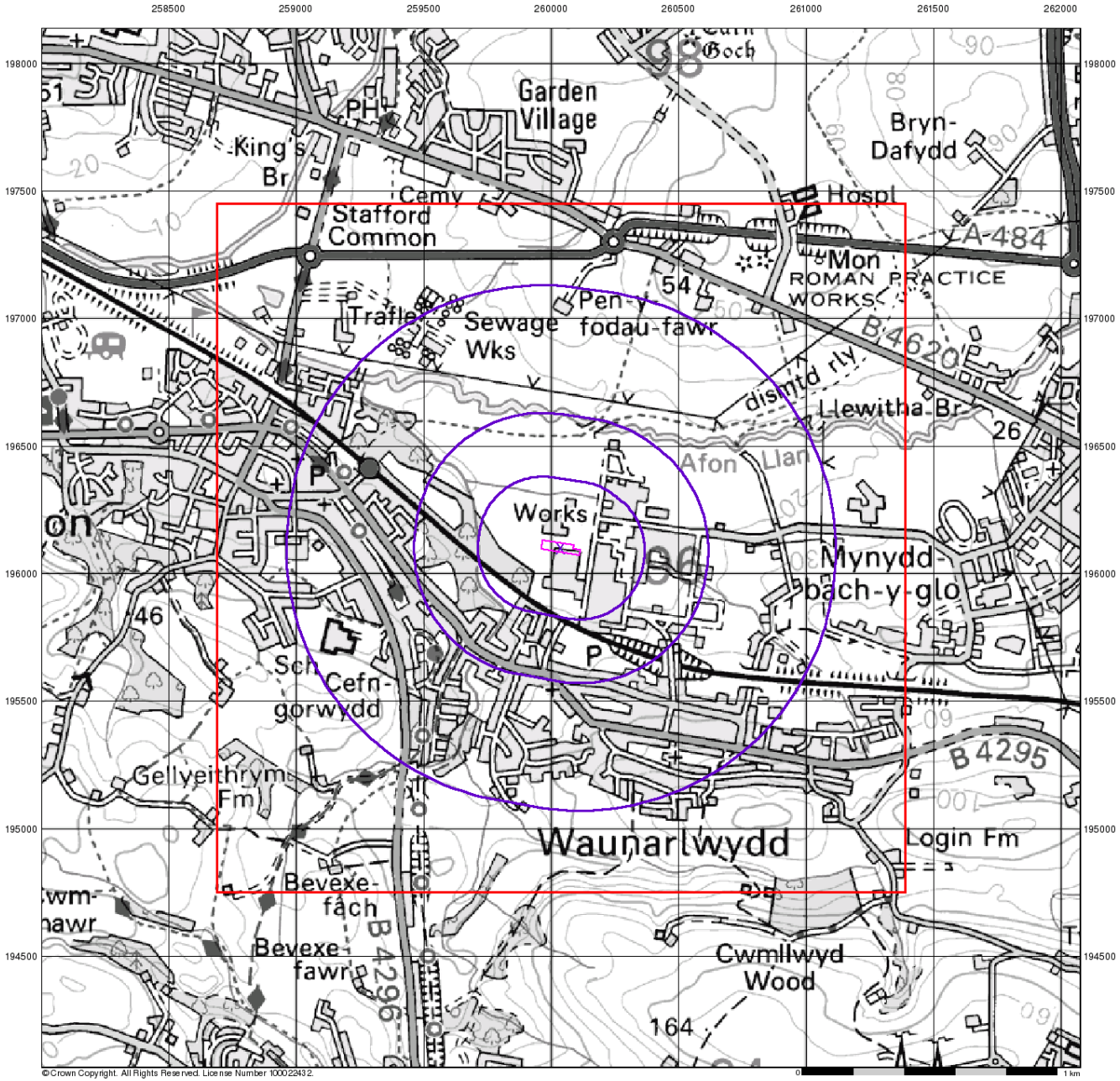
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Source Protection Zones

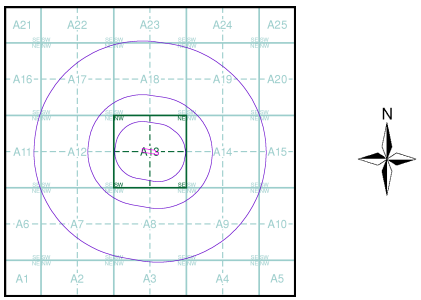
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

- Source Protection Zone I
- Source Protection Zone II
- Source Protection Zone III
- Zone of Special Interest
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



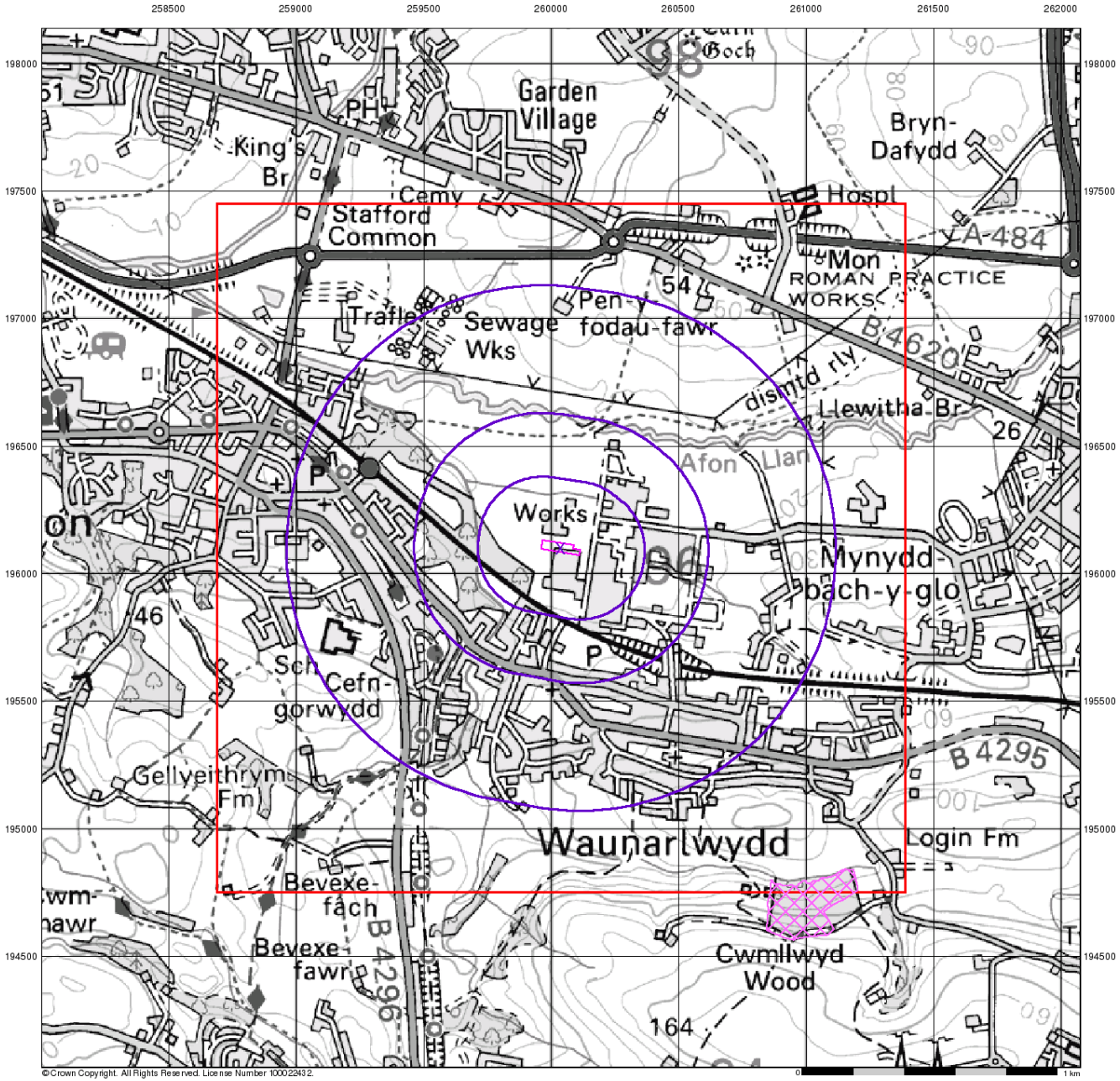
Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Sensitive Land Uses

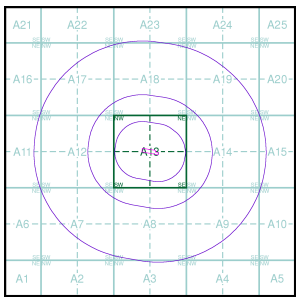
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Sensitive Land Uses

- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area

Site Sensitivity Context Map - Slice A



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Order Details

Order Number:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

sol environment

General

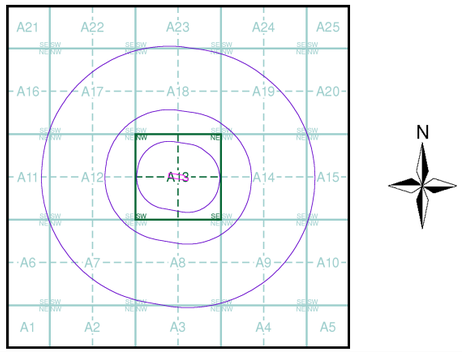
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



Order Details

Order Details:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group

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sol environment

General

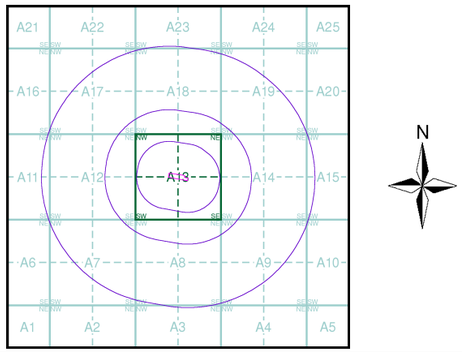
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



Order Details

Order Details:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

0 400 m

A1 A2 A3 A4 A5

sol environment

General

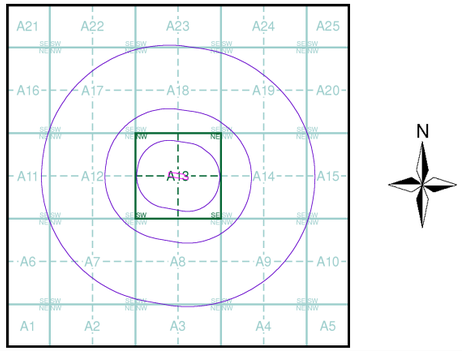
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



Order Details

Order Details:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

sol environment

General

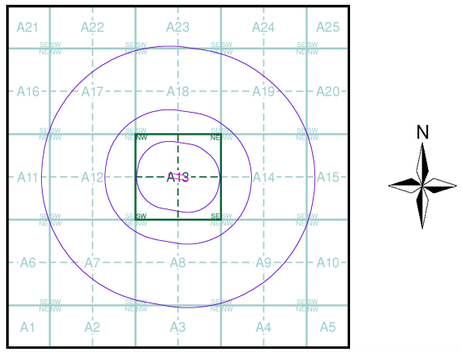
Specified Site
Specified Buffer(s)
X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- < 150
- 150 - 300
- 300 - 600
- 600 - 900
- > 900

Estimated Soil Chemistry Lead - Slice A



Order Details

Order Details:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

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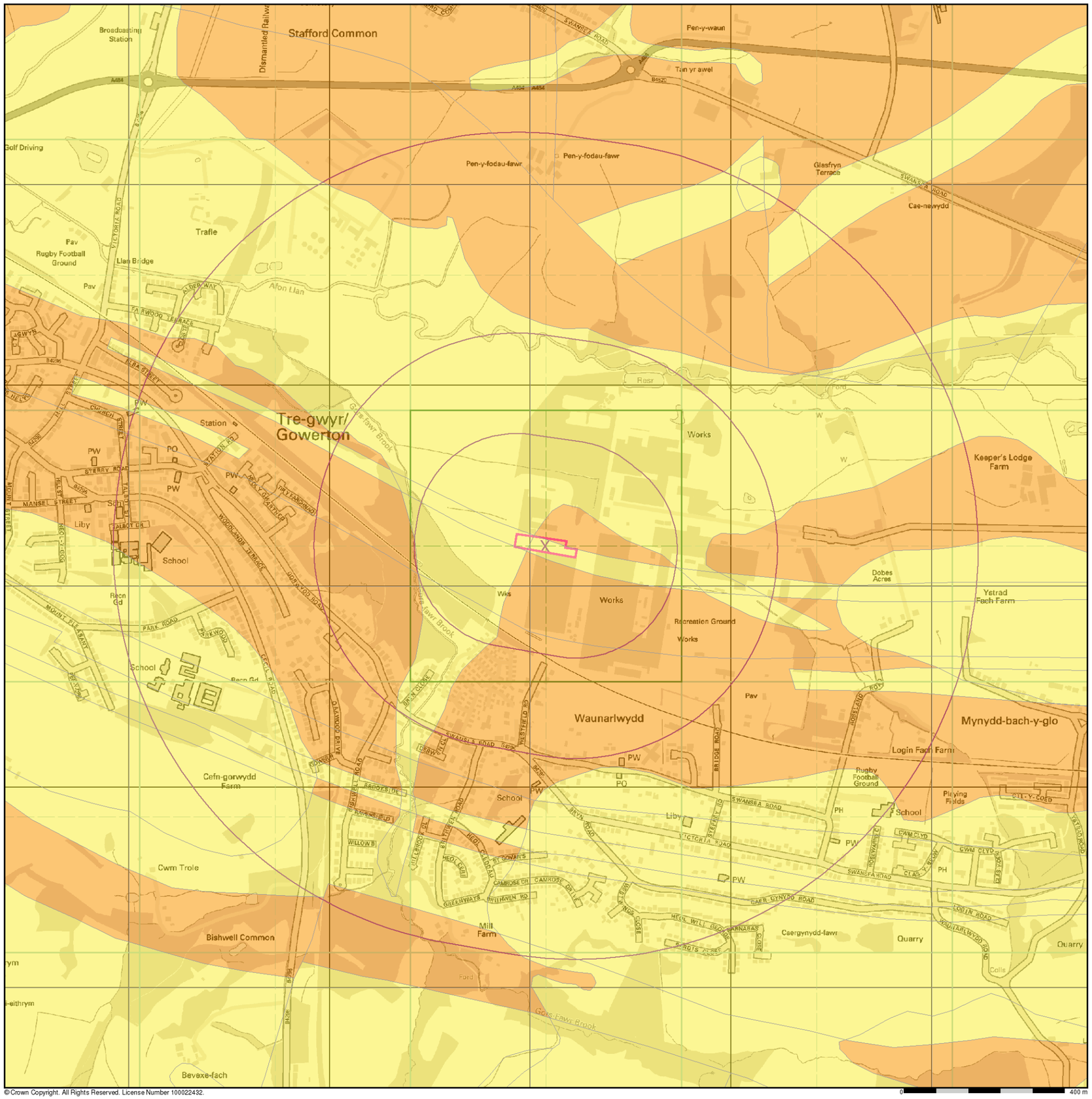
Web: www.envirocheck.co.uk



sol environment

General

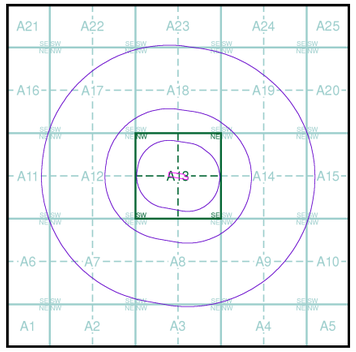
Specified Site
Specified Buffer(s)
X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



Order Details

Order Details:	45945406_1_1
Customer Ref:	SOL0113AL01
National Grid Reference:	260040, 196100
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Site at, Waunarlwydd, Swansea

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Annex D - Envirocheck Report

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
45945406_1_1

Customer Reference:
SOL0113AL01

National Grid Reference:
260040, 196100

Slice:
A

Site Area (Ha):
0.5

Search Buffer (m):
1000

Site Details:

Site at
Waunarlwydd
Swansea

Client Details:

Mr S Butler
Steve Butler
23 Christchurch Road
Malvern
Worcestershire
WR14 3BH

Prepared For:

Aleris Recycling (Swansea) Ltd
Westfield Industrial Park
Waunarlwydd, Swansea
SA5 4SF

Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v47.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1		2	8	9
Enforcement and Prohibition Notices	pg 5			1	
Integrated Pollution Controls	pg 5		13	3	
Integrated Pollution Prevention And Control	pg 8		11	5	
Local Authority Integrated Pollution Prevention And Control	pg 11		2		
Local Authority Pollution Prevention and Controls	pg 12		2		
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 12		Yes		
Pollution Incidents to Controlled Waters	pg 12		1	10	14
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality	pg 16			2	
River Quality Biology Sampling Points	pg 17				1
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 17			1	1
Water Abstractions	pg 17			1	(*2)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 18	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 18	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 18	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 18		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 18		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 20		1	1	
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 20		1	3	
Licensed Waste Management Facilities (Locations)	pg 21		3		
Local Authority Recorded Landfill Sites					
Registered Landfill Sites	pg 22		1	1	
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites	pg 22		1	1	

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)	pg 24		1		
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 25	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 25	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 42			1	5
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas	pg 43	Yes	n/a	n/a	n/a
Mining Instability	pg 43	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 43	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 44	Yes		n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 44	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 44	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 44	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 45		3	2	21
Fuel Station Entries	pg 47				1

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Environmental Health & Safety Engineer Property Type: Unspecified Tip Location: Former Waste Tipping, Alcoa Extrusions Uk Limited, Waunarlwydd Works, Po Box 42, Swansea, Sa1 1yd Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Bp0294301 Permit Version: 1 Effective Date: 28th March 2002 Issued Date: 28th March 2002 Revocation Date: 6th February 2007 Discharge Type: Trade Discharges - Site Drainage (Contam Surface Water, Not Tips) Discharge Environment: Freshwater Stream/River Receiving Water: Trib Of Gors Fawr Brook **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A13SW (SW)	128	1	259917 195978
2	**Discharge Consents** Operator: Alcoa Manufacturing (Gb) Ltd Property Type: Metal Treatment, Bolts, Nuts Etc. Location: Waunarlwydd Works Swansea Authority: Environment Agency, Welsh Region Catchment Area: River Loughor Reference: BC0012101 Permit Version: 2 Effective Date: 25th April 1997 Issued Date: 24th April 1997 Revocation Date: 2nd April 2009 Discharge Type: Trade Effluent Discharge Environment: Freshwater Stream/River Receiving Water: Unnamed Tributary Of The Gors **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A13NE (E)	147	1	260240 196170
3	**Discharge Consents** Operator: Brown D R Property Type: Domestic Property (Single) Location: Swansea Waunarlwydd 31 Westfield Ro, Waunarlwydd 31 Westfield Road Authority: Environment Agency, Welsh Region Catchment Area: River Loughor Reference: Bp0045301 Permit Version: 1 Effective Date: 2nd July 1987 Issued Date: 2nd July 1987 Revocation Date: 16th September 1994 Discharge Type: Unspecified Discharge Environment: Onto Land Receiving Water: To Land **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A13SW (S)	295	1	259950 195800
4	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Swo. Gowerton (Point 38 New Ma Authority: Environment Agency, Welsh Region Catchment Area: River Loughor Reference: BW4106501 Permit Version: 1 Effective Date: 4th February 1963 Issued Date: 4th February 1963 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Gorsfawr Brook **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	384	1	259780 195760

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Swansea Road/Brithwen Road (Point 3, (Point 38) Swansea Authority: Environment Agency, Welsh Region Catchment Area: Not Given Reference: BP0243001 Permit Version: 1 Effective Date: 21st July 1994 Issued Date: 21st July 1994 Revocation Date: 30th March 2003 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: Afon Llan **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	402	1	259760 195750
4	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Sso Waunarlwydd Authority: Environment Agency, Welsh Region Catchment Area: River Loughor Reference: Bd0025304 Permit Version: 1 Effective Date: 29th January 1974 Issued Date: 29th January 1974 Revocation Date: 14th March 1994 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: Gorsfawr Brook **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	411	1	259760 195740
5	**Discharge Consents** Operator: Environmental Health & Safety Engineer Property Type: Non Ferrous Foundries Location: Waunarlwydd Works , Swansea Authority: Environment Agency, Welsh Region Catchment Area: River Loughor Reference: BP0227801 Permit Version: 1 Effective Date: 21st April 1993 Issued Date: 21st April 1993 Revocation Date: 6th February 2007 Discharge Type: Trade Effluent Discharge Environment: Freshwater Stream/River Receiving Water: Afon Llan **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A18SE (N)	446	1	260170 196550
5	**Discharge Consents** Operator: Alcoa Manufacturing (Gb) Ltd Property Type: Metal Treatment, Bolts, Nuts Etc. Location: Waunarlwydd Works Swansea Authority: Environment Agency, Welsh Region Catchment Area: River Loughor Reference: Bc0012101 Permit Version: 1 Effective Date: 28th July 1970 Issued Date: 28th July 1970 Revocation Date: 24th April 1997 Discharge Type: Trade Effluent Discharge Environment: Into And/Or Watercourse Receiving Water: Unnamed Tributary Of The Gors **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A18SE (N)	448	1	260180 196550

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: Hawkes Coaches Ltd Property Type: Undefined Or Other Location: Workshop & Offices Bridge Road. Wa, Bridge Road. Waunarlwydd Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Bm0005101 Permit Version: 1 Effective Date: 13th March 1980 Issued Date: 13th March 1980 Revocation Date: 2nd July 1994 Discharge Type: Unspecified Discharge Environment: Onto Land Receiving Water: To Land Nr. River Llan **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	474	1	260330 195650
7	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Waunarlwydd Caravan Site Cso, Swansea Road, Waunarlwydd, Swansea Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Bp0243001 Permit Version: 2 Effective Date: 31st March 2003 Issued Date: 21st March 2003 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Gors Fawr Brook **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NW (S)	498	1	259868 195609
8	**Discharge Consents** Operator: Fitzgerald K A Property Type: Undefined Or Other Location: 128 Brithwen Road Waunarlwydd Swans, Waunarlwydd Swansea Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Bm0040301 Permit Version: 1 Effective Date: 8th August 1984 Issued Date: 8th August 1984 Revocation Date: 11th July 1994 Discharge Type: Unspecified Discharge Environment: Specified Underground Receiving Water: Underground Strata **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A8NW (S)	559	1	259850 195550
9	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Alcoa Waunarllwydd (Point 42) Swan, (Point 42) Swansea Authority: Environment Agency, Welsh Region Catchment Area: Not Given Reference: BP0243101 Permit Version: 1 Effective Date: 21st July 1994 Issued Date: 21st July 1994 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Afon Llan **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14SW (E)	615	1	260700 195890

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Discharge Consents** Operator: Mr T K Davies Property Type: Domestic Property (Single) Location: 4 Bridge Rd Waunarlwydd Swansea Authority: Environment Agency, Welsh Region Catchment Area: Not Given Reference: BN0044202 Permit Version: 1 Effective Date: 23rd July 1971 Issued Date: 23rd July 1971 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Into Land Receiving Water: To Land Nr. River Llan **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	639	1	260400 195500
11	**Discharge Consents** Operator: Swansea City Council Property Type: Undefined Or Other Location: Waunarlwydd Development Off Brithwe, Development Off Brithwen Road Authority: Environment Agency, Welsh Region Catchment Area: River Loughor Reference: Bp0033401 Permit Version: 1 Effective Date: 1st December 1986 Issued Date: 1st December 1986 Revocation Date: 20th October 1992 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: Gors Fawr Brook **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	717	1	259700 195430
12	**Discharge Consents** Operator: Mr David Haydn Morgan Property Type: Domestic Property (Single) Location: Cefn Gorwydd Farm Cecil Rd. Gowerto, Cecil Rd. Gowerton Swansea Authority: Environment Agency, Welsh Region Catchment Area: Not Given Reference: BM0021501 Permit Version: 1 Effective Date: 15th February 1982 Issued Date: 15th February 1982 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Into Land Receiving Water: To Land **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	794	1	259360 195580
13	**Discharge Consents** Operator: Mr David Haydn Morgan Property Type: Undefined Or Other Location: Cefn Gorwydd Farm Cecil Road Gowert, Cecil Road Gowerton Swansea Authority: Environment Agency, Welsh Region Catchment Area: River Loughor Reference: Bp0067301 Permit Version: 1 Effective Date: 2nd November 1987 Issued Date: 2nd November 1987 Revocation Date: 4th November 1996 Discharge Type: Unspecified Discharge Environment: Onto Land Receiving Water: To Land **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	827	1	259370 195520

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Discharge Consents** Operator: Mr & Mrs R J & M F Head Property Type: Domestic Property (Single) Location: 126 Brithwen Rd Waunarlwydd Swanse, Waunarlwydd Swansea Authority: Environment Agency, Welsh Region Catchment Area: Not Given Reference: BF0092901 Permit Version: 1 Effective Date: 3rd January 1974 Issued Date: 3rd January 1974 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Into Land Receiving Water: To Land Nr. Gors Fawr Brook **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A8SW (S)	895	1	259900 195200
15	**Discharge Consents** Operator: Thomas A Property Type: Undefined Or Other Location: Dwe.126 Brithwen Rd. Waunarlwydd Sw, Waunarlwydd Swansea. Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Bf0147701 Permit Version: 1 Effective Date: 12th April 1976 Issued Date: 12th April 1976 Revocation Date: 31st January 1994 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: To Land Nr. Gors Fawr Brook **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A8SW (S)	916	1	259977 195165
16	**Discharge Consents** Operator: John A Property Type: Domestic Property (Single) Location: Ystrad Fach Farm Mynydd Bach Y Glo, Mynydd Bach Y Glo Waunarlwydd. Authority: Environment Agency, Welsh Region Catchment Area: River Loughor Reference: Bp0099501 Permit Version: 1 Effective Date: 11th August 1988 Issued Date: 11th August 1988 Revocation Date: 10th October 1994 Discharge Type: Unspecified Discharge Environment: Onto Land Receiving Water: To Land **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A15SW (E)	965	1	261070 195950
17	**Enforcement and Prohibition Notices** Location: Waunarlwydd, SWANSEA, . Permit Reference: Not Given Enforcement Date: 20th February 2002 Details: Waste Salt Cake Transferred From Storage Bins To Unauthorised Storage Area Positional Accuracy: Manually positioned to the address or location	A13SE (E)	266	1	260368 195997
18	**Integrated Pollution Controls** Name: Imco Recycling (Uk) Ltd Location: Waunarlwydd Works, Waunarlwydd, SWANSEA, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Bl5628 Dated: Not Supplied Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Application has met the requirements for authorisation (but not yet authorised)Not Yet Authorised** Positional Accuracy: Manually positioned to the address or location	A13SE (E)	178	1	260294 196096

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	**Integrated Pollution Controls** Name: Alcoa Europe Flat Rolled Products Ltd Location: PO Box 68, Waunarl Wydd Works, SWANSEA, WEST GLAMORGAN, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: BI0670 Dated: 18th April 2000 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (D) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	232	1	260299 196234
19	**Integrated Pollution Controls** Name: Alcoa Europe Flat Rolled Products Ltd Location: PO Box 68, Waunarl Wydd Works, SWANSEA, WEST GLAMORGAN, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: BF4652 Dated: 14th June 1999 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (D) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	232	1	260299 196234
19	**Integrated Pollution Controls** Name: Alcoa Europe Flat Rolled Products Ltd Location: PO Box 68, Waunarl Wydd Works, SWANSEA, WEST GLAMORGAN, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: BF9638 Dated: 29th April 1999 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (D) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	232	1	260299 196234
19	**Integrated Pollution Controls** Name: Alcoa Europe Flat Rolled Products Ltd Location: PO Box 68, Waunarl Wydd Works, SWANSEA, WEST GLAMORGAN, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: BF4644 Dated: 15th March 1999 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (D) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	232	1	260299 196234
19	**Integrated Pollution Controls** Name: Alcoa Europe Flat Rolled Products Ltd Location: PO Box 68, Waunarl Wydd Works, SWANSEA, WEST GLAMORGAN, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: BD2314 Dated: 24th November 1998 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (D) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	232	1	260299 196234
19	**Integrated Pollution Controls** Name: Alcoa Europe Flat Rolled Products Ltd Location: PO Box 68, Waunarl Wydd Works, SWANSEA, WEST GLAMORGAN, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: AS6845 Dated: 21st February 1996 Process Type: IPC application for process that was regulated by HMIP for air releases under previous legislation Description: 2.2 A (D) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	232	1	260299 196234

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	**Integrated Pollution Controls** Name: Alcoa Europe Flat Rolled Products Ltd Location: PO Box 68, Waunarl Wydd Works, SWANSEA, WEST GLAMORGAN, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: AF8882 Dated: 21st April 1993 Process Type: IPC application for process that was regulated by HMIP for air releases under previous legislation Description: 1.3 A (A) Combustion processes within the Fuel & Power Industry **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	232	1	260299 196234
19	**Integrated Pollution Controls** Name: Alcoa Europe Flat Rolled Products Ltd Location: PO Box 68, Waunarl Wydd Works, SWANSEA, WEST GLAMORGAN, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: BG4577 Dated: Not Supplied Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (D) Non-ferrous Metal processes within the Metal Industry **Status: Application refused** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	232	1	260299 196234
20	**Integrated Pollution Controls** Name: Aleris Recycling (Swansea) Ltd Location: Waunarlwydd Works, Waunarlwydd, Swansea, West Glamorgan, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Bu6077 Dated: 7th May 2003 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Revoked - Now IPPC** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	247	1	260236 195857
20	**Integrated Pollution Controls** Name: Aleris Recycling (Swansea) Ltd Location: Waunarlwydd Works, Waunarlwydd, Swansea, West Glamorgan, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Bq4467 Dated: 21st May 2002 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	247	1	260236 195857
20	**Integrated Pollution Controls** Name: Aleris Recycling (Swansea) Ltd Location: Waunarlwydd Works, Waunarlwydd, SWANSEA, West Glamorgan, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: AZ6037 Dated: 4th December 1997 Process Type: IPC major (substantial) variation Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	247	1	260236 195857
20	**Integrated Pollution Controls** Name: Aleris Recycling (Swansea) Ltd Location: Waunarlwydd Works, WAUNARLWYDD, SWANSEA, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: BH8888 Dated: 18th April 2000 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	249	1	260241 195857
20	**Integrated Pollution Controls** Name: Aleris Recycling (Swansea) Ltd Location: Waunarlwydd Works, WAUNARLWYDD, SWANSEA, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: AX6168 Dated: 11th June 1997 Process Type: IPC new application Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	251	1	260236 195852

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
20	**Integrated Pollution Controls** Name: Aleris Recycling (Swansea) Ltd Location: Waunarlwydd Works, WAUNARLWYDD, SWANSEA, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: BE1011 Dated: 24th November 1998 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	254	1	260241 195852
21	**Integrated Pollution Controls** Name: Aleris Recycling (Swansea) Ltd Location: Waunarlwydd Works, Waunarlwydd, Swansea, West Glamorgan, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Bk9601 Dated: 25th June 2001 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A14SW (E)	487	1	260593 195995
22	**Integrated Pollution Prevention And Control** Name: Alcoa Manufacturing (G.B.) Limited Location: PO Box 68, Waunarlwydd Works, Swansea, Swansea, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: Bx4658iv Original Permit Ref: Bm1377it Effective Date: 1st March 2004 **Status: Superseded By Variation** Application Type: Variation App. Sub Type: Minor Positional Accuracy: Manually positioned to the address or location Activity Code: 2.2 A(1) (B) (I) Activity Description: Non-Ferrous Metals; Melting With Capacity Greater Than 4T/D Lead/Cadmium Or 20T/D Others Primary Activity: Y	A13SE (SE)	158	1	260245 195986
23	**Integrated Pollution Prevention And Control** Name: Alcoa Manufacturing (G.B.) Limited Location: Waunarlwydd, Swansea, West Glamorgan, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: SP3138MK Original Permit Ref: Bm1377it Effective Date: 12th January 2007 **Status: Superseded By Variation** Application Type: Variation App. Sub Type: Simple Standard Variation Positional Accuracy: Manually positioned within the geographical locality Activity Code: 2.2 A(1) (B) (I) Activity Description: Non-Ferrous Metals; Melting With Capacity Greater Than 4T/D Lead/Cadmium Or 20T/D Others Primary Activity: Y	A13SE (E)	195	1	260301 196022
23	**Integrated Pollution Prevention And Control** Name: Alcoa Manufacturing (G.B.) Limited Location: Waunarlwydd Non Ferrous Metals, Po Box 68, Waunarlwydd Works,Waunarlwydd,, SWANSEA, Swansea, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: Bp3739lm Original Permit Ref: Bm1377it Effective Date: 10th January 2006 **Status: Superseded By Variation** Application Type: Variation App. Sub Type: Minor Positional Accuracy: Located by supplier to within 100m Activity Code: 2.2 A(1) (B) (I) Activity Description: Non-Ferrous Metals; Melting With Capacity Greater Than 4T/D Lead/Cadmium Or 20T/D Others Primary Activity: Y	A13SE (E)	201	1	260300 196000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	**Integrated Pollution Prevention And Control** Name: Timet Uk Ltd Location: Po Box 57, Swansea, Sa1 1xd Authority: Environment Agency, Welsh Region Permit Reference: Bx9846id Original Permit Ref: Bx9846id Effective Date: 10th January 2005 **Status: Superseded By Variation** Application Type: Application App. Sub Type: New Positional Accuracy: Manually positioned to the address or location Activity Code: 2.3 A(1) (A) Activity Description: Surface Treating Metals And Plastics; Electrolytic/Chemical Greater Than 30 Cubic Metres Primary Activity: Y Activity Code: 0.0 Associated Process Activity Description: Associated Process Primary Activity: N	A13NE (E)	214	1	260309 196183
25	**Integrated Pollution Prevention And Control** Name: Alcoa Manufacturing (G.B.) Limited Location: Waunarlwydd Works, Waunarlwydd, SWANSEA, West Glamorgan, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Bx1713ib Original Permit Ref: Bm1377it Effective Date: 29th December 2003 **Status: Superseded By Variation** Application Type: Variation App. Sub Type: Minor Positional Accuracy: Manually positioned to the address or location Activity Code: 2.2 A(1) (B) (I) Activity Description: Non-Ferrous Metals; Melting With Capacity Greater Than 4T/D Lead/Cadmium Or 20T/D Others Primary Activity: Y	A13SE (SE)	246	1	260235 195858
25	**Integrated Pollution Prevention And Control** Name: Alcoa Manufacturing (G.B.) Limited Location: Alcoa Emp Swansea, Waunarlwydd Works, Waunarlwydd,,, SWANSEA, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: XP3537XX Original Permit Ref: Bm1377it Effective Date: 12th September 2008 **Status: Surrender Effective** Application Type: Surrender App. Sub Type: Whole Positional Accuracy: Automatically positioned to the address Activity Code: 2.3 A(1) (A) Activity Description: Surface Treating Metals And Plastics; Electrolytic/Chemical Greater Than 30 Cubic Metres Primary Activity: N Activity Code: 0.0 Associated Process Activity Description: Associated Process Primary Activity: N Activity Code: 2.2 A(1) (B) Activity Description: Non-Ferrous Metals; Melting Capacity Greater Than 4T/D Lead/Cadmium Or 20T/D Others And For Alloys A Vessel With A Design Holding Capacity Of 5 Tonnes Or More Primary Activity: Y	A13SE (SE)	247	1	260236 195857
25	**Integrated Pollution Prevention And Control** Name: Aleris International Ltd Location: Waunarlwydd Non Ferrous Metals, Waunarlwydd Works, Waunarlwydd, SWANSEA, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: GP3432MN Original Permit Ref: Bm1385ix Effective Date: 27th July 2007 **Status: Revoked** Application Type: Variation App. Sub Type: Standard Positional Accuracy: Manually positioned to the address or location Activity Code: 2.2 A(1) (A) Activity Description: Non-Ferrous Metals; Producing From Raw Materials By Metallurgical Activities Etc Primary Activity: Y	A13SE (SE)	247	1	260235 195857

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	**Integrated Pollution Prevention And Control** Name: Aleris Recycling (Swansea) Limited Location: Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: EP3935UC Original Permit Ref: Ep3935uc Effective Date: 27th July 2007 **Status: Effective** Application Type: Transfer App. Sub Type: Whole limited change in management Positional Accuracy: Automatically positioned to the address Activity Code: 2.2 A(1) (A) Activity Description: Non-Ferrous Metals; Producing From Raw Materials By Metallurgical Activities Etc Primary Activity: Y	A13SE (SE)	247	1	260236 195857
25	**Integrated Pollution Prevention And Control** Name: Imco Recycling Uk Ltd Location: Waunarlwydd Non Ferrous Metals, Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Wp3339sp Original Permit Ref: Bm1385ix Effective Date: 18th January 2005 **Status: Superseded By Variation** Application Type: Variation App. Sub Type: Standard Positional Accuracy: Automatically positioned to the address Activity Code: 2.2 A(1) (A) Activity Description: Non-Ferrous Metals; Producing From Raw Materials By Metallurgical Activities Etc Primary Activity: Y	A13SE (SE)	247	1	260236 195857
25	**Integrated Pollution Prevention And Control** Name: Alcoa Manufacturing (G.B.) Limited Location: Waunarlwydd Works, Waunarlwydd, Swansea, West Glamorgan, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Ep3337pq Original Permit Ref: Bm1377it Effective Date: 13th August 2004 **Status: Superseded By Variation** Application Type: Variation App. Sub Type: Standard Positional Accuracy: Automatically positioned to the address Activity Code: 2.2 A(1) (B) (l) Activity Description: Non-Ferrous Metals; Melting With Capacity Greater Than 4T/D Lead/Cadmium Or 20T/D Others Primary Activity: Y	A13SE (SE)	247	1	260236 195857
25	**Integrated Pollution Prevention And Control** Name: Alcoa Manufacturing (G.B.) Limited Location: Waunarlwydd Works, Waunarlwydd, Swansea, West Glamorgan, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Bx6928iy Original Permit Ref: Bm1377it Effective Date: 9th April 2004 **Status: Superseded By Variation** Application Type: Variation App. Sub Type: Minor Positional Accuracy: Automatically positioned to the address Activity Code: 2.2 A(1) (B) (l) Activity Description: Non-Ferrous Metals; Melting With Capacity Greater Than 4T/D Lead/Cadmium Or 20T/D Others Primary Activity: Y	A13SE (SE)	247	1	260236 195857
26	**Integrated Pollution Prevention And Control** Name: Timet Uk Ltd Location: Timet Waunarlwydd, Timet Uk Ltd, Waunarlwydd, SWANSEA, West Glamorgan, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: GP3836FQ Original Permit Ref: Bx9846id Effective Date: 16th July 2012 **Status: Effective** Application Type: Variation App. Sub Type: Substantial Positional Accuracy: Located by supplier to within 100m Activity Code: 0.0 Associated Process Activity Description: Associated Process Primary Activity: N Activity Code: 2.3 A(1) (A) Activity Description: Surface Treating Metals And Plastics; Electrolytic/Chemical Greater Than 30 Cubic Metres Primary Activity: Y	A13NE (NE)	265	1	260280 196300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**Integrated Pollution Prevention And Control** Name: Timet Uk Ltd Location: Timet Waunarlwydd, Waunarlwydd, Swansea, SA1 1XD Authority: Environment Agency, Welsh Region Permit Reference: TP3637MW Original Permit Ref: Bx9846id Effective Date: 27th July 2007 **Status: Superseded By Variation** Application Type: Variation App. Sub Type: Minor Positional Accuracy: Manually positioned to the address or location Activity Code: 0.0 Associated Process Activity Description: Associated Process Primary Activity: N Activity Code: 2.3 A(1) (A) Activity Description: Surface Treating Metals And Plastics; Electrolytic/Chemical Greater Than 30 Cubic Metres Primary Activity: Y	A13NE (NE)	281	1	260280 196320
27	**Integrated Pollution Prevention And Control** Name: Alcoa Manufacturing (G.B.) Limited Location: Waunarlwydd Non Ferrous Metals, Po Box 68, Waunarlwydd Works, Swansea, West Glamorgan, SA1 1XH Authority: Environment Agency, Welsh Region Permit Reference: Bm1377it Original Permit Ref: Bm1377it Effective Date: 12th August 2003 **Status: Superseded By Variation** Application Type: Application App. Sub Type: New Positional Accuracy: Manually positioned to the address or location Activity Code: 2.2 A(1) (B) (I) Activity Description: Non-Ferrous Metals; Melting With Capacity Greater Than 4T/D Lead/Cadmium Or 20T/D Others Primary Activity: Y	A13SE (SE)	334	1	260346 195833
27	**Integrated Pollution Prevention And Control** Name: Imco Recycling Uk Ltd Location: Waunarlwydd Non Ferrous Metals, Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Bm1385ix Original Permit Ref: Bm1385ix Effective Date: 5th September 2003 **Status: Superseded By Variation** Application Type: Application App. Sub Type: New Positional Accuracy: Manually positioned to the address or location Activity Code: 2.2 A(1) (A) Activity Description: Non-Ferrous Metals; Producing From Raw Materials By Metallurgical Activities Etc Primary Activity: Y	A13SE (SE)	337	1	260346 195828
28	**Integrated Pollution Prevention And Control** Name: Imco Recycling Uk Ltd Location: Waunarlwydd Non Ferrous Metals, Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF Authority: Environment Agency, Welsh Region Permit Reference: Bx1411ie Original Permit Ref: Bm1385ix Effective Date: 15th July 2004 **Status: Superseded By Variation** Application Type: Variation App. Sub Type: Minor Positional Accuracy: Automatically positioned to the address Activity Code: 2.2 A(1) (A) Activity Description: Non-Ferrous Metals; Producing From Raw Materials By Metallurgical Activities Etc Primary Activity: Y	A14SW (E)	494	1	260598 195979
29	**Local Authority Integrated Pollution Prevention And Control** Name: 3ms Location: 3m United Kingdom Plc, Penllergaer, Swansea, SA4 9GD Authority: City and County of Swansea, Environmental Health Department Permit Reference: CCS IPPC A2 002/04 Dated: 1st October 2004 Process Type: Other Activities Description: Manufacture of dyestuffs, prinitng ink and coating materials **Status: Permit Issued** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	244	2	260326 195953

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	**Local Authority Integrated Pollution Prevention And Control** Name: Coil Color Location: Waunarlwydd Works, Swansea Authority: City and County of Swansea, Environmental Health Department Permit Reference: Not Supplied Dated: Not Supplied Process Type: Production and Processing of Metals Description: Coating of steel **Status: Permit Issued** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	244	2	260326 195953
30	**Local Authority Pollution Prevention and Controls** Name: Timet Location: PO Box 57, Waurnarlwydd, SWANSEA, West Glamorgan, SA1 1XD Authority: City and County of Swansea, Environmental Health Department Permit Reference: Sd/Poll/Mw1842 Dated: 5th April 1995 Process Type: Local Authority Air Pollution Control Description: PG4/1 Processes for the surface treatment of metals **Status: Authorised** Positional Accuracy: Manually positioned within the geographical locality	A13NE (NE)	171	2	260250 196198
31	**Local Authority Pollution Prevention and Controls** Name: Coil Color Location: Waunarlwydd Works, PO Box 68, SWANSEA, West Glamorgan, SA5 4SG Authority: City and County of Swansea, Environmental Health Department Permit Reference: Kdj/Pd/Alcoa Dated: 18th January 2000 Process Type: Local Authority Pollution Prevention and Control Description: PG6/13 Coil coating processes **Status: Transferred to LAIPPC** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	244	2	260326 195953
	Nearest Surface Water Feature	A13NW (NW)	42	-	259942 196164
32	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Upstream Gowerton Rugby Club, As Far As Alcoa Authority: Environment Agency, Welsh Region Pollutant: Chlorinated Water Note: Tributary Of River Llan; Burst Incident Date: 24th July 1997 Incident Reference: 33120 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	137	1	260200 196200
33	**Pollution Incidents to Controlled Waters** Property Type: Other Location: Between, Gowerton And, WAUNARLWYDD Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Deliberate Act Incident Date: 27th July 1995 Incident Reference: 25278 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Direct Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	339	1	259800 195800
33	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Storm Overflow Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Miscellaneous - Vehicle Washings And De Waxing Note: Blocked Sewer Incident Date: 22nd January 1992 Incident Reference: 2920 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Overflow Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	341	1	259805 195795

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	**Pollution Incidents to Controlled Waters** Property Type: Private Sewage (Non-PLC): Other Location: Adjacent To 68 Roseland Road Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 17th May 1991 Incident Reference: 777 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	343	1	259800 195795
34	**Pollution Incidents to Controlled Waters** Property Type: Abandoned mine Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Inadequate Design/Capacity Incident Date: 15th February 1995 Incident Reference: 22680 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	402	1	259900 195700
35	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Storm Overflow Location: Laurel Drive, Waunarlwy Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Blocked Sewer Incident Date: 26th October 1991 Incident Reference: 1618 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Overflow Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	429	1	259800 195700
35	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 11th June 1991 Incident Reference: 830 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	434	1	259800 195695
36	**Pollution Incidents to Controlled Waters** Property Type: Process Location: Extrusion Plant Interceptor Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Mechanical Failure Incident Date: 23rd April 1991 Incident Reference: 486 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Overflow Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (NE)	437	1	260300 196495
36	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Alcoa Works To, Gowerton Pond Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Not Supplied Incident Date: 16th May 1991 Incident Reference: 746 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A18SE (NE)	441	1	260300 196500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
37	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Below Alcoa Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Not Supplied Incident Date: 26th May 1991 Incident Reference: 755 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A18SE (N)	496	1	260200 196595
37	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Below Alcoa Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 26th May 1991 Incident Reference: 755 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (N)	497	1	260205 196595
37	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Alcoa/Imi, WAUNARLWYDD Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 11th April 1991 Incident Reference: 124 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (N)	501	1	260200 196600
37	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 3rd March 1992 Incident Reference: 3996 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (N)	507	1	260205 196605
38	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: At Penyfodau Farm, Gorseinon, SWANSEA Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: River Llan (Tributary Of River Loughor) Incident Date: 15th August 1997 Incident Reference: 33329 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (NE)	505	1	260350 196545
38	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Effluent From Timet, /Alcoa Pipes At, GORSEINON Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: River Llan (Tributary Of River Loughor) Incident Date: 15th August 1997 Incident Reference: 33329 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (NE)	508	1	260355 196545

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Alcoa 42 And 21 Inch Outfalls Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: River Llan (Tributary Of River Loughor) Incident Date: 15th August 1997 Incident Reference: 33329 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (NE)	510	1	260350 196550
39	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Alcoa Authority: Environment Agency, Welsh Region Pollutant: Mining Water Note: Weather Incident Date: 15th March 1991 Incident Reference: 1870 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Overflow Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A18SE (NE)	531	1	260300 196600
40	**Pollution Incidents to Controlled Waters** Property Type: Private Sewage (Non-PLC): Other Location: Stream, Cockett Valley Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: Blocked Sewer Incident Date: 31st August 1991 Incident Reference: 1404 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Overflow Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SE (E)	739	1	260800 195800
41	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Llewitha Bridge, On B4620, SWANSEA Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 11th July 1995 Incident Reference: 25071 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 1 - Major Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	771	1	260700 196595
41	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Llewitha Bridge, CARMARTHEN Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 11th July 1995 Incident Reference: 25071 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	775	1	260700 196600
42	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Storm Overflow Location: Crosses, Roseland Road, WAUNARLWYDD Authority: Environment Agency, Welsh Region Pollutant: Agricultural: Carcasses Note: Blocked Sewer Incident Date: 8th September 1991 Incident Reference: 1477 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Overflow Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	781	1	260800 195700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Stream Crossing, Roseland Road, WAUNARLWYDD Authority: Environment Agency, Welsh Region Pollutant: Sewage - Septic Tank Effluent Note: Not Supplied Incident Date: 2nd March 1995 Incident Reference: 23191 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NE (E)	851	1	260900 195750
44	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Courtsland Way, Tudor Court, SWANSEA Authority: Environment Agency, Welsh Region Pollutant: Oils - Petrol Note: No River Catchment: To Road Drains Incident Date: 9th November 1997 Incident Reference: 34107 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NE (E)	891	1	261000 196200
45	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Stream Near Roseland Road , Below Waunarlwyd Common Authority: Environment Agency, Welsh Region Pollutant: Mud/Clay/Soil Note: Weather; Tributary Of Gors Fawr Brook Incident Date: 9th July 1998 Incident Reference: 36217 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Natural Causes Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	893	1	260900 195650
46	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Stream Behind, 168 Flemming Crescent Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Not Supplied Incident Date: 8th May 1996 Incident Reference: 28312 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17NE (NW)	944	1	259600 197000
	River Quality Name: Llan GQA Grade: River Quality A Reach: Alcoa Outlet-Melin Llan Br.Llangafelach Estimated Distance (km): 5.2 Flow Rate: Flow less than 0.62 cumecs Flow Type: River Year: 2000	A13NE (NE)	274	1	260176 196374
	River Quality Name: Llan GQA Grade: River Quality B Reach: Conf.Lliw - Alcoa Outlet Waunarl. Estimated Distance (km): 2.1 Flow Rate: Flow less than 0.62 cumecs Flow Type: River Year: 2000	A18SW (N)	338	1	259990 196467

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	**River Quality Biology Sampling Points** Name: Llan Reach: Confluence River Lliw To Alcoa Outlet Waunarl. Estimated Distance: 2.10 Positional Accuracy: Located by supplier to within 100m Year: 1990 GQA Grade: River Quality Biology GQA Grade D - Fair Year: 1995 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2000 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2002 GQA Grade: River Quality Biology GQA Grade Not Supplied Year: 2003 GQA Grade: River Quality Biology GQA Grade Not Supplied Year: 2004 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2005 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2006 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2007 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2008 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2009 GQA Grade: River Quality Biology GQA Grade B - Good	A18SE (N)	501	1	260200 196600
48	**Substantiated Pollution Incident Register** Authority: Environment Agency Wales, South West Area Incident Date: 12th March 2011 Incident Reference: 865209 Water Impact: Category 4 - No Impact Air Impact: Category 1 - Major Incident Land Impact: Category 1 - Major Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants And Effects: Smoke	A14SW (SE)	466	1	260480 195784
49	**Substantiated Pollution Incident Register** Authority: Environment Agency Wales, South West Area Incident Date: 3rd May 2007 Incident Reference: 491986 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Pollutant Not Identified: Not Identified	A8NW (SW)	639	1	259702 195514
50	**Water Abstractions** Operator: Alcoa Manufacturing (GB) Ltd Licence Number: 22/59/4/0029 Permit Version: 100 Location: Afon Llan Near Waunarlwydd Authority: Environment Agency, Welsh Region Abstraction: Metal: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Afon Llan Near Waunarlwydd Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 28th February 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A18SE (NE)	492	1	260350 196530
	Water Abstractions Operator: Bromham Leisure Ltd Licence Number: 22/59/4/0085 Permit Version: 101 Location: Afon Llan At Llwchwr Authority: Environment Agency, Welsh Region Abstraction: Amenity: Make-Up Or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 30 September Permit Start Date: 4th September 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A16NE (NW)	1418	1	258810 196950

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Bromham Leisure Ltd Licence Number: 22/59/4/0085 Permit Version: 100 Location: Afon Llan At Llwchwr Authority: Environment Agency, Welsh Region Abstraction: Amenity: Make-Up Or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Afon Llan Authorised Start: 01 April Authorised End: 30 September Permit Start Date: 23rd October 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A16NE (NW)	1418	1	258810 196950
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 35 West Glamorgan Scale: 1:100,000	A13SE (S)	0	1	260039 196071
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 35 West Glamorgan Scale: 1:100,000	A13SW (SW)	0	1	260038 196099
	Drift Deposits Drift Deposit: Low permeability drift deposits occuring at the surface and overlying Major and Minor Aquifers are head, clay-with-flints, brickearth, peat, river terrace deposits and marine and estuarine alluvium Map Sheet: Sheet 35 West Glamorgan Scale: 1:100,000	A13SW (SW)	0	1	260038 196099
	Bedrock Aquifer Designations Aquifer Desination: Secondary Aquifer - A	A13SW (SW)	0	3	260038 196099
	Bedrock Aquifer Designations Aquifer Desination: Secondary Aquifer - A	A13SW (W)	0	3	259998 196099
	Superficial Aquifer Designations Aquifer Designation: Unproductive Strata	A13SW (SW)	0	3	260038 196099
	Superficial Aquifer Designations Aquifer Designation: Unproductive Strata	A13SW (W)	0	3	259998 196099
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NW (W)	0	3	259998 196107
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NW (NW)	0	3	260002 196116
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	80	1	259882 196093
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	209	1	259852 195919
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (NW)	105	1	259877 196183
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (SW)	211	1	259852 195917
	Areas Benefiting from Flood Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flood Water Storage Areas None				
	Flood Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
51	**Historical Landfill Sites** Licence Holder: Alcoa Manufacturing GB Limited Location: P O Box 68, Waunarlwydd, Swansea Name: Alcoa Manuafacturing G B Limited Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14865 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert and Industrial Waste EA Waste Ref: 34021 Regis Ref: WV1/L/ALC001 WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: EC7/77, L1/7, 6855/0048	A13NE (NE)	55	1	260071 196178
52	**Historical Landfill Sites** Licence Holder: Imperial Metal Industries Limited Location: Fforestfach Name: IMI Titanium And Alcoa No.1 Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15144 First Input Date: 31st December 1957 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert and Industrial Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6855/0019 BGS Ref: Not Supplied Other Ref: L1/4, SWW 6L SW, W/24/L	A13NE (NE)	328	1	260265 196389
53	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Alcoa Manuafacturing G B Ltd Licence Number: 34021 Location: P O Box 68, Waunarlwydd, Swansea, SA1 1XH Licence Holder: Alcoa Manufacturing G B Ltd Authority: Environment Agency Wales, South West Area Site Category: Industrial Waste Landfills Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) **Licence Status: Inactive** Issued 30th November 1988 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A13NE (NE)	55	1	260071 196178
54	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Timet Landfill Licence Number: 34005 Location: Titanium Plant, Waunarlwydd, SA1 1XD Licence Holder: Timet U K Ltd Authority: Environment Agency Wales, South West Area Site Category: Industrial Waste Landfills Max Input Rate: Not Supplied **Licence Status: Closure** Issued 8th August 1977 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A18SE (N)	325	1	260088 196440
55	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Timet Landfill Licence Number: 34005 Location: Titanium Plant, Waunarlwydd, SA1 1XD Licence Holder: Timet U K Ltd Authority: Environment Agency Wales, South West Area Site Category: Industrial Waste Landfills Max Input Rate: Not Supplied **Licence Status: Closure** Issued 8th August 1977 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A13NE (NE)	327	1	260261 196391

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
56	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Timet Landfill Licence Number: 34005 Location: Titanium Plant, Waunarlwydd, SA1 1XD Licence Holder: Timet U K Ltd Authority: Environment Agency Wales, South West Area Site Category: Industrial Waste Landfills Max Input Rate: Not Supplied **Licence Status: Closure** Issued 8th August 1977 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A13NE (NE)	391	1	260333 196417
57	**Licensed Waste Management Facilities (Locations)** Licence Number: 34021 Location: P O Box 68, Waunarlwydd, Swansea, SA1 1XH Operator Name: Alcoa Manufacturing G B Ltd Operator Location: Not Supplied Authority: Environment Agency Wales, South West Area Site Category: Industrial Waste Landfills **Licence Status: Surrendered** Issued: 30th November 1988 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 23rd November 2001 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	137	1	260200 196200
57	**Licensed Waste Management Facilities (Locations)** Licence Number: 34005 Location: Titanium Plant, Waunarlwydd, SA1 1XD Operator Name: Timet U K Ltd Operator Location: Not Supplied Authority: Environment Agency Wales, South West Area Site Category: Industrial Waste Landfills **Licence Status: Closed** Issued: 8th August 1977 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	169	1	260190 196248
58	**Licensed Waste Management Facilities (Locations)** Licence Number: 34004 Location: Titanium Plant, Waunarlwydd, SA1 1XD Operator Name: Timet U K Ltd Operator Location: Not Supplied Authority: Environment Agency Wales, South West Area Site Category: Lagoons **Licence Status: Closed** Issued: 8th August 1977 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	172	1	260193 196250
	Local Authority Landfill Coverage Name: City and County of Swansea - Has no landfill data to supply		0	2	260038 196099

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
59	**Registered Landfill Sites** Licence Holder: Alcoa Manufacturing (Gb) Ltd Licence Reference: L1/ 7 Site Location: Waunarlwydd Works, Bridge Road, Waunarlwydd, Swansea, West Glamorgan Licence Easting: 260100 Licence Northing: 196200 Operator Location: PO Box 68, Bridge Road, Waunarlwydd, SWANSEA, West Glamorgan, SA1 1XH Authority: Environment Agency Wales, South West Area Site Category: Landfill Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: Waste produced/controlled by licence holder Status: Site Closed Dated: 1st September 1977 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste Max.Waste Permitted By Licence Sw Wales Cat. A 'Non-Decomp' Prohibited Waste Waste N.O.S.	A13NE (NE)	89	1	260100 196200
60	**Registered Landfill Sites** Licence Holder: I.M.I. (Kynoch) Ltd Licence Reference: L1/ 4 Site Location: Titanium Plant, Waunarlwydd, SWANSEA, West Glamorgan, SA1 1XD Licence Easting: 260350 Licence Northing: 196450 Operator Location: As Site Address Authority: Environment Agency Wales, South West Area Site Category: Landfill Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: Waste produced/controlled by licence holder Status: Operational as far as is knownOperational Dated: 8th July 1977 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste Inert Pyrophoric W. After Burn Off Max.Waste Permitted By Licence S W Wales Wmg Category A Prohibited Waste Highly Flammable Waste Fl.Pt < 20 C Liquified Gas / Gas Under Pressure Percussive/Explosive/Similar Waste Special Wastes Sub'S Control. Radioactive Subs Act'60	A18SE (NE)	427	1	260350 196450
61	**Registered Waste Treatment or Disposal Sites** Licence Holder: Alcoa Manufacturing (Gb) Ltd Licence Reference: L2B Site Location: Waunarlwydd Works, Bridge Road, Waunarlwydd, Swansea, West Glamorgan Operator Location: PO Box 68, Bridge Road, Waunarlwydd, SWANSEA, West Glamorgan, SA1 1XH Authority: Environment Agency Wales, South West Area Site Category: Storage - Lagoon Max Input Rate: Undefined Waste Source Restrictions: Waste produced/controlled by licence holder Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st November 1978 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Approximate location provided by supplier Boundary Quality: Not Supplied Authorised Waste Liquids/Slurries Ex R.C.S.Proj.At Site	A13SW (S)	89	1	260001 196001

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
62	**Registered Waste Treatment or Disposal Sites** Licence Holder: I.M.I. (Titanium) Ltd Licence Reference: L1/ 5 Site Location: Titanium Plant, Waunarlwydd, SWANSEA, West Glamorgan, SA1 1XD Operator Location: As Site Address Authority: Environment Agency Wales, South West Area Site Category: Storage - Lagoon Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: Waste produced/controlled by licence holder Licence Status: Operational as far as is knownOperational Dated: 8th August 1977 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste Max.Waste From Fees/Charges Production Sludge	A18SE (NE)	441	1	260280 196510

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
63	**Control of Major Accident Hazards Sites (COMAH)** Name: Alcoa European Mill Products Swansea Location: Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF Reference: Not Supplied Type: Lower Tier **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	247	4	260236 195857

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Upper Westphalian (including Pennant Measures)	A13SW (SW)	0	3	260038 196099
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	0	5	259991 196087
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (W)	0	5	260000 196106
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	0	5	260000 196099
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (SW)	0	5	260038 196099
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (NW)	0	5	260004 196115
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13NE (N)	0	5	260044 196116

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (NW)	4	5	260010 196128
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (W)	5	5	260000 196084
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (NW)	6	5	260000 196131
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (S)	7	5	260027 196073
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (S)	71	5	260038 196000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (S)	90	5	260000 196000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (SW)	98	5	259951 196000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (SW)	168	5	259927 195925
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (SW)	176	5	259938 195919
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (S)	201	5	260000 195887
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	202	5	259785 196000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (E)	213	5	260313 196000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (W)	247	5	259716 196070
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (W)	251	5	259720 196032
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (E)	255	5	260366 196046
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SW (W)	258	5	259723 196000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NE (W)	308	5	259678 196237
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (E)	314	5	260418 196000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A14SW (E)	322	5	260438 196083
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (E)	332	5	260433 195987
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12NE (NW)	354	5	259652 196290
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (E)	358	5	260470 196034
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (E)	433	5	260539 196000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18SE (N)	514	5	260226 196609

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NE (S)	526	5	260176 195549
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18SW (N)	537	5	260000 196666
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A8NW (S)	583	5	259848 195521
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NW (SW)	586	5	259721 195563
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A7NE (SW)	593	5	259665 195584
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (SE)	600	5	260645 195794

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A8NW (S)	611	5	260000 195471
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NW (S)	613	5	260012 195467
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A19SW (NE)	619	5	260430 196631
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NW (S)	644	5	260000 195438
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	658	5	260767 195995
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A19SW (NE)	658	5	260593 196544

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	661	5	260764 195965
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	663	5	260772 196000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	667	5	260777 196004
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NW (S)	670	5	259870 195426
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NW (SW)	670	5	259710 195477
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NE (SW)	672	5	259679 195488

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NE (SW)	678	5	259379 195750
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	687	5	260000 195393
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	687	5	259991 195396
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NE (SW)	688	5	259403 195697
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NW (W)	700	5	259300 196342
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NE (N)	700	5	260220 196799

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A8SW (S)	709	5	259808 195402
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NW (SW)	709	5	259716 195433
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (NE)	709	5	260673 196530
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A7NE (SW)	712	5	259676 195446
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NE (SW)	729	5	259459 195570
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (NE)	733	5	260708 196524

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	736	5	259977 195348
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	739	5	260000 195341
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	753	5	259813 195356
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (SW)	754	5	259708 195388
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NE (SW)	758	5	259468 195523
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	769	5	259961 195317

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	771	5	260000 195308
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18NE (N)	786	5	260116 196902
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NE (SW)	796	5	259455 195484
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (NE)	812	5	260593 196749
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18NE (N)	838	5	260057 196963
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SW (W)	849	5	259118 196000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	861	5	260938 195826
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18NW (N)	870	5	260000 197000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18NW (N)	871	5	260022 197000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18NW (N)	872	5	260038 197000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18NE (N)	875	5	260058 197000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A14SE (E)	884	5	261000 196099

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	884	5	261000 196092
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	888	5	261000 196009
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	889	5	261000 196000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	894	5	261000 195963
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18NW (N)	896	5	260000 197025
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NE (E)	913	5	261000 196320

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A19NW (NE)	915	5	260594 196875
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	921	5	261000 195826
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A14SE (E)	927	5	261000 195803
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	929	5	261000 195797
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A8SW (S)	934	5	259775 195180
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19NW (NE)	939	5	260537 196938

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19NW (NE)	941	5	260542 196936
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19NW (N)	944	5	260411 197000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	945	5	261017 195797
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A9NE (E)	950	5	261000 195732
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	955	5	259922 195135
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (W)	962	5	259000 196073

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A11SE (W)	962	5	259000 196099
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19NW (NE)	963	5	260585 196937
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (W)	967	5	259000 196000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	968	5	260000 195110
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SE (E)	971	5	261000 196494
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19NW (NE)	985	5	260516 197000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (W)	987	5	259000 195877
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A17NE (NW)	989	5	259496 197000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A7SE (SW)	993	5	259485 195227
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 30 - 45 mg/kg	A11NE (W)	998	5	259000 196379
64	**BGS Recorded Mineral Sites** Site Name: Ystrad-Isaf Location: , Gorseinon, Swansea, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 153955 Type: Underground **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Grovesend Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A14SW (SE)	361	3	260409 195866
65	**BGS Recorded Mineral Sites** Site Name: Cape Colliery Location: , Gorseinon, Swansea, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 153965 Type: Underground **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Grovesend Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	738	3	260544 196694

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	**BGS Recorded Mineral Sites** Site Name: Cape Colliery Location: , Gorseinon, Swansea, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 153964 Type: Underground **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Grovesend Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	773	3	260527 196749
67	**BGS Recorded Mineral Sites** Site Name: St Barnabas'S Church Location: , Waunarlwydd, Swansea, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 156275 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Hughes Member Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A8SE (S)	859	3	260052 195214
68	**BGS Recorded Mineral Sites** Site Name: St Barnabas'S Church Location: , Waunarlwydd, Swansea, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 156277 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Hughes Member Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A8SE (S)	910	3	260320 195185
69	**BGS Recorded Mineral Sites** Site Name: St Barnabas'S Church Location: , Waunarlwydd, Swansea, West Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 156276 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Hughes Member Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A8SE (S)	975	3	260326 195120
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13SW (SW)	0	6	260038 196099
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13SW (SW)	0	-	260038 196099
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	3	260002 196116
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	0	3	259998 196107

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	3	259998 196099
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	3	260038 196099
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	3	259998 196099
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	3	260038 196099
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	0	3	259998 196107
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	3	260002 196116
	Potential for Ground Dissolution Stability Hazards No Hazard				
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	3	259998 196099
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	3	260038 196099
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	0	3	259998 196107
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	3	260002 196116
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	3	259998 196099
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	3	260038 196099
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	3	259998 196099
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	3	260038 196099
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	3	259998 196099
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	3	260038 196099
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	3	259998 196099
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	3	260038 196099

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
70	**Contemporary Trade Directory Entries** Name: Thernat Supplies Location: Waunarlwydd, Swansea, West Glamorgan, SA5 4SF Classification: Valve Manufacturers & Suppliers **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A13SE (SE)	247	-	260236 195857
70	**Contemporary Trade Directory Entries** Name: Falcon Steel Ltd Location: Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF Classification: Coating Specialists **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	247	-	260236 195857
70	**Contemporary Trade Directory Entries** Name: Hall & Roche Logistics Location: Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF Classification: Road Haulage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	247	-	260236 195857
71	**Contemporary Trade Directory Entries** Name: Hall & Roche Location: Unit 5,West Field Ind Park, Waunarlwydd, Swansea, West Glamorgan, SA5 4SF Classification: Road Haulage Services **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A14SW (SE)	422	-	260416 195778
72	**Contemporary Trade Directory Entries** Name: R R Heggie Location: Bridge Road, Waunarlwydd, Swansea, SA5 4SP Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	491	-	260356 195644
73	**Contemporary Trade Directory Entries** Name: Vijay Garage Location: Bryn Road, Waunarlwydd, Swansea, SA5 4RA Classification: Petrol Filling Stations - 24 Hour **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	539	-	259989 195545
73	**Contemporary Trade Directory Entries** Name: Bryn Garage Location: Bryn Road, Waunarlwydd, Swansea, SA5 4RA Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	539	-	259989 195545
73	**Contemporary Trade Directory Entries** Name: L H Car Sales Location: Bryn Road, Waunarlwydd, Swansea, SA5 4RA Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	539	-	259989 195545
73	**Contemporary Trade Directory Entries** Name: Glc Auto Imports Location: Bryn Road, Waunarlwydd, SWANSEA, SA5 4RA Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	539	-	259989 195545
74	**Contemporary Trade Directory Entries** Name: Steve'S Location: Bryn Rd, Waunarlwydd, Swansea, West Glamorgan, SA5 4RA Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A8NE (S)	563	-	260044 195512
74	**Contemporary Trade Directory Entries** Name: Swansea Van Centre Ltd Location: Bryn Rd, Waunarlwydd, Swansea, West Glamorgan, SA5 4RA Classification: Commercial Vehicle Dealers **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A8NE (S)	589	-	260068 195484

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
75	**Contemporary Trade Directory Entries** Name: Aqua Cleaning & Enviromental Location: Clos Y Portman, Drovers Point, Swansea, West Glamorgan, SA4 3GT Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A12NE (W)	564	-	259405 196188
75	**Contemporary Trade Directory Entries** Name: Glyn Thomas Location: Cattle Market, Gorwydd Road, Gowerton, Swansea, SA4 3AG Classification: Agricultural Machinery - Sales & Service **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	611	-	259359 196193
76	**Contemporary Trade Directory Entries** Name: Swlr Ltd Location: 45, Oakwood Drive, Gowerton, Swansea, SA4 3DJ Classification: Laundry Equipment - Sales & Service **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	620	-	259541 195643
77	**Contemporary Trade Directory Entries** Name: R R Heggie Location: 38, Brithwen Road, Waunarlwydd, Swansea, West Glamorgan, SA5 4QS Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	643	-	259810 195473
78	**Contemporary Trade Directory Entries** Name: Woodlands Antique Restoration Location: 22, Woodlands, Gowerton, Swansea, SA4 3DP Classification: Antiques - Repairing & Restoring **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	673	-	259291 196060
79	**Contemporary Trade Directory Entries** Name: Spot On Gold Ltd Location: 50, Cecil Road, Gowerton, Swansea, SA4 3DE Classification: Sports Equipment Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	761	-	259201 196080
80	**Contemporary Trade Directory Entries** Name: Response Cleaning (Wales) Ltd Location: 62, Brithwen Road, Waunarlwydd, Swansea, SA5 4QT Classification: Cleaning Services - Commercial **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	763	-	259763 195361
80	**Contemporary Trade Directory Entries** Name: Ceops Uk Location: 68, Brithwen Road, Waunarlwydd, Swansea, SA5 4QT Classification: Engineering Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	785	-	259759 195339
81	**Contemporary Trade Directory Entries** Name: One Stop Laundry Location: 3, Gorwydd Road, Gowerton, Swansea, SA4 3AG Classification: Laundries & Launderettes **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NW (W)	770	-	259215 196296
81	**Contemporary Trade Directory Entries** Name: One Stop Laundery Services Location: 3, Gorwydd Road, Gowerton, Swansea, SA4 3AG Classification: Laundries & Launderettes **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	770	-	259215 196296
82	**Contemporary Trade Directory Entries** Name: Europa Silos Ltd Location: 18, Heol Cleddau, Waunarlwydd, Swansea, SA5 4QF Classification: Materials Handling Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	792	-	259874 195309
83	**Contemporary Trade Directory Entries** Name: Douglas Machine Tools Location: 3, Willowbank, Gowerton, Swansea, SA4 3BA Classification: Machine Tool Accessories & Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	813	-	259568 195386

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
84	**Contemporary Trade Directory Entries** Name: House Proud Domestics Location: 33, Roseland Road, Waunarlwydd, Swansea, SA5 4ST Classification: Commercial Cleaning Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	827	-	260754 195550
85	**Contemporary Trade Directory Entries** Name: Phonelink Installations Ltd Location: 94, Sterry Road, Gowerton, Swansea, West Glamorgan, SA4 3BW Classification: Telecommunications Equipment & Systems **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NW (W)	872	-	259109 196286
86	**Contemporary Trade Directory Entries** Name: A Cool Move Location: 16, West Winds Close, Waunarlwydd, Swansea, SA5 4RD Classification: Air Conditioning & Refrigeration Contractors **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	934	-	260254 195148
87	**Fuel Station Entries** Name: Bryn Road Service Station Location: Bryn Road, Waunarlwydd, Swansea, West Glamorgan, SA5 4RA Brand: Murco Premises Type: Petrol Station **Status: Open** Positional Accuracy: Automatically positioned to the address	A8NW (S)	539	-	259989 195545

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Carmarthenshire County Council - Environmental Health Department	January 2013	Annual Rolling Update
City and County of Swansea - Environmental Health Department	June 2012	Annual Rolling Update
Discharge Consents		
Environment Agency - Welsh Region	April 2013	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Welsh Region	March 2013	Quarterly
Integrated Pollution Controls		
Environment Agency - Welsh Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Welsh Region	April 2013	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Carmarthenshire County Council - Environmental Health Department	August 2012	Annual Rolling Update
City and County of Swansea - Environmental Health Department	November 2012	Annual Rolling Update
Swansea Bay Port Heatlh Authority	November 2012	Annually
Local Authority Pollution Prevention and Controls		
Carmarthenshire County Council - Environmental Health Department	August 2012	Annual Rolling Update
City and County of Swansea - Environmental Health Department	November 2012	Annual Rolling Update
Swansea Bay Port Heatlh Authority	November 2012	Annually
Local Authority Pollution Prevention and Control Enforcements		
Carmarthenshire County Council - Environmental Health Department	August 2012	Annual Rolling Update
City and County of Swansea - Environmental Health Department	November 2012	Annual Rolling Update
Swansea Bay Port Heatlh Authority	November 2012	Annually
Nearest Surface Water Feature		
Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Welsh Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Welsh Region	March 2013	Monthly
Prosecutions Relating to Controlled Waters		
Environment Agency - Welsh Region	March 2013	Monthly
Registered Radioactive Substances		
Environment Agency - Welsh Region	April 2013	Quarterly
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency Wales - South West Area	April 2013	Quarterly
Water Abstractions		
Environment Agency - Welsh Region	January 2013	Quarterly
Water Industry Act Referrals		
Environment Agency - Welsh Region	April 2013	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	January 2011	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	October 2012	Annually

Agency & Hydrological	Version	Update Cycle
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	October 2012	Annually
Source Protection Zones Environment Agency - Head Office	March 2013	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	January 2013	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	January 2013	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	January 2013	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	January 2013	Quarterly
Flood Defences Environment Agency - Head Office	January 2013	Quarterly
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Environment Agency Wales - South West Area	April 2013	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - Welsh Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency Wales - South West Area	April 2013	Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency Wales - South West Area	January 2013	Quarterly
Local Authority Landfill Coverage Carmarthenshire County Council City and County of Swansea - Environmental Health Department	May 2000 May 2000	Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Carmarthenshire County Council City and County of Swansea - Environmental Health Department	May 2000 May 2000	Not Applicable Not Applicable
Registered Landfill Sites Environment Agency Wales - South West Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency Wales - South West Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency Wales - South West Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	March 2013	Bi-Annually
Explosive Sites Health and Safety Executive	March 2013	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
City and County of Swansea - Planning Department	August 2012	Annual Rolling Update
Carmarthenshire County Council - Area Planning Office (East Area)	March 2013	Annual Rolling Update
Carmarthenshire County Council - Area Planning Office (South Area)	March 2013	Annual Rolling Update
Carmarthenshire County Council - Environment Department (West Area)	March 2013	Annual Rolling Update
Planning Hazardous Substance Consents		
City and County of Swansea - Planning Department	August 2012	Annual Rolling Update
Carmarthenshire County Council - Area Planning Office (East Area)	March 2013	Annual Rolling Update
Carmarthenshire County Council - Area Planning Office (South Area)	March 2013	Annual Rolling Update
Carmarthenshire County Council - Environment Department (West Area)	March 2013	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	January 2010	Variable
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2013	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Mining Report Service	January 2012	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	February 2011	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	February 2011	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	February 2013	Quarterly
Fuel Station Entries Catalist Ltd - Experian	February 2013	Quarterly
Sensitive Land Use	**Version**	**Update Cycle**
Areas of Outstanding Natural Beauty Countryside Council for Wales	April 2013	Bi-Annually
Environmentally Sensitive Areas The National Assembly for Wales - GI Services (Department of Planning & Countryside)	August 2008	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Carmarthenshire County Council City and County of Swansea	 November 2012 November 2012	 Bi-Annually Bi-Annually
Marine Nature Reserves Countryside Council for Wales	November 2012	Bi-Annually
National Nature Reserves Countryside Council for Wales	November 2012	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
Nitrate Vulnerable Zones The National Assembly for Wales - GI Services (Department of Planning & Countryside)	October 2005	Annually
Ramsar Sites Countryside Council for Wales	November 2012	Bi-Annually
Sites of Special Scientific Interest Countryside Council for Wales	November 2012	Bi-Annually
Special Areas of Conservation Countryside Council for Wales	November 2012	Bi-Annually
Special Protection Areas Countryside Council for Wales	November 2012	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Countryside Council for Wales	
Scottish Natural Heritage	
Natural England	
Health Protection Agency	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	**City and County of Swansea - Environmental Health Department** The Guildhall, Swansea, West Glamorgan, SA1 4PE	Telephone: 01792 636000 extn 5651 Fax: 01792 635719
3	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
4	**Health and Safety Executive** Explosives Inspectorate, 5S.2 Redgrave Court, Merton Road, Bootle, L20 7HS	Website: www.hse.gov.uk
5	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmark.co.uk Website: www.landmarkinfo.co.uk
6	**The Coal Authority - Mining Report Service** 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0845 7626848 Email: thecoalauthority@coal.gov.uk
7	**City and County of Swansea** The Guildhall, Swansea, Glamorgan, SA1 4PH	Telephone: 01792 636000 Fax: 01792 635719 Website: www.swansea.gov.uk
-	**Health Protection Agency - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@hpa.org.uk Website: www.hpa.org.uk
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / SEPA have a charging policy in place for enquiries.

Annex E – Phase II Environmental Permit Baseline Assessment

Phase II Site Investigation
Environmental Permit Baseline Assessment

Permit Reference EP3935UC

Aleris Recycling (Swansea) Ltd, Westfield Industrial Park, Swansea, SA5 4SF

On behalf of:
Aleris Recycling (Swansea) Ltd

Project Reference:
014-1280

Revision:
REV 00

Date:
December 2014

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Document Control Record				
Revision	**Date**	**Author(s)**	**Authorised by**	**Reason for Change**
00	09/12/14	MJS	SPR	First issue

Contents

Executive Summary

Overview

Earth & Marine Environmental Consultants Ltd were commissioned by Aleris Recycling (Swansea) Ltd, Westfield Industrial Park, Swansea, SA5 4SF to undertake a targeted intrusive site investigation of the 1.27 hectare parcel of land located to the south of the currently permitted area (Permit Reference EP3935UC). The report is designed to meet (in part) the requirements of Environment Agency Guidance H5, Environmental Permitting Regulations Site Condition Report – Guidance and Templates, LIT8001 Version 3.0, April 2013.

With respect to the operational activities in the area there are no above ground or below ground storage tanks, no storage of any drums or IBCs containing wastes and/or chemicals. The area is solely used for the unloading of HGVs, the storage of 'clean' baled metals and the storage of slag within bays located in the single building.

Scope of Works

A targeted intrusive investigation at the site was undertaken to better understand the ground conditions at the site and to develop a robust baseline assessment of prevailing conditions. This involved drilling of three new boreholes (BH01 – BH03), using rotary air flush drilling technique to a maximum depth of 11.0m below ground level (bgl). An existing well (MW38) was also used during the groundwater monitoring assessment.

Soil Conditions

Made ground was identified in all exploratory holes to a maximum of 8.0m bgl. The made ground consisted of brick, rusted metal fragments, fabric, ash and wood.

No olfactory or visual evidence of contamination was noted in any of the boreholes. The Photo-Ionisation Detector headspace readings were generally low with a maximum level recorded of 0.842 parts per million (BH01 @ 5.0m). These concentrations indicate that there does not appear to be widespread volatile organic compounds within the soils.

The chemical testing of the soils has not revealed significant concentration of contaminants across the site. As this is a baseline assessment levels have not been compared to screening values. Elevated Polycyclic Aromatic Hydrocarbons (PAHs), heavy metals, Total Petroleum Hydrocarbons (aliphatic/aromatic) and two Semi-Volatile Organic Compounds were detected. Asbestos (Chrysotile - Insulation lagging) was identified in both samples submitted for analysis. Due to the heterogeneous nature of the historic infilled areas the soil concentrations are likely to be highly variable.

Groundwater Conditions

The chemical testing of the groundwater has not revealed significant concentration of contaminants across the site. As this is a baseline assessment levels have not been compared to screening values. Elevated selected PAHs and selected heavy metals were detected. Overall it can be concluded that whilst the groundwater does exhibit signs of chemical

contamination, the results are typical of a previously utilised and historically infilled industrial site. Due to the heterogeneous nature of the historic infilled areas the groundwater concentrations are likely to be highly variable across the site.

Land Gas

A single round of gas monitoring has been undertaken. Stable methane concentrations were recorded at or below the instrument's limit of detection (≤0.1%) at the four locations monitored. Depleted oxygen levels were recorded at two locations (BH01 and BH03) although high methane levels were not recorded (maximum 0.1% v/v). All other monitoring wells recorded oxygen concentrations within the normal range (*i.e.* approximately 21%). No measurable flow rates were recorded in any of the monitoring wells during the monitoring period. With respect of the current data and the identified Gas Screening Value, the site is considered to be at Characteristic Situation 1 - Very Low Risk.

Conclusions

As the area is largely used to contain 'clean' aluminium bales and slag within a fully contained building, the likelihood of soil and groundwater impacts (resulting from the permitted activities) is considered to be low. However, due to the heterogeneous nature of the historic infilled areas (locally known as Swansea Valley Fill) the soil and groundwater concentrations are likely to be highly variable even over relatively short distances.

Whilst bearing this in mind it is considered that the results of the investigation provide a suitable baseline for the future operation of the area within the context of the current environmental permit.

Recommendations

No recommendations for further work have been made.

1 Introduction

1.1 Background

Earth & Marine Environmental Consultants Ltd (EAME) were commissioned by Aleris Recycling (Swansea) Ltd (Aleris), Westfield Industrial Park, Swansea, SA5 4SF (*Annex A - Figure 1*) to undertake a targeted intrusive site investigation of the 1.27 hectare (ha) parcel of land located to the south of the currently permitted area, Permit Ref. EP3935UC (*Figure 1.1*).

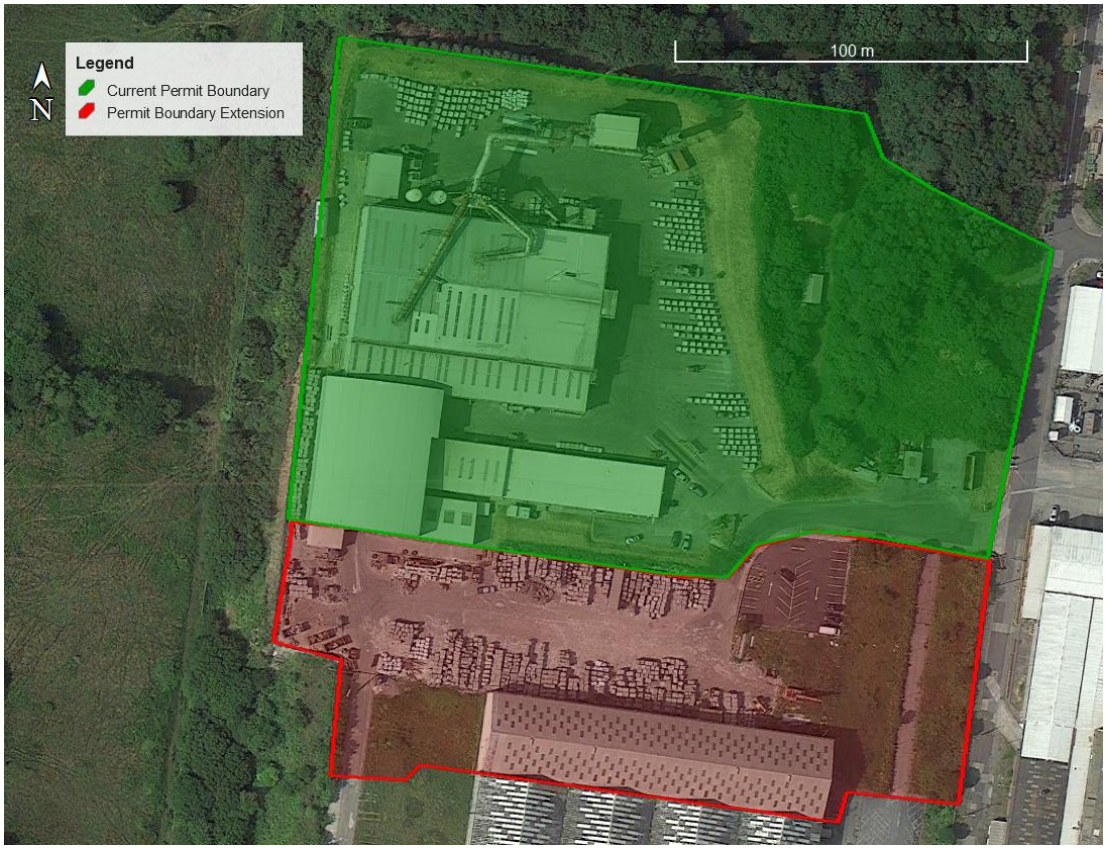


Figure 1.1: *Current permit boundary and proposed extension*

Google Earth Imaging with the permission of Google – Licensed to Earth and Marine Environmental Consultants Ltd.

This report details the intrusive investigation strategy and the investigation findings in relation to the soils, groundwater and land gas conditions.

The report is designed to meet (in part) the requirements of Environment Agency (EA) Guidance H5, Environmental Permitting Regulations Site Condition Report – Guidance and Templates, LIT8001 Version 3.0, April 2013.

1.2 Scope of Works

A targeted intrusive investigation at the site was undertaken to better understand the ground conditions at the site and to develop a robust baseline assessment of prevailing conditions in-line with H5 requirements. The breakdown of the strategy to investigate and assess conditions can be summarised as follows:

- service tracing of underground services by specialist third-party service tracing company;
- levelling of the borehole locations (including existing groundwater well MW38) to a temporary benchmark;
- drilling of three new boreholes (BH01 – BH03), using rotary air flush drilling technique to a maximum depth of 11.0m below ground level (bgl) to enable an assessment of the prevailing soil conditions (shallow soils and the underlying natural strata);
- conversion of the three boreholes to monitoring wells to facilitate gas and groundwater monitoring;
- logging, sampling and field examination of soil samples for any olfactory and/or visual evidence of potential contamination;
- field testing of soil samples by dynamic headspace analysis for the presence of volatile organic compounds (VOCs) using a Photo-Ionisation Detector (PID);
- groundwater monitoring of all installed borehole monitoring wells (including existing groundwater well MW38) on one occasion;
- submission of selected soil and groundwater samples to an accredited independent laboratory for chemical analysis for a range of contaminants appropriate to the operational history of the area;
- gas monitoring of all installed borehole locations (including existing groundwater well MW38) on one occasion;
- assessment and interpretation of field and analytical data to assess the current on-site conditions; and
- provision of an interpretative report.

2 Site Setting and Description

2.1 Site Setting

The site is accessed from Titanium Road, Swansea and forms part of the Westfield Industrial Park, approximately 6km northwest of Swansea City Centre (*Annex A - Figure 1*) at National Grid Reference (NGR) SS 60037 96100 (260037, 196100) (*Figure 2.1*).

Figure 2.1: *Site location*

Ordnance Survey 1: 25,000 scale map with the permission of The Controller of Her Majesty's Stationery Office, Crown Copyright Earth and Marine Environmental Consultants Ltd, Licence No. 100050755

The site is irregular in shape and occupies an approximate area of 1.27ha and is located due south of the currently permitted main Aleris site (2.53ha). The site lies at approximately 15m Above Ordnance Datum (AOD).

The site was formerly operated by ALCOA Manufacturing (GB) Ltd as part of the extensive Waunarlwydd Aluminium Rolling Mill and was operated as part of the aluminium extrusions area.

The Aleris facility in South Wales is the largest aluminium dross reprocessor in the UK, with a customer base that includes Aleris rolling and extrusion plants, as well as other leading global companies in the aluminium industry. The company recycle mainly wrought alloy scraps and dross and supply the recycled metal to customers in the form of molten metal or sows. The company is registered both to ISO 14001:2004 and EMAS.

The proposed permit extension area is composed of the following elements (*Figure 2.2*):

- grassed areas composed of rough vegetation (approximately 22%);
- engineered hard standing where bales of 'clean' metals, such as drinks cans, are unloaded, stored prior to processing (approximately 50%);
- employee and plant parking areas composed of tarmac and hardcore surfacing (approximately 13%); and
- covered building (storage of slag) with engineered hardstanding and storage bays (approximately 16%).

Figure 2.2: *Surfacing and operational areas of the permit extension area*

Google Earth Imaging with the permission of Google – Licensed to Earth and Marine Environmental Consultants Ltd.

There are no above ground or below ground storage tanks in this area and no drums or IBCs containing wastes and/or chemicals. The area is solely used for the unloading of HGVs, the storage of 'clean' baled metals and the storage of slag within the bays located in the single building.

The site is located in a mixed agricultural/heavy industrial area on the outskirts of Waunarlwydd (suburb of north Swansea). The following current activities been identified surrounding the site:

- **NORTH** – directly adjacent to the site's northern boundary is the currently permitted Aleris Recycling (Swansea) Ltd site beyond which (and to the northeast) is Timet Metals Corporation (titanium mill products).
- **EAST** – the disused ALCOA Manufacturing (GB) Ltd site. The area was occupied by the Ingot Metal Store.
- **SOUTH** – Beyond the site boundary is the disused ALCOA Manufacturing (GB) Ltd site. The area was occupied by the Extrusions and End Products (EEP) facility.
- **WEST** – open agricultural (grazing) land.

2.2 Site History

The site was initially part of the Gowerton aluminium factory (ICI Metal Works) (*Figure 2.1*).

Figure 2.1: *View of Gowerton aluminium factory (with wartime camouflage), C888311, 6th October 1947*

The Royal Commission on the Ancient and Historical Monuments of Wales

Figure 2.2: *View of Gowerton aluminium factory (with wartime camouflage), C888318, 6th October 1947*

The Royal Commission on the Ancient and Historical Monuments of Wales

The ALCOA Manufacturing (GB) Ltd Waunarlwydd site began production in the late 1950s[1] and was operated until 2007 when it was closed. The current permitted area (north of the proposed extension) was operated by ALOCA Manufacturing (GB) Ltd as a licensed waste management facility (license now revoked).

2.3 Historical Contamination Potential

Potential contaminants depend on the precise nature of the activities undertaken on-site as well as the site management practice. A previous investigation of the area by ENVIRON UK Ltd (2007) (*i.e.* TP69, TP70, TP71, TP72, TP73 TP87, TP92, TP102, TP103, WS30, WS31, WS32, MW38 and MW39) and Arcadis (date unknown) (*i.e.* E2, SV12, SV13, SV14 and SV15) are outlined in *Figure 2.3*.

[1] http://www.alcoa.com/united_kingdom/en/info_page/home.asp

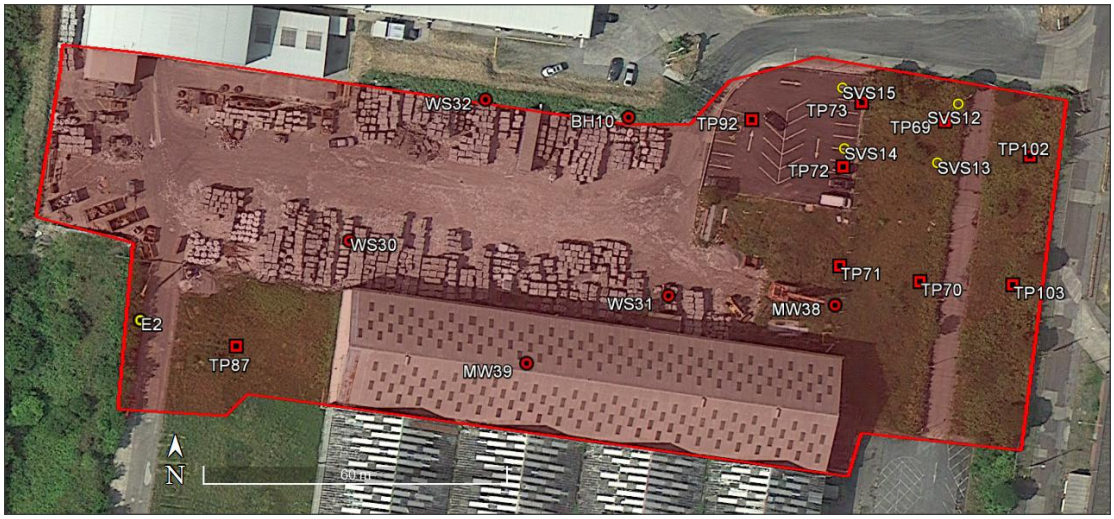


Figure 2.3: *Previous site investigations at the facility (ENVIRON-Red, Arcadis-Yellow)*

Google Earth Imaging with the permission of Google – Licensed to Earth and Marine Environmental Consultants Ltd.

These investigations were undertaken on behalf of Alcoa Manufacturing (GB) Ltd and cannot be relied upon to form the baseline for the permit extension. As a result new baseline information was required.

Based upon the above information the potential for contamination to have arisen (within the area of the proposed permit extension) as a result of the historic use is considered to be HIGH.

3 Environmental Setting

3.1 Introduction

The environmental setting information has been obtained from the *'PPC Site Surrender Report: Part 2 - Surrender Data, ALCOA Manufacturing (GB) Ltd, Waunarlwydd, Swansea, Permit No: BM1377'* report produced by ENVIRON UK Limited in 2007 (Ref. 64-C11647) and from current information sources.

3.2 Geology

According to the British Geological Survey (BGS) Geology of Britain Viewer[2], the site is directly underlain by alluvium (superficial deposits of clay, silt, sand and gravel) which in turn is underlain by the Grovesend Formation (sedimentary bedrock of Mudstone, Siltstone and Sandstone).

According to ENVIRON UK Limited (2007) the majority of the wider site area is underlain by Made Ground, including Swansea Valley Fill in the northern and eastern site boundaries. The west and north west of the wider site area is underlain by recent Alluvium associated with the Afon Llan, comprising clays, silts, sands and gravels. Alluvium is also present in the vicinity of Gors Fawr Brook, which is culverted though the site. Glacial Boulder Clay is present in the south and east of the wider site area.

The superficial deposits are underlain by the Carboniferous Coal Measures, present at relatively shallow depth and comprising primarily of mudstones and occasionally sandstone units. Coal seams are present to the south of the site. The south of the site is known to have been subject to mining activity and there are records of three disused adits.

3.3 Hydrogeology

The aquifer classification system was updated on 1st April 2010 which provided new aquifer designations to replace the old system of aquifer classifications, such as Major, Minor and Non-Aquifer. This new system is in line with the EA's Groundwater Protection Policy (GP3) and the Water Framework Directive (WFD) and is based on BGS mapping.

From a review of the EA on-line maps[3] the site is located on a:

- **Superficial and Bedrock deposits (Secondary B Aquifer)** – predominantly lower permeability layers which may store and yield limited amounts of groundwater due to

[2] http://maps.bgs.ac.uk/geologyviewer
[3] http://www.environment-agency.gov.uk/homeandleisure/37793.aspx

localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

The groundwater vulnerability zone of the site is classified as being *'Minor Aquifer High'*. The site is not located in a Groundwater Source Protection Zone.

3.4 Hydrology

According to the most recent Ordnance Survey map, the nearest surface water feature is the Afon Llan located 480m north of the site that flows in an east-west direction before confluence with the Afon Lliw 1.9km to the west of the site.

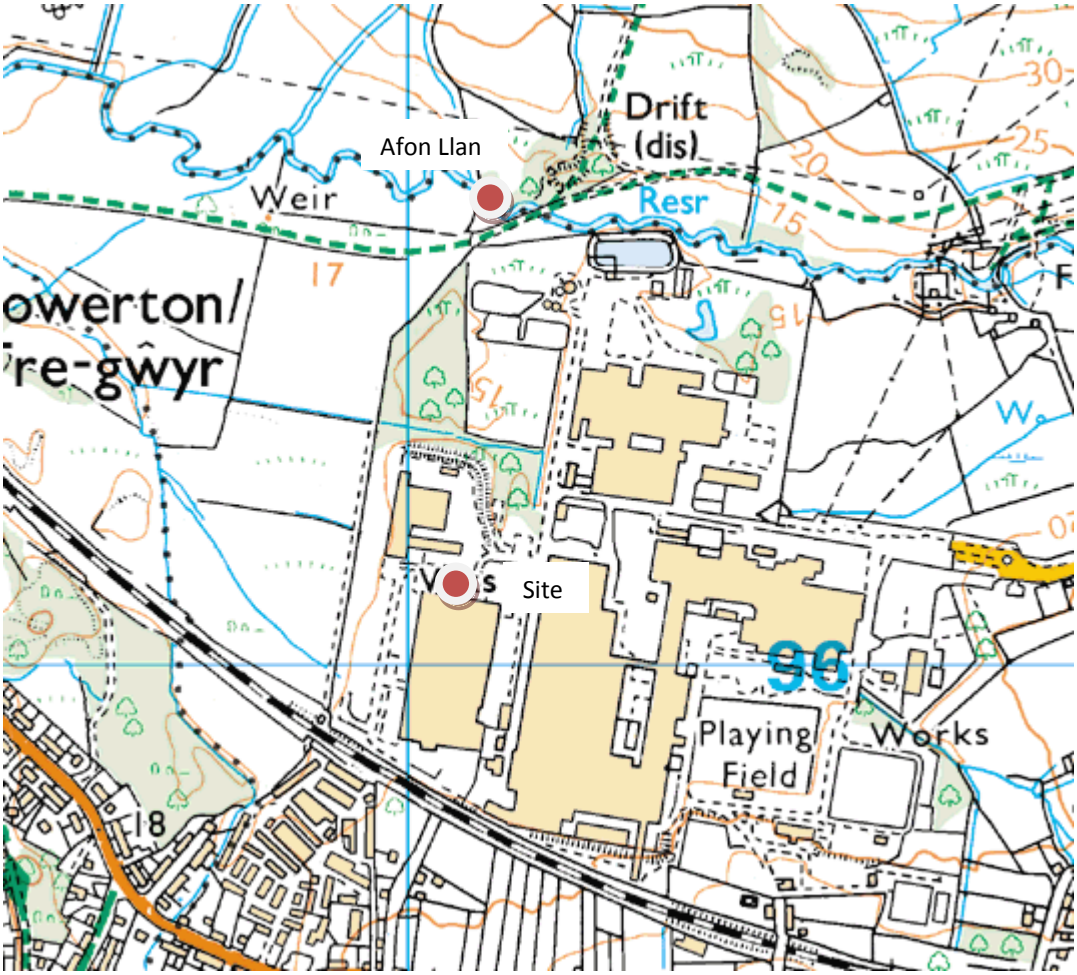


Figure 3.1: *Surface water features surrounding the site*

Ordnance Survey 1: 25,000 scale map with the permission of The Controller of Her Majesty's Stationery Office, Crown Copyright Earth and Marine Environmental Consultants Ltd, Licence No. 100050755

Various unnamed ditches and small water features are located in the fields to the west of the installation. Previous work by ENVIRON UK Limited in 2007 (Ref. 64-C11647) references the Gors Fawr Brook that is culverted near the installation (running parallel to Titanium Road). The Gors Fawr Brook ultimately discharges in to the Afon Llan.

For each River Basin District, the WFD requires a River Basin Management Plan to be published. These are plans that set out the environmental objectives for all the water bodies within the River Basin District and how they will be achieved. The plans are based upon a detailed analysis of the pressures on the water bodies and an assessment of their impacts. The plans must be reviewed and updated every six years. The ecological status of surface water bodies is based on the following quality elements: biological quality, general chemical and physico-chemical quality, water quality with respect to specific pollutants (synthetic and non-synthetic), and hydromorphological quality. There are five classes of ecological status (*i.e.* high, good, moderate, poor or bad). Ecological status and chemical status together define the overall surface water status of a watercourse. The Afon Llan has been classified as having moderate ecological quality and a failure of chemical quality.

According to the EA website, the site is not located on the floodplain of the Afon Llan, however, some parts of the site are at high risk of surface water flooding (based on EA assessment methodology).

3.5 Sensitive Land Uses

The MAGIC website, managed by the Department for Environment, Food and Rural Affairs (Defra), was queried to locate Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar Sites, National Nature Reserves, Areas of Outstanding Natural Beauty (AONB), National Parks and Local Nature Reserves in the immediate and wider surrounds of the site. According to MAGIC, there are no statutory protected habitats within 1km of the site.

The nearest residential properties are 206m south of the site and are located across the main railway line between Swansea and Llanelli.

4 Investigation Strategy

4.1 Introduction

The service location survey element of the investigation was completed on the 30th September 2014, with the borehole drilling between 15th and 16th October 2014. The investigation strategy is summarised below:

- a non-intrusive utility search for the presence of site services was carried out by obtaining service utility plans and the undertaking of a survey of the site by an EAME approved service tracing specialist;
- the drilling of three boreholes to a maximum depth of 11.0m bgl by an EAME approved sub-contractor;
- the installation of 50mm diameter monitoring wells at all three locations to facilitate gas and groundwater monitoring;
- levelling in of all boreholes locations to the on-site temporary benchmark;
- the logging, sampling and on-site screening of soil samples for VOCs at regular intervals throughout the soil profile;
- gas monitoring of the four boreholes (including existing groundwater well MW38) on one occasion; and
- submission of selected soil samples and ten groundwater samples (including existing groundwater well MW38) to a UKAS and MCERTS accredited independent laboratory (i2 Analytical) for the analysis of a range of contaminants, which are likely to be associated with the former/current activities and ground conditions on the site.

Exploratory locations are shown on *Annex A - Figure 2.*

4.2 Environmental Permitting Requirements

A site condition report (SCR) is required for any facility the Natural Resource Wales (NRW) regulate under the Environmental Permitting Regulations where there may be a significant risk to land or groundwater including where one is necessary to satisfy requirements of the Industrial Emissions Directive (IED). This applies to both new applications and existing operations.

As stated in EA Guidance H5[4] it is in an operator's interest to produce a site condition report (with baseline data). If no baseline data was collected the NRW would assume that the site is completely uncontaminated, irrespective of its previous history, but that would mean that any contamination by substances used at, produced or released from the installation that is discovered when you apply to surrender your permit would be considered to have resulted from your operation of your installation. In this scenario an operator would then be potentially liable for remediation work, and would be unable to surrender the permit until the NRW agreed it was returned to a satisfactory state.

An operator therefore needs a point of reference (baseline) at the start of operations or at the time the permit is issued so that when you want to surrender the permit you can demonstrate whether there has been any contamination of the site due to your operations.

The report is designed to meet (in part) the requirements of EA Guidance H5, Environmental Permitting Regulations Site Condition Report – Guidance and Templates, LIT8001 Version 3.0, April 2013.

4.3 Health and Safety

A detailed project specific Health and Safety Plan (HSP) was prepared in advance of the commencement of the investigatory works. The project specific HSP was approved by the Project Director and was provided to all on-site EAME employees and contractors. For the avoidance of doubt, EAME staff as a minimum adhere to relevant legislation and best practice, including the Health and Safety Executive Guidance Note HS(G) 47 "*Avoiding Danger From Underground Services*", and other relevant regulatory and legal requirements *e.g.* Health & Safety at Work Act 1974 *etc.*

4.4 Service Tracing

Service tracing, by an EAME approved specialised sub-contractor (SubSight Limited), was undertaken prior to the commencement of any drilling works so as to aid the safe positioning of the intrusive locations and ensure compliance with HS(G)47, Avoiding Danger from Underground Services, and HSE Guidance Note GS 6, Avoidance of Danger from overhead electric cables. The service tracing comprises a review of statutory service plans procured from the local utility providers and other drawings provided by the site; physical survey operations using Radiodetection Pipe and Cable Locators to trace power and conducting lines (*e.g.* telecom, CATV, cast iron water and gas); and a radio sonde survey of any open lines including major drainage.

[4] Environment Agency Guidance H5, Environmental Permitting Regulations Site Condition Report – Guidance and Templates, LIT8001 Version 3.0, April 2013

4.5 Borehole Drilling

4.5.1 Methodology

Rotary air flush involves the rotation of a drill-pipe and bit to cut the rock. Air was pumped down the drill-pipe to flush out the debris. The velocity of the flush in the borehole annulus must be sufficient to lift the cuttings. The borehole were drilled using rotary open-hole methods whereby samples are not recovered; excavated soils are returned to the surface during drilling allowing a rapid examination of strata.

4.5.2 Exploratory Borehole Location Rationale

An exploratory location plan (*Annex A - Figure 2*) and the rationale for the location of the boreholes is presented in *Table 4.1* below:

Table 4.1: Borehole Location Rationale

Location ID	Location	Rationale
BH01	Western edge of the new extension.	Located within grassed area away from traffic. Should be possible to protect borehole from damage.
BH02	Northern edge of the new extension.	Replacement of previously damaged borehole.
BH03	Eastern edge of the new extension area.	Located within grassed area away from traffic. Should be possible to protect BH from damage. Previous soil vapour survey by Arcadis in this area (date unknown). Arcadis stated that this was previously used as an area for Trichloroethylene (TCE) storage.
MW38	Towards southern edge of extension adjacent to the building.	Previous well created in May 2007 by ENVIRON UK Ltd. The investigation states that this well was located near to an historic tank farm.

The location of each borehole is outlined in *Photographs 4.1 – 4.4*.

Photograph 4.1: *Monitoring Well BH01*

Photograph 4.2: *Monitoring Well BH02*

Photograph 4.3: *Monitoring Well BH03*

Photograph 4.4: *Monitoring Well MW38 (existing well)*

4.5.3 Monitoring Well Installation

All groundwater wells were drilled and installed in accordance with current EA guidelines *i.e.* Guidance on the design and installation of groundwater quality monitoring points (Science Report SC020093. January 2006) and in compliance with EAME field procedures that form part of our Quality Management System (QMS). The installed wells were finished with high quality flush covers to aid identification during future gas and groundwater monitoring visits.

4.6 Sample Acquisition and On-Site Analysis

4.6.1 Soils

Soil arisings from the exploratory hole locations were examined visually and unusual odours were also noted. The soils encountered were logged broadly in accordance with BS EN ISO 14688-1:2002 and BS EN ISO 14688-2:2004, which has partially superseded BS 5930:1999, however, this standard does not cover descriptions of manmade or reworked materials and was written principally for engineering purposes.

Soil samples were either collected from within the top 1.0m (but ideally within the top 0.5m), a change in strata and at any depth where visual or olfactory evidence of contamination was identified or suspected.

Headspace Testing

Selected samples were tested by dynamic headspace analysis, for the presence of volatile organic compounds using a PID. Dynamic headspace analysis refers to the manual agitation of a bagged soil sample to facilitate the volatilisation of organic compounds present in the soil into the headspace above (*i.e.* soil gas) which is then analysed using the PID. The PID screens for a wide range of volatile organic compounds including hydrocarbon compounds and certain chlorinated solvents, but does not indicate a specific compound. The measurements obtained by the instrument in parts per million by volume (ppmv) provide a semi-quantitative indication of the concentration of hydrocarbon vapours that are present in the soil pore spaces.

The PID used during the investigation, and associated calibration status, is outlined in *Table 4.2*.

Table 4.2: PID Details

Criteria	Description
Instrument	PhoCheck Tiger
Supplied By	Shawcity Limited
Serial No.	T-105766
Calibration Method	CM03
Ambient Conditions	20°C ± 2°C and 50% (± 20%) Relative Humidity
Results	Isobutylene (Lot No. 1543753), Ref value 100 ppm, indicated value 100 ppm

Table 4.2: PID Details	
Criteria	**Description**
Calibration Date	2nd October 2014
Next Service Date	24/05/15
Certificate No.	52514

Discrete soil samples were taken from the exploratory locations based on their visual appearance and observations of potential contamination. Samples of any unusual and representative strata were also retained. All samples submitted were placed in containers appropriate to the type of analysis being undertaken and stored in cool boxes maintained at a low temperature, to avoid the loss of volatile compounds. Dispatch to the accredited laboratory took place as soon as possible following the completion of the investigation.

4.6.2 Groundwater

Subsequent to borehole installation the resting groundwater levels were measured. Prior to sampling the wells were developed, the groundwater from each well was purged of at least three times the well volume using dedicated Waterra inertial pump. Actual purge volumes are outlined within *Table 4.3*.

Table 4.3: Borehole Purging Record				
Criteria	**Depth to Water**	**Borehole Base**	**Standing Water**	**Actual Purge Volume**
BH1	4.08m bgl	9.50m bgl	5.42m	50 litres
BH2	2.69m bgl	6.88m bgl	4.19m	84 litres
BH3	4.01m bgl	7.95m bgl	3.94m	36 litres
MW38	3.43m bgl	8.82m bgl	5. 39m	48 litres

Each of the groundwater wells were left for a minimum of 2 hours to stabilise (post development) before sampling. A new disposable plastic bailer was used for each well in order to obtain a representative groundwater sample. Field observations were recorded during groundwater monitoring, including colour and odour (if present).

Samples were then collected, placed immediately into containers appropriate to the type of analysis being undertaken and stored in cool boxes maintained at a low temperature, to

avoid the loss of volatile compounds. Samples were submitted to an accredited independent laboratory for analysis.

All sampling was undertaken using EAME in-house field procedures and relevant guidance, such as *BS ISO 5667-11:2009, BS 6068-6.11:2009 Water quality Sampling. Guidance on sampling of groundwaters*.

4.6.3 Land Gas

All boreholes were monitored for land gas including methane, carbon dioxide and oxygen on one occasion using a GA2000 gas analyser.

4.6.4 Sample Integrity

All collected samples were submitted to a MCERTS and UKAS accredited laboratory (i2 Analytical) for chemical analysis. Discussions were held with the laboratory prior to the commencement of any works to determine the quantity of sample required and the particular containers to be used.

All samples obtained were placed in the appropriate container for the analysis to be carried out and were immediately put into a temperature regulated cool box with cool packs. All samples were given a unique reference number, dated and the information recorded on an appropriate Chain of Custody (CoC) form for dispatch with the samples to the appropriate laboratory.

5 Field Observations

5.1 Ground Conditions

The drilling of boreholes on the site enabled the opportunity for limited field observations of the soil strata. The ground conditions at the site are summarised in *Table 5.1* and the exploratory borehole logs are presented in *Annex B*.

Table 5.1: Summarised Ground Conditions beneath the Site

Description	Maximum Thickness (m)	Depth (m bgl)
MADE GROUND generally comprised unsurfaced ground comprising rough vegetation (BH01/BH03/MW38) and/or tarmac storage areas (BH02). Made ground consisting of brick, rusted metal fragments, fabric, ash and in places (BH02) lots of wood. No hydrocarbon odours detected in any of the samples of made ground.	8.0	0.0 – 8.0
Light brown – orange –yellow silty sandy **CLAY** with siltstone fragments. No odours.	4.5	3.0 – to depth
Grey **MUDSTONE/SILTSTONE**	To depth	7.0 – to depth

Exploratory locations are shown on *Annex A - Figure 2.*

5.2 Groundwater

5.2.1 Groundwater Survey

Initial groundwater strikes were encountered at various depths and within different geological strata during the investigation, details of which are summarised in *Table 5.2* with further details in the excavation logs presented in *Annex B*.

Table 5.2: Groundwater Strikes

Location	Lithological Description	Strike m bgl	Strike m ASD
BH01	Loose, brown/grey, mudstone/siltstone fragments, no odour	9.6 m	90.01 m

Table 5.2: Groundwater Strikes			
Location	**Lithological Description**	**Strike m bgl**	**Strike m ASD**
BH02	MADE GROUND: Loose brown silt clay with brick and lots of wood fragments, no odour	2.9 m	95.71 m
BH03	Firm, light brown silty clay with numerous rock fragments, no odour	6.6 m	93.42 m
MW38	N/A	N/A	N/A
m ASD – metres above site datum TBM set as manhole cover near to BH3			

5.2.2 Groundwater Flow Direction

In addition to the accurate determination of the depths of the groundwater strikes, the levelling of the boreholes allows the relative resting groundwater levels to be calculated in order to determine flow direction of the groundwater body beneath the site. The resting groundwater elevations are outlined in *Table 5.3*.

Table 5.3: Resting Groundwater Depths During Sampling				
Location	**Elevation of Location (TBM)**	**Date**	**Depth to Water (m bgl)**	**Groundwater Elevation (TBM)**
BH01	99.618	16/10/14	5.46	94.158m
BH02	98.614	16/10/14	2.45	96.164m
BH03	100.015	16/10/14	4.03	95.985m
MW38	100.406	16/10/14	3.38	97.026m
Notes: Temporary Benchmark (TBM) of 100 m taken from manhole located in roadway adjacent to BH3. BH1, BH2 and BH3 surveyed to ground level. MW38 surveyed to top of the standpipe.				

Due to the heterogeneous nature of the ground conditions, it has not been possible to determine the groundwater regime using the four wells monitored.

5.3 Field Evidence of Potential Contamination

5.3.1 Soil Observations and Headspace Test Results

No visual or olfactory evidence of soil contamination was noted during the borehole drilling. Furthermore, only limited elevated PID readings (above 0.01 ppm) were observed from the samples obtained (*Table 5.4*).

Table 5.4: PID Readings (ppm)

Depth (m bgl)	BH01	BH02	BH03
0.5	0.000	0.047	0.187
1.0	0.087	0.008	0.069
2.0	0.112	0.132	0.198
3.0	0.080	0.018	0.049
4.0	0.063	0.000	0.342
5.0	0.842	0.001	0.399
6.0	0.323	-	0.025
7.0	0.648	-	0.003
8.0	0.376	-	0.018
9.0	0.128	-	-
10.0	0.175	-	-

Notes:

Poor recovery from BH2 after 5m bgl no samples recovered or tested using the PID

5.3.2 Groundwater Observations and Headspace Test Results

During groundwater sampling and monitoring, no visual evidence of hydrocarbon contamination was noted including no elevated PID readings.

6 Chemical Data

6.1 Analytical Strategy

The analytical strategy was designed by EAME to provide an assessment of the presence of a common range of potential contaminants. The analytical suites are outlined in *Table 6.1*.

Table 6.1: Analytical Strategy

Analytical Suite	Soil Samples	Groundwater Samples
Suite B Arsenic (dissolved), Cadmium (dissolved), Chromium (dissolved), Lead (dissolved), Mercury (dissolved), Selenium (dissolved), Copper (dissolved), Nickel (dissolved), Zinc (dissolved), Vanadium (dissolved), Beryllium (dissolved), Water Soluble Boron, Total Cyanide, Monohydric Phenols, pH Value, TPH - CWG (C5-35) Aliphatic/Aromatic Split (with CWG banding - Aliphatic C5-6,>6-8,>8-10,>10-12,>12-16,>16-21,>21-35) (Aromatic - >C6-7,>7-8,>8-10,>C10-12,>12-16,>16-21,>21-35), Speciated PAHs (USEPA-16), Sulphate (water soluble), Hexavalent chrome, Free cyanide	BH1 (2 m) BH1 (5 m) BH1 (7 m) BH2 (1 m) BH2 (2 m) BH2 (4 m) BH3 (1 m) BH3 5 m) BH3 (7 m)	BH1 BH2 BH3 MW32
Asbestos Screen Associated with general fill material and demolition wastes	BH1 (2 m) BH2 (2 m)	N/A
VOCs VOCs include solvents and fuel constituents	BH1 (5 m) BH2 (2 m) BH3 (5 m)	BH1 BH2 BH3 MW32
Semi Volatile Organic Compounds (SVOCs) Targeted analysis for range of SVOCs including PAH compounds and phenols	BH1 (5 m) BH2 (2 m) BH3 (5 m)	BH1 BH2 BH3 MW32

6.2 Soil Chemical Data

A total of nine soil samples were recovered from the exploratory locations and scheduled for laboratory analysis. The first stage of assessment was to screen out those compounds that were not recorded above the laboratory analytical method detection limits (MDLs). These are provided in the below, and have thus not been considered further:

- Total Cyanide/Free Cyanide (MDL – <1 mg/kg);
- Total Phenols (MDL – <1 mg/kg);
- Speciated PAHs (Acenaphthylene and Dibenz(a,h)anthracene) (MDL – <0.1 mg/kg);
- Hexavalent Chromium (MDL – <4 mg/kg);
- Selenium (MDL – <1 mg/kg);
- Mono-aromatics (*i.e.* Benzene, Toluene, Ethylbenzene, p & m-xylene, o-xylene, MTBE (Methyl Tertiary Butyl Ether) (MDL – <1 µg/kg);
- TPH-CWG - Aliphatic (*i.e.* >EC5 - EC6, >EC6 - EC8, >EC8 - EC10 (MDL – <0.1 mg/kg);
- TPH-CWG - Aromatic (*i.e.* >EC5 - EC7, >EC7 - EC8, >EC8 - EC10, >EC10 - EC12 (MDL – <0.1 mg/kg); and
- VOCs (MDL – <1 µg/kg).

The remaining determinands, detected above their respective laboratory MDLs, have been reported. The soil analytical results are summarised in *Table 6.2* with the full analytical certificates presented in *Annex C.*

Table 6.2: Summary of Soil Chemical Analytical Results

Determinand	No. of Samples	Minimum	Mean	Maximum
General Inorganics				
pH	9	8.3	8.83	9.7 (BH2 - 1.0m)
Sulphate (water soluble) as SO_4 (2:1)	9	34	538.20	1500 (BH1 – 7.0m)
Sulphate (water soluble) as SO_4 (g/l), Soil Equivalent	9	0.03	0.54	1.50 (BH1 – 7.0 m)

Table 6.2: Summary of Soil Chemical Analytical Results				
Determinand	**No. of Samples**	**Minimum**	**Mean**	**Maximum**
Sulphate (water soluble) as SO_4 (g/l), (2:1 Leachate Equivalent)	9	0.02	0.27	0.74 (BH1 – 7.0 m)
Speciated PAHs				
Napthalene	9	ND	0.40	0.55 (BH2 – 4.0 m)
Acenaphthene	9	ND	0.90	2.30 (BH2 – 2.0 m)
Fluorene	9	ND	0.59	1.50 (BH2 – 2.0 m)
Phenanthrene	9	ND	1.58	3.10 (BH2 – 2.0 m)
Anthracene	9	ND	0.65	1.70 (BH2 – 2.0 m)
Fluoranthene	9	ND	3.48	7.80 (BH2 – 2.0 m)
Pyrene	9	ND	2.69	5.60 (BH2 – 2.0 m)
Benz(a)anthracene	9	ND	1.13	1.70 (BH2 – 2.0 m)
Chrysene	9	ND	1.10	1.80 (BH2 – 4.0 m)
Benzo(b)fluoranthene	9	ND	1.49	2.20 (BH2 – 2.0 m)
Benzo(k)fluoranthene	9	ND	0.82	1.10 (BH2 – 4.0 m)
Benzo(a)pyrene	9	ND	1.05	1.50 (BH2 – 4.0 m)
Indeno(123cd(pyrene	9	ND	0.44	0.59 (BH2 – 4.0 m)
Benzo(ghi)perylene	9	ND	0.50	0.63 (BH1 – 5.0 m)
Speciated PAH 16 EPA Total	9	ND	16.35	30.9 (BH2 – 2.0 m)
Heavy Metals/Metalloids				
Arsenic	9	6.6	30.74	94 (BH1 – 5.0 m)
Beryllium	9	0.8	1.02	1.2 (BH1 – 5.0 m)
Boron (water soluble)	9	ND	1.14	2.0 (BH1 – 7.0 m)
Cadmium	9	ND	1.02	1.6 (BH1 – 5.0 m)
Chromium	9	15	27.56	54 (BH2 – 1.0 m)
Copper	9	29	154.22	350 (BH1 – 5.0 m)
Lead	9	15	127.22	310 (BH1 – 5.0 m)
Mercury	9	ND	0.70	1.0 (BH1 – 5.0 m)

Table 6.2: Summary of Soil Chemical Analytical Results				
Determinand	**No. of Samples**	**Minimum**	**Mean**	**Maximum**
Nickel	9	30	41.11	53 (BH2 – 2.0 m)
Vanadium	9	20	30.22	44 (BH1 – 5.0 m)
Zinc	9	65	217.00	400 (BH2 – 2.0 m)
TPH CWG aliphatic/aromatic				
Aliphatic >C_{10} – C_{12}	9	ND	-	3.6 (BH1 – 5.0 m)
Aliphatic >C_{12} – C_{16}	9	4.30	31.67	67 (BH1 – 2.0 m)
Aliphatic >C_{16} – C_{21}	9	20	129.00	310 (BH1 – 2.0 m)
Aliphatic >C_{21} – C_{35}	9	22	273.56	470 (BH1 – 5.0 m/7.0 m)
Total Aliphatic (C_5 – C_{35})	9	22	398.00	820 (BH1 – 2.0 m)
Aromatic >C_{12} – C_{16}	9	ND	11.10	18 (BH2 – 2.0 m)
Aromatic >C_{16} – C_{21}	9	ND	60.00	91 (BH1 – 2.0 m)
Aromatic >C_{21} – C_{35}	9	ND	149.29	260 (BH1 – 5.0 m)
Total Aromatic >C_5 – C_{35}	9	ND	210.57	340 (BH1 – 5.0 m)
SVOCs				
Dibenzofuran	3	ND	-	0.6 (BH2 – 2.0 m)
Anthraquinone	3	ND	-	1.0 (BH2 – 2.0 m)
Other				
Asbestos Screen	2	Detected	-	Chrysotile- Insulation lagging (BH1 – 2.0 m) (BH2 – 1.0 m)

Notes:

ND = Not recorded above limit of detection

All results expressed in mg/kg except for pH and where indicated.

PAHs within SVOC analytical suite reported as speciated PAHs.

- = Not calculated

As this is a baseline assessment soil levels have not been compared to screening values.

6.3 Groundwater Chemical Data

A total of four groundwater samples were recovered from the exploratory locations and scheduled for laboratory analysis. The first stage of assessment was to screen out those compounds that were not recorded above the laboratory analytical method detection limits (MDLs). These are provided in the below, and have thus not been considered further:

- Total Cyanide/Free Cyanide (MDL – <10 µg/l);
- Total Phenols (MDL – <10 µg/l);
- Majority of the speciated PAHs except those noted in *Table 6.3* (MDL – <0.01 µg/l);
- Beryllium (MDL – <0.1 µg/l)
- Hexavalent Chromium (MDL – <5 µg/l)
- Mono-aromatics (*i.e.* Benzene, Toluene, Ethylbenzene, p & m-xylene, o-xylene, MTBE (MDL – <1 µg/l)
- Petroleum hydrocarbons (TPH-CWG Aliphatic/Aromatic split) (MDL - <10 µg/l)
- VOCs (MDL – <1 µg/l)
- All SVOCs except for the stated PAHs (MDL – variable)

The remaining determinands, detected above their respective laboratory MDLs, have been reported. The groundwater analytical results are summarised in *Table 6.3* with the full analytical certificates presented in *Annex C.*

Table 6.3: Summary of Groundwater Chemical Analytical Results

Determinand	No. of Samples	Minimum	Mean	Maximum
General Inorganics				
pH	4	7.0	7.4	7.8 (BH1 & BH2)
Sulphate as SO_4	4	29,100	102,425	169,000 (BH3)
Speciated PAHs				
Acenaphthene	4	ND	-	0.23 (BH2)
Fluoranthene	4	ND	-	0.07 (BH2)

Table 6.3: Summary of Groundwater Chemical Analytical Results				
Determinand	**No. of Samples**	**Minimum**	**Mean**	**Maximum**
Pyrene	4	ND	-	0.04 (BH2)
Speciated PAH 16 EPA Total	4	ND	-	0.34 (BH2)
Heavy Metals/Metalloids				
Arsenic	4	0.29	2.88	8.26 (BH1)
Boron	4	39	207.25	550 (BH2)
Cadmium	4	ND	0.11	0.23 (BH3)
Chromium	4	ND	-	2.2 (BH2)
Copper	4	2	7.88	17 (BH2)
Lead	4	ND	0.35	0.5 (BH2)
Mercury	4	ND	-	0.34 (BH2)
Nickel	4	6.2	13.73	23 (BH3)
Selenium	4	ND	4.77	11 (BH1)
Vanadium	4	ND	-	6.7 (BH2)
Zinc	4	2.9	8.03	14 (MW38)

Notes:

ND = Not recorded above limit of detection

All results expressed in mg/kg except for pH and where indicated.

PAHs within SVOC analytical suite reported as speciated PAHs.

- = Not calculated

As this is a baseline assessment groundwater levels have not been compared to screening values.

7 Land Gas Monitoring Data

7.1 Introduction

A number of new guidance documents have been produced for new developments on gassing sites. BRE Report 465, 2004 Edition, is aimed at providing a framework for planners to ensure 'contaminated land' issues are adequately addressed, including guidance for methane and other ground gases. The framework includes CIRIA's report 149, which provides further guidance and an initial attempt at characterising gassing sites in terms of volume of gas rather than just concentrations. This was further developed by Wilson and Card's paper in 1999, which provided an approach considering the distribution of gas concentrations and flow rates. For the purpose of this assessment, reference has been made to the recent CIRIA (665) document, Assessing risks poses by hazardous ground gases to building, 2007, which provides the most up to date and comprehensive reference criteria for assessing land gas, by providing advice relevant to existing or planned development and a step-wise approach to risk assessment.

The CIRIA C665 document uses both gas concentrations and borehole flow rates to define a characteristic situation for a site based on the limiting borehole gas volume flow for methane and carbon dioxide. This provides a Gas Screening Value (GSV), based on the maximum gas concentrations (methane or carbon dioxide) and flow rates recorded at the site (Gas Screening Value (l of gas per hour) = borehole flow rate (l/hr) x gas concentration (%)), which then enables an appropriate Characteristic Situation to be determined. The GSV should only be considered as a guideline value and not an absolute threshold.

Land gas monitoring was undertaken on the four installed monitoring wells on 2nd December 2014 using a Geotech GA2000. The gas analyser used during the investigation, and associated calibration status, is outlined in *Table 7.1*. The results are summarised in *Table 7.2.*

Table 7.1: Gas Analyser Details

Criteria	Description
Instrument	Geotech GA2000
Serial No.	GA13407
Certificate No.	GA13407_2/13435
Calibration Date	01/10/14
UKAS Lab No.	4533

7.2 Land Gas Results

Table 7.1: Summary of Land Gas Results

ID	Atm. Pressure (mb)	Time	CH_4 (% v/v)	CO_2 % v/v)	O_2 (% v/v)	CO (ppm)	H_2S (ppm)	Flow (l/hr)
BH01	1022	10 sec	0.1	0.5	12.8	0.0	0.0	0.0
		30 sec	0.1	0.4	12.8			
		60 sec (stable)	0.1	0.4	12.9			
BH02	1022	10 sec	0.1	1.6	20.9	0.0	0.0	0.0
		30 sec	0.1	1.6	20.9			
		60 sec (stable)	0.1	1.6	20.9			
BH03	1022	10 sec	0.1	4.1	12.6	0.0	0.0	0.0
		30 sec	0.1	4.2	12.6			
		60 sec (stable)	0.1	4.2	12.6			
MW38	1022	10 sec	0.2	1.8	20.9	0.0	0.0	0.0
		30 sec	0.2	1.8	20.9			
		60 sec (stable)	0.1	1.8	20.9			

Methane concentrations (stable) were recorded at or below the instrument's limit of detection (≤0.1%) at the four locations. Depleted oxygen levels were recorded at two locations (BH01 and BH03) although high methane levels were not recorded (maximum 0.1% v/v). All other monitoring wells recorded oxygen concentrations within the normal range (*i.e.* approximately 21%).

No measurable **flow rates** of were recorded in any of the monitoring wells during the monitoring period.

Although the gas monitoring results obtained only offer a snap shot of conditions at the site, the CIRIA 665 guidance has been used for comparative purposes. As such, using the modified Wilson and Card Classification (CIRIA C665, 2007), in respect of the current data and the identified GSV, the site is considered to be at **Characteristic Situation 1 - Very Low Risk** from land gases. The Modified Wilson and Card Classification and typical scope of gas protective measures, as identified in C665, are presented in *Annex D.*

8 Conclusions

EAME were commissioned by Aleris Recycling (Swansea) Ltd, Westfield Industrial Park, Swansea, SA5 4SF to undertake a targeted intrusive site investigation of the 1.27 ha parcel of land located to the south of the currently permitted area. The area is currently being used by Aleris for the storage of 'clean' baled aluminium cans prior to processing and the storage of slag within a large covered building.

The report is designed to meet (in part) the requirements of EA Guidance H5, Environmental Permitting Regulations Site Condition Report – Guidance and Templates, LIT8001 Version 3.0, April 2013. The results of the investigation provide the baseline assessment for the area.

The key findings of the investigation are:

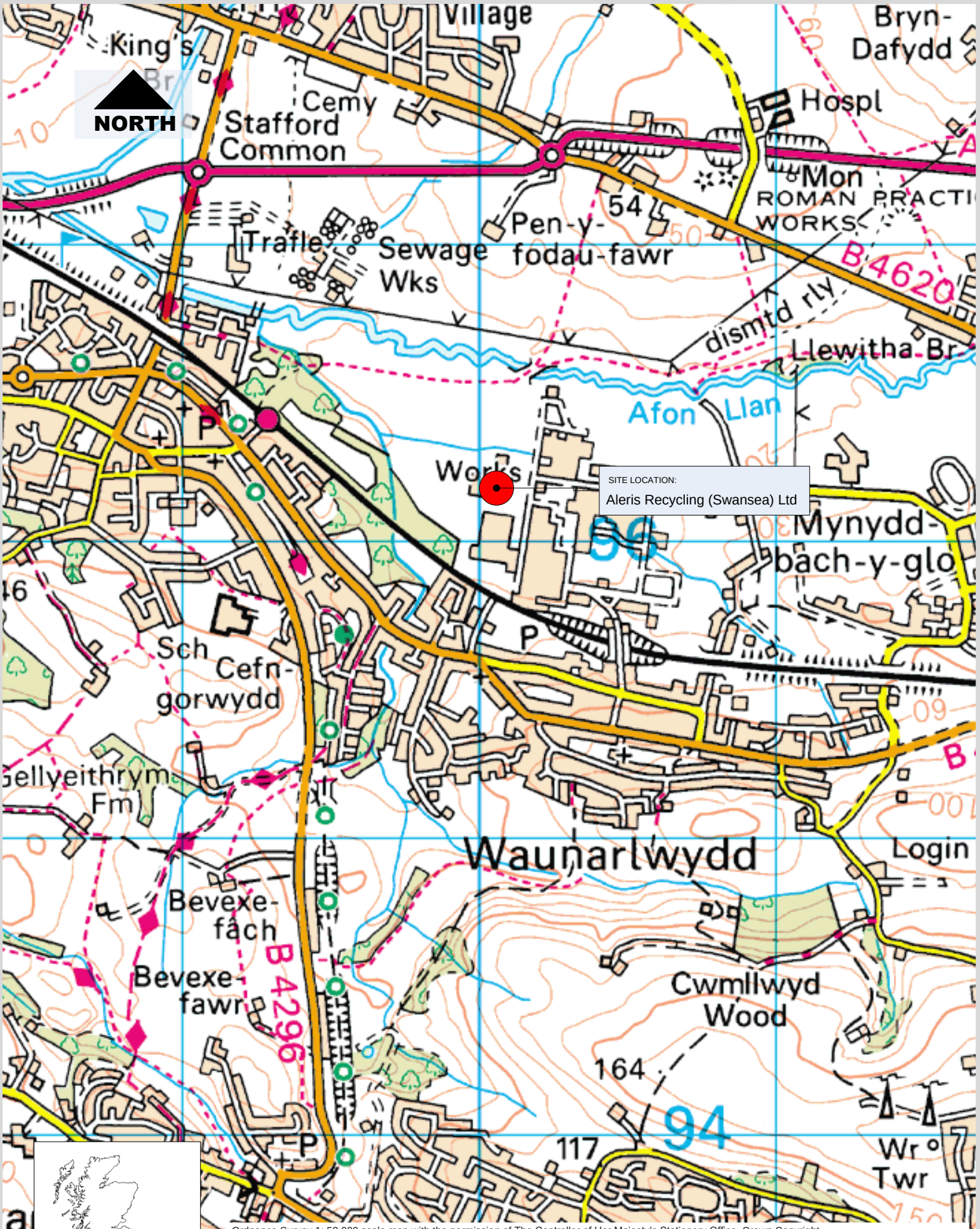
- Made Ground was identified in all exploratory holes to a maximum of 8.0m bgl. The Made Ground consisted of brick, rusted metal fragments, fabric, ash and wood;
- No olfactory or visual evidence of contamination was noted in any of the boreholes. Headspace readings were undertaken on all recovered soil samples, with the results generally low with a maximum level recorded of 0.842 ppm (BH01 @ 5.0m). These concentrations indicate that there does not appear to be widespread volatile organic compounds within the soils;
- The chemical testing of the soils has not revealed significant concentration of contaminants across the site. As this is a baseline assessment levels have not been compared to screening values. Elevated PAHs, heavy metals, TPH (aliphatic/aromatic) and two SVOC species were detected. Asbestos (Chrysotile - Insulation lagging) was identified in both samples submitted for analysis. Due to the heterogeneous nature of the historic infilled areas the soils concentrations are likely to be highly variable;
- The chemical testing of the groundwater has not revealed significant concentration of contaminants across the site. As this is a baseline assessment levels have not been compared to screening values. Elevated selected PAHs and selected heavy metals. Thus, overall it can be concluded that whilst the groundwater does exhibit signs of chemical contamination, the results are typical of a previously utilised industrial site. Due to the heterogeneous nature of the historic infilled areas the groundwater concentrations are likely to be highly variable;
- During groundwater sampling and monitoring, no visual evidence of hydrocarbon contamination was noted; and

- A single round of gas monitoring has been undertaken. Stable methane concentrations were recorded at or below the instrument's limit of detection (≤0.1%) at the four locations. Depleted oxygen levels were recorded at two locations (BH01 and BH03) although high methane levels were not recorded (maximum 0.1% v/v). All other monitoring wells recorded oxygen concentrations within the normal range (*i.e.* approximately 21%). No measurable flow rates of were recorded in any of the monitoring wells during the monitoring period. With respect of the current data and the identified GSV, the site is considered to be at Characteristic Situation 1 - Very Low Tisk.

8.1 Recommendations

No recommendations for further work have been made.

Annex A: Figures



Ordnance Survey 1: 50,000 scale map with the permission of The Controller of Her Majesty's Stationery Office, Crown Copyright
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TITLE:	JOB REFERENCE:	REVISIONS:		
Figure 1. Site Location	014-1280	No. / Date. / Description. 00 / 19/11/14 / Final for report		
CLIENT:	DATE:	- / --/--/-- / -		
Aleris Recycling (Swansea) Ltd	November 19, 2014	- / --/--/-- / -		
	SCALE:	DRAWN BY:	CHECKED BY:	
	1:50,000	MJS	SPR	

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KEY:

- EAME Monitoring Wells (2014)
- ENVIRON UK Ltd Monitoring Well (2007)

TITLE:	JOB REFERENCE:	REVISIONS:		
Figure 2. Borehole Locations	014-1280	No. / Date. / Description. 00 / 19/11/14 / Final for report - / --/--/-- / - - / --/--/-- / - - / --/--/-- / -		
	DATE: November 19, 2014			
CLIENT: Aleris Recycling (Swansea) Ltd	SCALE: Not to Scale	DRAWN BY: MJS	CHECKED BY: SPR	

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Annex B: Exploratory Borehole Logs

Project	Date	Co-ordinates	Reference
Phase II Environmental Permit Baseline Assessment	Start: 15/10/14 Finish: 15/10/14	51°38.754 N 4°1.499 W	BH01

Client	Project Ref.	Datum	Sheet
Aleris Recycling (Swansea) Ltd	014-1280	99.618 m	01 of 01

Plant and Equipment Used	Logged by
Hands England 36 Lorry, ODEX/412/CPT PCD, Rotary (Heavy Mist)	Tectonics Drilling Services and EAME (MS)

Depth	Geology	Description	Elevation	Well Installation	Water	Sample No.	Lab Analysis	PID Readings (0 50 100 150 200)
0.0								
1.0		MADE GROUND: Grassed surface underlain by loose brown silty clay, with brick and rootlets, dry, no odour	1.0					
2.0						2.0		
3.0		MADE GROUND: Loose grey mudstone fragments, with rusted metal and fabric type material, dry (damp at 5.0m), no odour						
4.0			4.0					
5.0						5.0		
6.0								
7.0		MADE GROUND: Grey silty clay, with ash, brick and wood fragments, dry, no odour				7.0		
8.0			8.0					
9.0		Loose, brown silt with mudstone fragments, dry, no odour	9.0					
10.0								
11.0		Loose, brown/grey, mudstone/siltstone fragments, dry, no odour	11.0					
12.0								
13.0		Terminated @ 11.00 m						
14.0								
15.0								
16.0								
17.0								
18.0								
19.0								
20.0								

Remarks

TBM based on manhole cover in roadway near to BH3.
Became damp at 5.0 metres with slow inflow at 9.6 m bgl.
2 metres plain casing and 9 metres of 50 mm slotted pipe installed.

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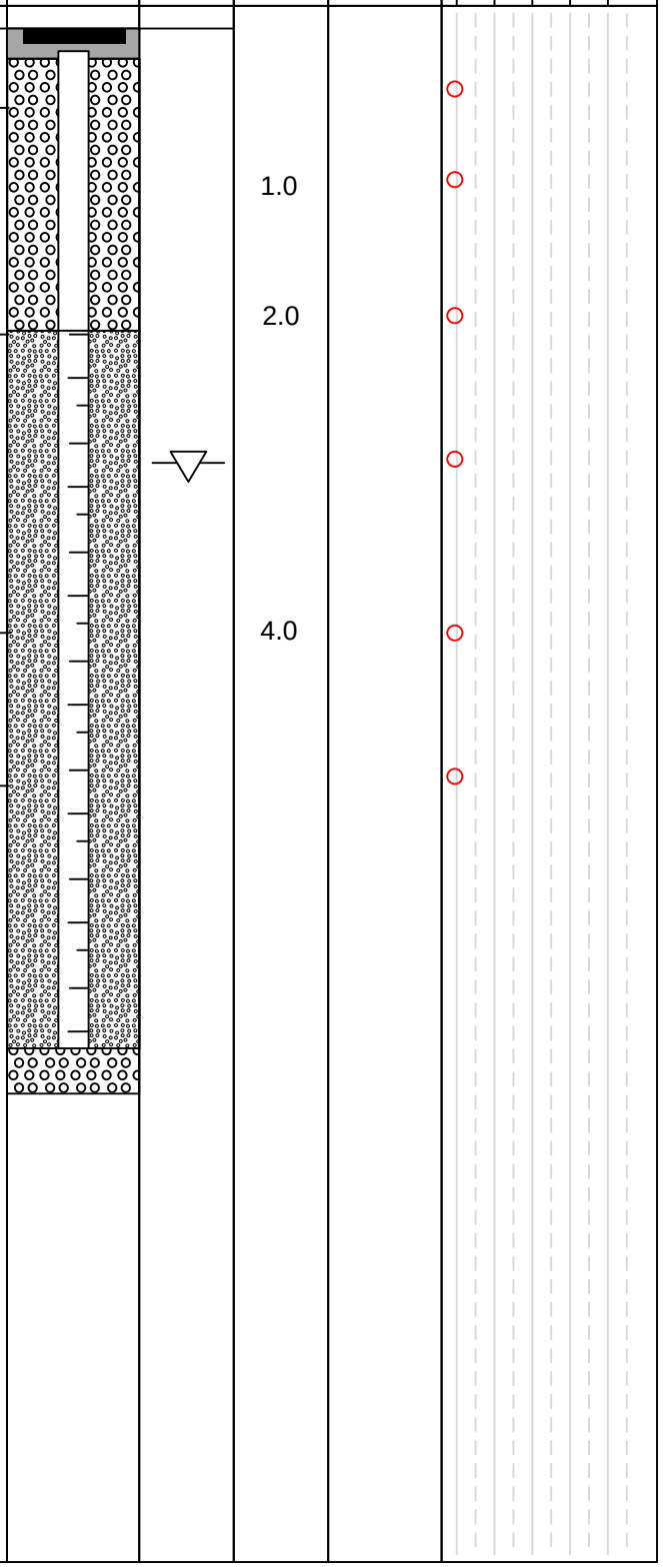
Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Project	Date	Co-ordinates	Reference
Phase II Environmental Permit Baseline Assessment	Start: 15/10/14 Finish: 15/10/14	51°38.775 N 4°1.434 W	BH02

Client	Project Ref.	Datum	Sheet
Aleris Recycling (Swansea) Ltd	014-1280	98.614 m	01 of 01

Plant and Equipment Used	Logged by
Hands England 36 Lorry, ODEX/412/CPT PCD, Rotary (Heavy Mist)	Tectonics Drilling Services and EAME (MS)

Depth	Geology	Description	Elevation	Well Installation	Water	Sample No.	Lab Analysis	PID Readings (0 50 100 150 200)
0.0		MADE GROUND: Tarmac surface underlain by loose brown silty clay, dry, no odour	0.5					
1.0		MADE GROUND: Loose brown silt clay with brick and lots of wood fragments, dry, no odour	2.0			1.0		
2.0		As above, less wood, becoming damper	4.0			2.0		
3.0		Very loose, brown, silty clay, very wet, no odour	5.0			4.0		
4.0		Poor recovery after 5.0 m, hole collapsing – Grey Siltstone						
5.0		Terminated @ 7.0 m						
6.0								
7.0								
8.0								
9.0								
10.0								



Remarks

TBM based on manhole cover in roadway near to BH3.
2 metres plain casing and 5 metres of slotted.
Fast inflow at 2.9 m bgl.

EAME Earth & Marine Environmental Consultants

Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Project	Date	Co-ordinates	Reference
Phase II Environmental Permit Baseline Assessment	Start: 15/10/14 Finish: 15/10/14	51°38.785 N 4°1.364 W	BH03

Client	Project Ref.	Datum	Sheet
Aleris Recycling (Swansea) Ltd	014-1280	100.015 m	01 of 01

Plant and Equipment Used	Logged by
Hands England 36 Lorry, ODEX/412/CPT PCD, Rotary (Heavy Mist)	Tectonics Drilling Services and EAME (MS)

Depth	Geology	Description	Elevation	Well Installation	Water	Sample No.	Lab Analysis	PID Readings (0 50 100 150 200)
0.0								
1.0						1.0	Suite B Asb.	
2.0		MADE GROUND: Grassed surface underlain by soft brown silty clay with brick fragments, dry, no odour						
3.0			3.0					
4.0		Firm, orange/yellow silty clay with numerous sandstone fragments, dry, no odour						
5.0			5.0			5.0	Suite B Asb. SVOC VOC	
6.0		Firm, light brown silty clay with numerous rock fragments, dry, no odour						
7.0			7.0			7.0	Suite B	
8.0		Grey rock flour, mudstone/ siltstone, dry, no odour	8.0					
9.0		Terminated @ 8.0 m						
10.0								

Remarks

TBM based on manhole cover in roadway near to BH3. Asb. (Asbestos).
16/10/14, Depth to water = 4.01 metres bgl, Depth to base = 7.95 m bgl.
2 metres plain casing and 6 metres of slotted, Medium inflow after 6.6 metres bgl.

EAME Earth & Marine Environmental Consultants

Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Symbols for Soils and Rocks
British Standards Institute (1999). BS 5930:1999
Code of practice for site investigations.

Soils	Sedimentary	Metamorphic	Igneous
Made Ground	Chalk	Coarse grained	Coarse grained
Gravel	Limestone	Medium grained	Medium grained
Sand	Sandstone	Fine grained	Fine grained
Silt	Siltstone	Pyroclastic	
Clay	Mudstone		
Peat	Shale		
Silty Sand	Coal		

Well Installation

Well cover

Plain pipework

Slotted pipework

Bentonite pellets

Pea gravel

Bentonite seal

PID Reading

Rest water level

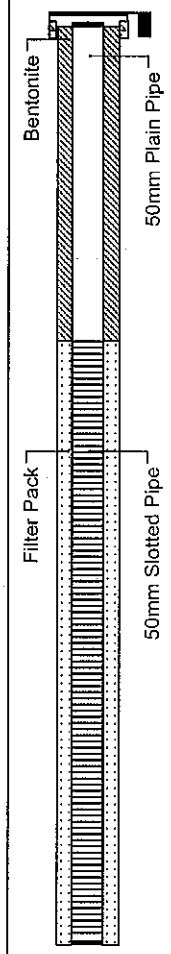
Water strike

Well Installation by ENVIRON UK Limited in May 2007.

Project No: 64C11647	***Borehole: MW38***	TBM - 100.406 to top of pipework
Client: Alcoa	***Date:*** 01/05/07	
Location: Waunarlwydd	***Plant Used:*** Beretta Rotary Rig	
Datum:	***Logged by:*** ES	

SUBSURFACE PROFILE

Depth (m bgl)	Symbol	Description	Elevation (m bgl)	Sample Depth (m bgl)	Groundwater Data	Well Installation
0.0		Ground Surface	0.0			
		MADE GROUND Reworked from trial pit - please refer to TP71 log for details.			3.98m bgl RWL	
4.0			-4.5	4.0		
		BOULDER CLAY Dark brown, damp, firm CLAY with occasional small pebbles. Slight hydrocarbon odour noted, fading with depth.		5.0		
6.0			-6.5	6.0		
		WEATHERED COAL MEASURES Grey/brown firm CLAY with frequent fragments weathered mudstone.	-7.0	6.5		
7.0		**WEATHERED COAL MEASURES** Light grey, wet, soft CLAY with frequent very small fragments of mudstone.	-8.0	7.0		
8.0		**COAL MEASURES** Grey, moist, large, angular MUDSTONE fragments in a soft clay matrix.	-8.5	8.0		
9.0		8.5 m bgl				
10.0						



Remarks: Borehole terminated at 8.5m bgl.
Rest water level of 3.98m bgl on 08/05/07.

Checked by: JC

Sheet: 1 of 1

TP71 referred to in log MW38, by ENVIRON UK Limited in May 2007.

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Trial Pit: TP71

Date: 30/04/07

Plant Used: Case CX210 Excavator

Logged by: JC

ENVIRON

TRIAL PIT LOG

Depth (m)	Symbol	Description	Unit Depth	Sample
0.00		Ground Surface		
		MADE GROUND Grass over firm brown sandy SILT/CLAY.		0.2 - 0.4 D
		MADE GROUND Pale firm grey slightly sandy gravelly CLAY.		
		MADE GROUND (SWANSEA VALLEY FILL) Dark browk to black sandy gravelly ashy SILT with occasional bricks, concrete, small metal fragments and limestone chippings. Becomes brown below 0.7m bgl.		0.6 D
1.00		**MADE GROUND** Firm brown sandy gravelly CLAY with occasional bricks and sandstone cobbles. Organic lenses present with depth.		1.0 D
2.00				
3.00				
		FORMER TOPSOIL HORIZON Dark brown firm slightly sandy SILT.		3.4 - 3.6 D
		SUPERFICIAL CLAY Grey mottled olive slightly sandy SILT/CLAY with occasioal sandstone gravels. Moderate hydrocarbon odour present and occasional moist lenses.		
4.00		Occasional sandstone cobbles present from 4.4m bgl.		4.0 D
		4.5 m bgl		
5.00				

Remarks: TP71 terminated at 4.5m bgl.
No groundwater encountered.
Trial pit located in vicinity of former tank farm. MW38 psotioned on TP71 to investgate deep hydrocarbon contamination.

Checked by:

Sheet: 1 of 1

Annex C: Analytical Results

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e: reception@i2analytical.com

Analytical Report Number : 14-61570

Project / Site name:	014-1280, Aleris	**Samples received on:**	20/10/2014
Your job number:	014-1280	**Samples instructed on:**	20/10/2014
Your order number:		**Analysis completed by:**	31/10/2014
Report Issue Number:	1	**Report issued on:**	31/10/2014
Samples Analysed:	4 water samples		

Signed: CCStone

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 14-61570

Project / Site name: 014-1280, Aleris

Lab Sample Number				382999	383000	383001	383002	
Sample Reference				BH1	BH2	BH3	MW38	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				16/10/2014	16/10/2014	17/10/2014	16/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.8	7.8	7.0	7.0	
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	
Sulphate as SO_4	µg/l	45	ISO 17025	113000	29100	169000	98600	
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	0.23	< 0.01	< 0.01	
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.07	< 0.01	< 0.01	
Pyrene	µg/l	0.01	ISO 17025	< 0.01	0.04	< 0.01	< 0.01	
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	ISO 17025	< 0.20	0.34	< 0.20	< 0.20	
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	8.26	2.27	0.29	0.71	
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	
Boron (dissolved)	µg/l	10	ISO 17025	160	550	39	80	
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.07	0.23	0.03	
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	2.2	< 0.2	< 0.2	
Copper (dissolved)	µg/l	0.5	ISO 17025	8.0	17	4.5	2.0	
Lead (dissolved)	µg/l	0.2	ISO 17025	0.2	0.5	< 0.2	< 0.2	
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	0.34	< 0.05	< 0.05	
Nickel (dissolved)	µg/l	0.5	ISO 17025	17	8.7	23	6.2	
Selenium (dissolved)	µg/l	0.6	ISO 17025	11	2.2	1.1	< 0.6	
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	6.7	< 0.2	< 0.2	
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.9	3.2	12	14	

Analytical Report Number: 14-61570

Project / Site name: 014-1280, Aleris

Lab Sample Number				382999	383000	383001	383002	
Sample Reference				BH1	BH2	BH3	MW38	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				16/10/2014	16/10/2014	17/10/2014	16/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	

Analytical Report Number: 14-61570

Project / Site name: 014-1280, Aleris

Lab Sample Number				382999	383000	383001	383002	
Sample Reference				BH1	BH2	BH3	MW38	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				16/10/2014	16/10/2014	17/10/2014	16/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	

Analytical Report Number: 14-61570

Project / Site name: 014-1280, Aleris

Lab Sample Number				382999	383000	383001	383002	
Sample Reference				BH1	BH2	BH3	MW38	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				16/10/2014	16/10/2014	17/10/2014	16/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	0.23	< 0.01	< 0.01	
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Hexachlorobenzene	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.07	< 0.01	< 0.01	
Pyrene	µg/l	0.01	ISO 17025	< 0.01	0.04	< 0.01	< 0.01	
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 14-61570

Project / Site name: 014-1280, Aleris

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron in water	Determination of boron by acidification followed by ICP-MS. Accredited matrices: SW, GW.	In-house method based on MEWAM	L012-PL	W	ISO 17025
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073W-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L012-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L070-UK	W	NONE
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L070-UK	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073W-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 14-61604

Project / Site name:	Aleris	**Samples received on:**	20/10/2014
Your job number:	014-1280	**Samples instructed on:**	20/10/2014
Your order number:		**Analysis completed by:**	31/10/2014
Report Issue Number:	1	**Report issued on:**	31/10/2014
Samples Analysed:	9 soil samples		

Signed: CCStone

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed: TPl

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 14-61604

Project / Site name: Aleris

Lab Sample Number				383283	383284	383285	383286	383287
Sample Reference				BH1	BH1	BH1	BH2	BH2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	5.00	7.00	1.00	2.00
Date Sampled				15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	7.2	14	16	15	15
Total mass of sample received	kg	0.001	NONE	0.56	0.60	0.56	0.53	0.54

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile-Insulation lagging	-	-	Chrysotile-Insulation lagging	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	-	-	Detected	-

General Inorganics

pH	pH Units	N/A	MCERTS	9.1	8.4	8.5	9.7	9.1
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.31	1.4	1.5	0.38	0.29
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	310	1400	1500	380	290
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.16	0.71	0.74	0.19	0.14

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.30	0.36	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.24	0.38	0.36	2.3
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.28	0.40	0.20	1.5
Phenanthrene	mg/kg	0.1	MCERTS	0.66	1.1	1.5	0.59	3.1
Anthracene	mg/kg	0.1	MCERTS	0.14	0.28	0.38	0.42	1.7
Fluoranthene	mg/kg	0.1	MCERTS	0.96	1.9	1.9	2.7	7.8
Pyrene	mg/kg	0.1	MCERTS	0.92	1.9	1.4	2.1	5.6
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.56	1.1	0.92	1.1	1.7
Chrysene	mg/kg	0.05	MCERTS	0.52	0.89	0.82	0.98	1.6
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.63	1.2	1.1	1.7	2.2
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.43	0.92	0.53	0.94	1.0
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.53	1.1	0.74	1.1	1.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.25	0.50	0.32	0.47	0.53
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.31	0.63	0.39	0.49	0.56

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	5.91	12.4	11.1	13.1	30.9

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	94	77	19	26
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.8	1.2	1.0	1.1	0.9
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	1.9	2.0	0.8	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	1.6	1.5	0.6	1.1
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17	42	27	54	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	120	350	250	150	210
Lead (aqua regia extractable)	mg/kg	1	MCERTS	140	310	270	84	140
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	1.0	0.4	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30	40	38	50	53
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	21	44	33	37	30
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	160	360	300	250	400

Analytical Report Number: 14-61604

Project / Site name: Aleris

Lab Sample Number				383283	383284	383285	383286	383287
Sample Reference				BH1	BH1	BH1	BH2	BH2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	5.00	7.00	1.00	2.00
Date Sampled				15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	3.6	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	67	60	52	9.4	14
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	310	170	160	93	58
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	440	470	470	370	180
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	820	700	680	480	250

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	8.7	14	9.9	3.0	18
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	91	69	57	39	53
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	210	260	200	130	81
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	310	340	270	180	150

Analytical Report Number: 14-61604

Project / Site name: Aleris

Lab Sample Number				383283	383284	383285	383286	383287
Sample Reference				BH1	BH1	BH1	BH2	BH2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	5.00	7.00	1.00	2.00
Date Sampled				15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Chloroethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Vinyl Chloride	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Bromodichloromethane	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Tetrachloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Tribromomethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Isopropylbenzene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Butylbenzene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0

Analytical Report Number: 14-61604

Project / Site name: Aleris

Lab Sample Number				383283	383284	383285	383286	383287
Sample Reference				BH1	BH1	BH1	BH2	BH2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	5.00	7.00	1.00	2.00
Date Sampled				15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	< 0.1	-	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
Naphthalene	mg/kg	0.1	MCERTS	-	0.30	-	-	< 0.10
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	-	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	< 0.1
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	-	0.24	-	-	2.3
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2	-	-	0.6
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
Fluorene	mg/kg	0.1	MCERTS	-	0.28	-	-	1.5
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
Phenanthrene	mg/kg	0.1	MCERTS	-	1.1	-	-	3.1
Anthracene	mg/kg	0.1	MCERTS	-	0.28	-	-	1.7
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0.3	-	-	1.0
Fluoranthene	mg/kg	0.1	MCERTS	-	1.9	-	-	7.8
Pyrene	mg/kg	0.1	MCERTS	-	1.9	-	-	5.6
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	1.1	-	-	1.7
Chrysene	mg/kg	0.05	MCERTS	-	0.89	-	-	1.6
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	1.2	-	-	2.2
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	0.92	-	-	1.0
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	1.1	-	-	1.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	0.50	-	-	0.53
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.63	-	-	0.56

Analytical Report Number: 14-61604

Project / Site name: Aleris

Lab Sample Number				383288	383289	383290	383291	
Sample Reference				BH2	BH3	BH3	BH3	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				4.00	1.00	5.00	7.00	
Date Sampled				15/10/2014	16/10/2014	16/10/2014	16/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	29	17	11	8.4	
Total mass of sample received	kg	0.001	NONE	0.62	0.63	0.52	0.56	
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	
General Inorganics								
pH	pH Units	N/A	MCERTS	9.5	8.5	8.3	8.4	
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.55	0.23	0.15	0.034	
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	550	230	150	34	
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.28	0.11	0.075	0.017	
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.55	< 0.05	< 0.05	< 0.05	
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene	mg/kg	0.1	MCERTS	1.2	< 0.10	< 0.10	< 0.10	
Fluorene	mg/kg	0.1	MCERTS	0.55	< 0.10	< 0.10	< 0.10	
Phenanthrene	mg/kg	0.1	MCERTS	2.5	< 0.10	< 0.10	< 0.10	
Anthracene	mg/kg	0.1	MCERTS	1.0	< 0.10	< 0.10	< 0.10	
Fluoranthene	mg/kg	0.1	MCERTS	5.6	< 0.10	< 0.10	< 0.10	
Pyrene	mg/kg	0.1	MCERTS	4.2	< 0.10	< 0.10	< 0.10	
Benzo(a)anthracene	mg/kg	0.1	MCERTS	1.4	< 0.10	< 0.10	< 0.10	
Chrysene	mg/kg	0.05	MCERTS	1.8	< 0.05	< 0.05	< 0.05	
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	2.1	< 0.10	< 0.10	< 0.10	
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.1	< 0.10	< 0.10	< 0.10	
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.5	< 0.10	< 0.10	< 0.10	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.59	< 0.10	< 0.10	< 0.10	
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.60	< 0.05	< 0.05	< 0.05	
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	24.7	< 1.60	< 1.60	< 1.60	
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	12	6.6	9.1	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1	0.9	1.1	1.1	
Boron (water soluble)	mg/kg	0.2	MCERTS	1.8	0.6	0.2	< 0.2	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.0	< 0.2	< 0.2	< 0.2	
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	15	21	17	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	190	54	35	29	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	21	15	15	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	49	46	32	32	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	41	23	23	20	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	280	72	66	65	

Analytical Report Number: 14-61604

Project / Site name: Aleris

Lab Sample Number				383288	383289	383290	383291	
Sample Reference				BH2	BH3	BH3	BH3	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				4.00	1.00	5.00	7.00	
Date Sampled				15/10/2014	16/10/2014	16/10/2014	16/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	15	4.3	< 2.0	< 2.0	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	92	20	< 8.0	< 8.0	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	320	160	30	22	
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	420	180	30	22	

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	13	< 2.0	< 2.0	< 2.0	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	51	< 10	< 10	< 10	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	140	24	< 10	< 10	
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	200	24	< 10	< 10	

Analytical Report Number: 14-61604

Project / Site name: Aleris

Lab Sample Number				383288	383289	383290	383291	
Sample Reference				BH2	BH3	BH3	BH3	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				4.00	1.00	5.00	7.00	
Date Sampled				15/10/2014	16/10/2014	16/10/2014	16/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Chloroethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Bromomethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Vinyl Chloride	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
1,1-Dichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
2,2-Dichloropropane	µg/kg	1	NONE	-	-	< 1.0	-	
Trichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1-Dichloropropene	µg/kg	1	NONE	-	-	< 1.0	-	
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-	
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Tetrachloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Trichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Dibromomethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Bromodichloromethane	µg/kg	1	NONE	-	-	< 1.0	-	
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Tetrachloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Chlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	-	< 1.0	-	
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
p & m-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Styrene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Tribromomethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
o-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Isopropylbenzene	µg/kg	1	NONE	-	-	< 1.0	-	
Bromobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
2-Chlorotoluene	µg/kg	1	NONE	-	-	< 1.0	-	
4-Chlorotoluene	µg/kg	1	NONE	-	-	< 1.0	-	
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
tert-Butylbenzene	µg/kg	1	NONE	-	-	< 1.0	-	
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
sec-Butylbenzene	µg/kg	1	NONE	-	-	< 1.0	-	
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Butylbenzene	µg/kg	1	NONE	-	-	< 1.0	-	
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Hexachlorobutadiene	µg/kg	1	NONE	-	-	< 1.0	-	
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	< 1.0	-	

Analytical Report Number: 14-61604

Project / Site name: Aleris

Lab Sample Number				383288	383289	383290	383291	
Sample Reference				BH2	BH3	BH3	BH3	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				4.00	1.00	5.00	7.00	
Date Sampled				15/10/2014	16/10/2014	16/10/2014	16/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-	
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-	
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-	
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Naphthalene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-	
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-	
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	< 0.1	-	
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
Acenaphthylene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Acenaphthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Fluorene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Azobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Phenanthrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Anthracene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Carbazole	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Anthraquinone	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Fluoranthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Pyrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Chrysene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	

Analytical Report Number : 14-61604

Project / Site name: Aleris

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
383283	BH1	None Supplied	2.00	Light grey sandy topsoil with gravel.
383284	BH1	None Supplied	5.00	Grey topsoil and clay with gravel.
383285	BH1	None Supplied	7.00	Grey topsoil and clay with gravel.
383286	BH2	None Supplied	1.00	Grey topsoil and clay with gravel and vegetation.
383287	BH2	None Supplied	2.00	Grey topsoil and clay with gravel and vegetation.
383288	BH2	None Supplied	4.00	Brown clay and sand with vegetation.
383289	BH3	None Supplied	1.00	Brown topsoil and clay with vegetation.
383290	BH3	None Supplied	5.00	Light brown clay and sand with gravel.
383291	BH3	None Supplied	7.00	Light brown clay and sand with gravel.

Analytical Report Number : 14-61604

Project / Site name: Aleris

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES. Results reported corrected for extraction ratio (soil equivalent) as g/l and mg/kg; and upon the 2:1	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Annex D: Modified Wilson and Card Classification

Table D.1: Modified Wilson and Card Classification (adapted from CIRIA Report 665)			
Characteristic Situation (CIRIA Report 149)	**Risk Classification**	**Gas Screening Value (CH_4 or CO_2 (l/hr))**	**Additional Factors**
1	Very low risk	<0.07	Typical methane </=1% v/v and/or carbon dioxide </=5% v/v. Otherwise increase to Situation 2.
2	Low risk	<0.7	Borehole air flow rate not to exceed 70l/hr. Otherwise consider increase to Situation 3.
3	Moderate risk	<3.5	-
4	Moderate to high risk	<15	Quantitative risk assessment required to evaluate scope of protective measures
5	High risk	<70	-
6	Very high risk	<70	-
Note: Gas Screening Value (GSV): litres of gas/hour is calculated by multiplying the gas concentration (%) by the measured borehole flow rate (l/hr).			

Table D.2: Typical Scope of Protective Measures (adapted from CIRIA Report 665)		
Characteristic Situation (CIRIA Report 149)	**Office/Commercial/Industrial Development**	
	Number of Levels of Protection	**Typical Scope of Protection Measures**
1	None	No special precautions.
2	1 to 2	Reinforced concrete cast in situ floor slab (suspended, non-suspended or raft) with at least 1200g DPM9. Beam and block or pre-cast concrete and minimum 2000g DPM/reinforced gas membrane. Possibly underfloor venting or pressurisation in combination with a) and b) depending on use. All joints and penetrations sealed.
3	1 to 2	All types of floor slab as above. All joints and penetrations sealed. Minimum 200g/reinforced gas proof membrane and possibly ventilated underfloor sub-space or positively pressurised underfloor subspace
4	2 to 3	All types of floor slab as above. All joints and penetrations sealed. Proprietary gas resistance membrane and passively ventilated or positively pressurised underfloor sub-space with monitoring facility
5	3 to 4	Reinforced concrete cast in situ floor slab (suspended, non-suspended or raft). All joints and penetrations sealed. Proprietary gas resistant membrane and passively ventilated or positively pressurised underfloor sub-space with monitoring facility. In ground venting wells or barriers
6	4 to 5	Reinforced concrete cast in situ floor slab (suspended, non-suspended or raft). All joints and penetrations sealed. Proprietary gas resistant membrane and actively ventilated or positively pressurised underfloor sub-space with monitoring facility, with monitoring. In ground venting wells or reduction of gas regime
Note: Typical scope of protective measures may be rationalised for specific developments on the basis of quantitative risk assessments.		

Annex F – Site Investigation Data (relevant for the new area)

ENVIRON

22nd November 2011

Mr Steve Butler
Sol Environment Ltd
3rd Floor
23 Christchurch Road
Malvern
Worcestershire
WR14 3BH

Our Ref: AG/jc/LUK14-17316_ Former EEP Facility Data_01

Dear Steve

Investigation Data, former Alcoa EEP facility, Waunarlwydd, Swansea

On behalf of Alcoa Manufacturing (GB) Limited, please find attached available site investigation data, including borehole logs and analytical data from the former Alcoa Extrusions and End products (EEP) facility at Waunarlwydd, Swansea. As requested in your e-mail correspondence on the 14th November 2011, we have provided data for locations within your client's site boundary, for contaminants including total petroleum hydrocarbons, BTEX compounds, pH, PAH's, phenols and phthalates.

Yours sincerely

Andy Goddard
Senior Manager

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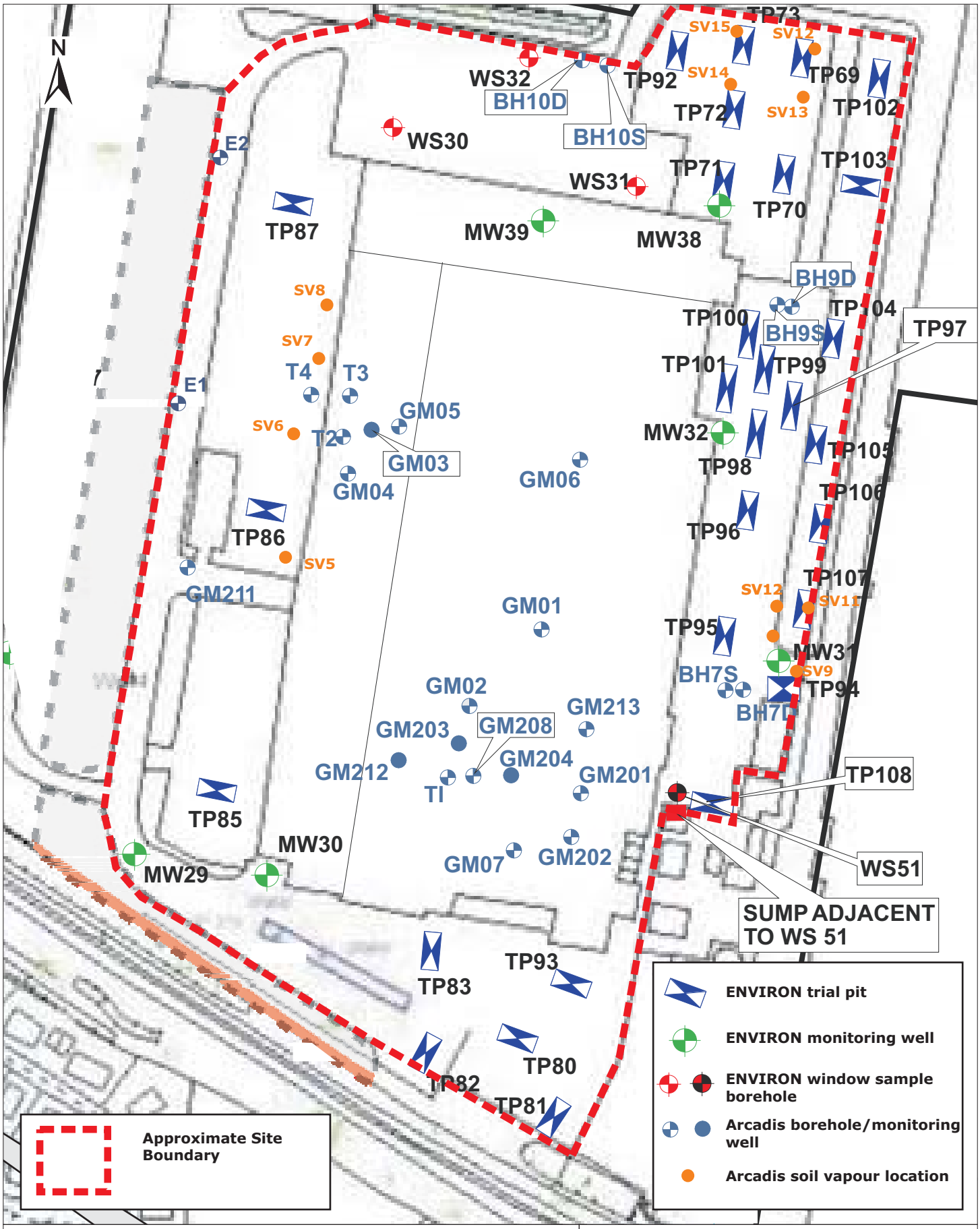


Scale NTS

Title	Figure 1: Investigation Locations, Former Alcoa EEP Facility
Site	Alcoa Manufacturing (GB) Ltd Waunarlwydd Swansea

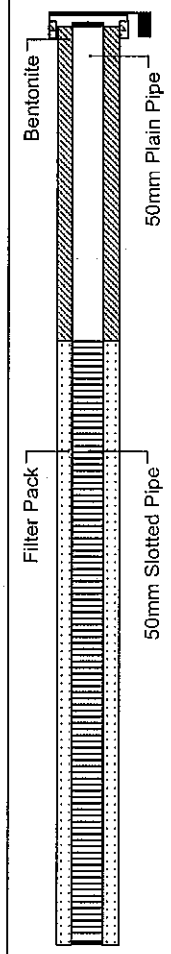
Client	Alcoa Manufacturing (GB) Ltd		
Project No.	UK14-17316	Issue	1
Date	November 2011	Drawn by	JC

ENVIRON

Project No: 64C11647	***Borehole: MW38***
Client: Alcoa	***Date:*** 01/05/07
Location: Waunarlwydd	***Plant Used:*** Beretta Rotary Rig
Datum:	***Logged by:*** ES

SUBSURFACE PROFILE

Depth (m bgl)	Symbol	Description	Elevation (m bgl)	Sample Depth (m bgl)	Groundwater Data	Well Installation
0.0		Ground Surface	0.0			
		MADE GROUND Reworked from trial pit - please refer to TP71 log for details.				
1.0						
2.0						
3.0						
4.0			-4.5	4.0	3.98m bgl RWL	
		BOULDER CLAY Dark brown, damp, firm CLAY with occasional small pebbles. Slight hydrocarbon odour noted, fading with depth.				
5.0				5.0		
6.0			-6.5	6.0		
		WEATHERED COAL MEASURES Grey/brown firm CLAY with frequent fragments weathered mudstone.	-7.0	6.5		
7.0		**WEATHERED COAL MEASURES** Light grey, wet, soft CLAY with frequent very small fragments of mudstone.	-8.0	7.0		
8.0		**COAL MEASURES** Grey, moist, large, angular MUDSTONE fragments in a soft clay matrix.	-8.5	8.0		
9.0		8.5 m bgl				
10.0						



Remarks: Borehole terminated at 8.5m bgl.
Rest water level of 3.98m bgl on 08/05/07.

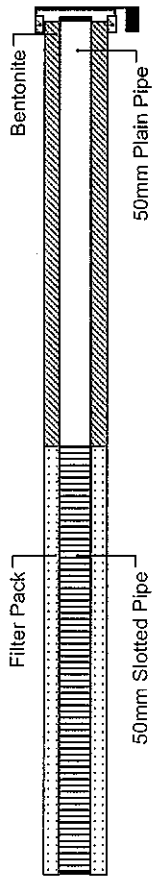
Checked by: JC

Sheet: 1 of 1

Project No: 64C11647	***Borehole: MW39***
Client: Alcoa	***Date:*** 02/05/07
Location: Waunarlwydd,Swansea	***Plant Used:*** Beretta Rotary Rig
Datum:	***Logged by:*** ES

SUBSURFACE PROFILE

Depth (m bgl)	Symbol	Description	Elevation (m bgl)	Sample Depth (m bgl)	Groundwater Data	Well Installation
0.0		Ground Surface	0.0			
		MADE GROUND Concrete.	-0.8			
1.0		**MADE GROUND (SWANSEA VALLEY FILL)** Black, ashy, coarse sand with frequent red brick fragments and pockets of soft, sandy, grey, friable clay.		1.0		
2.0				2.0	3.49m bgl RWL	
3.0			-3.5	3.0		
		SUPERFICIAL CLAY Grey/brown, soft moist CLAY with occasional small gravels.				
4.0				4.0		
5.0			-5.0	5.0		
		BOULDER CLAY Dark brown, soft sandy CLAY with occasional gravels. Becoming more sandy with depth				
6.0				6.0	6.5m bgl Water Strike	
7.0			-7.0	7.0		
		COAL MEASURES Recovered as wet, angular SANDSTONE fragments in a grey soft clay matrix.	-7.9			
8.0		7.9 m bgl		7.9		
9.0						
10.0						



Remarks: Borehole terminated at 7.9m bgl.
Groudwater encountered at 6.5m bgl during drilling.
Rest water level of 3.49m bgl on 09/05/07.

Checked by: JC

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Trial Pit: TP69

Date: 30/04/07

Plant Used: Case CX210 Excavator

Logged by: JC

ENVIRON

TRIAL PIT LOG

Depth (m)	Symbol	Description	Unit Depth	Sample
		Ground Surface		
0.00		**MADE GROUND** Grass over firm brown sandy SILT/CLAY.		
		MADE GROUND Firm grey brown mottled blue grey sandy gravelly dry CLAY. Gravels comprise fine to coarse weak mudstone and occasional brick.		0.5 - 1.0 D
		MADE GROUND (SWANSEA VALLEY FILL) Dry black friable sandy gravelly SILT. Fill comprises frequent ash, bricks, slag cobbles, concrete fragments, metal wire and occasional ceramic fragments.		
1.00		**MADE GROUND** Frm moist grey green slightly sandy slightly gravelly CLAY. Gravels comprise fine to coarse sub-angular mudstone and sub-angular to sub-rounded sandstone. Becomes gravelly below 2.0m bgl.		1.3 D
2.00				
3.00				
		FORMER TOPSOIL HORIZON Firm dark brown SILT with rootlets.		3.5 - 3.7 D
		SUPERFICIAL CLAY Firm grey mottled orange brown slightly sandy CLAY.		
		3.7 m bgl		
4.00				
5.00				

Remarks: TP69 located on Extrusions grassed area.
TP69 terminated at 3.7m bgl.
No groundwater encountered.

Checked by:

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Trial Pit: TP70

Date: 30/04/07

Plant Used: Case CX210 Excavator

Logged by: JC

ENVIRON

TRIAL PIT LOG

Depth (m)	Symbol	Description	Unit Depth	Sample
0.00		Ground Surface		
		MADE GROUND gRASS OVER FIRM SLIGHTLY SANDY silt/clay.		
		MADE GROUND Firm pale grey slightly sandy gravelly CLAY.		
		MADE GROUND (SWANSEA VALLEY FILL) Black sandy gravelly ashy SILT with frequent fragments of clinker, concrete and occasional bricks.		
1.00				1.0 D
		MADE GROUND Firm to stiff grey with occasional olive mottles slightly sandy gravelly CLAY. Gravels comprise fine to coarse sandstone and occasional cobbles. Occasional brick fragments, wood, fabric, concrete, coal and clinker.		
2.00				
3.00				3.0 D
		3.3 m bgl		
4.00				
5.00				

Remarks: TP70 terminated at 3.3m bgl.
Rapid water ingress at 3.3m bgl with an oily sheen.

Checked by:

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Trial Pit: TP71

Date: 30/04/07

Plant Used: Case CX210 Excavator

Logged by: JC

ENVIRON

TRIAL PIT LOG

Depth (m)	Symbol	Description	Unit Depth	Sample
0.00		Ground Surface		
		MADE GROUND Grass over firm brown sandy SILT/CLAY.		0.2 - 0.4 D
		MADE GROUND Pale firm grey slightly sandy gravelly CLAY.		
		MADE GROUND (SWANSEA VALLEY FILL) Dark browk to black sandy gravelly ashy SILT with occasional bricks, concrete, small metal fragments and limestone chippings. Becomes brown below 0.7m bgl.		0.6 D
1.00		**MADE GROUND** Firm brown sandy gravelly CLAY with occasional bricks and sandstone cobbles. Organic lenses present with depth.		1.0 D
2.00				
3.00				
		FORMER TOPSOIL HORIZON Dark brown firm slightly sandy SILT.		3.4 - 3.6 D
		SUPERFICIAL CLAY Grey mottled olive slightly sandy SILT/CLAY with occasioal sandstone gravels. Moderate hydrocarbon odour present and occasional moist lenses.		
4.00		Occasional sandstone cobbles present from 4.4m bgl.		4.0 D
		4.5 m bgl		
5.00				

Remarks: TP71 terminated at 4.5m bgl.
No groundwater encountered.
Trial pit located in vicinity of former tank farm. MW38 psotioned on TP71 to investgate deep hydrocarbon contamination.

Checked by:

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Trial Pit: TP72

Date: 30/04/07

Plant Used: Case CX210 Excavator

Logged by: JC

ENVIRON

TRIAL PIT LOG

Depth (m)	Symbol	Description	Unit Depth	Sample
0.00		Ground Surface		
		MADE GROUND Firm brown friable SILT/CLAY.		
		MADE GROUND (SWANSEA VALLEY FILL) Dark brown to black sandy gravelly ash SILT.		0.5 D
		0.6 m bgl		
1.00				
2.00				
3.00				
4.00				
5.00				

Remarks: TP72 terminated at 0.6m bgl due to a concrete obstruction.
No groundwater encountered.

Checked by:

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Trial Pit: TP72A

Date: 02/05/07

Plant Used: Case CX210 Excavator

Logged by: JC

ENVIRON

TRIAL PIT LOG

Depth (m)	Symbol	Description	Unit Depth	Sample
0.00		Ground Surface		
		MADE GROUND fFirm brown friable sandy SILT/CLAY.		
		MADE GROUND Firm dry slightly sandy gravelly CLAY.		
		MADE GROUND (SWANSEA VALLEY FILL) Black silty ash with sandstone gravels and cobbles. Frequent brick, clinker, concrete and occasional metal and fabric.		0.5 D
1.00		1.1 m bgl		
2.00				
3.00				
4.00				
5.00				

Remarks: TP72A terminated at 1.1m bgl due to the presence of aceramic water drainage pipe containing water with an oily sheen.

Checked by:

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Trial Pit: TP73

Date: 30/04/07

Plant Used: Case CX210 Excavator

Logged by: JC

ENVIRON

TRIAL PIT LOG

Depth (m)	Symbol	Description	Unit Depth	Sample
0.00		Ground Surface		
		MADE GROUND Grass over friable sandy SILT/CLAY.		
		MADE GROUND Pale firm grey slightly sandy gravelly CLAY over dark brown to black sandy gravelly ashy SILT.		
		0.4 m bgl		
1.00				
2.00				
3.00				
4.00				
5.00				

Remarks: TP73 terminated at 0.4m bgl due to presence of electrical cable and alarm cable in duct.

Checked by:

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Trial Pit: TP92

Date: 02/05/07

Plant Used: Case CX210 Excavator

Logged by: JC

ENVIRON

TRIAL PIT LOG

Depth (m)	Symbol	Description	Unit Depth	Sample
0.00		Ground Surface		
		TOPSOIL Grass over firm friable sandy SILT/CLAY.		
		MADE GROUND Stiff dry grey sandy gravelly CLAY.		
		MADE GROUND (SWANSEA VALLEY FILL) Silty ash with frequent brick, carbon rods, electric cables, plastic, 1 No. rotten metal barrel, wood, paint can and glass bottles.		0.5 - 1.0 D
1.00		**MADE GROUND** Orange brown mottled brown and grey sandy gravelly CLAY with occasional bricks, bottles, ceramics and gravel to cobble sized slag.		
2.00		**BOULDER CLAY** Firm grey mottled olive slightly sandy CLAY with occasional rounded sandstone gravels.		2.5 D
		2.5 m bgl		
3.00				
4.00				
5.00				

Remarks: TP92 was terminated at 2.5m bgl.
No groundwater encountered.

Checked by:

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Trial Pit: TP104

Date: 03/05/07

Plant Used: Case CX210 Excavator

Logged by: JC

ENVIRON

TRIAL PIT LOG

Depth (m)	Symbol	Description	Unit Depth	Sample
		Ground Surface		
0.00		**MADE GROUND** Grass over brown silty sandy gravelly SILT/CLAY.		
		MADE GROUND Firm friable brown sandy gravelly SILT with frequent sandstone cobbles, fragments of brick and concrete and occasional fragments of coal.		0.5 - 1.0 D
1.00				
		MADE GROUND Stiff grey brown CLAY with frequent sandstone cobbles, fragments of brick and concrete and occasional fragments of coal.		
2.00				1.9 D
3.00				
		FORMER TOPSOIL Firm brown slightly sandy SILT/CLAY with a natural organic odour.		
		SUPERFICIAL CLAY Olive mottled grey slightly sandy CLAY.		
		3.4 m bgl		
4.00				
5.00				

Remarks: TP104 was terminated at 3.4m bgl.
Growundwater seepage from base of trial pit at 1.9m bgl.

Checked by:

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Datum:

Window Sample: WS30

Date: 03/05/07

Plant Used: Terrier

Logged by: JE

Window Sample Diameter: 50mm

ENVIRON

WINDOW SAMPLE LOG

Depth (m)	Symbol	Description	Unit Depth	Groundwater Levels	Well Installation
0.0		Ground Surface	0.0		
		MADE GROUND Concrete.	-0.2		
		MADE GROUND (SWANSEA VALLEY FILL) Poor recovery. Black ash with cobbles of concrete, brick fragments and mudstone fragments.	-0.9		
1.0		**MADE GROUND** Clay with brick fragments.	-1.0		Arisings
		POSSIBLE MADE GROUND Poor recovery. Gren brown clay, sandstone cobbles and mudstone fragments. Possible igneous cobbles recovered between 2.0-3.0m bgl.			
2.0					
3.0			-3.0		
		3 m bgl			
4.0					
5.0					

Datum Details:

Checked by:

Remarks: Window sample terminated at 3.0m bgl.
No groundwater encountered.

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Datum:

Window Sample: WS31

Date: 03/05/07

Plant Used: Terrier

Logged by: JE

Window Sample Diameter: 50mm

ENVIRON

WINDOW SAMPLE LOG

Depth (m)	Symbol	Description	Unit Depth	Groundwater Levels	Well Installation
0.0		Ground Surface	0.0		
		MADE GROUND Concrete.	-0.2		Arisings
		MADE GROUND (SWANSEA VALLEY FILL) Thin sub-base of gravel and clinker, then a further concrete sub-base.	-0.7		
		0.7 m bgl			
1.0					
2.0					
3.0					
4.0					
5.0					

Datum Details:

Checked by:

Remarks: Window sample terminated at 0.7m bgl. No progress.
No groundwater encountered.

Sheet: 1 of 1

Project No: 64C11647

Client: Alcoa

Site Location: Waunarlwydd

Datum:

Window Sample: WS32

Date: 03/05/07

Plant Used: Terrier

Logged by: JE

Window Sample Diameter: 50mm

ENVIRON

WINDOW SAMPLE LOG

Depth (m)	Symbol	Description	Unit Depth	Groundwater Levels	Well Installation
0.0		Ground Surface	0.0		
		MADE GROUND Concrete.	-0.2		Arisings
		0.2 m bgl			
1.0					
2.0					
3.0					
4.0					
5.0					

Datum Details:

Checked by:

Remarks: Window sample terminated beneath the concrete.
No groundwater encountered.

Sheet: 1 of 1

ALCOA GLOBAL BUSINESS SHARED SERVICES
ALCOA EUROPE EEP, SWANSEA

Table 1 - Borehole and Monitoring Well Details

Location	Boring Complete	Company	Elevation Level	Boring Depth	Water Strike	Monitoring Well Installed?	Depth of Well	Top of Screen	Base of Screen
			m AOD	m bgl	m bgl		m bgl	m bgl	m bgl
[redacted]									
BH7S	July-93	AGMI	20.07	1.4	1.4	Yes	1.37	0.3	1.7
BH7D	July-93	AGMI	20.07	7.8	2.7	Yes	7.74	4.5	10.0
[redacted]									
BH9S	July-93	AGMI	20.02	0.9	0.2	Yes	0.81	1.0	3.5
BH9D	July-93	AGMI	20.02	6.1	2.8	Yes	6.10	4.0	6.2
BH10S	July-93	AGMI	18.58	4.1	2.8	Yes	4.10	2.7	4.2
BH10D	July-93	AGMI	18.58	8.0	2.8	Yes	7.94	6.4	8.0
[redacted]									
T4	Unknown		20.03	Unknown		Yes	6.53	Unknown	
[redacted]									
SMW51S	February-04	AGMI	19.42	4.5	0.5	Yes	4.39	0.5	4.5
SMW51SA	February-04	AGMI		0.5	-	No	-	-	-
SMW51SB	February-04	AGMI		1.5	-	No	-	-	-
[redacted]									
[redacted]									
SB1	February-04	AGMI		1.0	-	No	-	-	-
SB2	February-04	AGMI		1.0	-	No	-	-	-
SB3	February-04	AGMI		1.5	-	No	-	-	-
SB4	February-04	AGMI		1.5	-	No	-	-	-
SB5	February-04	AGMI		4.5	-	No	-	-	-

Notes:

AGMI Arcadis Geraghty and Miller International
bgl Below Ground Level
AOD Above Ordnance Datum

ALCOA GLOBAL BUSINESS SHARED SERVICES
ALCOA EUROPE EEP, SWANSEA

Table 2 - Alcoa Groundwater Data (ug/l)

Sample Identity	DIV	BH7			BH9			BH10			T4		
		26/09/02	04/06/03	18/11/2003	26/09/02	04/06/03	18/11/2003	########	########	########	26/09/02	04/06/03	18/11/2003
Arsenic	60	1			<1			1			<1		
Boron		0.5			400			500			500		
Cadmium	6	<1			4			3			4		
Chromium	30	<5			**119**			**107**			20		
Copper	75	<20			**360**			**240**			**186**		
Lead	75	20			**670**			**370**			**290**		
Mercury	0.3	<0.1			<0.1			<0.1			<0.001		
Nickel	75	10			**75**			**94**			74		
Selenium	160	1			1			1			1		
Zinc	800	50			**1370**			**980**			**1000**		
Toluene	1000					14.2	-						
TPH	600	<2000	<50	<500	<3000	11	<500	<2000	<50	**3020**	<2000	568	178
P-Isopropyltoluene													
pH		8.3	6.3	6.9	7.1	6.2	6.7	6.6	6.1	6	6.8	6.5	

Notes:

- Denotes Concentration Below Method Detection Limit

DIV New Dutch Intervention Value

25 Concentration Exceeds DIV

ALCOA GLOBAL BUSINESS SHARED SERVICES
ALCOA EUROPE EEP, SWANSEA

Table 4 - Soil Vapour Survey Results (ppmV)

Soil Vapour Point	Depth m bgl	PID Reading ppmV	Location
[redacted]			
5	0.47	2.0	West of Llantrisant Press South of monitoring well T4
6	0.64	2.4	West of Llantrisant Press South of monitoring well T4
7	0.59	1.6	West of Llantrisant Press North of monitoring well T4
8	0.66	0.3	West of Llantrisant Press North of monitoring well T4
9	0.84	0.0	East of office complex in flowerbed.
10	0.72	0.0	East of office complex in flowerbed.
11	0.60	0.0	East of office complex in flowerbed.
12	0.74	0.1	East of office complex in flowerbed.
13	0.74	0.0	North of main plant in area of TCE chemical storage.
14	0.83	0.0	North of main plant in area of TCE chemical storage.
15	0.60	0.0	North of main plant in area of TCE chemical storage.
16	0.57	0.0	North of main plant in area of TCE chemical storage.

Notes
ppmV Results are in parts per million total ionisable organic vapours by volume
bgl Below Ground Level

ALCOA GLOBAL BUSINESS SHARED SERVICES
ALCOA EUROPE EEP SWANSEA

Table 5 - Ground Level and Groundwater Elevations

Monitoring Well	Elevation	February 1994		February 2004	
		DTW	GE	DTW	GE
	m AOD	m bgl	m AOD	m bgl	m AOD
[redacted]					
BH7S	20.07	0.12	19.95	0.19	19.89
BH7D	20.07	2.60	17.47	2.73	17.34
[redacted]					
BH9S	20.02	2.63	17.39	0.18	19.84
BH9D	20.02	2.73	17.29	2.78	17.24
BH10S	18.58	2.69	15.89	2.76	15.82
BH10D	18.58	3.88	14.70	2.76	15.82
[redacted]					
T4	20.03	-	-	4.82	15.21
[redacted]					
SMW51S	19.42	-	-	0.48	18.94
[redacted]					

Notes

DTW	Depth To Water
GE	Groundwater Elevation
bgl	Below Ground Level
AOD	Above Ordnance Datum

ALCOA GLOBAL BUSINESS SHARED SERVICES
ALCOA EUROPE EEP, SWANSEA

Table 7 - Schedule of Laboratory Analyses (Water)

Location	Chemical Analysis					
	VOCs	Speciated TPH	Free Cyanide	Total Chromium	Hex Chromium	Metals
GROUNDWATER						
[redacted]						
BH7S	✓	✓	✓	✓	✓	
BH7D	✓	✓	✓	✓	✓	
[redacted]						
BH9S	✓	✓	✓	✓	✓	
BH9D	✓	✓	✓	✓	✓	
BH10S	✓	✓	✓	✓	✓	
BH10D	✓	✓	✓	✓	✓	
[redacted]						
T4	✓	✓	✓	✓	✓	
[redacted]						
SMW51S	✓	✓	✓	✓	✓	
[redacted]						

ALCOA GLOBAL BUSINESS SHARED SERVICES
ALCOA EUROPE EEP, SWANSEA

Table 11 - Volatile Organic Compounds in Groundwater (ug/l)

Sample Identity	DIV	04-Feb-04							
		BH7S	BH7D	BH9S	BH9D	BH10S	BH10D	T4	SMW51S
1.2.3-Trichlorobenzene		-	-	-	-	-	-	-	-
1.2.3-Trichloropropane		-	-	-	-	-	-	-	-
1.2.4-Trichlorobenzene		-	-	-	-	-	-	-	-
1.2.4-Trimethylbenzene		-	-	-	-	-	-	-	-
1.2-Dibromo-3-chloropropane		-	-	-	-	-	-	-	-
1.2-Dibromoethane		-	-	-	-	-	-	-	-
1.2-Dichlorobenzene		-	-	-	-	-	-	-	-
1.2-Dichloropropane	400	-	-	-	-	-	-	-	-
1.3,5-Trimethylbenzene		-	-	-	-	-	-	-	-
1.3-Dichlorobenzene		-	-	-	-	-	-	-	-
1.3-Dichloropropane		-	-	-	-	-	-	-	-
1.4-Dichlorobenzene		-	-	-	-	-	-	-	-
2.2-Dichloropropane		-	-	-	-	-	-	-	-
2-Chlorotoluene		-	-	-	-	-	-	-	-
4-Chlorotoluene		-	-	-	-	-	-	-	-
4-Isopropyltoluene		-	-	-	-	-	-	-	-
Benzene	30	-	-	-	-	-	-	-	-
Bromobenzene		-	-	-	-	-	-	-	-
Bromochloromethane		-	-	-	-	-	-	-	-
Bromodichloromethane		-	-	-	-	-	-	-	-
Bromoform		-	-	-	-	-	-	-	-
Bromomethane		-	-	-	-	-	-	-	-
Carbon Disulphide		-	-	-	-	-	-	-	-
Carbontetrachloride		-	-	-	-	-	-	-	-
Chlorobenzene	180	-	-	-	-	-	-	-	-
Dibromochloromethane		-	-	-	-	-	-	-	-
Dibromomethane		-	-	-	-	-	-	-	-
Dichlorodifluoromethane	1000	-	-	-	-	-	-	-	-
Ethylbenzene	150	-	-	-	-	-	-	-	-
Hexachlorobutadiene		-	-	-	-	-	-	-	-
Isopropylbenzene		-	-	-	-	-	-	-	-
Methyl Tertiary Butyl Ether		-	-	-	-	-	-	-	-
Naphthalene		-	-	-	-	-	-	-	-
n-Butylbenzene		-	-	-	-	-	-	-	-
o-Xylene		-	-	-	-	-	-	-	-
p/m-Xylene		-	-	-	-	-	-	-	2
Propylbenzene		-	-	-	-	-	-	-	-
sec-Butylbenzene		-	-	-	-	-	-	-	-
Styrene	300	-	-	-	-	-	-	-	-
tert-Butylbenzene		-	-	-	-	-	-	-	-
Toluene	1000	-	-	-	-	-	-	-	-

Notes:

-	Denotes Concentration Below Laboratory Method Detection Limit
DIV	New Dutch Intervention Value
25	Concentration Exceeds DIV

ALCOA GLOBAL BUSINESS SHARED SERVICES
ALCOA EUROPE EEP, SWANSEA

Table 12 - Speciated TPH Concentrations in Groundwater (ug/l)

Sample Identity	Standards		February 2004											
	DIV		BH7S	BH7D		BH9S	BH9D	BH10S	BH10D		T4		SMW51S	
Aliphatics														
C5-C6			-	-		-	-	-	-		-		-	
>C6-C8			-	-		-	-	-	-		-		-	
>C8-C10			-	-		-	-	-	-		-		-	
>C10-C12			-	-		-	-	-	-		-		-	
>C12-C16			-	-		67	-	-	-		-		-	
>C16-C21			-	-		237	-	-	-		-		-	
>C21-C35			-	-		22	-	-	-		-		-	
Total Aliphatics			-	-		326	-	-	-		-		-	
Aromatics														
C6-C7			-	-		-	-	-	-		-		-	
>C7-C8			-	-		-	-	-	-		-		-	
>C8-C10			-	-		-	-	-	-		-		-	
>C10-C12			-	-		-	-	-	-		-		-	
>C12-C16			-	-		-	-	-	-		-		-	
>C16-C21			-	-		-	-	-	-		-		-	
>C21-C35			-	-		-	-	-	-		-		-	
Total Aromatics			-	-		-	-	-	-		-		-	
PRO			-	-		-	-	-	-		-		-	
DRO			-	-		326	-	-	-		-		-	
TPH	600		-	-		326	-	-	-		-		-	

Notes:

TPH	TPH is the sum of Aliphatics and Aromatics (C5-C35)
GSL	Generic Screening Level based on RBCA
DIV	New Dutch Intervention Value
Sol	Target acceptable risk is not exceeded at the theoretical solubility concentration.
-	Below Method Detection Limit
25	Concentration exceeds DIV
25	Concentration exceeds GSL

ALCOA EEP - WAUNARLWYDD WORKS, SWANSEA

TABLE 1c
SCHEDULE OF LABORATORY ANALYSIS - GROUNDWATER

Location		BH7D	BH10D		T1	T2	T3	T4
Volatile Organic Compounds					✓	✓	✓	
TPHCWG					✓	✓	✓	
pH		✓	✓		✓	✓	✓	✓

ALCOA EEP - WAUNARLWYDD WORKS, SWANSEA

TABLE 6
DISSOLVED METALS IN GROUNDWATER
(ug/L)

Analytical Parameter	T1	T2	T3	T4		BH7D	BH10D		EQS
pH	8.55	8.21	8.38	8.42		8.62	7.88		nd

Notes:

EQS	Based on hardness >250mg/l for related List 2 dangerous substances, EC Dangerous Substances Directive (76/464/EEC). Value taken for freshwater suitabel for Cyprinid coarse fish
25	Value exceeds EQS
nd	No value determined

ALCOA EEP - WAUNARLWYDD WORKS, SWANSEA

TABLE 1

GROUND AND GROUNDWATER ELEVATIONS

Monitoring Well	Ground Elevation	March 2005			
		DTP	DTW	DTB	Groundwater Elevation
	m AOD	m bgl	m bgl	m bgl	m AOD
T1	-	-	3.330	7.320	-
T2	19.626	-	4.678	5.545	14.948
T3	19.433	-	4.91	6.534	14.523
T4	19.858	-	5.218	6.233	14.640
[redacted]					
BH7S	20.070	-	0.01	0.383	20.060
BH7D	20.070	-	2.867	8.042	17.203
[redacted]					
BH9S	20.020	-	0.100	1.092	19.920
BH9D	20.020	-	2.916	6.357	17.104
BH10S	18.580	-	2.996	4.03	15.584
BH10D	18.580	-	2.837	8.01	15.743
[redacted]					
SMW51S	19.420	-	0.806	4.435	18.560
[redacted]					
GM01	20.070	-	4.064	5.905	16.006
GM02	20.081	5.665 [1]	3.206	6.015	16.875
GM03	19.423	-	4.142	5.935	15.281
GM04	19.726	-	4.455	6.894	15.271
GM05	19.423	-	4.273	6.12	15.150
GM06	20.060	-	3.826	6.021	16.234
GM07	20.078	-	3.31	6.074	16.768

Notes:

mAOD	Metres Above Ordnance Datum
nr	Not recorded
-	No product encountered
DTP	Depth to product
DTW	Depth to groundwater
DTB	Depth to base of well
UTL	Unable to locate
[1]	Product present as DNAPL

ALCOA EEP - WAUNARLWYDD WORKS, SWANSEA

TABLE 7
TOTAL PETROLEUM HYDROCARBONS IN GROUNDWATER
(ug/l)

	Monitoring Well	[redacted]	T2	T3	T4	GM01	GM02	GM03	GM04	GM04 DUP	GM05	GM06	GM07
TOTAL PETROLEUM HYDROCARBONS	**Aliphatics**												
	C5-C6		**9,682**	-	-	-	-	-	**60**	-	-	-	-
	C6-C8		**1,068**	-	-	-	-	-	**52**	**99**	-	-	-
	C8-C10		-	-	-	-	-	-	-	-	-	-	-
	C10-C12		-	-	-	-	-	-	-	-	-	-	-
	C12-C16		-	-	-	-	-	-	-	-	-	-	-
	C16-C35		14	11	-	-	-	15	-	-	11	-	-
	Aromatics												
	C6-C7		-	-	-	-	-	-	-	-	-	-	-
	C7-C8		-	-	-	-	-	-	-	-	16	-	-
	C8-C10		-	-	-	-	-	-	-	-	-	-	-
	C10-C12		-	-	-	-	-	-	-	-	-	-	-
	C12-C16		-	-	-	-	-	-	-	-	30	-	-
	C16-C21		-	-	-	-	-	-	-	-	-	-	-
	C21-C35		-	-	-	-	2,439	-	-	-	-	-	-
	PRO		10,750	-	-	-	-	-	112	99	16	-	-
	EPH		14	11	-	-	2,439	15	-	-	41	-	-
	TPH		10,764	11	-	-	2,439	15	112	99	57	-	-
	MTBE		-	-	-	-	-	-	-	-	-	-	-
	Benzene		-	-	-	-	-	-	-	-	-	-	-
	Toluene		-	-	-	-	-	-	-	-	16	-	-
	Ethylbenzene		-	-	-	-	-	-	-	-	-	-	-
	Total Xylenes		-	-	-	-	-	-	-	-	-	-	-

Notes:

All concentrations are in ug/l

256	Exceedance of Generic Screening Value
256	Exceedance of Generic SSTL
PRO	Petroleum Range Organics (C_4-C_{12})
EPH	Extractable Petroleum Hydrocarbons (C_{12}-C_{35})
TPH	Total Petroleum Hydrocarbons (C_4-C_{35})
nd	Value Not Defined
-	Not determined

Jo Cutler
Environ UK Ltd
Hartham Park
Corsham
Wiltshire
SN13 0RR

15 September 2006

TEST REPORT

Our Report Number: 06-20296

Your Order Reference: Instructions of 31/08/2006

9 water samples submitted for analysis on 31/08/2006

Project Name: Alcoa Swansea

Project Code: 64-C10817

Laboratory analysis started on 31/08/2006
All laboratory analysis completed by 15 September 2006

Rhys Ashton
Principal Chemist
ALCONTROL TECHNICHEM

Sharon Googh
Project Co-Ordinator
ALCONTROL TECHNICHEM

ALcontrol Technichem
Table Of Results

Job Number : 06-20296
Matrix : Water
Project Code: 64-C10817

Project Name: Alcoa Swansea
Client : Environ UK Ltd

Sample Reference	GM07	E2	T4	T1	GM213	Method No	Units	LOD
Sample Depth (m)	-	-	-	-	-			
Date Sampled	30/08/06	30/08/06	30/08/06	30/08/06	30/08/06			
Date Scheduled	31/08/06	31/08/06	31/08/06	31/08/06	31/08/06			
Laboratory Reference No	169618	169619	169620	169621	169622			
Analysis								
Arsenic (Dissolved)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	080W[I]	mg/l	0.005
Cadmium (Dissolved)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	080W[I]	mg/l	0.001
Chromium (Dissolved)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	080W[I]	mg/l	0.005
Chromium (Hexavalent)	< 0.01	< 0.01	< 0.01	-	-	007W[I]	mg/l	0.01
Copper (Dissolved)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	080W[I]	mg/l	0.005
Lead (Dissolved)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	080W[I]	mg/l	0.005
Mercury (Dissolved)	0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	080W[I]	mg/l	0.00005
Nickel (Dissolved)	0.026	0.006	< 0.005	0.024	0.008	080W[I]	mg/l	0.005
Selenium (Dissolved)	< 0.005	< 0.005	< 0.005	< 0.005	0.011	080W[I]	mg/l	0.005
Zinc (Dissolved)	0.12	< 0.005	0.015	0.011	0.008	080W[I]	mg/l	0.005
Ammoniacal Nitrogen as N	0.98	0.69	2.4	< 0.05	2.6	057W[I]	mg/l	0.05
Ammoniacal Nitrogen as NH4	1.3	0.89	3.1	0.06	3.4	057W[I]	mg/l	0.05
Total Cyanide	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	061W[I]	mg/l	0.03
pH	6.6	7.8	7.7	6.7	7.8	084W[I]	pH Units	
Orthophosphate as P	-	0.11	-	-	-	087W[I]	mg/l	0.05
Sulphate as SO4	41	210	< 10	17	39	086W[I]	mg/l	10
* * EPH SUITE * *								
EPH (C10-C40)	0.01	0.08	0.02	4.9	0.05	072W[I]	mg/l	0.01

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.
U/S denotes sample unsuitable for analysis.

ALcontrol Technichem
Table Of Results

Job Number : 06-20296
Matrix : Water
Project Code: 64-C10817

Project Name: Alcoa Swansea
Client : Environ UK Ltd

Sample Reference	GM202	BH95	[redacted]		Method No	Units	LOD
Sample Depth (m)	-	-					
Date Sampled	30/08/06	30/08/06					
Date Scheduled	31/08/06	31/08/06					
Laboratory Reference No	169623	169624					
Analysis							
Arsenic (Dissolved)	U/S	< 0.005			080W[I]	mg/l	0.005
Cadmium (Dissolved)	U/S	< 0.001			080W[I]	mg/l	0.001
Chromium (Dissolved)	U/S	< 0.005			080W[I]	mg/l	0.005
Chromium (Hexavalent)	-	< 0.01			007W[I]	mg/l	0.01
Copper (Dissolved)	U/S	< 0.005			080W[I]	mg/l	0.005
Lead (Dissolved)	U/S	< 0.005			080W[I]	mg/l	0.005
Mercury (Dissolved)	U/S	< 0.00005			080W[I]	mg/l	0.00005
Nickel (Dissolved)	U/S	0.016			080W[I]	mg/l	0.005
Selenium (Dissolved)	U/S	< 0.005			080W[I]	mg/l	0.005
Zinc (Dissolved)	U/S	0.031			080W[I]	mg/l	0.005
Ammoniacal Nitrogen as N	U/S	0.09			057W[I]	mg/l	0.05
Ammoniacal Nitrogen as NH4	U/S	0.12			057W[I]	mg/l	0.05
Total Cyanide	0.03	< 0.03			061W[I]	mg/l	0.03
pH	10.5	7.1			084W[I]	pH Units	
Orthophosphate as P	19	< 0.05			087W[I]	mg/l	0.05
Sulphate as SO4	140	19			086W[I]	mg/l	10
* * EPH SUITE * *							
EPH (C10-C40)	U/S	0.01			072W[I]	mg/l	0.01
[redacted]							

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.
U/S denotes sample unsuitable for analysis.

ALcontrol Technichem
Table Of Results

Job Number : 06-20296
Matrix : Water
Project Code: 64-C10817

Project Name: Alcoa Swansea
Client : Environ UK Ltd

Sample Reference	GM07	E2	T4	T1	GM213	Method No	Units	LOD
Sample Depth (m)	-	-	-	-	-			
Date Sampled	30/08/06	30/08/06	30/08/06	30/08/06	30/08/06			
Date Scheduled	31/08/06	31/08/06	31/08/06	31/08/06	31/08/06			
Laboratory Reference No	169618	169619	169620	169621	169622			
Analysis								
* * SVOC SUITE * *								
Naphthalene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2-Chloronaphthalene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Acenaphthylene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Acenaphthene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Fluorene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Phenanthrene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Anthracene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Fluoranthene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Pyrene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Benz(a)anthracene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Chrysene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Benzo(b)fluoranthene	< 25	< 25	< 25	< 25	< 25	053W[I]	ug/l	25
Benzo(k)fluoranthene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Benzo(a)pyrene	< 25	< 25	< 25	< 25	< 25	053W[I]	ug/l	25
Dibenzo(a,h)anthracene	< 40	< 40	< 40	< 40	< 40	053W[I]	ug/l	40
Indeno(1,2,3-cd)pyrene	< 40	< 40	< 40	< 40	< 40	053W[I]	ug/l	40
Benzo(g,h,i)perylene	< 40	< 40	< 40	< 40	< 40	053W[I]	ug/l	40
Phenol	< 20	< 20	< 20	140	< 20	053W[I]	ug/l	20
2-Chlorophenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2-Methylphenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
4-Methylphenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2-Nitrophenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,4-Dimethylphenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,4-Dichlorophenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,6-Dichlorophenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
4-Chloro-3-methyl phenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,4,6-Trichlorophenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,4,5-Trichlorophenol	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
4-Nitrophenol	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 06-20296
Matrix : Water
Project Code: 64-C10817

Project Name: Alcoa Swansea
Client : Environ UK Ltd

Sample Reference	GM07	E2	T4	T1	GM213	Method No	Units	LOD
Sample Depth (m)	-	-	-	-	-			
Date Sampled	30/08/06	30/08/06	30/08/06	30/08/06	30/08/06			
Date Scheduled	31/08/06	31/08/06	31/08/06	31/08/06	31/08/06			
Laboratory Reference No	169618	169619	169620	169621	169622			
Analysis								
* * SVOC SUITE Cont.. * *								
2,3,4,6-Tetrachlorophenol	< 30	< 30	< 30	< 30	< 30	053W	ug/l	30
Pentachlorophenol	< 60	< 60	< 60	< 60	< 60	053W	ug/l	60
Dimethyl Phthalate	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Diethyl Phthalate	< 30	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
Di-n-butyl phthalate	< 30	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
Butyl benzyl phthalate	< 60	< 60	< 60	< 60	< 60	053W[I]	ug/l	60
Bis(2-chloroethyl)ether	< 15	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
Bis(2-chloroisopropyl)ether	< 10	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
4-Chlorophenyl phenyl ether	< 15	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
Bromo phenyl phenyl ether	< 30	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
1,3-Dichlorobenzene	< 15	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
1,2-Dichlorobenzene	< 10	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
1,4-Dichlorobenzene	< 10	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
Nitrobenzene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
1,2,4-Trichlorobenzene	< 10	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
2,6-Dinitrotoluene	< 30	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
2,4-Dinitrotoluene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Azobenzene	< 30	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
Hexachlorobenzene	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Hexachloroethane	< 40	< 40	< 40	< 40	< 40	053W[I]	ug/l	40
n-Nitro-n-propyl-1-propanamine	< 15	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
Isophorone	< 20	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Bis(2-chloroethoxy)methane	< 15	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
Hexachlorobutadiene	< 10	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
Anthraquinone	< 30	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
Aniline	< 40	< 40	< 40	< 40	< 40	053W[I]	ug/l	40
Hexachlorocyclopentadiene	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50
2-Methylnapthalene	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50
2-nitroaniline	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 06-20296
Matrix : Water
Project Code: 64-C10817

Project Name: Alcoa Swansea
Client : Environ UK Ltd

Sample Reference	GM07	E2	T4	T1	GM213	Method No	Units	LOD
Sample Depth (m)	-	-	-	-	-			
Date Sampled	30/08/06	30/08/06	30/08/06	30/08/06	30/08/06			
Date Scheduled	31/08/06	31/08/06	31/08/06	31/08/06	31/08/06			
Laboratory Reference No	169618	169619	169620	169621	169622			
Analysis								
3-nitroaniline	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50
4-Chloroaniline	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50
4-nitroaniline	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50
Bis (2-ethylhexyl) phthalate	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50
Carbazole	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50
Dibenzofuran	< 50	< 50	< 50	< 50	< 50	053W	ug/l	50
Biphenyl	< 40	< 40	< 40	< 40	< 40	053W	ug/l	40

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 06-20296
Matrix : Water
Project Code: 64-C10817

Project Name: Alcoa Swansea
Client : Environ UK Ltd

Sample Reference	GM202	BH95	[redacted]			Method No	Units	LOD
Sample Depth (m)	-	-						
Date Sampled	30/08/06	30/08/06						
Date Scheduled	31/08/06	31/08/06						
Laboratory Reference No	169623	169624						
Analysis								
* * SVOC SUITE * *								
Naphthalene	< 20	< 20				053W[I]	ug/l	20
2-Chloronaphthalene	< 20	< 20				053W[I]	ug/l	20
Acenaphthylene	< 20	< 20				053W[I]	ug/l	20
Acenaphthene	< 20	< 20				053W[I]	ug/l	20
Fluorene	< 20	< 20				053W[I]	ug/l	20
Phenanthrene	< 20	< 20				053W[I]	ug/l	20
Anthracene	< 20	< 20				053W[I]	ug/l	20
Fluoranthene	< 20	< 20				053W[I]	ug/l	20
Pyrene	< 20	< 20				053W[I]	ug/l	20
Benz(a)anthracene	< 20	< 20				053W[I]	ug/l	20
Chrysene	< 20	< 20				053W[I]	ug/l	20
Benzo(b)fluoranthene	< 25	< 25				053W[I]	ug/l	25
Benzo(k)fluoranthene	< 20	< 20				053W[I]	ug/l	20
Benzo(a)pyrene	< 25	< 25				053W[I]	ug/l	25
Dibenzo(a,h)anthracene	< 40	< 40				053W[I]	ug/l	40
Indeno(1,2,3-cd)pyrene	< 40	< 40				053W[I]	ug/l	40
Benzo(g,h,i)perylene	< 40	< 40				053W[I]	ug/l	40
Phenol	1900	< 20				053W[I]	ug/l	20
2-Chlorophenol	< 20	< 20				053W[I]	ug/l	20
2-Methylphenol	< 20	< 20				053W[I]	ug/l	20
4-Methylphenol	120	< 20				053W[I]	ug/l	20
2-Nitrophenol	< 20	< 20				053W[I]	ug/l	20
2,4-Dimethylphenol	330	< 20				053W[I]	ug/l	20
2,4-Dichlorophenol	< 20	< 20				053W[I]	ug/l	20
2,6-Dichlorophenol	< 20	< 20				053W[I]	ug/l	20
4-Chloro-3-methyl phenol	< 20	< 20				053W[I]	ug/l	20
2,4,6-Trichlorophenol	< 20	< 20				053W[I]	ug/l	20
2,4,5-Trichlorophenol	< 20	< 20				053W[I]	ug/l	20
4-Nitrophenol	< 50	< 50				053W	ug/l	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 06-20296
Matrix : Water
Project Code: 64-C10817

Project Name: Alcoa Swansea
Client : Environ UK Ltd

Sample Reference	GM202	BH95	[redacted]			Method No	Units	LOD
Sample Depth (m)	-	-						
Date Sampled	30/08/06	30/08/06						
Date Scheduled	31/08/06	31/08/06						
Laboratory Reference No	169623	169624						
Analysis								
* * SVOC SUITE Cont.. * *								
2,3,4,6-Tetrachlorophenol	< 30	< 30				053W	ug/l	30
Pentachlorophenol	< 60	< 60				053W	ug/l	60
Dimethyl Phthalate	< 20	< 20				053W[I]	ug/l	20
Diethyl Phthalate	< 30	< 30				053W[I]	ug/l	30
Di-n-butyl phthalate	< 30	< 30				053W[I]	ug/l	30
Butyl benzyl phthalate	< 60	< 60				053W[I]	ug/l	60
Bis(2-chloroethyl)ether	< 15	< 15				053W[I]	ug/l	15
Bis(2-chloroisopropyl)ether	< 10	< 10				053W[I]	ug/l	10
4-Chlorophenyl phenyl ether	< 15	< 15				053W[I]	ug/l	15
Bromo phenyl phenyl ether	< 30	< 30				053W[I]	ug/l	30
1,3-Dichlorobenzene	< 15	< 15				053W[I]	ug/l	15
1,2-Dichlorobenzene	< 10	< 10				053W[I]	ug/l	10
1,4-Dichlorobenzene	< 10	< 10				053W[I]	ug/l	10
Nitrobenzene	< 20	< 20				053W[I]	ug/l	20
1,2,4-Trichlorobenzene	< 10	< 10				053W[I]	ug/l	10
2,6-Dinitrotoluene	< 30	< 30				053W[I]	ug/l	30
2,4-Dinitrotoluene	< 20	< 20				053W[I]	ug/l	20
Azobenzene	< 30	< 30				053W[I]	ug/l	30
Hexachlorobenzene	< 20	< 20				053W[I]	ug/l	20
Hexachloroethane	< 40	< 40				053W[I]	ug/l	40
n-Nitro-n-propyl-1-propanamine	< 15	< 15				053W[I]	ug/l	15
Isophorone	< 20	< 20				053W[I]	ug/l	20
Bis(2-chloroethoxy)methane	< 15	< 15				053W[I]	ug/l	15
Hexachlorobutadiene	< 10	< 10				053W[I]	ug/l	10
Anthraquinone	< 30	< 30				053W[I]	ug/l	30
Aniline	< 40	< 40				053W[I]	ug/l	40
Hexachlorocyclopentadiene	< 50	< 50				053W	ug/l	50
2-Methylnapthalene	< 50	< 50				053W	ug/l	50
2-nitroaniline	< 50	< 50				053W	ug/l	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 06-20296
Matrix : Water
Project Code: 64-C10817

Project Name: Alcoa Swansea
Client : Environ UK Ltd

Sample Reference	GM202	BH95				Method No	Units	LOD
Sample Depth (m)	-	-						
Date Sampled	30/08/06	30/08/06						
Date Scheduled	31/08/06	31/08/06						
Laboratory Reference No	169623	169624						
Analysis								
3-nitroaniline	< 50	< 50				053W	ug/l	50
4-Chloroaniline	< 50	< 50				053W	ug/l	50
4-nitroaniline	< 50	< 50				053W	ug/l	50
Bis (2-ethylhexyl) phthalate	< 50	< 50				053W	ug/l	50
Carbazole	< 50	< 50				053W	ug/l	50
Dibenzofuran	< 50	< 50				053W	ug/l	50
Biphenyl	< 40	< 40				053W	ug/l	40

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

Jo Cutler
Environ UK Ltd
Hartham Park
Corsham
Wiltshire
SN13 0RR

10 May 2007

TEST REPORT

Our Report Number: 07-30780

Your Order Reference: Instructions of 25/04/2007

57 soil samples submitted for analysis on 23/04/2007

Project Name: Alcoa

Project Code: 64C11647

Laboratory analysis started on 25/04/2007
All laboratory analysis completed by 10 May 2007

Sharon Googh
Project Co-Ordinator
ALCONTROL TECHNICHEM

Rexona Rahman
Analytical Reporting Manager
ALCONTROL TECHNICHEM

ALcontrol Technichem
Sample Description

Job Number: 07-30780
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soil
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	Sample Description
223472	WS30	0.2-0.7	19/04/07	*Black gravel with sand
223473	WS30	0.9-1.1	19/04/07	Brown sandy clay with gravel
223474	WS31	0.2	19/04/07	*Brown gravel

*Denotes outside the scope of MCERTS accreditation since matrix not included in method validation.

ALcontrol Technichem
Table Of Results

Job Number : 07-30780
Matrix : Soil
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	WS30	WS30	WS31	Method No	Units	LOD
Sample Depth (m)	0.2-0.7	0.9-1.1	0.2			
Date Sampled	19/04/07	19/04/07	19/04/07			
Date Scheduled	23/04/07	23/04/07	23/04/07			
Laboratory Reference No	223472	223473	223474			
Analysis						
Moisture Content (Dry Weight)	9.7	12.5	7.1		%	0.1
Moisture Content (Wet Weight)	8.8	11.1	6.6		%	0.1
Asbestos (Screen)	Absent	-	Absent	001a		
Asbestos Description	-	-	-	001[I]		
Asbestos Type	-	-	-	001[I]		
Arsenic	52	120	46	069S[IM]	mg/kg	3
Barium	1400	210	1900	069S[IM]	mg/kg	10
Beryllium	1.8	1.0	0.7	069S[IM]	mg/kg	0.5
Boron (W/S)	2.5	0.6	3.2	016S[IM]	mg/kg	0.5
Cadmium	6.9	2.5	5.6	069S[IM]	mg/kg	0.5
Chromium	830	37	1200	069S[IM]	mg/kg	10
Copper	340	290	130	069S[IM]	mg/kg	5
Lead	940	1200	440	069S[IM]	mg/kg	10
Mercury	0.9	< 0.6	< 0.6	069S[IM]	mg/kg	0.6
Nickel	61	50	8.2	069S[IM]	mg/kg	4
Selenium	8.0	< 2.5	9.5	069S[IM]	mg/kg	2.5
Sulphate (Total Acid Soluble) as SO4	2900	-	-	025a[IM]	mg/kg	200
Titanium	-	-	-	069S	mg/kg	5
Vanadium	650	53	1200	069S[IM]	mg/kg	3
Zinc	1800	2700	5300	069S[IM]	mg/kg	10
Exchangeable Ammonium as N	-	-	-	018[IM]	mg/kg	40
Total Cyanide	< 1	-	-	061S[IM]	mg/kg	1
W/S Chloride	-	-	-	073S[IM]	mg/kg	10
Organic Carbon	-	-	-	092[IM]	%	0.1
W/S Nitrate as N	-	-	-	073S[I]	mg/kg	2.2
pH	9.5	-	10.5	009S[IM]	pH Units	

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-30780
Matrix : Soil
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	WS30	WS30	WS31	Method No	Units	LOD
Sample Depth (m)	0.2-0.7	0.9-1.1	0.2			
Date Sampled	19/04/07	19/04/07	19/04/07			
Date Scheduled	23/04/07	23/04/07	23/04/07			
Laboratory Reference No	223472	223473	223474			
Analysis						
* * RAPID TPH SUITE * *						
TPH (C8-C40)	-	-	-	065[IM]	mg/kg	25
* * EPH SUITE * *						
EPH (C10-C40)	-	140	88	070S[IM]	mg/kg	5
* * PCB SUITE * *						
PCB Congener 28	-	-	-	039S[IM]	mg/kg	0.002
PCB Congener 52	-	-	-	039S[IM]	mg/kg	0.002
PCB Congener 101	-	-	-	039S[IM]	mg/kg	0.002
PCB Congener 118	-	-	-	039S[IM]	mg/kg	0.002
PCB Congener 138	-	-	-	039S[IM]	mg/kg	0.002
PCB Congener 153	-	-	-	039S[IM]	mg/kg	0.002
PCB Congener 180	-	-	-	039S[IM]	mg/kg	0.002
PCB's (Sum of ICES Congeners)	-	-	-	039S[I]	mg/kg	0.002
* * PHENOLS SUITE * *						
Phenol	-	-	-	020S[IM]	mg/kg	0.1
Total Monohydric Phenols	-	-	-	020S[I]	mg/kg	1

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-30780
Matrix : Soil
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	WS30	Method No	Units	LOD
Sample Depth (m)	0.9-1.1			
Date Sampled	19/04/07			
Date Scheduled	23/04/07			
Laboratory Reference No	223473			
Analysis				
* * PAH SUITE * *				
Naphthalene	< 0.1	022S[IM]	mg/kg	0.1
Acenaphthylene	< 0.1	022S[IM]	mg/kg	0.1
Acenaphthene	< 0.1	022S[IM]	mg/kg	0.1
Fluorene	< 0.1	022S[IM]	mg/kg	0.1
Phenanthrene	< 0.1	022S[IM]	mg/kg	0.1
Anthracene	< 0.1	022S[IM]	mg/kg	0.1
Fluoranthene	< 0.1	022S[IM]	mg/kg	0.1
Pyrene	< 0.1	022S[IM]	mg/kg	0.1
Benzo(a)anthracene	< 0.1	022S[IM]	mg/kg	0.1
Chrysene	< 0.1	022S[IM]	mg/kg	0.1
Benzo(b)fluoranthene	< 0.1	022S[IM]	mg/kg	0.1
Benzo(k)fluoranthene	< 0.1	022S[IM]	mg/kg	0.1
Benzo(a)pyrene	< 0.1	022S[IM]	mg/kg	0.1
Indeno(1,2,3-cd)pyrene	< 0.1	022S[IM]	mg/kg	0.1
Dibenzo(a,h)anthracene	< 0.1	022S[IM]	mg/kg	0.1
Benzo(g,h,i)perylene	< 0.1	022S[IM]	mg/kg	0.1
PAH (Sum of Dutch 10)	ND	022S[I]	mg/kg	0.1
PAH (Sum of EPA 16)	ND	022S[I]	mg/kg	0.1

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-30780
Matrix : Soil
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	WS30			Method No	Units	LOD
Sample Depth (m)	0.2-0.7					
Date Sampled	19/04/07					
Date Scheduled	23/04/07					
Laboratory Reference No	223472					
Analysis						
* * CWG SUITE * *						
Aliphatic C5-C6	0.02			CWGS	mg/kg	0.01
Aliphatic >C6-C8	0.02			CWGS	mg/kg	0.01
Aliphatic >C8-C10	0.01			CWGS	mg/kg	0.01
Aliphatic >C10-C12	0.01			CWGS	mg/kg	0.01
Aliphatic >C12-C16	7.4			CWGS[I]	mg/kg	5
Aliphatic >C16-C21	15			CWGS[I]	mg/kg	5
Aliphatic >C21-C35	85			CWGS[I]	mg/kg	5
Total Aliphatics (C5-C35)	110			CWGS	mg/kg	5
Aromatic C6-C7	< 0.01			CWGS	mg/kg	0.01
Aromatic >C7-C8	< 0.01			CWGS	mg/kg	0.01
Aromatic >C8-C10	0.02			CWGS	mg/kg	0.01
Aromatic >C10-C12	0.02			CWGS	mg/kg	0.01
Aromatic >C12-C16	< 5			CWGS[I]	mg/kg	5
Aromatic >C16-C21	7.0			CWGS[I]	mg/kg	5
Aromatic >C21-C35	34			CWGS[I]	mg/kg	5
Total Aromatics (C5-C35)	41			CWGS	mg/kg	5
Volatile Hydrocarbons (C5-C12)	0.11			CWGS	mg/kg	0.01
Extractable Hydrocarbons (C12-C35)	150			CWGS	mg/kg	5
Total Hydrocarbons (C5-C35)	150			CWGS	mg/kg	5
MTBE	< 0.010			CWGS[IM]	mg/kg	0.01
Benzene	< 0.010			CWGS[IM]	mg/kg	0.01
Toluene	< 0.010			CWGS[IM]	mg/kg	0.01
Ethylbenzene	< 0.010			CWGS[IM]	mg/kg	0.01
m,p-Xylenes	< 0.010			CWGS[IM]	mg/kg	0.01
o-Xylene	< 0.010			CWGS[IM]	mg/kg	0.01
1,3,5-Trimethylbenzene	< 0.010			CWGS[IM]	mg/kg	0.01
1,2,4-Trimethylbenzene	< 0.010			CWGS[IM]	mg/kg	0.01

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-30780
Matrix : Soil
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	WS30	Method No	Units	LOD
Sample Depth (m)	0.2-0.7			
Date Sampled	19/04/07			
Date Scheduled	23/04/07			
Laboratory Reference No	223472			
Analysis				
* * SVOC SUITE * *				
Naphthalene	770	053S[IM]	ug/kg	150
2-Chloronaphthalene	< 150	053S[I]	ug/kg	150
Acenaphthylene	< 150	053S[I]	ug/kg	150
Acenaphthene	< 150	053S[I]	ug/kg	150
Fluorene	< 150	053S[I]	ug/kg	150
Phenanthrene	160	053S[I]	ug/kg	150
Anthracene	< 150	053S[I]	ug/kg	150
Fluoranthene	280	053S[I]	ug/kg	150
Pyrene	230	053S[IM]	ug/kg	150
Benz(a)anthracene	< 150	053S	ug/kg	150
Chrysene	150	053S[I]	ug/kg	150
Benzo(b)fluoranthene	< 150	053S[I]	ug/kg	150
Benzo(k)fluoranthene	< 150	053S[I]	ug/kg	150
Benzo(a)pyrene	< 150	053S	ug/kg	150
Dibenzo(a,h)anthracene	< 150	053S[IM]	ug/kg	150
Indeno(1,2,3-cd)pyrene	< 150	053S[I]	ug/kg	150
Benzo(g,h,i)perylene	< 150	053S[I]	ug/kg	150
Phenol	< 150	053S[I]	ug/kg	150
2-Chlorophenol	< 150	053S[IM]	ug/kg	150
2-Methylphenol	< 200	053S[I]	ug/kg	200
4-Methylphenol	< 200	053S[IM]	ug/kg	200
2-Nitrophenol	< 300	053S[I]	ug/kg	300
2,4-Dimethylphenol	< 250	053S[IM]	ug/kg	250
2,4-Dichlorophenol	< 200	053S[IM]	ug/kg	200
2,6-Dichlorophenol	< 200	053S[IM]	ug/kg	200
4-Chloro-3-methyl phenol	< 150	053S[IM]	ug/kg	150
2,4,6-Trichlorophenol	< 150	053S[I]	ug/kg	150
2,4,5-Trichlorophenol	< 200	053S[IM]	ug/kg	200
4-Nitrophenol	< 300	053S	ug/kg	300

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[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-30780
Matrix : Soil
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	WS30	Method No	Units	LOD
Sample Depth (m)	0.2-0.7			
Date Sampled	19/04/07			
Date Scheduled	23/04/07			
Laboratory Reference No	223472			
Analysis				
* * SVOC SUITE Cont.. * *				
2,3,4,6-Tetrachlorophenol	< 250	053S	ug/kg	250
Pentachlorophenol	< 250	053S	ug/kg	250
Dimethyl Phthalate	< 200	053S[IM]	ug/kg	200
Diethyl Phthalate	< 200	053S[I]	ug/kg	200
Di-n-butyl phthalate	< 150	053S[I]	ug/kg	150
Butyl benzyl phthalate	< 150	053S[IM]	ug/kg	150
Bis(2-chloroethyl)ether	< 150	053S[IM]	ug/kg	150
Bis(2-chloroisopropyl)ether	< 200	053S[I]	ug/kg	200
4-Chlorophenyl phenyl ether	< 150	053S[I]	ug/kg	150
Bromo phenyl phenyl ether	< 200	053S[IM]	ug/kg	200
1,3-Dichlorobenzene	< 200	053S[IM]	ug/kg	200
1,2-Dichlorobenzene	< 150	053S[IM]	ug/kg	150
1,4-Dichlorobenzene	< 200	053S[I]	ug/kg	200
Nitrobenzene	< 150	053S[IM]	ug/kg	150
1,2,4-Trichlorobenzene	< 200	053S[IM]	ug/kg	200
2,6-Dinitrotoluene	< 200	053S	ug/kg	200
2,4-Dinitrotoluene	< 200	053S	ug/kg	200
Azobenzene	< 200	053S[I]	ug/kg	200
Hexachlorobenzene	< 200	053S[IM]	ug/kg	200
Hexachloroethane	< 150	053S[I]	ug/kg	150
n-Nitro-n-propyl-1-propanamine	< 200	053S[I]	ug/kg	200
Isophorone	< 200	053S[IM]	ug/kg	200
Bis(2-chloroethoxy)methane	< 150	053S[I]	ug/kg	150
Hexachlorobutadiene	< 150	053S[IM]	ug/kg	150
Anthraquinone	< 150	053S	ug/kg	150
Aniline	< 150	053S	ug/kg	150
Hexachlorocyclopentadiene	< 300	053S	ug/kg	300
Di-n-octyl phthalate	< 150	053S	ug/kg	150
2-Methylnapthalene	< 150	053S[I]	ug/kg	150

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-30780
Matrix : Soil
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	WS30	Method No	Units	LOD
Sample Depth (m)	0.2-0.7			
Date Sampled	19/04/07			
Date Scheduled	23/04/07			
Laboratory Reference No	223472			
Analysis				
2-nitroaniline	< 250	053S[I]	ug/kg	250
3-nitroaniline	< 200	053S	ug/kg	200
4-Chloroaniline	< 200	053S	ug/kg	200
4-nitroaniline	< 250	053S	ug/kg	250
Bis (2-ethylhexyl) phthalate	< 300	053S	ug/kg	300
Carbazole	< 100	053S[I]	ug/kg	100
Dibenzofuran	< 150	053S[IM]	ug/kg	150
Biphenyl	< 150	053S	ug/kg	150

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
EPH Description

Job Number: 07-30780
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soils
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
223473	WS30	0.9-1.1	19/04/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40.
223474	WS31	0.2	19/04/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to beyond C40.

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-30780

Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
070S	In-house method	Determination of hexane/acetone extractable hydrocarbons in soil by gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	W
065	In-house method	Determination of total petroleum hydrocarbons in soil samples using hexane:acetone extraction and GC-FID detection. Note: UKAS accreditation only applies to C8-C40 and excludes other carbon banding.	W
061S	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in soil samples by continuous flow colorimetry (Skalar)	W
053S	In-house method	Determination of semi-volatile organic compounds in soil samples by dichloromethane extraction and GC-MS detection	W
039S	In-house method	Determination of PCB congeners in soil samples by hexane/acetone extraction followed by GC-MS determination	W
022S	In-house method	Determination of PAH compounds in soil samples by hexane / acetone extraction followed by GC-MS detection	W
020S	In-house method based on Second Site Property: Environmental Assessment Guidance Version 3: March 2003	Determination of methanol/water based mobile phase extractable phenols in soil samples by HPLC with electrochemical detection	W
018	In-house method based on Method 17.13 "Environmental Assessment Guidance" Version 3, Second Site Property, March 2003	Determination of exchangeable ammonium in soil samples (potassium chloride extraction)	W
009S	In-house method referencing BS1377: Part 3: 1990 and Second Site Property: Environmental Assessment Guidance Version 3: March 2003	Determination of pH by addition of water followed by electrometric measurement	W
CWGS	In-house method based on "Total Petroleum Hydrocarbon Criteria Working Group" series, 1998-9	Determination of "CWG" banded petroleum hydrocarbons in soil samples using a combination of headspace GC-FID (C5-C12) and hexane:acetone extraction / silica-alumina aliphatic - aromatic split / GC-FID (C12-C35) techniques with banding by comparison to alkane standards	W

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-30780

Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
071S	In-house method	Determination of volatile organic compounds in soil samples by headspace GC-MS analysis	W
092	In-house method	Determination of organic content and organic carbon in soil samples by combustion analyser	D
073S	In-house method based on BS1377 Part 3, "Chemical and Electrochemical Tests", 1990	Determination of water soluble anion content in soils using a 2:1 water:soil extration ratio followed by ion chromatographic determination with electrical conductivity detector	D
069S	In-house method based on MEWAM "Methods for the Determination of Metals in Soil", HMSO, 1986	Determination of metals in soil samples by aqua-regia digestion followed by ICP-OES detection	D
025a	In-house method based on BS1377 Part 3, "Chemical and Electrochemical Tests", 1990	Determination of hydrochloric acid soluble sulphate in soil samples by Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES)	D
016S	In-house method	Determination of water soluble boron by 2:1 extraction in hot water followed by ICP-OES detection	D
001a	In-house method based on HSG 248	Visual screening of soil samples for fibrous material requiring further identification according to method 001 (note for samples > approximately 1kg it may be necessary to sub-sample prior to screening)	
001	In-house method based on HSG 248	Identification of asbestos in bulk materials using polarised light microscopy. For indicative values of asbestos content for different material types please refer to MDHS100.	

Soil results are expressed on a dry weight basis. Where the test uses as-received sample, a moisture correction factor is applied to the wet weight result. This factor is determined gravimetrically using weight loss on drying at 30º (+/-5) C.

Jo Cutler
Environ UK Ltd
Hartham Park
Corsham
Wiltshire
SN13 0RR

16 May 2007

TEST REPORT

Our Report Number: 07-31255

Your Order Reference: Instructions of 01/05/2007

9 soil samples submitted for analysis on 01/05/2007

Project Name: ALCOA

Project Code: 64C11647

Laboratory analysis started on 02/05/2007
All laboratory analysis completed by 16 May 2007

Sharon Googh
Project Co-Ordinator
ALCONTROL TECHNICHEM

Rexona Rahman
Analytical Reporting Manager
ALCONTROL TECHNICHEM

ALcontrol Technichem
Sample Description

Job Number: 07-31255
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soil
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	Sample Description
225971	BH29	1.0	26/04/07	*Dark brown gravel with fibres
225972	BH29	3.0	26/04/07	Grey & brown clay
225973	BH30	0.5	26/04/07	Dark brown clay with gravel
225974	BH30	4.5	26/04/07	Grey & brown clay
225975	BH31	0.8	27/04/07	Dark grey clay with gravel
225976	BH31	2.0	27/04/07	Dark grey clay with gravel
225977	BH31	5.0	27/04/07	Dark brown clay
225978	TP71	3.4-3.6	30/04/07	Dark brown sandy clay
225979	TP71	4.0	30/04/07	Dark grey clay with gravel

*Denotes outside the scope of MCERTS accreditation since matrix not included in method validation.

ALcontrol Technichem
Table Of Results

Job Number : 07-31255
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	**BH31**	**BH31**	**TP71**	**TP71**		**Method No**	**Units**	**LOD**
Sample Depth (m)	**2.0**	**5.0**	**3.4-3.6**	**4.0**				
Date Sampled	**27/04/07**	**27/04/07**	**30/04/07**	**30/04/07**				
Date Scheduled	**01/05/07**	**01/05/07**	**01/05/07**	**01/05/07**				
Laboratory Reference No	**225976**	**225977**	**225978**	**225979**				
Analysis								
Moisture Content (Dry Weight)	19.3	12.6	38.5	11.9			%	0.1
Moisture Content (Wet Weight)	16.2	11.2	27.8	10.6			%	0.1
Asbestos (Screen)	-	-	-	-		001a		
Arsenic	9.3	7.2	34	7.3		069S[I,M]	mg/kg	3
Barium	38	61	75	27		069S[I,M]	mg/kg	10
Beryllium	0.9	0.9	< 0.5	0.8		069S[I,M]	mg/kg	0.5
Boron (W/S)	< 0.5	< 0.5	1.8	< 0.5		016S[I,M]	mg/kg	0.5
Cadmium	< 0.5	< 0.5	1.0	< 0.5		069S[I,M]	mg/kg	0.5
Chromium	21	19	22	13		069S[I,M]	mg/kg	10
Copper	24	19	76	20		069S[I,M]	mg/kg	5
Lead	29	24	70	23		069S[I,M]	mg/kg	10
Mercury	< 0.6	< 0.6	0.8	< 0.6		069S[I,M]	mg/kg	0.6
Nickel	9.6	24	14	18		069S[I,M]	mg/kg	4
Selenium	< 2.5	< 2.5	< 2.5	< 2.5		069S[I,M]	mg/kg	2.5
Sulphate (Total Acid Soluble) as SO4	-	-	-	-		025a[I,M]	mg/kg	200
Vanadium	23	17	37	15		069S[I,M]	mg/kg	3
Zinc	39	62	120	51		069S[I,M]	mg/kg	10
Exchangeable Ammonium as N	-	-	-	< 40		018[I,M]	mg/kg	40
Total Cyanide	-	< 1	-	< 1		061S[I,M]	mg/kg	1
Organic Carbon	-	-	-	-		092[I,M]	%	0.1
pH	6.4	7.7	6.4	7.2		009S[I,M]	pH Units	
* * EPH SUITE * *								
EPH (C10-C40)	96	19	240	-		070S[I,M]	mg/kg	5

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31255
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	BH29	BH31	TP71			Method No	Units	LOD
Sample Depth (m)	1.0	0.8	4.0					
Date Sampled	26/04/07	27/04/07	30/04/07					
Date Scheduled	01/05/07	01/05/07	01/05/07					
Laboratory Reference No	225971	225975	225979					
Analysis								
* * CWG SUITE * *								
Aliphatic C5-C6	0.22	0.01	0.03			CWGS	mg/kg	0.01
Aliphatic >C6-C8	0.13	0.01	0.39			CWGS	mg/kg	0.01
Aliphatic >C8-C10	0.41	0.08	19			CWGS	mg/kg	0.01
Aliphatic >C10-C12	4.8	0.67	48			CWGS	mg/kg	0.01
Aliphatic >C12-C16	45	890	12			CWGS[I]	mg/kg	5
Aliphatic >C16-C21	72	2300	6.7			CWGS[I]	mg/kg	5
Aliphatic >C21-C35	340	380	20			CWGS[I]	mg/kg	5
Total Aliphatics (C5-C35)	460	3600	110			CWGS	mg/kg	5
Aromatic C6-C7	< 0.01	< 0.01	< 0.01			CWGS	mg/kg	0.01
Aromatic >C7-C8	< 0.01	< 0.01	< 0.01			CWGS	mg/kg	0.01
Aromatic >C8-C10	0.63	0.14	29			CWGS	mg/kg	0.01
Aromatic >C10-C12	7.2	1.0	72			CWGS	mg/kg	0.01
Aromatic >C12-C16	310	80	10			CWGS[I]	mg/kg	5
Aromatic >C16-C21	390	410	< 5			CWGS[I]	mg/kg	5
Aromatic >C21-C35	300	170	13			CWGS[I]	mg/kg	5
Total Aromatics (C5-C35)	1000	650	120			CWGS	mg/kg	5
Volatile Hydrocarbons (C5-C12)	13	1.9	170			CWGS	mg/kg	0.01
Extractable Hydrocarbons (C12-C35)	1500	4200	63			CWGS	mg/kg	5
Total Hydrocarbons (C5-C35)	1500	4200	230			CWGS	mg/kg	5
MTBE	< 0.010	< 0.010	< 0.010			CWGS[IM]	mg/kg	0.01
Benzene	< 0.010	< 0.010	< 0.010			CWGS[IM]	mg/kg	0.01
Toluene	< 0.010	< 0.010	< 0.010			CWGS[IM]	mg/kg	0.01
Ethylbenzene	< 0.010	< 0.010	0.011			CWGS[IM]	mg/kg	0.01
m,p-Xylenes	< 0.010	0.012	0.19			CWGS[IM]	mg/kg	0.01
o-Xylene	0.011	< 0.010	0.30			CWGS[IM]	mg/kg	0.01
1,3,5-Trimethylbenzene	0.099	< 0.010	0.39			CWGS[IM]	mg/kg	0.01
1,2,4-Trimethylbenzene	0.22	< 0.010	7.2			CWGS[IM]	mg/kg	0.01

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31255
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	BH29	BH31	TP71			Method No	Units	LOD
Sample Depth (m)	1.0	0.8	4.0					
Date Sampled	26/04/07	27/04/07	30/04/07					
Date Scheduled	01/05/07	01/05/07	01/05/07					
Laboratory Reference No	225971	225975	225979					
Analysis								
* * SVOC SUITE * *								
Naphthalene	44000	< 150	< 150			053S[I][M]	ug/kg	150
2-Chloronaphthalene	< 150	< 150	< 150			053S[I]	ug/kg	150
Acenaphthylene	8100	< 150	< 150			053S[I]	ug/kg	150
Acenaphthene	91000	< 150	< 150			053S[I]	ug/kg	150
Fluorene	58000	< 150	< 150			053S[I]	ug/kg	150
Phenanthrene	180000	< 150	< 150			053S[I]	ug/kg	150
Anthracene	38000	< 150	< 150			053S[I]	ug/kg	150
Fluoranthene	55000	< 150	< 150			053S[I]	ug/kg	150
Pyrene	38000	< 150	< 150			053S[I][M]	ug/kg	150
Benz(a)anthracene	8200	< 150	< 150			053S	ug/kg	150
Chrysene	6700	< 150	< 150			053S[I]	ug/kg	150
Benzo(b)fluoranthene	3200	< 150	< 150			053S[I]	ug/kg	150
Benzo(k)fluoranthene	2000	< 150	< 150			053S[I]	ug/kg	150
Benzo(a)pyrene	3500	< 150	< 150			053S	ug/kg	150
Dibenzo(a,h)anthracene	280	< 150	< 150			053S[I][M]	ug/kg	150
Indeno(1,2,3-cd)pyrene	1000	< 150	< 150			053S[I]	ug/kg	150
Benzo(g,h,i)perylene	1200	< 150	< 150			053S[I]	ug/kg	150
2-Chlorophenol	< 150	< 150	< 150			053S[I][M]	ug/kg	150
2-Methylphenol	< 200	< 200	< 200			053S[I]	ug/kg	200
4-Methylphenol	< 200	< 200	< 200			053S[I][M]	ug/kg	200
2-Nitrophenol	< 300	< 300	< 300			053S[I]	ug/kg	300
2,4-Dichlorophenol	< 200	< 200	< 200			053S[I][M]	ug/kg	200
2,6-Dichlorophenol	< 200	< 200	< 200			053S[I][M]	ug/kg	200
4-Chloro-3-methyl phenol	< 150	< 150	< 150			053S[I][M]	ug/kg	150
2,4,6-Trichlorophenol	< 150	< 150	< 150			053S[I]	ug/kg	150
2,4,5-Trichlorophenol	< 200	< 200	< 200			053S[I][M]	ug/kg	200
4-Nitrophenol	< 300	< 300	< 300			053S	ug/kg	300

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31255
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	BH29	BH31	TP71			Method No	Units	LOD
Sample Depth (m)	1.0	0.8	4.0					
Date Sampled	26/04/07	27/04/07	30/04/07					
Date Scheduled	01/05/07	01/05/07	01/05/07					
Laboratory Reference No	225971	225975	225979					
Analysis								
* * SVOC SUITE Cont.. * *								
2,3,4,6-Tetrachlorophenol	< 250	< 250	< 250			053S	ug/kg	250
Pentachlorophenol	< 250	< 250	< 250			053S	ug/kg	250
Dimethyl Phthalate	< 200	< 200	< 200			053S[IM]	ug/kg	200
Diethyl Phthalate	< 200	< 200	< 200			053S[I]	ug/kg	200
Di-n-butyl phthalate	< 150	< 150	< 150			053S[I]	ug/kg	150
Butyl benzyl phthalate	< 150	< 150	< 150			053S[IM]	ug/kg	150
Bis(2-chloroethyl)ether	< 150	< 150	< 150			053S[IM]	ug/kg	150
Bis(2-chloroisopropyl)ether	< 200	< 200	< 200			053S[I]	ug/kg	200
4-Chlorophenyl phenyl ether	< 150	< 150	< 150			053S[I]	ug/kg	150
Bromo phenyl phenyl ether	< 200	< 200	< 200			053S[IM]	ug/kg	200
1,3-Dichlorobenzene	< 200	< 200	< 200			053S[IM]	ug/kg	200
1,2-Dichlorobenzene	< 150	< 150	< 150			053S[IM]	ug/kg	150
1,4-Dichlorobenzene	< 200	< 200	< 200			053S[I]	ug/kg	200
Nitrobenzene	< 150	< 150	< 150			053S[IM]	ug/kg	150
1,2,4-Trichlorobenzene	< 200	< 200	< 200			053S[IM]	ug/kg	200
2,6-Dinitrotoluene	< 200	< 200	< 200			053S	ug/kg	200
2,4-Dinitrotoluene	< 200	< 200	< 200			053S	ug/kg	200
Azobenzene	< 200	< 200	< 200			053S[I]	ug/kg	200
Hexachlorobenzene	< 200	< 200	< 200			053S[IM]	ug/kg	200
Hexachloroethane	< 150	< 150	< 150			053S[I]	ug/kg	150
n-Nitro-n-propyl-1-propanamine	< 200	< 200	< 200			053S[I]	ug/kg	200
Isophorone	< 200	< 200	< 200			053S[IM]	ug/kg	200
Bis(2-chloroethoxy)methane	< 150	< 150	< 150			053S[I]	ug/kg	150
Hexachlorobutadiene	< 150	< 150	< 150			053S[IM]	ug/kg	150
Anthraquinone	6300	< 150	< 150			053S	ug/kg	150
Aniline	< 150	< 150	< 150			053S	ug/kg	150
Di-n-octyl phthalate	< 150	< 150	< 150			053S	ug/kg	150
Hexachlorocyclopentadiene	< 300	< 300	< 300			053S	ug/kg	300
2-Methylnapthalene	78000	< 150	< 150			053S[I]	ug/kg	150

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31255
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	BH29	BH31	TP71			Method No	Units	LOD
Sample Depth (m)	1.0	0.8	4.0					
Date Sampled	26/04/07	27/04/07	30/04/07					
Date Scheduled	01/05/07	01/05/07	01/05/07					
Laboratory Reference No	225971	225975	225979					
Analysis								
2-nitroaniline	< 250	< 250	< 250			053S[I]	ug/kg	250
3-nitroaniline	< 200	< 200	< 200			053S	ug/kg	200
4-Chloroaniline	< 200	< 200	< 200			053S	ug/kg	200
4-nitroaniline	< 250	< 250	< 250			053S	ug/kg	250
Bis (2-ethylhexyl) phthalate	< 300	< 300	< 300			053S	ug/kg	300
Carbazole	4400	< 100	< 100			053S[I]	ug/kg	100
Dibenzofuran	26000	< 150	< 150			053S[IM]	ug/kg	150
Biphenyl	8900	< 150	< 150			053S	ug/kg	150

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
EPH Description

Job Number: 07-31255
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soils
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
225972	BH29	3.0	26/04/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40, overlain by a series of n-alkane peaks eluting through the diesel range.
225973	BH30	0.5	26/04/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from before C10 to beyond C40.
225974	BH30	4.5	26/04/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to C40.
225976	BH31	2.0	27/04/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to C40, overlain by several peaks unidentifiable by this analysis.
225977	BH31	5.0	27/04/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to C40.
225978	TP71	3.4-3.6	30/04/07	The sample chromatogram exhibits two humps of unresolved complex material, the first eluting from before C10 to C12 and the second from C12 to beyond C40, both overlain by a series of peaks which require qualitative analysis by GC-MS for further identification.

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31255

Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
070S	In-house method	Determination of hexane/acetone extractable hydrocarbons in soil by gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	W
061S	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in soil samples by continuous flow colorimetry (Skalar)	W
053S	In-house method	Determination of semi-volatile organic compounds in soil samples by dichloromethane extraction and GC-MS detection	W
022S	In-house method	Determination of PAH compounds in soil samples by hexane / acetone extraction followed by GC-MS detection	W
018	In-house method based on Method 17.13 "Environmental Assessment Guidance" Version 3, Second Site Property, March 2003	Determination of exchangeable ammonium in soil samples (potassium chloride extraction)	W
009S	In-house method referencing BS1377: Part 3: 1990 and Second Site Property: Environmental Assessment Guidance Version 3: March 2003	Determination of pH by addition of water followed by electrometric measurement	W
CWGS	In-house method based on "Total Petroleum Hydrocarbon Criteria Working Group" series, 1998-9	Determination of "CWG" banded petroleum hydrocarbons in soil samples using a combination of headspace GC-FID (C5-C12) and hexane:acetone extraction / silica-alumina aliphatic - aromatic split / GC-FID (C12-C35) techniques with banding by comparison to alkane standards	W
071S	In-house method	Determination of volatile organic compounds in soil samples by headspace GC-MS analysis	W
092	In-house method	Determination of organic content and organic carbon in soil samples by combustion analyser	D

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31255

Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
069S	In-house method based on MEWAM "Methods for the Determination of Metals in Soil", HMSO, 1986	Determination of metals in soil samples by aqua-regia digestion followed by ICP OES detection	D
025a	In-house method based on BS1377 Part 3, "Chemical and Electrochemical Tests", 1990	Determination of hydrochloric acid soluble sulphate in soil samples by Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES)	D
016S	In-house method	Determination of water soluble boron by 2:1 extraction in hot water followed by ICP-OES detection	D
001a	In-house method based on HSG 248	Visual screening of soil samples for fibrous material requiring further identification according to method 001 (note for samples > approximately 1kg it may be necessary to sub-sample prior to screening)	

Soil results are expressed on a dry weight basis. Where the test uses as-received sample, a moisture correction factor is applied to the wet weight result. This factor is determined gravimetrically using weight loss on drying at 30º (+/-5) C.

Jo Cutler
Environ UK Ltd
Hartham Park
Corsham
Wiltshire
SN13 0RR

10 May 2007

TEST REPORT

Our Report Number: 07-31496

Your Order Reference: Instructions of 25/04/2007

14 soil samples submitted for analysis on 25/04/2007

Project Name: Alcoa

Project Code: 64-C11647

Laboratory analysis started on 04/05/2007
All laboratory analysis completed by 10 May 2007

pp. Sharon Googh
Project Co-Ordinator
ALCONTROL TECHNICHEM

Rexona Rahman
Analytical Reporting Manager
ALCONTROL TECHNICHEM

ALcontrol Technichem
Sample Description

Job Number: 07-31496
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Soil
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	Sample Description
227377	TP69	0.50-1.00	30/04/2007	Dark grey sand with rubble
227378	TP69	1.3	30/04/2007	Dark grey sandy clay
227379	TP69	3.50-3.70	30/04/2007	Grey & brown sandy clay with gravel
227380	TP70	0.5	30/04/2007	Dark brown sand with coal / coke and rubble
227381	TP71	0.6	30/04/2007	Dark brown sand with rubble and gravel
227382	TP71	1.0	30/04/2007	Grey & brown clay
227383	TP72	0.5	30/04/2007	Dark brown sand with gravel
227389	MW32	1.0	30/04/2007	Dark grey sand with gravel
227390	MW32	2.8	30/04/2007	Dark grey sandy clay with gravel

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP69	TP69	TP69	TP70	TP71	Method No	Units	LOD
Sample Depth (m)	0.50-1.00	1.30	3.50-3.70	0.50	0.60			
Date Sampled	30/04/2007	30/04/2007	30/04/2007	30/04/2007	30/04/2007			
Date Scheduled	25/04/07	25/04/07	25/04/07	25/04/07	25/04/07			
Laboratory Reference No	227377	227378	227379	227380	227381			
Analysis								
Moisture Content (Dry Weight)	17.8	15.1	16.6	13.7	11.6		%	0.1
Moisture Content (Wet Weight)	15.1	13.1	14.3	12.1	10.4		%	0.1
Asbestos (Screen)	Absent	Absent	-	Absent	Absent	001a		
Arsenic	240	-	9.1	39	140	069S[I,M]	mg/kg	3
Barium	380	-	35	350	360	069S[I,M]	mg/kg	10
Beryllium	1.8	-	< 0.5	1.4	1.0	069S[I,M]	mg/kg	0.5
Boron (W/S)	0.6	-	< 0.5	< 0.5	0.6	016S[I,M]	mg/kg	0.5
Cadmium	7.0	-	< 0.5	0.9	4.0	069S[I,M]	mg/kg	0.5
Chromium	33	-	19	33	38	069S[I,M]	mg/kg	10
Copper	5800	-	17	300	350	069S[I,M]	mg/kg	5
Lead	1300	-	25	140	1500	069S[I,M]	mg/kg	10
Mercury	< 0.6	-	< 0.6	< 0.6	0.8	069S[I,M]	mg/kg	0.6
Nickel	73	-	13	260	51	069S[I,M]	mg/kg	4
Selenium	8.4	-	< 2.5	< 2.5	< 2.5	069S[I,M]	mg/kg	2.5
Sulphate (Total Acid Soluble) as SO4	-	-	< 200	1300	-	025a[I,M]	mg/kg	200
Titanium	-	-	-	-	-	069S	mg/kg	5
Vanadium	54	-	19	86	67	069S[I,M]	mg/kg	3
Zinc	3600	-	39	330	2800	069S[I,M]	mg/kg	10
Exchangeable Ammonium as N	-	-	58	-	-	018[I,M]	mg/kg	40
Total Cyanide	< 1	-	< 1	-	< 1	061S[I,M]	mg/kg	1
Organic Carbon	-	-	0.85	20	-	092[I,M]	%	0.1
pH	8.4	7.6	7.2	8.4	8.4	009S[I,M]	pH Units	
Acid Soluble Sulphide	-	-	-	-	-	008[I,M]	mg/kg	10
* * VPH/BTEX SUITE * *								
MTBE	-	-	-	-	-	068S[I,M]	mg/kg	0.01
Benzene	-	-	-	-	-	068S[I,M]	mg/kg	0.01
Toluene	-	-	-	-	-	068S[I,M]	mg/kg	0.01
Ethylbenzene	-	-	-	-	-	068S[I,M]	mg/kg	0.01
m,p-Xylenes	-	-	-	-	-	068S[I,M]	mg/kg	0.01

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP69	TP69	TP69	TP70	TP71	Method No	Units	LOD
Sample Depth (m)	0.50-1.00	1.30	3.50-3.70	0.50	0.60			
Date Sampled	30/04/2007	30/04/2007	30/04/2007	30/04/2007	30/04/2007			
Date Scheduled	25/04/07	25/04/07	25/04/07	25/04/07	25/04/07			
Laboratory Reference No	227377	227378	227379	227380	227381			
Analysis								
o-Xylene	-	-	-	-	-	068S[IM]	mg/kg	0.01
1,3,5-Trimethylbenzene	-	-	-	-	-	068S[IM]	mg/kg	0.01
1,2,4-Trimethylbenzene	-	-	-	-	-	068S[IM]	mg/kg	0.01
VPH Compounds (C5-C10)	-	-	-	-	-	068S[IM]	mg/kg	0.01
VPH Compounds (C10-C12)	-	-	-	-	-	068S	mg/kg	0.01
VPH Compounds (C5-C12)	-	-	-	-	-	068S	mg/kg	0.01
* * EPH SUITE * *								
EPH (C10-C20)	-	-	-	-	-	070S	mg/kg	5
EPH (C20-C30)	-	-	-	-	-	070S	mg/kg	5
EPH (C30-C40)	-	-	-	-	-	070S	mg/kg	5
EPH (C10-C40)	360	-	8	210	810	070S[IM]	mg/kg	5
* * PHENOLS SUITE * *								
Phenol	-	-	-	-	-	020S[IM]	mg/kg	0.1
Total Monohydric Phenols	-	-	-	-	-	020S[I]	mg/kg	1

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP71	TP72	Method No	Units	LOD	MW32	MW32	
Sample Depth (m)	1.00	0.50				1.00	2.80	
Date Sampled	30/04/2007	30/04/2007				30/04/2007	30/04/2007	
Date Scheduled	25/04/07	25/04/07				25/04/07	25/04/07	
Laboratory Reference No	227382	227383				227389	227390	
Analysis								
Moisture Content (Dry Weight)	15.7	9.7		%	0.1	13.7	16.2	
Moisture Content (Wet Weight)	13.6	8.9		%	0.1	12.0	13.9	
Asbestos (Screen)	-	Absent	001a			Absent	Absent	
Arsenic	-	60	069S[I,M]	mg/kg	3	32	20	
Barium	-	270	069S[I,M]	mg/kg	10	290	160	
Beryllium	-	1.1	069S[I,M]	mg/kg	0.5	1.2	1.1	
Boron (W/S)	-	0.6	016S[I,M]	mg/kg	0.5	1.3	1.3	
Cadmium	-	2.7	069S[I,M]	mg/kg	0.5	1.3	0.9	
Chromium	-	43	069S[I,M]	mg/kg	10	33	47	
Copper	-	310	069S[I,M]	mg/kg	5	400	210	
Lead	-	570	069S[I,M]	mg/kg	10	220	130	
Mercury	-	< 0.6	069S[I,M]	mg/kg	0.6	< 0.6	< 0.6	
Nickel	-	87	069S[I,M]	mg/kg	4	43	40	
Selenium	-	< 2.5	069S[I,M]	mg/kg	2.5	< 2.5	< 2.5	
Sulphate (Total Acid Soluble) as SO4	-	1200	025a[I,M]	mg/kg	200	1700	-	
Titanium	-	-	069S	mg/kg	5	-	-	
Vanadium	-	120	069S[I,M]	mg/kg	3	38	30	
Zinc	-	1000	069S[I,M]	mg/kg	10	630	300	
Exchangeable Ammonium as N	-	< 40	018[I,M]	mg/kg	40	< 40	< 40	
Total Cyanide	-	-	061S[I,M]	mg/kg	1	< 1	< 1	
Organic Carbon	-	-	092[I,M]	%	0.1	-	-	
pH	7.7	8.5	009S[I,M]	pH Units		9.2	10.2	
Acid Soluble Sulphide	-	-	008[I,M]	mg/kg	10	-	< 10	
* * VPH/BTEX SUITE * *								
MTBE	-	-	068S[I,M]	mg/kg	0.01	-	< 0.01	
Benzene	-	-	068S[I,M]	mg/kg	0.01	-	< 0.01	
Toluene	-	-	068S[I,M]	mg/kg	0.01	-	< 0.01	
Ethylbenzene	-	-	068S[I,M]	mg/kg	0.01	-	< 0.01	
m,p-Xylenes	-	-	068S[I,M]	mg/kg	0.01	-	< 0.01	

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP71	TP72	Method No	Units	LOD	MW32	MW32	
Sample Depth (m)	1.00	0.50				1.00	2.80	
Date Sampled	30/04/2007	30/04/2007				30/04/2007	30/04/2007	
Date Scheduled	25/04/07	25/04/07				25/04/07	25/04/07	
Laboratory Reference No	227382	227383				227389	227390	
Analysis								
o-Xylene	-	-	068S[IM]	mg/kg	0.01	-	< 0.01	
1,3,5-Trimethylbenzene	-	-	068S[IM]	mg/kg	0.01	-	< 0.01	
1,2,4-Trimethylbenzene	-	-	068S[IM]	mg/kg	0.01	-	< 0.01	
VPH Compounds (C5-C10)	-	-	068S[IM]	mg/kg	0.01	-	0.049	
VPH Compounds (C10-C12)	-	-	068S	mg/kg	0.01	-	< 0.01	
VPH Compounds (C5-C12)	-	-	068S	mg/kg	0.01	-	0.049	
* * EPH SUITE * *								
EPH (C10-C20)	-	-	070S	mg/kg	5	-	42	
EPH (C20-C30)	-	-	070S	mg/kg	5	-	46	
EPH (C30-C40)	-	-	070S	mg/kg	5	-	31	
EPH (C10-C40)	27	-	070S[IM]	mg/kg	5	220	120	
* * PHENOLS SUITE * *								
Phenol	-	-	020S[IM]	mg/kg	0.1	-	< 0.1	
Total Monohydric Phenols	-	-	020S[I]	mg/kg	1	-	< 1	

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD
Sample Depth (m)			
Date Sampled			
Date Scheduled			
Laboratory Reference No			
Analysis			
Moisture Content (Dry Weight)		%	0.1
Moisture Content (Wet Weight)		%	0.1
Asbestos (Screen)	001a		
Arsenic	069S[I M]	mg/kg	3
Barium	069S[I M]	mg/kg	10
Beryllium	069S[I M]	mg/kg	0.5
Boron (W/S)	016S[I M]	mg/kg	0.5
Cadmium	069S[I M]	mg/kg	0.5
Chromium	069S[I M]	mg/kg	10
Copper	069S[I M]	mg/kg	5
Lead	069S[I M]	mg/kg	10
Mercury	069S[I M]	mg/kg	0.6
Nickel	069S[I M]	mg/kg	4
Selenium	069S[I M]	mg/kg	2.5
Sulphate (Total Acid Soluble) as SO4	025a[I M]	mg/kg	200
Titanium	069S	mg/kg	5
Vanadium	069S[I M]	mg/kg	3
Zinc	069S[I M]	mg/kg	10
Exchangeable Ammonium as N	018[I M]	mg/kg	40
Total Cyanide	061S[I M]	mg/kg	1
Organic Carbon	092[I M]	%	0.1
pH	009S[I M]	pH Units	
Acid Soluble Sulphide	008[I M]	mg/kg	10
* * VPH/BTEX SUITE * *			
MTBE	068S[I M]	mg/kg	0.01
Benzene	068S[I M]	mg/kg	0.01
Toluene	068S[I M]	mg/kg	0.01
Ethylbenzene	068S[I M]	mg/kg	0.01
m,p-Xylenes	068S[I M]	mg/kg	0.01

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD
Sample Depth (m)			
Date Sampled			
Date Scheduled			
Laboratory Reference No			
Analysis			
o-Xylene	068S[IM]	mg/kg	0.01
1,3,5-Trimethylbenzene	068S[IM]	mg/kg	0.01
1,2,4-Trimethylbenzene	068S[IM]	mg/kg	0.01
VPH Compounds (C5-C10)	068S[IM]	mg/kg	0.01
VPH Compounds (C10-C12)	068S	mg/kg	0.01
VPH Compounds (C5-C12)	068S	mg/kg	0.01
* * EPH SUITE * *			
EPH (C10-C20)	070S	mg/kg	5
EPH (C20-C30)	070S	mg/kg	5
EPH (C30-C40)	070S	mg/kg	5
EPH (C10-C40)	070S[IM]	mg/kg	5
* * PHENOLS SUITE * *			
Phenol	020S[IM]	mg/kg	0.1
Total Monohydric Phenols	020S[I]	mg/kg	1

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP69	TP71	MW32	Method No	Units	LOD
Sample Depth (m)	0.50-1.00	0.60	2.80			
Date Sampled	30/04/2007	30/04/2007	30/04/2007			
Date Scheduled	25/04/07	25/04/07	25/04/07			
Laboratory Reference No	227377	227381	227390			
Analysis						
* * PAH SUITE * *						
Naphthalene	2.2	< 0.1	0.13	022S[IM]	mg/kg	0.1
Acenaphthylene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Acenaphthene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Fluorene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Phenanthrene	0.16	0.25	0.51	022S[IM]	mg/kg	0.1
Anthracene	< 0.1	< 0.1	0.16	022S[IM]	mg/kg	0.1
Fluoranthene	0.48	0.54	0.48	022S[IM]	mg/kg	0.1
Pyrene	0.41	0.50	0.36	022S[IM]	mg/kg	0.1
Benzo(a)anthracene	0.24	0.29	0.21	022S[IM]	mg/kg	0.1
Chrysene	0.37	0.36	0.24	022S[IM]	mg/kg	0.1
Benzo(b)fluoranthene	0.40	0.40	0.24	022S[IM]	mg/kg	0.1
Benzo(k)fluoranthene	0.29	0.25	0.13	022S[IM]	mg/kg	0.1
Benzo(a)pyrene	0.25	0.41	0.16	022S[IM]	mg/kg	0.1
Indeno(1,2,3-cd)pyrene	0.14	0.17	< 0.1	022S[IM]	mg/kg	0.1
Dibenzo(a,h)anthracene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Benzo(g,h,i)perylene	0.16	0.23	< 0.1	022S[IM]	mg/kg	0.1
PAH (Sum of Dutch 10)	4.32	2.49	2.02	022S[I]	mg/kg	0.1
PAH (Sum of EPA 16)	5.14	3.39	2.63	022S[I]	mg/kg	0.1

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP69	TP70	TP72	MW32	Method No	Units	LOD
Sample Depth (m)	3.50-3.70	0.50	0.50	1.00			
Date Sampled	30/04/2007	30/04/2007	30/04/2007	30/04/2007			
Date Scheduled	25/04/07	25/04/07	25/04/07	25/04/07			
Laboratory Reference No	227379	227380	227383	227389			
Analysis							
* * SVOC SUITE * *							
Naphthalene	< 150	< 150	< 150	< 150	053S[I M]	ug/kg	150
2-Chloronaphthalene	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
Acenaphthylene	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
Acenaphthene	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
Fluorene	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
Phenanthrene	< 150	280	470	< 150	053S[I]	ug/kg	150
Anthracene	< 150	260	< 150	< 150	053S[I]	ug/kg	150
Fluoranthene	< 150	2800	990	160	053S[I]	ug/kg	150
Pyrene	< 150	4300	760	< 150	053S[I M]	ug/kg	150
Benz(a)anthracene	< 150	1400	480	< 150	053S	ug/kg	150
Chrysene	< 150	1500	530	< 150	053S[I]	ug/kg	150
Benzo(b)fluoranthene	< 150	850	510	< 150	053S[I]	ug/kg	150
Benzo(k)fluoranthene	< 150	820	420	< 150	053S[I]	ug/kg	150
Benzo(a)pyrene	< 150	1300	540	< 150	053S	ug/kg	150
Dibenzo(a,h)anthracene	< 150	160	< 150	< 150	053S[I M]	ug/kg	150
Indeno(1,2,3-cd)pyrene	< 150	520	360	< 150	053S[I]	ug/kg	150
Benzo(g,h,i)perylene	< 150	730	450	< 150	053S[I]	ug/kg	150
Phenol	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
2-Chlorophenol	< 150	< 150	< 150	< 150	053S[I M]	ug/kg	150
2-Methylphenol	< 200	< 200	< 200	< 200	053S[I]	ug/kg	200
4-Methylphenol	< 200	< 200	< 200	< 200	053S[I M]	ug/kg	200
2-Nitrophenol	< 300	< 300	< 300	< 300	053S[I]	ug/kg	300
2,4-Dimethylphenol	< 250	< 250	< 250	< 250	053S[I M]	ug/kg	250
2,4-Dichlorophenol	< 200	< 200	< 200	< 200	053S[I M]	ug/kg	200
2,6-Dichlorophenol	< 200	< 200	< 200	< 200	053S[I M]	ug/kg	200
4-Chloro-3-methyl phenol	< 150	< 150	< 150	< 150	053S[I M]	ug/kg	150
2,4,6-Trichlorophenol	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
2,4,5-Trichlorophenol	< 200	< 200	< 200	< 200	053S[I M]	ug/kg	200
4-Nitrophenol	< 300	< 300	< 300	< 300	053S	ug/kg	300

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP69	TP70	TP72	MW32	Method No	Units	LOD
Sample Depth (m)	3.50-3.70	0.50	0.50	1.00			
Date Sampled	30/04/2007	30/04/2007	30/04/2007	30/04/2007			
Date Scheduled	25/04/07	25/04/07	25/04/07	25/04/07			
Laboratory Reference No	227379	227380	227383	227389			
Analysis							
* * SVOC SUITE Cont.. * *							
2,3,4,6-Tetrachlorophenol	< 250	< 250	< 250	< 250	053S	ug/kg	250
Pentachlorophenol	< 250	< 250	< 250	< 250	053S	ug/kg	250
Dimethyl Phthalate	< 200	< 200	< 200	< 200	053S[I][M]	ug/kg	200
Diethyl Phthalate	< 200	< 200	< 200	< 200	053S[I]	ug/kg	200
Di-n-butyl phthalate	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
Butyl benzyl phthalate	< 150	< 150	< 150	< 150	053S[I][M]	ug/kg	150
Bis(2-chloroethyl)ether	< 150	< 150	< 150	< 150	053S[I][M]	ug/kg	150
Bis(2-chloroisopropyl)ether	< 200	< 200	< 200	< 200	053S[I]	ug/kg	200
4-Chlorophenyl phenyl ether	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
Bromo phenyl phenyl ether	< 200	< 200	< 200	< 200	053S[I][M]	ug/kg	200
1,3-Dichlorobenzene	< 200	< 200	< 200	< 200	053S[I][M]	ug/kg	200
1,2-Dichlorobenzene	< 150	< 150	< 150	< 150	053S[I][M]	ug/kg	150
1,4-Dichlorobenzene	< 200	< 200	< 200	< 200	053S[I]	ug/kg	200
Nitrobenzene	< 150	< 150	< 150	< 150	053S[I][M]	ug/kg	150
1,2,4-Trichlorobenzene	< 200	< 200	< 200	< 200	053S[I][M]	ug/kg	200
2,6-Dinitrotoluene	< 200	< 200	< 200	< 200	053S	ug/kg	200
2,4-Dinitrotoluene	< 200	< 200	< 200	< 200	053S	ug/kg	200
Azobenzene	< 200	< 200	< 200	< 200	053S[I]	ug/kg	200
Hexachlorobenzene	< 200	< 200	< 200	< 200	053S[I][M]	ug/kg	200
Hexachloroethane	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
n-Nitro-n-propyl-1-propanamine	< 200	< 200	< 200	< 200	053S[I]	ug/kg	200
Isophorone	< 200	< 200	< 200	< 200	053S[I][M]	ug/kg	200
Bis(2-chloroethoxy)methane	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150
Hexachlorobutadiene	< 150	< 150	< 150	< 150	053S[I][M]	ug/kg	150
Anthraquinone	< 150	< 150	< 150	< 150	053S	ug/kg	150
Aniline	< 150	< 150	< 150	< 150	053S	ug/kg	150
Di-n-octyl phthalate	< 150	< 150	< 150	< 150	053S	ug/kg	150
Hexachlorocyclopentadiene	< 300	< 300	< 300	< 300	053S	ug/kg	300
2-Methylnapthalene	< 150	< 150	< 150	< 150	053S[I]	ug/kg	150

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31496
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP69	TP70	TP72	MW32	Method No	Units	LOD
Sample Depth (m)	3.50-3.70	0.50	0.50	1.00			
Date Sampled	30/04/2007	30/04/2007	30/04/2007	30/04/2007			
Date Scheduled	25/04/07	25/04/07	25/04/07	25/04/07			
Laboratory Reference No	227379	227380	227383	227389			
Analysis							
2-nitroaniline	< 250	< 250	< 250	< 250	053S[I]	ug/kg	250
3-nitroaniline	< 200	< 200	< 200	< 200	053S	ug/kg	200
4-Chloroaniline	< 200	< 200	< 200	< 200	053S	ug/kg	200
4-nitroaniline	< 250	< 250	< 250	< 250	053S	ug/kg	250
Bis (2-ethylhexyl) phthalate	< 300	< 300	< 300	< 300	053S	ug/kg	300
Carbazole	< 100	< 100	< 100	< 100	053S[I]	ug/kg	100
Dibenzofuran	< 150	< 150	< 150	< 150	053S[IM]	ug/kg	150
Biphenyl	< 150	< 150	< 150	< 150	053S	ug/kg	150

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
EPH Description

Job Number: 07-31496
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Soils
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
227377	TP69	0.50-1.00	30/04/2007	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40, overlain by a series of peaks, unidentifiable by this analysis, eluting between C10 and C16.
227379	TP69	3.50-3.70	30/04/2007	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
227380	TP70	0.5	30/04/2007	The sample chromatogram exhibits a hump of unresolved complex material eluting from C14 to beyond C40, overlain by a series of peaks consistent with a small amount of PAHs.
227381	TP71	0.6	30/04/2007	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to beyond C40, overlain by a series of n-alkane peaks eluting from C14 to C22.
227382	TP71	1.0	30/04/2007	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to C40.
227389	MW32	1.0	30/04/2007	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40, overlain by a series of n-alkane peaks eluting from C11 to C20.
227390	MW32	2.8	30/04/2007	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40, overlain by a series of n-alkane peaks eluting from C12 to C19.

ALcontrol Technichem
EPH Description

Job Number: 07-31496
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Soils
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31496

Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
068S	In-house method	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) including BTEX and MTBE compounds by Headspace GC-FID (VPH).	W
061S	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in soil samples by continuous flow colorimetry (Skalar)	W
053S	In-house method	Determination of semi-volatile organic compounds in soil samples by dichloromethane extraction and GC-MS detection	W
022S	In-house method	Determination of PAH compounds in soil samples by hexane / acetone extraction followed by GC-MS detection	W
020S	In-house method based on Second Site Property: Environmental Assessment Guidance Version 3: March 2003	Determination of methanol/water based mobile phase extractable phenols in soil samples by HPLC with electrochemical detection	W
018	In-house method based on Method 17.13 "Environmental Assessment Guidance" Version 3, Second Site Property, March 2003	Determination of exchangeable ammonium in soil samples (potassium chloride extraction)	W
009S	In-house method referencing BS1377: Part 3: 1990 and Second Site Property: Environmental Assessment Guidance Version 3: March 2003	Determination of pH by addition of water followed by electrometric measurement	W
008	In-house method adapted from MEWAM "Sulphide in Waters and Effluents", HMSO, 1983	Determination of sulphide in soil samples by sulphuric acid addition, absorption of liberated hydrogen sulphide in sodium hydroxide / ascorbic acid buffer solution and ion selective electrode detection	W
071S	In-house method	Determination of volatile organic compounds in soil samples by headspace GC-MS analysis	W

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31496

Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
070S	In-house method	Determination of hexane/acetone extractable hydrocarbons in soil by gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	W
092	In-house method	Determination of organic content and organic carbon in soil samples by combustion analyser	D
069S	In-house method based on MEWAM "Methods for the Determination of Metals in Soil", HMSO, 1986	Determination of metals in soil samples by aqua-regia digestion followed by ICP OES detection	D
025a	In-house method based on BS1377 Part 3, "Chemical and Electrochemical Tests", 1990	Determination of hydrochloric acid soluble sulphate in soil samples by Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES)	D
016S	In-house method	Determination of water soluble boron by 2:1 extraction in hot water followed by ICP-OES detection	D
001a	In-house method based on HSG 248	Visual screening of soil samples for fibrous material requiring further identification according to method 001 (note for samples > approximately 1kg it may be necessary to sub-sample prior to screening)	

Soil results are expressed on a dry weight basis. Where the test uses as-received sample, a moisture correction factor is applied to the wet weight result. This factor is determined gravimetrically using weight loss on drying at 30º (+/-5) C.

Jo Cutler
Environ UK Ltd
Hartham Park
Corsham
Wiltshire
SN13 0RR

18 May 2007

TEST REPORT

Our Report Number: 07-31513

Your Order Reference: Instructions of 04/05/2007

54 soil samples and 1 water sample submitted for analysis on 04/05/2007

Project Name: Alcoa

Project Code: 64-C11647

Laboratory analysis started on 04/05/2007
All laboratory analysis completed by 18 May 2007

Sharon Googh
Project Co-Ordinator
ALCONTROL TECHNICHEM

Rhys Ashton
Project Co-Ordinator
ALCONTROL TECHNICHEM

ALcontrol Technichem
Sample Description

Job Number: 07-31513
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Soil
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	Sample Description
227479	MW38	6.5	01/05/07	Grey sandy clay
227480	MW38	8	01/05/07	Grey clay
227490	TP80	0.5	01/05/07	*Dark grey clinker / ash with brick and sand
227491	TP81	0.5	01/05/07	Dark grey sand with coal / coke and gravel
227492	TP81	1.5	01/05/07	Dark grey sandy clay
227493	TP81	2.5	01/05/07	Dark grey sandy clay
227494	WS51	0.3	02/05/07	Dark grey sand with coal / coke and rubble
227495	WS51	2.8	02/05/07	Grey & brown clay
227498	MW39	2	02/05/07	Dark brown sand with brick and concrete
227499	MW39	4	02/05/07	Grey & brown clay
227500	TP84 Matrix	-	02/05/07	Dark grey sand with gravel and rubble
227506	TP82	0.4	02/05/07	Dark grey sand with rubble

*Denotes outside the scope of MCERTS accreditation since matrix not included in method validation.

ALcontrol Technichem
Sample Description

Job Number: 07-31513
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Soil
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	Sample Description
227507	TP83	0.5	02/05/07	Grey & brown clay with gravel
227508	TP83	1.80-2.00	02/05/07	Brown clay with gravel
227509	TP85	0.50-1.00	02/05/07	*Dark brown clinker / ash with sand and gravel
227510	TP85	3	02/05/07	-
227511	TP86	1.5	02/05/07	Black sand with coal / coke and brick
227512	TP87	0.50-1.00	02/05/07	-
227513	TP87	2.00-2.30	02/05/07	Grey & brown sandy clay with gravel
227514	TP87	4.5	02/05/07	Grey & brown clay
227515	TP86	4.00-4.20	02/05/07	Dark grey sandy clay with rubble
227516	TP70	1	02/05/07	Dark brown sand with rubble and coal / coke
227517	TP70	3	02/05/07	Dark grey clay
227518	TP72A	0.5	02/05/07	*Dark grey clinker / ash with rubble and sand
227519	TP92	1	02/05/07	Dark brown sand with gravel and rubble
227520	TP92	2.5	02/05/07	Brown clay

*Denotes outside the scope of MCERTS accreditation since matrix not included in method validation.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	MW38	MW38	Method No	Units	LOD	TP80	TP81	Method No
Sample Depth (m)	6.50	8.00				0.50	0.50	
Date Sampled	01/05/07	01/05/07				01/05/07	01/05/07	
Date Scheduled	04/05/07	04/05/07				04/05/07	04/05/07	
Laboratory Reference No	227479	227480				227490	227491	
Analysis								
Moisture Content (Dry Weight)	11.8	17.0		%	0.1	18.8	23.2	
Moisture Content (Wet Weight)	10.6	14.5		%	0.1	15.8	18.8	
Asbestos (Screen)	-	-	001a			Absent	Absent	001a
Arsenic	9.8	-	069S[IM]	mg/kg	3	-	38	069S[IM]
Barium	-	-	069S[IM]	mg/kg	10	-	630	069S[IM]
Beryllium	-	-	069S[IM]	mg/kg	0.5	-	2.1	069S[IM]
Boron (W/S)	-	-	016S[IM]	mg/kg	0.5	-	2.0	016S[IM]
Cadmium	< 0.5	-	069S[IM]	mg/kg	0.5	-	1.3	069S[IM]
Chromium	31	-	069S[IM]	mg/kg	10	-	81	069S[IM]
Copper	38	-	069S[IM]	mg/kg	5	-	440	069S[IM]
Lead	43	-	069S[IM]	mg/kg	10	-	200	069S[IM]
Mercury	< 0.6	-	069S[IM]	mg/kg	0.6	-	0.6	069S[IM]
Nickel	41	-	069S[IM]	mg/kg	4	-	64	069S[IM]
Selenium	< 2.5	-	069S[IM]	mg/kg	2.5	-	< 2.5	069S[IM]
Sulphate (Total Acid Soluble) as SO4	-	-	025a[IM]	mg/kg	200	-	1100	025a[IM]
Titanium	-	-	069S	mg/kg	5	-	-	069S
Vanadium	-	-	069S[IM]	mg/kg	3	-	110	069S[IM]
Zinc	95	-	069S[IM]	mg/kg	10	-	490	069S[IM]
Exchangeable Ammonium as N	-	-	018[IM]	mg/kg	40	-	< 40	018[IM]
Total Cyanide	-	-	061S[IM]	mg/kg	1	< 1	< 1	061S[IM]
Organic Carbon	-	-	092[IM]	%	0.1	-	-	092[IM]
W/S Nitrate as N	-	-	073S[I]	mg/kg	2.2	-	-	073S[I]
pH	6.3	6.2	009S[IM]	pH Units		-	11.1	009S[IM]
* * VPH/BTEX SUITE * *								
MTBE	< 0.01	-	068S[IM]	mg/kg	0.01	-	-	068S[IM]
Benzene	< 0.01	-	068S[IM]	mg/kg	0.01	-	-	068S[IM]
Toluene	< 0.01	-	068S[IM]	mg/kg	0.01	-	-	068S[IM]
Ethylbenzene	< 0.01	-	068S[IM]	mg/kg	0.01	-	-	068S[IM]
m,p-Xylenes	< 0.01	-	068S[IM]	mg/kg	0.01	-	-	068S[IM]

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	MW38	MW38	Method No	Units	LOD	TP80	TP81	Method No
Sample Depth (m)	6.50	8.00				0.50	0.50	
Date Sampled	01/05/07	01/05/07				01/05/07	01/05/07	
Date Scheduled	04/05/07	04/05/07				04/05/07	04/05/07	
Laboratory Reference No	227479	227480				227490	227491	
Analysis								
o-Xylene	0.015	-	068S[IM]	mg/kg	0.01	-	-	068S[IM]
1,3,5-Trimethylbenzene	0.022	-	068S[IM]	mg/kg	0.01	-	-	068S[IM]
1,2,4-Trimethylbenzene	0.46	-	068S[IM]	mg/kg	0.01	-	-	068S[IM]
VPH Compounds (C5-C10)	3.0	-	068S[IM]	mg/kg	0.01	-	-	068S[IM]
VPH Compounds (C10-C12)	7.2	-	068S	mg/kg	0.01	-	-	068S
VPH Compounds (C5-C12)	10	-	068S	mg/kg	0.01	-	-	068S
* * EPH SUITE * *								
EPH (C10-C20)	7	-	070S	mg/kg	5	-	-	070S
EPH (C20-C30)	< 5	-	070S	mg/kg	5	-	-	070S
EPH (C30-C40)	< 5	-	070S	mg/kg	5	-	-	070S
EPH (C10-C40)	14	6	070S[IM]	mg/kg	5	-	-	070S[IM]

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	LOD	MW39	MW39	TP84 Matrix	Method No	Units	LOD	TP82
Sample Depth (m)		2.00	4.00	-				0.40
Date Sampled		02/05/07	02/05/07	02/05/07				02/05/07
Date Scheduled		04/05/07	04/05/07	04/05/07				04/05/07
Laboratory Reference No		227498	227499	227500				227506
Analysis								
Moisture Content (Dry Weight)	0.1	13.9	20.3	8.4		%	0.1	6.7
Moisture Content (Wet Weight)	0.1	12.2	16.9	7.7		%	0.1	6.3
Asbestos (Screen)		Absent	-	Absent	001a			-
Arsenic	3	72	12	31	069S[IM]	mg/kg	3	15
Barium	10	240	43	280	069S[IM]	mg/kg	10	310
Beryllium	0.5	0.9	0.5	1.2	069S[IM]	mg/kg	0.5	0.6
Boron (W/S)	0.5	2.3	< 0.5	1.2	016S[IM]	mg/kg	0.5	0.8
Cadmium	0.5	1.3	< 0.5	0.7	069S[IM]	mg/kg	0.5	0.7
Chromium	10	54	18	28	069S[IM]	mg/kg	10	34
Copper	5	1400	32	99	069S[IM]	mg/kg	5	85
Lead	10	250	38	82	069S[IM]	mg/kg	10	57
Mercury	0.6	1.1	< 0.6	< 0.6	069S[IM]	mg/kg	0.6	0.8
Nickel	4	55	13	21	069S[IM]	mg/kg	4	31
Selenium	2.5	< 2.5	< 2.5	< 2.5	069S[IM]	mg/kg	2.5	< 2.5
Sulphate (Total Acid Soluble) as SO4	200	-	-	1000	025a[IM]	mg/kg	200	-
Titanium	5	-	-	-	069S	mg/kg	5	-
Vanadium	3	40	24	25	069S[IM]	mg/kg	3	25
Zinc	10	650	48	190	069S[IM]	mg/kg	10	170
Exchangeable Ammonium as N	40	< 40	-	< 40	018[IM]	mg/kg	40	-
Total Cyanide	1	< 1	< 1	< 1	061S[IM]	mg/kg	1	-
Organic Carbon	0.1	-	-	-	092[IM]	%	0.1	-
W/S Nitrate as N	2.2	-	-	< 2.2	073S[I]	mg/kg	2.2	-
pH		9.1	7.3	8.5	009S[IM]	pH Units		8.4
* * VPH/BTEX SUITE * *								
MTBE	0.01	-	-	-	068S[IM]	mg/kg	0.01	-
Benzene	0.01	-	-	-	068S[IM]	mg/kg	0.01	-
Toluene	0.01	-	-	-	068S[IM]	mg/kg	0.01	-
Ethylbenzene	0.01	-	-	-	068S[IM]	mg/kg	0.01	-
m,p-Xylenes	0.01	-	-	-	068S[IM]	mg/kg	0.01	-

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	LOD	MW39	MW39	TP84 Matrix	Method No	Units	LOD	TP82
Sample Depth (m)		2.00	4.00	-				0.40
Date Sampled		02/05/07	02/05/07	02/05/07				02/05/07
Date Scheduled		04/05/07	04/05/07	04/05/07				04/05/07
Laboratory Reference No		227498	227499	227500				227506
Analysis								
o-Xylene	0.01	-	-	-	068S[IM]	mg/kg	0.01	-
1,3,5-Trimethylbenzene	0.01	-	-	-	068S[IM]	mg/kg	0.01	-
1,2,4-Trimethylbenzene	0.01	-	-	-	068S[IM]	mg/kg	0.01	-
VPH Compounds (C5-C10)	0.01	-	-	-	068S[IM]	mg/kg	0.01	-
VPH Compounds (C10-C12)	0.01	-	-	-	068S	mg/kg	0.01	-
VPH Compounds (C5-C12)	0.01	-	-	-	068S	mg/kg	0.01	-
* * EPH SUITE * *								
EPH (C10-C20)	5	-	-	-	070S	mg/kg	5	-
EPH (C20-C30)	5	-	-	-	070S	mg/kg	5	-
EPH (C30-C40)	5	-	-	-	070S	mg/kg	5	-
EPH (C10-C40)	5	3100	300	350	070S[IM]	mg/kg	5	980

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD	TP87	TP87	TP87	TP86	TP70
Sample Depth (m)				**0.50-1.00**	**2.00-2.30**	**4.50**	**4.00-4.20**	**1.00**
Date Sampled				**02/05/07**	**02/05/07**	**02/05/07**	**02/05/07**	**02/05/07**
Date Scheduled				**04/05/07**	**04/05/07**	**04/05/07**	**04/05/07**	**04/05/07**
Laboratory Reference No				**227512**	**227513**	**227514**	**227515**	**227516**
Analysis								
Moisture Content (Dry Weight)		%	0.1	-	13.4	25.9	16.8	13.4
Moisture Content (Wet Weight)		%	0.1	-	11.9	20.5	14.4	11.8
Asbestos (Screen)	001a			Absent	Absent	-	-	Absent
Arsenic	069S[IM]	mg/kg	3	-	11	15	23	32
Barium	069S[IM]	mg/kg	10	-	75	71	99	300
Beryllium	069S[IM]	mg/kg	0.5	-	0.9	0.8	0.7	1.3
Boron (W/S)	016S[IM]	mg/kg	0.5	-	0.6	< 0.5	< 0.5	< 0.5
Cadmium	069S[IM]	mg/kg	0.5	-	< 0.5	< 0.5	< 0.5	0.7
Chromium	069S[IM]	mg/kg	10	-	13	24	15	27
Copper	069S[IM]	mg/kg	5	-	25	55	190	280
Lead	069S[IM]	mg/kg	10	-	30	66	54	110
Mercury	069S[IM]	mg/kg	0.6	-	< 0.6	< 0.6	< 0.6	< 0.6
Nickel	069S[IM]	mg/kg	4	-	23	16	16	150
Selenium	069S[IM]	mg/kg	2.5	-	< 2.5	< 2.5	< 2.5	< 2.5
Sulphate (Total Acid Soluble) as SO4	025a[IM]	mg/kg	200	-	< 200	-	-	-
Titanium	069S	mg/kg	5	-	-	-	-	-
Vanadium	069S[IM]	mg/kg	3	-	16	32	19	57
Zinc	069S[IM]	mg/kg	10	-	67	110	71	340
Exchangeable Ammonium as N	018[IM]	mg/kg	40	-	-	-	< 40	-
Total Cyanide	061S[IM]	mg/kg	1	-	< 1	-	< 1	-
Organic Carbon	092[IM]	%	0.1	-	-	-	-	-
W/S Nitrate as N	073S[I]	mg/kg	2.2	-	-	-	-	-
pH	009S[IM]	pH Units		-	8.0	7.3	7.9	8.2
* * VPH/BTEX SUITE * *								
MTBE	068S[IM]	mg/kg	0.01	-	-	-	-	-
Benzene	068S[IM]	mg/kg	0.01	-	-	-	-	-
Toluene	068S[IM]	mg/kg	0.01	-	-	-	-	-
Ethylbenzene	068S[IM]	mg/kg	0.01	-	-	-	-	-
m,p-Xylenes	068S[IM]	mg/kg	0.01	-	-	-	-	-

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD	TP70	TP72A	TP92	TP92	
Sample Depth (m)				3.00	0.50	1.00	2.50	
Date Sampled				02/05/07	02/05/07	02/05/07	02/05/07	
Date Scheduled				04/05/07	04/05/07	04/05/07	04/05/07	
Laboratory Reference No				227517	227518	227519	227520	
Analysis								
Moisture Content (Dry Weight)		%	0.1	13.3	15.4	13.8	18.4	
Moisture Content (Wet Weight)		%	0.1	11.7	13.4	12.1	15.5	
Asbestos (Screen)	001a			-	Absent	Absent	-	
Arsenic	069S[IM]	mg/kg	3	9.8	39	21	8.4	
Barium	069S[IM]	mg/kg	10	94	300	250	34	
Beryllium	069S[IM]	mg/kg	0.5	1.0	1.3	0.9	0.6	
Boron (W/S)	016S[IM]	mg/kg	0.5	1.1	< 0.5	0.8	< 0.5	
Cadmium	069S[IM]	mg/kg	0.5	< 0.5	0.7	2.4	< 0.5	
Chromium	069S[IM]	mg/kg	10	16	20	120	18	
Copper	069S[IM]	mg/kg	5	52	500	380	20	
Lead	069S[IM]	mg/kg	10	39	120	180	32	
Mercury	069S[IM]	mg/kg	0.6	< 0.6	< 0.6	0.9	< 0.6	
Nickel	069S[IM]	mg/kg	4	35	57	63	16	
Selenium	069S[IM]	mg/kg	2.5	< 2.5	< 2.5	< 2.5	< 2.5	
Sulphate (Total Acid Soluble) as SO4	025a[IM]	mg/kg	200	-	-	-	-	
Titanium	069S	mg/kg	5	-	-	-	-	
Vanadium	069S[IM]	mg/kg	3	20	52	72	19	
Zinc	069S[IM]	mg/kg	10	190	240	850	60	
Exchangeable Ammonium as N	018[IM]	mg/kg	40	-	< 40	-	-	
Total Cyanide	061S[IM]	mg/kg	1	-	< 1	-	-	
Organic Carbon	092[IM]	%	0.1	-	-	-	-	
W/S Nitrate as N	073S[I]	mg/kg	2.2	-	-	-	-	
pH	009S[IM]	pH Units		-	8.4	8.2	7.3	
* * VPH/BTEX SUITE * *								
MTBE	068S[IM]	mg/kg	0.01	-	-	-	-	
Benzene	068S[IM]	mg/kg	0.01	-	-	-	-	
Toluene	068S[IM]	mg/kg	0.01	-	-	-	-	
Ethylbenzene	068S[IM]	mg/kg	0.01	-	-	-	-	
m,p-Xylenes	068S[IM]	mg/kg	0.01	-	-	-	-	

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD	TP70	TP72A	TP92	TP92	
Sample Depth (m)				3.00	0.50	1.00	2.50	
Date Sampled				02/05/07	02/05/07	02/05/07	02/05/07	
Date Scheduled				04/05/07	04/05/07	04/05/07	04/05/07	
Laboratory Reference No				227517	227518	227519	227520	
Analysis								
o-Xylene	068S[I M]	mg/kg	0.01	-	-	-	-	
1,3,5-Trimethylbenzene	068S[I M]	mg/kg	0.01	-	-	-	-	
1,2,4-Trimethylbenzene	068S[I M]	mg/kg	0.01	-	-	-	-	
VPH Compounds (C5-C10)	068S[I M]	mg/kg	0.01	-	-	-	-	
VPH Compounds (C10-C12)	068S	mg/kg	0.01	-	-	-	-	
VPH Compounds (C5-C12)	068S	mg/kg	0.01	-	-	-	-	
* * EPH SUITE * *								
EPH (C10-C20)	070S	mg/kg	5	-	-	-	-	
EPH (C20-C30)	070S	mg/kg	5	-	-	-	-	
EPH (C30-C40)	070S	mg/kg	5	-	-	-	-	
EPH (C10-C40)	070S[I M]	mg/kg	5	-	500	1100	6	

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD
Sample Depth (m)			
Date Sampled			
Date Scheduled			
Laboratory Reference No			
Analysis			
Moisture Content (Dry Weight)		%	0.1
Moisture Content (Wet Weight)		%	0.1
Asbestos (Screen)	001a		
Arsenic	069S[IM]	mg/kg	3
Barium	069S[IM]	mg/kg	10
Beryllium	069S[IM]	mg/kg	0.5
Boron (W/S)	016S[IM]	mg/kg	0.5
Cadmium	069S[IM]	mg/kg	0.5
Chromium	069S[IM]	mg/kg	10
Copper	069S[IM]	mg/kg	5
Lead	069S[IM]	mg/kg	10
Mercury	069S[IM]	mg/kg	0.6
Nickel	069S[IM]	mg/kg	4
Selenium	069S[IM]	mg/kg	2.5
Sulphate (Total Acid Soluble) as SO4	025a[IM]	mg/kg	200
Titanium	069S	mg/kg	5
Vanadium	069S[IM]	mg/kg	3
Zinc	069S[IM]	mg/kg	10
Exchangeable Ammonium as N	018[IM]	mg/kg	40
Total Cyanide	061S[IM]	mg/kg	1
Organic Carbon	092[IM]	%	0.1
W/S Nitrate as N	073S[I]	mg/kg	2.2
pH	009S[IM]	pH Units	
* * VPH/BTEX SUITE * *			
MTBE	068S[IM]	mg/kg	0.01
Benzene	068S[IM]	mg/kg	0.01
Toluene	068S[IM]	mg/kg	0.01
Ethylbenzene	068S[IM]	mg/kg	0.01
m,p-Xylenes	068S[IM]	mg/kg	0.01

[I] ISO 17025 accredited.
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ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD
Sample Depth (m)			
Date Sampled			
Date Scheduled			
Laboratory Reference No			
Analysis			
o-Xylene	068S[I,M]	mg/kg	0.01
1,3,5-Trimethylbenzene	068S[I,M]	mg/kg	0.01
1,2,4-Trimethylbenzene	068S[I,M]	mg/kg	0.01
VPH Compounds (C5-C10)	068S[I,M]	mg/kg	0.01
VPH Compounds (C10-C12)	068S	mg/kg	0.01
VPH Compounds (C5-C12)	068S	mg/kg	0.01
* * EPH SUITE * *			
EPH (C10-C20)	070S	mg/kg	5
EPH (C20-C30)	070S	mg/kg	5
EPH (C30-C40)	070S	mg/kg	5
EPH (C10-C40)	070S[I,M]	mg/kg	5

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	MW38	Method No	Units	LOD	TP81	TP81	WS51	WS51
Sample Depth (m)	6.50				0.50	2.50	0.30	2.80
Date Sampled	01/05/07				01/05/07	01/05/07	02/05/07	02/05/07
Date Scheduled	04/05/07				04/05/07	04/05/07	04/05/07	04/05/07
Laboratory Reference No	227479				227491	227493	227494	227495
Analysis								
* * PAH SUITE * *								
Naphthalene	< 0.1	022S[I,M]	mg/kg	0.1	0.22	-	0.23	-
Acenaphthylene	< 0.1	022S[I,M]	mg/kg	0.1	< 0.1	-	< 0.1	-
Acenaphthene	< 0.1	022S[I,M]	mg/kg	0.1	< 0.1	-	< 0.1	-
Fluorene	< 0.1	022S[I,M]	mg/kg	0.1	0.17	-	< 0.1	-
Phenanthrene	< 0.1	022S[I,M]	mg/kg	0.1	1.5	-	0.38	-
Anthracene	< 0.1	022S[I,M]	mg/kg	0.1	0.31	-	< 0.1	-
Fluoranthene	< 0.1	022S[I,M]	mg/kg	0.1	1.9	-	0.39	-
Pyrene	< 0.1	022S[I,M]	mg/kg	0.1	1.2	-	0.32	-
Benzo(a)anthracene	< 0.1	022S[I,M]	mg/kg	0.1	0.79	-	0.27	-
Chrysene	< 0.1	022S[I,M]	mg/kg	0.1	0.83	-	0.40	-
Benzo(b)fluoranthene	< 0.1	022S[I,M]	mg/kg	0.1	0.64	-	0.38	-
Benzo(k)fluoranthene	< 0.1	022S[I,M]	mg/kg	0.1	0.54	-	0.27	-
Benzo(a)pyrene	< 0.1	022S[I,M]	mg/kg	0.1	0.37	-	0.30	-
Indeno(1,2,3-cd)pyrene	< 0.1	022S[I,M]	mg/kg	0.1	0.23	-	0.18	-
Dibenzo(a,h)anthracene	< 0.1	022S[I,M]	mg/kg	0.1	< 0.1	-	< 0.1	-
Benzo(g,h,i)perylene	< 0.1	022S[I,M]	mg/kg	0.1	0.25	-	0.21	-
PAH (Sum of Dutch 10)	ND	022S[I]	mg/kg	0.1	6.98	-	2.63	-
PAH (Sum of EPA 16)	ND	022S[I]	mg/kg	0.1	8.95	-	3.32	-

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD	MW39	MW39	TP84 Matrix	Method No	Units	LOD
Sample Depth (m)				2.00	4.00	-			
Date Sampled				02/05/07	02/05/07	02/05/07			
Date Scheduled				04/05/07	04/05/07	04/05/07			
Laboratory Reference No				227498	227499	227500			
Analysis									
* * PAH SUITE * *									
Naphthalene	022S[IM]	mg/kg	0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Acenaphthylene	022S[IM]	mg/kg	0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Acenaphthene	022S[IM]	mg/kg	0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Fluorene	022S[IM]	mg/kg	0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Phenanthrene	022S[IM]	mg/kg	0.1	-	< 0.1	0.13	022S[IM]	mg/kg	0.1
Anthracene	022S[IM]	mg/kg	0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Fluoranthene	022S[IM]	mg/kg	0.1	-	< 0.1	0.42	022S[IM]	mg/kg	0.1
Pyrene	022S[IM]	mg/kg	0.1	-	< 0.1	0.37	022S[IM]	mg/kg	0.1
Benzo(a)anthracene	022S[IM]	mg/kg	0.1	-	< 0.1	0.22	022S[IM]	mg/kg	0.1
Chrysene	022S[IM]	mg/kg	0.1	-	< 0.1	0.27	022S[IM]	mg/kg	0.1
Benzo(b)fluoranthene	022S[IM]	mg/kg	0.1	-	< 0.1	0.36	022S[IM]	mg/kg	0.1
Benzo(k)fluoranthene	022S[IM]	mg/kg	0.1	-	< 0.1	0.21	022S[IM]	mg/kg	0.1
Benzo(a)pyrene	022S[IM]	mg/kg	0.1	-	< 0.1	0.30	022S[IM]	mg/kg	0.1
Indeno(1,2,3-cd)pyrene	022S[IM]	mg/kg	0.1	-	< 0.1	0.16	022S[IM]	mg/kg	0.1
Dibenzo(a,h)anthracene	022S[IM]	mg/kg	0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Benzo(g,h,i)perylene	022S[IM]	mg/kg	0.1	-	< 0.1	0.17	022S[IM]	mg/kg	0.1
PAH (Sum of Dutch 10)	022S[I]	mg/kg	0.1	-	ND	1.89	022S[I]	mg/kg	0.1
PAH (Sum of EPA 16)	022S[I]	mg/kg	0.1	-	ND	2.61	022S[I]	mg/kg	0.1

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP70	TP70	TP72A	TP92	TP92	Method No	Units	LOD
Sample Depth (m)	1.00	3.00	0.50	1.00	2.50			
Date Sampled	02/05/07	02/05/07	02/05/07	02/05/07	02/05/07			
Date Scheduled	04/05/07	04/05/07	04/05/07	04/05/07	04/05/07			
Laboratory Reference No	227516	227517	227518	227519	227520			
Analysis								
* * PAH SUITE * *								
Naphthalene	< 0.1	< 0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Acenaphthylene	< 0.1	< 0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Acenaphthene	< 0.1	< 0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Fluorene	< 0.1	< 0.1	-	< 0.1	< 0.1	022S[IM]	mg/kg	0.1
Phenanthrene	0.10	< 0.1	-	0.39	< 0.1	022S[IM]	mg/kg	0.1
Anthracene	< 0.1	< 0.1	-	0.11	< 0.1	022S[IM]	mg/kg	0.1
Fluoranthene	0.18	< 0.1	-	1.1	< 0.1	022S[IM]	mg/kg	0.1
Pyrene	0.18	< 0.1	-	0.84	< 0.1	022S[IM]	mg/kg	0.1
Benzo(a)anthracene	< 0.1	< 0.1	-	0.64	< 0.1	022S[IM]	mg/kg	0.1
Chrysene	0.12	< 0.1	-	0.76	< 0.1	022S[IM]	mg/kg	0.1
Benzo(b)fluoranthene	0.11	< 0.1	-	0.74	< 0.1	022S[IM]	mg/kg	0.1
Benzo(k)fluoranthene	< 0.1	< 0.1	-	0.56	< 0.1	022S[IM]	mg/kg	0.1
Benzo(a)pyrene	0.11	< 0.1	-	0.60	< 0.1	022S[IM]	mg/kg	0.1
Indeno(1,2,3-cd)pyrene	< 0.1	< 0.1	-	0.48	< 0.1	022S[IM]	mg/kg	0.1
Dibenzo(a,h)anthracene	< 0.1	< 0.1	-	0.13	< 0.1	022S[IM]	mg/kg	0.1
Benzo(g,h,i)perylene	< 0.1	< 0.1	-	0.66	< 0.1	022S[IM]	mg/kg	0.1
PAH (Sum of Dutch 10)	0.52	ND	-	5.26	ND	022S[I]	mg/kg	0.1
PAH (Sum of EPA 16)	0.82	ND	-	6.96	ND	022S[I]	mg/kg	0.1

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP70				Method No	Units	LOD
Sample Depth (m)	3.00						
Date Sampled	02/05/07						
Date Scheduled	04/05/07						
Laboratory Reference No	227517						
Analysis							
* * CWG SUITE * *							
Aliphatic C5-C6	< 0.01				CWGS	mg/kg	0.01
Aliphatic >C6-C8	0.01				CWGS	mg/kg	0.01
Aliphatic >C8-C10	< 0.01				CWGS	mg/kg	0.01
Aliphatic >C10-C12	< 0.01				CWGS	mg/kg	0.01
Aliphatic >C12-C16	< 5				CWGS[I]	mg/kg	5
Aliphatic >C16-C21	5.3				CWGS[I]	mg/kg	5
Aliphatic >C21-C35	10				CWGS[I]	mg/kg	5
Total Aliphatics (C5-C35)	15				CWGS	mg/kg	5
Aromatic C6-C7	< 0.01				CWGS	mg/kg	0.01
Aromatic >C7-C8	< 0.01				CWGS	mg/kg	0.01
Aromatic >C8-C10	< 0.01				CWGS	mg/kg	0.01
Aromatic >C10-C12	< 0.01				CWGS	mg/kg	0.01
Aromatic >C12-C16	< 5				CWGS[I]	mg/kg	5
Aromatic >C16-C21	< 5				CWGS[I]	mg/kg	5
Aromatic >C21-C35	< 5				CWGS[I]	mg/kg	5
Total Aromatics (C5-C35)	< 5				CWGS	mg/kg	5
Volatile Hydrocarbons (C5-C12)	0.01				CWGS	mg/kg	0.01
Extractable Hydrocarbons (C12-C35)	15				CWGS	mg/kg	5
Total Hydrocarbons (C5-C35)	15				CWGS	mg/kg	5
MTBE	< 0.010				CWGS[IM]	mg/kg	0.01
Benzene	< 0.010				CWGS[IM]	mg/kg	0.01
Toluene	< 0.010				CWGS[IM]	mg/kg	0.01
Ethylbenzene	< 0.010				CWGS[IM]	mg/kg	0.01
m,p-Xylenes	< 0.010				CWGS[IM]	mg/kg	0.01
o-Xylene	< 0.010				CWGS[IM]	mg/kg	0.01
1,3,5-Trimethylbenzene	< 0.010				CWGS[IM]	mg/kg	0.01
1,2,4-Trimethylbenzene	< 0.010				CWGS[IM]	mg/kg	0.01

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP81	MW39	Method No	Units	LOD	TP85	TP87	TP86
Sample Depth (m)	1.50	2.00				0.50-1.00	2.00-2.30	4.00-4.20
Date Sampled	01/05/07	02/05/07				02/05/07	02/05/07	02/05/07
Date Scheduled	04/05/07	04/05/07				04/05/07	04/05/07	04/05/07
Laboratory Reference No	227492	227498				227509	227513	227515
Analysis								
* * SVOC SUITE * *								
Naphthalene	< 150	220	053S[IM]	ug/kg	150	250	< 150	< 150
2-Chloronaphthalene	< 150	< 150	053S[I]	ug/kg	150	< 150	< 150	< 150
Acenaphthylene	< 150	< 150	053S[I]	ug/kg	150	< 150	< 150	< 150
Acenaphthene	< 150	< 150	053S[I]	ug/kg	150	< 150	< 150	< 150
Fluorene	< 150	< 150	053S[I]	ug/kg	150	< 150	< 150	< 150
Phenanthrene	< 150	910	053S[I]	ug/kg	150	540	< 150	< 150
Anthracene	< 150	180	053S[I]	ug/kg	150	< 150	< 150	< 150
Fluoranthene	< 150	980	053S[I]	ug/kg	150	370	< 150	< 150
Pyrene	< 150	800	053S[IM]	ug/kg	150	280	< 150	< 150
Benz(a)anthracene	< 150	490	053S	ug/kg	150	180	< 150	< 150
Chrysene	< 150	610	053S[I]	ug/kg	150	270	< 150	< 150
Benzo(b)fluoranthene	< 150	530	053S[I]	ug/kg	150	180	< 150	< 150
Benzo(k)fluoranthene	< 150	320	053S[I]	ug/kg	150	< 150	< 150	< 150
Benzo(a)pyrene	< 150	500	053S	ug/kg	150	150	< 150	< 150
Dibenzo(a,h)anthracene	< 150	< 150	053S[IM]	ug/kg	150	< 150	< 150	< 150
Indeno(1,2,3-cd)pyrene	< 150	400	053S[I]	ug/kg	150	< 150	< 150	< 150
Benzo(g,h,i)perylene	< 150	460	053S[I]	ug/kg	150	< 150	< 150	< 150
Phenol	< 150	290	053S[I]	ug/kg	150	< 150	< 150	< 150
2-Chlorophenol	< 150	< 150	053S[IM]	ug/kg	150	< 150	< 150	< 150
2-Methylphenol	< 200	< 200	053S[I]	ug/kg	200	< 200	< 200	< 200
4-Methylphenol	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
2-Nitrophenol	< 300	< 300	053S[I]	ug/kg	300	< 300	< 300	< 300
2,4-Dimethylphenol	< 250	< 250	053S[IM]	ug/kg	250	< 250	< 250	< 250
2,4-Dichlorophenol	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
2,6-Dichlorophenol	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
4-Chloro-3-methyl phenol	< 150	< 150	053S[IM]	ug/kg	150	< 150	< 150	< 150
2,4,6-Trichlorophenol	< 150	< 150	053S[I]	ug/kg	150	< 150	< 150	< 150
2,4,5-Trichlorophenol	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
4-Nitrophenol	< 300	< 300	053S	ug/kg	300	< 300	< 300	< 300

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[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP81	MW39	Method No	Units	LOD	TP85	TP87	TP86
Sample Depth (m)	1.50	2.00				0.50-1.00	2.00-2.30	4.00-4.20
Date Sampled	01/05/07	02/05/07				02/05/07	02/05/07	02/05/07
Date Scheduled	04/05/07	04/05/07				04/05/07	04/05/07	04/05/07
Laboratory Reference No	227492	227498				227509	227513	227515
Analysis								
* * SVOC SUITE Cont.. * *								
2,3,4,6-Tetrachlorophenol	< 250	< 250	053S	ug/kg	250	< 250	< 250	< 250
Pentachlorophenol	< 250	< 250	053S	ug/kg	250	< 250	< 250	< 250
Dimethyl Phthalate	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
Diethyl Phthalate	< 200	< 200	053S[I]	ug/kg	200	< 200	< 200	< 200
Di-n-butyl phthalate	< 150	< 150	053S[I]	ug/kg	150	< 150	< 150	< 150
Butyl benzyl phthalate	< 150	< 150	053S[IM]	ug/kg	150	< 150	< 150	< 150
Bis(2-chloroethyl)ether	< 150	< 150	053S[IM]	ug/kg	150	< 150	< 150	< 150
Bis(2-chloroisopropyl)ether	< 200	< 200	053S[I]	ug/kg	200	< 200	< 200	< 200
4-Chlorophenyl phenyl ether	< 150	< 150	053S[I]	ug/kg	150	< 150	< 150	< 150
Bromo phenyl phenyl ether	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
1,3-Dichlorobenzene	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
1,2-Dichlorobenzene	< 150	< 150	053S[IM]	ug/kg	150	< 150	< 150	< 150
1,4-Dichlorobenzene	< 200	< 200	053S[I]	ug/kg	200	< 200	< 200	< 200
Nitrobenzene	< 150	< 150	053S[IM]	ug/kg	150	< 150	< 150	< 150
1,2,4-Trichlorobenzene	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
2,6-Dinitrotoluene	< 200	< 200	053S	ug/kg	200	< 200	< 200	< 200
2,4-Dinitrotoluene	< 200	< 200	053S	ug/kg	200	< 200	< 200	< 200
Azobenzene	< 200	< 200	053S[I]	ug/kg	200	< 200	< 200	< 200
Hexachlorobenzene	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
Hexachloroethane	< 150	< 150	053S[I]	ug/kg	150	< 150	< 150	< 150
n-Nitro-n-propyl-1-propanamine	< 200	< 200	053S[I]	ug/kg	200	< 200	< 200	< 200
Isophorone	< 200	< 200	053S[IM]	ug/kg	200	< 200	< 200	< 200
Bis(2-chloroethoxy)methane	< 150	< 150	053S[I]	ug/kg	150	< 150	< 150	< 150
Hexachlorobutadiene	< 150	< 150	053S[IM]	ug/kg	150	< 150	< 150	< 150
Anthraquinone	< 150	< 150	053S	ug/kg	150	< 150	< 150	< 150
Hexachlorocyclopentadiene	< 300	< 300	053S	ug/kg	300	< 300	< 300	< 300
2-Methylnapthalene	< 150	430	053S[I]	ug/kg	150	370	< 150	350
2-nitroaniline	< 250	< 250	053S[I]	ug/kg	250	< 250	< 250	< 250
3-nitroaniline	< 200	< 200	053S	ug/kg	200	< 200	< 200	< 200

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	TP81	MW39	Method No	Units	LOD	TP85	TP87	TP86
Sample Depth (m)	1.50	2.00				0.50-1.00	2.00-2.30	4.00-4.20
Date Sampled	01/05/07	02/05/07				02/05/07	02/05/07	02/05/07
Date Scheduled	04/05/07	04/05/07				04/05/07	04/05/07	04/05/07
Laboratory Reference No	227492	227498				227509	227513	227515
Analysis								
4-Chloroaniline	< 200	< 200	053S	ug/kg	200	< 200	< 200	< 200
Aniline	< 150	< 150	053S	ug/kg	150	< 150	< 150	< 150
Bis (2-ethylhexyl) phthalate	< 300	< 300	053S	ug/kg	300	< 300	< 300	< 300
Carbazole	< 100	< 100	053S[I]	ug/kg	100	< 100	< 100	< 100
Dibenzofuran	< 150	170	053S[IM]	ug/kg	150	< 150	< 150	< 150
Di-n-octyl phthalate	< 150	< 150	053S	ug/kg	150	< 150	< 150	< 150
4-nitroaniline	< 250	< 250	053S	ug/kg	250	< 250	< 250	< 250
Biphenyl	< 150	< 150	053S	ug/kg	150	190	< 150	< 150

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD	TP72A				
Sample Depth (m)				0.50				
Date Sampled				02/05/07				
Date Scheduled				04/05/07				
Laboratory Reference No				227518				
Analysis								
* * SVOC SUITE * *								
Naphthalene	053S[IM]	ug/kg	150	< 150				
2-Chloronaphthalene	053S[I]	ug/kg	150	< 150				
Acenaphthylene	053S[I]	ug/kg	150	< 150				
Acenaphthene	053S[I]	ug/kg	150	< 150				
Fluorene	053S[I]	ug/kg	150	< 150				
Phenanthrene	053S[I]	ug/kg	150	170				
Anthracene	053S[I]	ug/kg	150	< 150				
Fluoranthene	053S[I]	ug/kg	150	340				
Pyrene	053S[IM]	ug/kg	150	260				
Benz(a)anthracene	053S	ug/kg	150	160				
Chrysene	053S[I]	ug/kg	150	190				
Benzo(b)fluoranthene	053S[I]	ug/kg	150	180				
Benzo(k)fluoranthene	053S[I]	ug/kg	150	< 150				
Benzo(a)pyrene	053S	ug/kg	150	170				
Dibenzo(a,h)anthracene	053S[IM]	ug/kg	150	< 150				
Indeno(1,2,3-cd)pyrene	053S[I]	ug/kg	150	< 150				
Benzo(g,h,i)perylene	053S[I]	ug/kg	150	160				
Phenol	053S[I]	ug/kg	150	< 150				
2-Chlorophenol	053S[IM]	ug/kg	150	< 150				
2-Methylphenol	053S[I]	ug/kg	200	< 200				
4-Methylphenol	053S[IM]	ug/kg	200	< 200				
2-Nitrophenol	053S[I]	ug/kg	300	< 300				
2,4-Dimethylphenol	053S[IM]	ug/kg	250	< 250				
2,4-Dichlorophenol	053S[IM]	ug/kg	200	< 200				
2,6-Dichlorophenol	053S[IM]	ug/kg	200	< 200				
4-Chloro-3-methyl phenol	053S[IM]	ug/kg	150	< 150				
2,4,6-Trichlorophenol	053S[I]	ug/kg	150	< 150				
2,4,5-Trichlorophenol	053S[IM]	ug/kg	200	< 200				
4-Nitrophenol	053S	ug/kg	300	< 300				

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD	TP72A				
Sample Depth (m)				0.50				
Date Sampled				02/05/07				
Date Scheduled				04/05/07				
Laboratory Reference No				227518				
Analysis								
* * SVOC SUITE Cont.. * *								
2,3,4,6-Tetrachlorophenol	053S	ug/kg	250	< 250				
Pentachlorophenol	053S	ug/kg	250	< 250				
Dimethyl Phthalate	053S[IM]	ug/kg	200	< 200				
Diethyl Phthalate	053S[I]	ug/kg	200	< 200				
Di-n-butyl phthalate	053S[I]	ug/kg	150	< 150				
Butyl benzyl phthalate	053S[IM]	ug/kg	150	< 150				
Bis(2-chloroethyl)ether	053S[IM]	ug/kg	150	< 150				
Bis(2-chloroisopropyl)ether	053S[I]	ug/kg	200	< 200				
4-Chlorophenyl phenyl ether	053S[I]	ug/kg	150	< 150				
Bromo phenyl phenyl ether	053S[IM]	ug/kg	200	< 200				
1,3-Dichlorobenzene	053S[IM]	ug/kg	200	< 200				
1,2-Dichlorobenzene	053S[IM]	ug/kg	150	< 150				
1,4-Dichlorobenzene	053S[I]	ug/kg	200	< 200				
Nitrobenzene	053S[IM]	ug/kg	150	< 150				
1,2,4-Trichlorobenzene	053S[IM]	ug/kg	200	< 200				
2,6-Dinitrotoluene	053S	ug/kg	200	< 200				
2,4-Dinitrotoluene	053S	ug/kg	200	< 200				
Azobenzene	053S[I]	ug/kg	200	< 200				
Hexachlorobenzene	053S[IM]	ug/kg	200	< 200				
Hexachloroethane	053S[I]	ug/kg	150	< 150				
n-Nitro-n-propyl-1-propanamine	053S[I]	ug/kg	200	< 200				
Isophorone	053S[IM]	ug/kg	200	< 200				
Bis(2-chloroethoxy)methane	053S[I]	ug/kg	150	< 150				
Hexachlorobutadiene	053S[IM]	ug/kg	150	< 150				
Anthraquinone	053S	ug/kg	150	< 150				
Hexachlorocyclopentadiene	053S	ug/kg	300	< 300				
2-Methylnapthalene	053S[I]	ug/kg	150	< 150				
2-nitroaniline	053S[I]	ug/kg	250	< 250				
3-nitroaniline	053S	ug/kg	200	< 200				

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD	TP72A				
Sample Depth (m)				0.50				
Date Sampled				02/05/07				
Date Scheduled				04/05/07				
Laboratory Reference No				227518				
Analysis								
4-Chloroaniline	053S	ug/kg	200	< 200				
Aniline	053S	ug/kg	150	< 150				
Bis (2-ethylhexyl) phthalate	053S	ug/kg	300	< 300				
Carbazole	053S[I]	ug/kg	100	< 100				
Dibenzofuran	053S[IM]	ug/kg	150	< 150				
Di-n-octyl phthalate	053S	ug/kg	150	< 150				
4-nitroaniline	053S	ug/kg	250	< 250				
Biphenyl	053S	ug/kg	150	< 150				

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD
Sample Depth (m)			
Date Sampled			
Date Scheduled			
Laboratory Reference No			
Analysis			
* * SVOC SUITE * *			
Naphthalene	053S[IM]	ug/kg	150
2-Chloronaphthalene	053S[I]	ug/kg	150
Acenaphthylene	053S[I]	ug/kg	150
Acenaphthene	053S[I]	ug/kg	150
Fluorene	053S[I]	ug/kg	150
Phenanthrene	053S[I]	ug/kg	150
Anthracene	053S[I]	ug/kg	150
Fluoranthene	053S[I]	ug/kg	150
Pyrene	053S[IM]	ug/kg	150
Benz(a)anthracene	053S	ug/kg	150
Chrysene	053S[I]	ug/kg	150
Benzo(b)fluoranthene	053S[I]	ug/kg	150
Benzo(k)fluoranthene	053S[I]	ug/kg	150
Benzo(a)pyrene	053S	ug/kg	150
Dibenzo(a,h)anthracene	053S[IM]	ug/kg	150
Indeno(1,2,3-cd)pyrene	053S[I]	ug/kg	150
Benzo(g,h,i)perylene	053S[I]	ug/kg	150
Phenol	053S[I]	ug/kg	150
2-Chlorophenol	053S[IM]	ug/kg	150
2-Methylphenol	053S[I]	ug/kg	200
4-Methylphenol	053S[IM]	ug/kg	200
2-Nitrophenol	053S[I]	ug/kg	300
2,4-Dimethylphenol	053S[IM]	ug/kg	250
2,4-Dichlorophenol	053S[IM]	ug/kg	200
2,6-Dichlorophenol	053S[IM]	ug/kg	200
4-Chloro-3-methyl phenol	053S[IM]	ug/kg	150
2,4,6-Trichlorophenol	053S[I]	ug/kg	150
2,4,5-Trichlorophenol	053S[IM]	ug/kg	200
4-Nitrophenol	053S	ug/kg	300

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD
Sample Depth (m)			
Date Sampled			
Date Scheduled			
Laboratory Reference No			
Analysis			
* * SVOC SUITE Cont.. * *			
2,3,4,6-Tetrachlorophenol	053S	ug/kg	250
Pentachlorophenol	053S	ug/kg	250
Dimethyl Phthalate	053S[I M]	ug/kg	200
Diethyl Phthalate	053S[I]	ug/kg	200
Di-n-butyl phthalate	053S[I]	ug/kg	150
Butyl benzyl phthalate	053S[I M]	ug/kg	150
Bis(2-chloroethyl)ether	053S[I M]	ug/kg	150
Bis(2-chloroisopropyl)ether	053S[I]	ug/kg	200
4-Chlorophenyl phenyl ether	053S[I]	ug/kg	150
Bromo phenyl phenyl ether	053S[I M]	ug/kg	200
1,3-Dichlorobenzene	053S[I M]	ug/kg	200
1,2-Dichlorobenzene	053S[I M]	ug/kg	150
1,4-Dichlorobenzene	053S[I]	ug/kg	200
Nitrobenzene	053S[I M]	ug/kg	150
1,2,4-Trichlorobenzene	053S[I M]	ug/kg	200
2,6-Dinitrotoluene	053S	ug/kg	200
2,4-Dinitrotoluene	053S	ug/kg	200
Azobenzene	053S[I]	ug/kg	200
Hexachlorobenzene	053S[I M]	ug/kg	200
Hexachloroethane	053S[I]	ug/kg	150
n-Nitro-n-propyl-1-propanamine	053S[I]	ug/kg	200
Isophorone	053S[I M]	ug/kg	200
Bis(2-chloroethoxy)methane	053S[I]	ug/kg	150
Hexachlorobutadiene	053S[I M]	ug/kg	150
Anthraquinone	053S	ug/kg	150
Hexachlorocyclopentadiene	053S	ug/kg	300
2-Methylnapthalene	053S[I]	ug/kg	150
2-nitroaniline	053S[I]	ug/kg	250
3-nitroaniline	053S	ug/kg	200

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31513
Matrix : Soil
Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD
Sample Depth (m)			
Date Sampled			
Date Scheduled			
Laboratory Reference No			
Analysis			
4-Chloroaniline	053S	ug/kg	200
Aniline	053S	ug/kg	150
Bis (2-ethylhexyl) phthalate	053S	ug/kg	300
Carbazole	053S[I]	ug/kg	100
Dibenzofuran	053S[IM]	ug/kg	150
Di-n-octyl phthalate	053S	ug/kg	150
4-nitroaniline	053S	ug/kg	250
Biphenyl	053S	ug/kg	150

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
EPH Description

Job Number: 07-31513
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Soils
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
227479	MW38	6.5	01/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from before C10 to C38.
227480	MW38	8	01/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
227492	TP81	1.5	01/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C14 to C38.
227493	TP81	2.5	01/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to C38.
227494	WS51	0.3	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from before C10 to beyond C40 overlain by a series of peaks unidentifiable by this analysis.
227495	WS51	2.8	02/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
227498	MW39	2	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40 overlain by a series of n-alkane peaks eluting through the diesel range.
227499	MW39	4	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C13 to beyond C40.
227500	TP84 Matrix	-	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to beyond C40 overlain by a series of peaks consistent with a small amount of PAHs.

ALcontrol Technichem
EPH Description

Job Number: 07-31513
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Soils
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
227506	TP82	0.4	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to beyond C40 overlain by several peaks unidentifiable by this analysis.
227507	TP83	0.5	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C16 to C38.
227508	TP83	1.80-2.00	02/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.

ALcontrol Technichem
EPH Description

Job Number: 07-31513
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Soils
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
227509	TP85	0.50-1.00	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to C38.
227511	TP86	1.5	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to C40.
227513	TP87	2.00-2.30	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to C40.
227514	TP87	4.5	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C14 to C40.
227515	TP86	4.00-4.20	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from before C10 to C40.
227516	TP70	1	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40.
227518	TP72A	0.5	02/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to beyond C40.
227519	TP92	1	02/05/07	The sample chromatogram exhibits two overlapping humps of unresolved complex material eluting from C12 to beyond C40, overlain by a series of n-alkane peaks eluting from C12 to C21.

ALcontrol Technichem
EPH Description

Job Number: 07-31513
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Soils
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
227520	TP92	2.5	02/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31513

Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
068S	In-house method	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) including BTEX and MTBE compounds by Headspace GC-FID (VPH).	W
061S	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in soil samples by continuous flow colorimetry (Skalar)	W
053S	In-house method	Determination of semi-volatile organic compounds in soil samples by dichloromethane extraction and GC-MS detection	W
022S	In-house method	Determination of PAH compounds in soil samples by hexane / acetone extraction followed by GC-MS detection	W
018	In-house method based on Method 17.13 "Environmental Assessment Guidance" Version 3, Second Site Property, March 2003	Determination of exchangeable ammonium in soil samples (potassium chloride extraction)	W
009S	In-house method referencing BS1377: Part 3: 1990 and Second Site Property: Environmental Assessment Guidance Version 3: March 2003	Determination of pH by addition of water followed by electrometric measurement	W
CWGS	In-house method based on "Total Petroleum Hydrocarbon Criteria Working Group" series, 1998-9	Determination of "CWG" banded petroleum hydrocarbons in soil samples using a combination of headspace GC-FID (C5-C12) and hexane:acetone extraction / silica-alumina aliphatic - aromatic split / GC-FID (C12-C35) techniques with banding by comparison to alkane standards	W
086L	In-house method	Determination of sulphate content in aqueous samples using ion chromatographic determination with electrical conductivity detector	W
084L	In-house method	Determination of pH in aqueous samples by direct electrometric measurement	W

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31513

Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
080L	In-house method based on MEWAM "Inductively Coupled Plasma Spectrometry", HMSO, 1996	Determination of metals in aqueous samples by nitric acid digestion followed by Inductively Coupled Plasma - Mass Spectrometry detection (ICP-MS)	W
072L	In-house method	Determination of cyclopentane extractable hydrocarbons in aqueous samples by large volume injection gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	W
071S	In-house method	Determination of volatile organic compounds in soil samples by headspace GC-MS analysis	W
070S	In-house method	Determination of hexane/acetone extractable hydrocarbons in soil by gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	W
061L	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in aqueous samples by continuous flow colorimetry (Skalar)	W
022L	In-house method	Determination of PAH compounds in aqueous samples by pentane extraction followed by GC-MS detection	W
092	In-house method	Determination of organic content and organic carbon in soil samples by combustion analyser	D
069S	In-house method based on MEWAM "Methods for the Determination of Metals in Soil", HMSO, 1986	Determination of metals in soil samples by aqua-regia digestion followed by ICP OES detection	D
025a	In-house method based on BS1377 Part 3, "Chemical and Electrochemical Tests", 1990	Determination of hydrochloric acid soluble sulphate in soil samples by Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES)	D

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31513

Project Code: 64-C11647

Project Name: Alcoa
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
016S	In-house method	Determination of water soluble boron by 2:1 extraction in hot water followed by ICP-OES detection	D
073S	In-house method based on BS1377 Part 3, "Chemical and Electrochemical Tests", 1990	Determination of water soluble anion content in soils using a 2:1 water:soil extration ratio followed by ion chromatographic determination with electrical conductivity detector	D
086W	In-house method	Determination of anion content in aqueous samples using ion chromatographic determination with electrical conductivity detector	
084W	In-house method	Determination of pH in aqueous samples by direct electrometric measurement	
080W	In-house method based on MEWAM "Inductively Coupled Plasma Spectrometry", HMSO, 1996	Determination of metals in aqueous samples by nitric acid digestion followed by Inductively Coupled Plasma - Mass Spectrometry detection (ICP-MS)	
053W	In-house method	Determination of semi-volatile organic compounds in aqueous samples by dichloromethane extraction and GC-MS detection	
040W	In-house method based on EPA624 "Volatile Organic Compounds in Waste Waters"	Determination of volatile organic compounds in aqueous samples by headspace GC-MS	
001a	In-house method based on HSG 248	Visual screening of soil samples for fibrous material requiring further identification according to method 001 (note for samples > approximately 1kg it may be necessary to sub-sample prior to screening)	

Soil results are expressed on a dry weight basis. Where the test uses as-received sample, a moisture correction factor is applied to the wet weight result. This factor is determined gravimetrically using weight loss on drying at 30º (+/-5) C.

Jo Cutler
Environ UK Ltd
Hartham Park
Corsham
Wiltshire
SN13 0RR

21 May 2007

TEST REPORT

Our Report Number: 07-31634

Your Order Reference: Instructions of 08/05/2007

36 soil samples and 2 water samples submitted for analysis on 08/05/2007

Project Name: ALCOA

Project Code: 64C11647

Laboratory analysis started on 09/05/2007
All laboratory analysis completed by 21 May 2007

pp. Sharon Googh
Project Co-Ordinator
ALCONTROL TECHNICHEM

Rexona Rahman
Analytical Reporting Manager
ALCONTROL TECHNICHEM

ALcontrol Technichem
Sample Description

Job Number: 07-31634
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soil
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	Sample Description
228084	TP93	0.90	03/05/07	Black sandy clay with gravel
228085	TP93	1.50	03/05/07	Dark brown clay with gravel
228086	TP94	0.50	03/05/07	Orange / brown clay with gravel
228087	TP94	1.40	03/05/07	Orange / brown clay with gravel
228088	TP96	1.00	03/05/07	Orange / brown clay
228089	TP96	2.50	03/05/07	Orange / brown clay with gravel
228090	TP97	1.5-2	03/05/07	Grey & brown clay with gravel
228091	TP97	2.3-2.5	03/05/07	Black clay with gravel
228092	TP98	0.5-1	03/05/07	Grey & brown clay with gravel
228093	TP98	3.2-3.4	03/05/07	Dark brown clay with gravel
228094	TP99	1.00	03/05/07	Orange / brown clay with gravel
228095	TP99	2.60	03/05/07	Grey & brown clay with gravel
228096	TP100	0.2-0.4	03/05/07	Black sandy clay with gravel
228097	TP100	1.5-1.8	03/05/07	Grey & brown clay with gravel

ALcontrol Technichem
Sample Description

Job Number: 07-31634
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soil
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	Sample Description
228098	TP101	0.70	03/05/07	Black sandy clay with gravel
228099	TP101	4.00	03/05/07	Orange / brown clay
228100	TP102	0.50	03/05/07	Black sandy clay with gravel
228101	TP102	1.50	03/05/07	Dark brown clay with gravel
228102	TP103	0.5-1.0	03/05/07	Black sand with gravel
228103	TP104	1.90	03/05/07	Grey & brown clay with gravel
228104	TP104	3.40	03/05/07	Orange / brown clay
228105	TP105	0.2-0.8	03/05/07	Dark grey sandy clay with gravel
228106	TP106	1.5-2.0	03/05/07	Grey & brown clay
228107	TP106	3.80	03/05/07	Grey & brown clay with gravel
228108	TP107	0.80	03/05/07	Grey & brown clay with gravel
228109	TP107	1.80	03/05/07	Orange / brown clay with gravel
228110	TP107	2.50	03/05/07	Dark brown clay with vegetation
228111	TP108	0.50	03/05/07	Orange / brown clay with gravel

ALcontrol Technichem
Table Of Results

Job Number : 07-31634
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	TP99	TP99	TP100	TP100	Method No	Units	LOD	TP101
Sample Depth (m)	1.0	2.6	0.2-0.4	1.5-1.8				0.7
Date Sampled	03/05/07	03/05/07	03/05/07	03/05/07				03/05/07
Date Scheduled	08/05/07	08/05/07	08/05/07	08/05/07				08/05/07
Laboratory Reference No	228094	228095	228096	228097				228098
Analysis								
Moisture Content (Dry Weight)	14.1	16.3	14.2	10.4		%	0.1	43.9
Moisture Content (Wet Weight)	12.4	14.0	12.4	9.4		%	0.1	30.5
Asbestos (Screen)	-	Absent	-	Absent	001a			Absent
Arsenic	-	27	69	-	069S[I,M]	mg/kg	3	67
Barium	-	120	240	-	069S[I,M]	mg/kg	10	530
Beryllium	-	1.0	0.8	-	069S[I,M]	mg/kg	0.5	2.3
Boron (W/S)	-	1.0	0.5	-	016S[I,M]	mg/kg	0.5	0.9
Cadmium	-	< 0.5	1.1	-	069S[I,M]	mg/kg	0.5	1.1
Chromium	-	22	150	-	069S[I,M]	mg/kg	10	24
Copper	-	57	360	-	069S[I,M]	mg/kg	5	1100
Lead	-	100	420	-	069S[I,M]	mg/kg	10	320
Mercury	-	< 0.6	1.5	-	069S[I,M]	mg/kg	0.6	0.7
Nickel	-	24	62	-	069S[I,M]	mg/kg	4	90
Selenium	-	< 2.5	< 2.5	-	069S[I,M]	mg/kg	2.5	< 2.5
Sulphate (Total Acid Soluble) as SO4	-	-	1800	-	025a[I,M]	mg/kg	200	1700
Vanadium	-	21	77	-	069S[I,M]	mg/kg	3	54
Zinc	-	97	620	-	069S[I,M]	mg/kg	10	620
Exchangeable Ammonium as N	-	< 40	< 40	-	018[I,M]	mg/kg	40	< 40
Total Cyanide	-	< 1	< 1	-	061S[I,M]	mg/kg	1	< 1
pH	7.8	7.2	7.8	8.2	009S[I,M]	pH Units		7.6
Acid Soluble Sulphide	-	-	-	-	008[I,M]	mg/kg	10	< 10
* * EPH SUITE * *								
EPH (C10-C40)	30	29	580	75	070S[I,M]	mg/kg	5	170

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31634
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	TP101	TP102	TP102	TP103	Method No	Units	LOD	TP104
Sample Depth (m)	4.0	0.5	1.5	0.5-1.0				1.9
Date Sampled	03/05/07	03/05/07	03/05/07	03/05/07				03/05/07
Date Scheduled	08/05/07	08/05/07	08/05/07	08/05/07				08/05/07
Laboratory Reference No	228099	228100	228101	228102				228103
Analysis								
Moisture Content (Dry Weight)	21.1	24.5	17.5	12.6		%	0.1	15.3
Moisture Content (Wet Weight)	17.4	19.7	14.9	11.2		%	0.1	13.3
Asbestos (Screen)	-	-	-	-	001a			-
Arsenic	9.2	-	-	110	069S[I M]	mg/kg	3	8.5
Barium	53	-	-	350	069S[I M]	mg/kg	10	82
Beryllium	0.9	-	-	1.7	069S[I M]	mg/kg	0.5	0.9
Boron (W/S)	< 0.5	-	-	1.6	016S[I M]	mg/kg	0.5	< 0.5
Cadmium	< 0.5	-	-	31	069S[I M]	mg/kg	0.5	< 0.5
Chromium	21	-	-	130	069S[I M]	mg/kg	10	14
Copper	20	-	-	490	069S[I M]	mg/kg	5	22
Lead	32	-	-	4700	069S[I M]	mg/kg	10	23
Mercury	< 0.6	-	-	0.9	069S[I M]	mg/kg	0.6	< 0.6
Nickel	14	-	-	320	069S[I M]	mg/kg	4	29
Selenium	< 2.5	-	-	2.7	069S[I M]	mg/kg	2.5	< 2.5
Sulphate (Total Acid Soluble) as SO4	< 200	-	-	-	025a[I M]	mg/kg	200	-
Vanadium	24	-	-	200	069S[I M]	mg/kg	3	15
Zinc	40	-	-	11000	069S[I M]	mg/kg	10	77
Exchangeable Ammonium as N	-	-	-	-	018[I M]	mg/kg	40	-
Total Cyanide	< 1	< 1	-	-	061S[I M]	mg/kg	1	-
pH	6.9	7.3	-	8.4	009S[I M]	pH Units		6.9
Acid Soluble Sulphide	-	-	-	-	008[I M]	mg/kg	10	-
* * EPH SUITE * *								
EPH (C10-C40)	6	5500	120	51	070S[I M]	mg/kg	5	9

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31634
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	TP104	TP105	TP106	TP106	Method No	Units	LOD	TP107
Sample Depth (m)	3.4	0.2-0.8	1.5-2.0	3.8				0.8
Date Sampled	03/05/07	03/05/07	03/05/07	03/05/07				03/05/07
Date Scheduled	08/05/07	08/05/07	08/05/07	08/05/07				08/05/07
Laboratory Reference No	228104	228105	228106	228107				228108
Analysis								
Moisture Content (Dry Weight)	20.8	10.5	15.3	18.5		%	0.1	11.3
Moisture Content (Wet Weight)	17.2	9.5	13.2	15.6		%	0.1	10.2
Asbestos (Screen)	-	-	-	-	001a			-
Arsenic	12	22	7.2	-	069S[I,M]	mg/kg	3	9.9
Barium	33	140	83	-	069S[I,M]	mg/kg	10	72
Beryllium	0.6	1.0	1.0	-	069S[I,M]	mg/kg	0.5	1.1
Boron (W/S)	< 0.5	< 0.5	< 0.5	-	016S[I,M]	mg/kg	0.5	< 0.5
Cadmium	< 0.5	1.1	< 0.5	-	069S[I,M]	mg/kg	0.5	< 0.5
Chromium	17	13	18	-	069S[I,M]	mg/kg	10	17
Copper	14	770	27	-	069S[I,M]	mg/kg	5	33
Lead	26	68	25	-	069S[I,M]	mg/kg	10	29
Mercury	< 0.6	< 0.6	< 0.6	-	069S[I,M]	mg/kg	0.6	< 0.6
Nickel	11	28	31	-	069S[I,M]	mg/kg	4	33
Selenium	< 2.5	< 2.5	< 2.5	-	069S[I,M]	mg/kg	2.5	< 2.5
Sulphate (Total Acid Soluble) as SO4	-	-	-	-	025a[I,M]	mg/kg	200	-
Vanadium	33	21	17	-	069S[I,M]	mg/kg	3	18
Zinc	30	390	73	-	069S[I,M]	mg/kg	10	100
Exchangeable Ammonium as N	-	-	-	-	018[I,M]	mg/kg	40	-
Total Cyanide	-	-	-	-	061S[I,M]	mg/kg	1	-
pH	7.0	8.1	6.9	-	009S[I,M]	pH Units		-
Acid Soluble Sulphide	-	-	-	-	008[I,M]	mg/kg	10	-
* * EPH SUITE * *								
EPH (C10-C40)	16	120	-	9	070S[I,M]	mg/kg	5	17

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31634
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	TP93	TP94	TP97	Method No	Units	LOD	TP98	TP100
Sample Depth (m)	0.9	0.5	1.5-2				3.2-3.4	0.2-0.4
Date Sampled	03/05/07	03/05/07	03/05/07				03/05/07	03/05/07
Date Scheduled	08/05/07	08/05/07	08/05/07				08/05/07	08/05/07
Laboratory Reference No	228084	228086	228090				228093	228096
Analysis								
* * PAH SUITE * *								
Naphthalene	< 0.1	< 0.1	< 0.1	022S[M]	mg/kg	0.1	< 0.1	< 0.1
Acenaphthylene	< 0.1	< 0.1	< 0.1	022S[M]	mg/kg	0.1	< 0.1	< 0.1
Acenaphthene	< 0.1	< 0.1	< 0.1	022S[M]	mg/kg	0.1	< 0.1	< 0.1
Fluorene	< 0.1	< 0.1	< 0.1	022S[M]	mg/kg	0.1	< 0.1	< 0.1
Phenanthrene	0.17	0.30	< 0.1	022S[M]	mg/kg	0.1	< 0.1	0.18
Anthracene	< 0.1	< 0.1	< 0.1	022S[M]	mg/kg	0.1	< 0.1	< 0.1
Fluoranthene	0.20	0.46	< 0.1	022S[M]	mg/kg	0.1	< 0.1	0.31
Pyrene	0.14	0.37	< 0.1	022S[M]	mg/kg	0.1	< 0.1	0.24
Benzo(a)anthracene	< 0.1	0.20	< 0.1	022S[M]	mg/kg	0.1	< 0.1	0.11
Chrysene	0.13	0.20	< 0.1	022S[M]	mg/kg	0.1	< 0.1	0.23
Benzo(b)fluoranthene	< 0.1	0.11	< 0.1	022S[M]	mg/kg	0.1	< 0.1	0.16
Benzo(k)fluoranthene	< 0.1	0.14	< 0.1	022S[M]	mg/kg	0.1	< 0.1	0.13
Benzo(a)pyrene	< 0.1	0.14	< 0.1	022S[M]	mg/kg	0.1	< 0.1	0.10
Indeno(1,2,3-cd)pyrene	< 0.1	< 0.1	< 0.1	022S[M]	mg/kg	0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	< 0.1	< 0.1	< 0.1	022S[M]	mg/kg	0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	< 0.1	< 0.1	< 0.1	022S[M]	mg/kg	0.1	< 0.1	< 0.1
PAH (Sum of Dutch 10)	0.49	1.45	ND	022S[I]	mg/kg	0.1	ND	1.06
PAH (Sum of EPA 16)	0.63	1.93	ND	022S[I]	mg/kg	0.1	ND	1.46

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31634
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	TP101	TP104	TP105	Method No	Units	LOD	TP106	TP107
Sample Depth (m)	4.0	1.9	0.2-0.8				3.8	2.5
Date Sampled	03/05/07	03/05/07	03/05/07				03/05/07	03/05/07
Date Scheduled	08/05/07	08/05/07	08/05/07				08/05/07	08/05/07
Laboratory Reference No	228099	228103	228105				228107	228110
Analysis								
* * PAH SUITE * *								
Naphthalene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Acenaphthylene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Acenaphthene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Fluorene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Phenanthrene	< 0.1	< 0.1	0.15	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Anthracene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Fluoranthene	< 0.1	< 0.1	0.28	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Pyrene	< 0.1	< 0.1	0.23	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Benzo(a)anthracene	< 0.1	< 0.1	0.12	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Chrysene	< 0.1	< 0.1	0.17	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	< 0.1	< 0.1	0.12	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Benzo(a)pyrene	< 0.1	< 0.1	0.13	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	< 0.1	< 0.1	< 0.1	022S[IM]	mg/kg	0.1	< 0.1	< 0.1
PAH (Sum of Dutch 10)	ND	ND	0.85	022S[I]	mg/kg	0.1	ND	ND
PAH (Sum of EPA 16)	ND	ND	1.20	022S[I]	mg/kg	0.1	ND	ND

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31634
Matrix : Soil
Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference			Method No	Units	LOD
Sample Depth (m)					
Date Sampled					
Date Scheduled					
Laboratory Reference No					
Analysis					
* * PAH SUITE * *					
Naphthalene			022S[IM]	mg/kg	0.1
Acenaphthylene			022S[IM]	mg/kg	0.1
Acenaphthene			022S[IM]	mg/kg	0.1
Fluorene			022S[IM]	mg/kg	0.1
Phenanthrene			022S[IM]	mg/kg	0.1
Anthracene			022S[IM]	mg/kg	0.1
Fluoranthene			022S[IM]	mg/kg	0.1
Pyrene			022S[IM]	mg/kg	0.1
Benzo(a)anthracene			022S[IM]	mg/kg	0.1
Chrysene			022S[IM]	mg/kg	0.1
Benzo(b)fluoranthene			022S[IM]	mg/kg	0.1
Benzo(k)fluoranthene			022S[IM]	mg/kg	0.1
Benzo(a)pyrene			022S[IM]	mg/kg	0.1
Indeno(1,2,3-cd)pyrene			022S[IM]	mg/kg	0.1
Dibenzo(a,h)anthracene			022S[IM]	mg/kg	0.1
Benzo(g,h,i)perylene			022S[IM]	mg/kg	0.1
PAH (Sum of Dutch 10)			022S[I]	mg/kg	0.1
PAH (Sum of EPA 16)			022S[I]	mg/kg	0.1

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
EPH Description

Job Number: 07-31634
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soils
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
228084	TP93	0.9	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C13 to C39.
228085	TP93	1.5	03/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
228087	TP94	1.4	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C14 to C38.
228088	TP96	1.0	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to C39.

ALcontrol Technichem
EPH Description

Job Number: 07-31634
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soils
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
228089	TP96	2.5	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C16 to C39.
228090	TP97	1.5-2	03/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
228091	TP97	2.3-2.5	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from before C10 to C40 overlain by several peaks unidentifiable by this analysis.
228092	TP98	0.5-1	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C13 to beyond C40.
228093	TP98	3.2-3.4	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C13 to beyond C40 overlain by several peaks unidentifiable by this analysis.
228094	TP99	1.0	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C13 to C38.
228095	TP99	2.6	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C13 to C38.
228096	TP100	0.2-0.4	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40 overlain by a series of n-alkane peaks eluting from C10 to C18.

ALcontrol Technichem
EPH Description

Job Number: 07-31634
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soils
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
228097	TP100	1.5-1.8	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to C40 overlain by a series of n-alkane peaks eluting through the diesel range.
228098	TP101	0.7	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40 overlain by a series of peaks consistent with a small amount of PAHs and several peaks unidentifiable by this analysis.
228099	TP101	4.0	03/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
228100	TP102	0.5	03/05/07	The sample chromatogram exhibits two overlapping humps of unresolved complex material eluting from before C10 to beyond C40 overlain by several peaks unidentifiable by this analysis.
228101	TP102	1.5	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to C40.
228102	TP103	0.5-1.0	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to C40.
228103	TP104	1.9	03/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
228104	TP104	3.4	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C14 to C38.

ALcontrol Technichem
EPH Description

Job Number: 07-31634
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Soils
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
228105	TP105	0.2-0.8	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C14 to beyond C40.
228107	TP106	3.8	03/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
228108	TP107	0.8	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to C38.
228109	TP107	1.8	03/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
228111	TP108	0.5	03/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C12 to beyond C40 overlain by a series of peaks, unidentifiable by this analysis, eluting between C27 and C32.

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31634

Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
070S	In-house method	Determination of hexane/acetone extractable hydrocarbons in soil by gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	W
061S	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in soil samples by continuous flow colorimetry (Skalar)	W
053S	In-house method	Determination of semi-volatile organic compounds in soil samples by dichloromethane extraction and GC-MS detection	W
022S	In-house method	Determination of PAH compounds in soil samples by hexane / acetone extraction followed by GC-MS detection	W
018	In-house method based on Method 17.13 "Environmental Assessment Guidance" Version 3, Second Site Property, March 2003	Determination of exchangeable ammonium in soil samples (potassium chloride extraction)	W
009S	In-house method referencing BS1377: Part 3: 1990 and Second Site Property: Environmental Assessment Guidance Version 3: March 2003	Determination of pH by addition of water followed by electrometric measurement	W
008	In-house method adapted from MEWAM "Sulphide in Waters and Effluents", HMSO, 1983	Determination of sulphide in soil samples by sulphuric acid addition, absorption of liberated hydrogen sulphide in sodium hydroxide / ascorbic acid buffer solution and ion selective electrode detection	W
CWGS	In-house method based on "Total Petroleum Hydrocarbon Criteria Working Group" series, 1998-9	Determination of "CWG" banded petroleum hydrocarbons in soil samples using a combination of headspace GC-FID (C5-C12) and hexane:acetone extraction / silica-alumina aliphatic - aromatic split / GC-FID (C12-C35) techniques with banding by comparison to alkane standards	W
CWGL	In-house method based on "Total Petroleum Hydrocarbon Criteria Working Group" series, 1998-9	Determination of "CWG" banded petroleum hydrocarbons in aqueous samples using a combination of headspace GC-FID (C5-C12) and pentane extraction / silica-alumina aliphatic - aromatic split / GC-FID (C12-C35) techniques with banding by comparison to alkane standards	W

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31634

Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
086L	In-house method	Determination of sulphate content in aqueous samples using ion chromatographic determination with electrical conductivity detector	W
084L	In-house method	Determination of pH in aqueous samples by direct electrometric measurement	W
080L	In-house method based on MEWAM "Inductively Coupled Plasma Spectrometry", HMSO, 1996	Determination of metals in aqueous samples by nitric acid digestion followed by Inductively Coupled Plasma - Mass Spectrometry detection (ICP-MS)	W
071S	In-house method	Determination of volatile organic compounds in soil samples by headspace GC-MS analysis	W
061L	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in aqueous samples by continuous flow colorimetry (Skalar)	W
057L	In-house method based on Method 18.13 "Environmental Assessment Guidance" Version 3, Second Site Property, March 2003	Determination of ammoniacal nitrogen in aqueous samples by ion selective electrode	W
022L	In-house method	Determination of PAH compounds in aqueous samples by pentane extraction followed by GC-MS detection	W
069S	In-house method based on MEWAM "Methods for the Determination of Metals in Soil", HMSO, 1986	Determination of metals in soil samples by aqua-regia digestion followed by ICP OES detection	D
025a	In-house method based on BS1377 Part 3, "Chemical and Electrochemical Tests", 1990	Determination of hydrochloric acid soluble sulphate in soil samples by Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES)	D

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31634

Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
016S	In-house method	Determination of water soluble boron by 2:1 extraction in hot water followed by ICP-OES detection	D
CWGW	In-house method based on "Total Petroleum Hydrocarbon Criteria Working Group" series, 1998-9	Determination of "CWG" banded petroleum hydrocarbons in aqueous samples using a combination of headspace GC-FID (C5-C12) and pentane extraction / silica-alumina aliphatic - aromatic split / GC-FID (C12-C35) techniques with banding by comparison to alkane standards	
084W	In-house method	Determination of pH in aqueous samples by direct electrometric measurement	
072W	In-house method	Determination of cyclopentane extractable hydrocarbons in aqueous samples by large volume injection gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	
053W	In-house method	Determination of semi-volatile organic compounds in aqueous samples by dichloromethane extraction and GC-MS detection	
040W	In-house method	Determination of BTEX compounds in aqueous samples using headspace analysis by GC-MS	
022W	In-house method	Determination of PAH compounds in aqueous samples by pentane extraction followed by GC-MS detection	
001a	In-house method based on HSG 248	Visual screening of soil samples for fibrous material requiring further identification according to method 001 (note for samples > approximately 1kg it may be necessary to sub-sample prior to screening)	

Soil results are expressed on a dry weight basis. Where the test uses as-received sample, a moisture correction factor is applied to the wet weight result. This factor is determined gravimetrically using weight loss on drying at 30º (+/-5) C

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31634

Project Code: 64C11647

Project Name: ALCOA
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
		determined gravimetrically using weight loss on drying at 30° (+/-5) C.	

Jo Cutler
Environ UK Ltd
Hartham Park
Corsham
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SN13 0RR

22 May 2007

TEST REPORT

Our Report Number: 07-31806

Your Order Reference: Instructions of 11/05/2007

5 water samples submitted for analysis on 11/05/2007

Project Name: ALCOA

Project Code: 64-C11647

Laboratory analysis started on 11/05/2007
All laboratory analysis completed by 22 May 2007

Rhys Ashton
Project Co-Ordinator
ALCONTROL TECHNICHEM

Rexona Rahman
Analytical Reporting Manager
ALCONTROL TECHNICHEM

ALcontrol Technichem
Table Of Results

Job Number : 07-31806
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	MW29	MW30	Method No	Units	LOD
Sample Depth (m)	-	-			
Date Sampled	10/05/07	10/05/07			
Date Scheduled	11/05/07	11/05/07			
Laboratory Reference No	228945	228946			
Analysis					
Arsenic (Dissolved)	< 0.005	< 0.005	080W[I]	mg/l	0.005
Barium (Dissolved)	0.092	0.046	080W[I]	mg/l	0.005
Beryllium (Dissolved)	< 0.001	< 0.001	080W[I]	mg/l	0.001
Boron (Dissolved)	0.047	0.018	080W[I]	mg/l	0.005
Cadmium (Dissolved)	< 0.001	< 0.001	080W[I]	mg/l	0.001
Chromium (Dissolved)	0.006	< 0.005	080W[I]	mg/l	0.005
Copper (Dissolved)	< 0.005	< 0.005	080W[I]	mg/l	0.005
Lead (Dissolved)	< 0.005	< 0.005	080W[I]	mg/l	0.005
Mercury (Dissolved)	< 0.00005	< 0.00005	080W[I]	mg/l	0.00005
Nickel (Dissolved)	< 0.005	0.015	080W[I]	mg/l	0.005
Selenium (Dissolved)	< 0.005	< 0.005	080W[I]	mg/l	0.005
Vanadium (Dissolved)	< 0.005	< 0.005	080W[I]	mg/l	0.005
Zinc (Dissolved)	0.006	0.039	080W[I]	mg/l	0.005
Total Cyanide	< 0.02	< 0.02	061W[I]	mg/l	0.02
pH	7.0	6.4	084W[I]	pH Units	
* * EPH SUITE * *					
EPH (C10-C40)	-	0.28	072W[I]	mg/l	0.01

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31806
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	MW29				Method No	Units	LOD
Sample Depth (m)	-						
Date Sampled	10/05/07						
Date Scheduled	11/05/07						
Laboratory Reference No	228945						
Analysis							
* * CWG SUITE * *							
Aliphatic C5-C6	< 0.01				CWGW	mg/l	0.01
Aliphatic >C6-C8	< 0.01				CWGW	mg/l	0.01
Aliphatic >C8-C10	< 0.01				CWGW	mg/l	0.01
Aliphatic >C10-C12	< 0.01				CWGW	mg/l	0.01
Aliphatic >C12-C16	0.38				CWGW	mg/l	0.01
Aliphatic >C16-C21	0.51				CWGW	mg/l	0.01
Aliphatic >C21-C35	0.14				CWGW	mg/l	0.01
Total Aliphatics (C5-C35)	1.03				CWGW	mg/l	0.01
Aromatic C6-C7	< 0.01				CWGW	mg/l	0.01
Aromatic >C7-C8	< 0.01				CWGW	mg/l	0.01
Aromatic >C8-C10	< 0.01				CWGW	mg/l	0.01
Aromatic >C10-C12	< 0.01				CWGW	mg/l	0.01
Aromatic >C12-C16	0.02				CWGW	mg/l	0.01
Aromatic >C16-C21	0.02				CWGW	mg/l	0.01
Aromatic >C21-C35	0.01				CWGW	mg/l	0.01
Total Aromatics (C5-C35)	0.06				CWGW	mg/l	0.01
Volatile Hydrocarbons (C5-C12)	< 0.01				CWGW	mg/l	0.01
Extractable Hydrocarbons (C12-C35)	1.09				CWGW	mg/l	0.01
Total Hydrocarbons (C5-C35)	1.09				CWGW	mg/l	0.01
MTBE	< 0.005				CWGW[I]	mg/l	0.005
Benzene	< 0.005				CWGW[I]	mg/l	0.005
Toluene	< 0.005				CWGW[I]	mg/l	0.005
Ethylbenzene	< 0.005				CWGW[I]	mg/l	0.005
m,p-Xylenes	< 0.005				CWGW[I]	mg/l	0.005
o-Xylene	< 0.005				CWGW[I]	mg/l	0.005
1,3,5-Trimethylbenzene	< 0.005				CWGW[I]	mg/l	0.005
1,2,4-Trimethylbenzene	< 0.005				CWGW[I]	mg/l	0.005

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31806
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	MW29	MW30	Method No	Units	LOD
Sample Depth (m)	-	-			
Date Sampled	10/05/07	10/05/07			
Date Scheduled	11/05/07	11/05/07			
Laboratory Reference No	228945	228946			
Analysis					
* * SVOC SUITE * *					
Naphthalene	< 20	< 20	053W[I]	ug/l	20
2-Chloronaphthalene	< 20	< 20	053W[I]	ug/l	20
Acenaphthylene	< 20	< 20	053W[I]	ug/l	20
Acenaphthene	< 20	< 20	053W[I]	ug/l	20
Fluorene	< 20	< 20	053W[I]	ug/l	20
Phenanthrene	< 20	< 20	053W[I]	ug/l	20
Anthracene	< 20	< 20	053W[I]	ug/l	20
Fluoranthene	< 20	< 20	053W[I]	ug/l	20
Pyrene	< 20	< 20	053W[I]	ug/l	20
Benz(a)anthracene	< 20	< 20	053W[I]	ug/l	20
Chrysene	< 20	< 20	053W[I]	ug/l	20
Benzo(b)fluoranthene	< 25	< 25	053W	ug/l	25
Benzo(k)fluoranthene	< 20	< 20	053W[I]	ug/l	20
Benzo(a)pyrene	< 25	< 25	053W[I]	ug/l	25
Dibenzo(a,h)anthracene	< 40	< 40	053W[I]	ug/l	40
Indeno(1,2,3-cd)pyrene	< 40	< 40	053W[I]	ug/l	40
Benzo(g,h,i)perylene	< 40	< 40	053W[I]	ug/l	40
Phenol	< 20	< 20	053W[I]	ug/l	20
2-Chlorophenol	< 20	< 20	053W[I]	ug/l	20
2-Methylphenol	< 20	< 20	053W[I]	ug/l	20
4-Methylphenol	< 20	< 20	053W[I]	ug/l	20
2-Nitrophenol	< 20	< 20	053W[I]	ug/l	20
2,4-Dimethylphenol	< 20	< 20	053W[I]	ug/l	20
2,4-Dichlorophenol	< 20	< 20	053W[I]	ug/l	20
2,6-Dichlorophenol	< 20	< 20	053W[I]	ug/l	20
4-Chloro-3-methyl phenol	< 20	< 20	053W[I]	ug/l	20
2,4,6-Trichlorophenol	< 20	< 20	053W[I]	ug/l	20
2,4,5-Trichlorophenol	< 20	< 20	053W[I]	ug/l	20
4-Nitrophenol	< 50	< 50	053W	ug/l	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31806
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	MW29	MW30	Method No	Units	LOD
Sample Depth (m)	-	-			
Date Sampled	10/05/07	10/05/07			
Date Scheduled	11/05/07	11/05/07			
Laboratory Reference No	228945	228946			
Analysis					
* * SVOC SUITE Cont.. * *					
2,3,4,6-Tetrachlorophenol	< 30	< 30	053W	ug/l	30
Pentachlorophenol	< 60	< 60	053W	ug/l	60
Dimethyl Phthalate	< 20	< 20	053W[I]	ug/l	20
Diethyl Phthalate	< 30	< 30	053W[I]	ug/l	30
Di-n-butyl phthalate	< 30	< 30	053W[I]	ug/l	30
Butyl benzyl phthalate	< 60	< 60	053W[I]	ug/l	60
Bis(2-chloroethyl)ether	< 15	< 15	053W[I]	ug/l	15
1,3-Dichlorobenzene	< 15	< 15	053W[I]	ug/l	15
1,2-Dichlorobenzene	< 10	< 10	053W[I]	ug/l	10
1,4-Dichlorobenzene	< 10	< 10	053W[I]	ug/l	10
Nitrobenzene	< 20	< 20	053W[I]	ug/l	20
1,2,4-Trichlorobenzene	< 10	< 10	053W[I]	ug/l	10
2,6-Dinitrotoluene	< 30	< 30	053W[I]	ug/l	30
2,4-Dinitrotoluene	< 20	< 20	053W[I]	ug/l	20
Azobenzene	< 30	< 30	053W[I]	ug/l	30
Hexachlorobenzene	< 20	< 20	053W[I]	ug/l	20
Hexachloroethane	< 40	< 40	053W[I]	ug/l	40
n-Nitro-n-propyl-1-propanamine	< 15	< 15	053W[I]	ug/l	15
Isophorone	< 20	< 20	053W[I]	ug/l	20
Bis(2-chloroethoxy)methane	< 15	< 15	053W[I]	ug/l	15
Hexachlorobutadiene	< 10	< 10	053W[I]	ug/l	10
Anthraquinone	< 30	< 30	053W	ug/l	30
3-nitroaniline	< 50	< 50	053W	ug/l	50
2-Methylnapthalene	< 50	< 50	053W	ug/l	50
4-nitroaniline	< 50	< 50	053W	ug/l	50
2-nitroaniline	< 50	< 50	053W	ug/l	50
Aniline	< 40	< 40	053W	ug/l	40
Bis (2-ethylhexyl) phthalate	< 50	< 50	053W	ug/l	50
Carbazole	< 50	< 50	053W	ug/l	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-31806
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	MW29	MW30	Method No	Units	LOD
Sample Depth (m)	-	-			
Date Sampled	10/05/07	10/05/07			
Date Scheduled	11/05/07	11/05/07			
Laboratory Reference No	228945	228946			
Analysis					
Hexachlorocyclopentadiene	< 50	< 50	053W	ug/l	50
Dibenzofuran	< 50	< 50	053W	ug/l	50
4-Chloroaniline	< 50	< 50	053W	ug/l	50
Biphenyl	< 40	< 40	053W	ug/l	40
SVOC TIC'S	ND	ND	053W		1

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
EPH Description

Job Number: 07-31806
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Waters
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
228946	MW30	-	10/05/07	The sample chromatogram exhibits a hump of unresolved complex material eluting from C14 to C35, overlain by several peaks unidentifiable by this analysis.

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-31806

Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
CWGW	In-house method based on "Total Petroleum Hydrocarbon Criteria Working Group" series, 1998-9	Determination of "CWG" banded petroleum hydrocarbons in aqueous samples using a combination of headspace GC-FID (C5-C12) and pentane extraction / silica-alumina aliphatic - aromatic split / GC-FID (C12-C35) techniques with banding by comparison to alkane standards	
084W	In-house method	Determination of pH in aqueous samples by direct electrometric measurement	
080W	In-house method based on MEWAM "Inductively Coupled Plasma Spectrometry", HMSO, 1996	Determination of metals in aqueous samples by nitric acid digestion followed by Inductively Coupled Plasma - Mass Spectrometry detection (ICP-MS)	
072W	In-house method	Determination of cyclopentane extractable hydrocarbons in aqueous samples by large volume injection gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	
061W	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in aqueous samples by continuous flow colorimetry (Skalar)	
053W	In-house method	Determination of semi-volatile organic compounds in aqueous samples by dichloromethane extraction and GC-MS detection	
040W	In-house method based on EPA624 "Volatile Organic Compounds in Waste Waters"	Determination of volatile organic compounds in aqueous samples by headspace GC-MS	

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31 May 2007

TEST REPORT

Our Report Number: 07-32092

Your Order Reference: Instructions of 17/05/2007

27 water samples submitted for analysis on 17/05/2007

Project Name: Alcoa

Project Code: 64C11647

Laboratory analysis started on 18/05/2007
All laboratory analysis completed by 31 May 2007

Sharon Googh
Project Co-Ordinator
ALCONTROL TECHNICHEM

Rexona Rahman
Analytical Reporting Manager
ALCONTROL TECHNICHEM

ALcontrol Technichem
Table Of Results

Job Number : 07-32092
Matrix : Water
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	MW39	Method No	Units	LOD	GM05	GM213	GM201	GM202
Sample Depth (m)	-				-	-	-	-
Date Sampled	-				-	-	-	-
Date Scheduled	17/05/07				17/05/07	17/05/07	17/05/07	17/05/07
Laboratory Reference No	230567				230569	230570	230571	230572
Analysis								
Arsenic (Dissolved)	< 0.005	080W[I]	mg/l	0.005	-	< 0.005	0.047	0.28
Boron (Dissolved)	0.040	080W[I]	mg/l	0.005	-	0.015	0.23	0.35
Cadmium (Dissolved)	< 0.001	080W[I]	mg/l	0.001	-	< 0.001	< 0.001	< 0.001
Calcium (Dissolved)	-	062W[I]	mg/l	0.5	-	-	-	-
Chromium (Dissolved)	< 0.005	080W[I]	mg/l	0.005	-	< 0.005	0.010	0.009
Copper (Dissolved)	< 0.005	080W[I]	mg/l	0.005	-	< 0.005	< 0.005	1.1
Iron (Dissolved)	-	080W[I]	mg/l	0.02	-	-	-	-
Lead (Dissolved)	< 0.005	080W[I]	mg/l	0.005	-	< 0.005	< 0.005	0.021
Magnesium (Dissolved)	-	062W[I]	mg/l	0.1	-	-	-	-
Mercury (Dissolved)	< 0.00005	080W[I]	mg/l	0.00005	-	< 0.00005	< 0.00005	< 0.00005
Nickel (Dissolved)	< 0.005	080W[I]	mg/l	0.005	-	< 0.005	0.028	0.039
Potassium (Dissolved)	-	062W[I]	mg/l	0.5	-	-	-	-
Selenium (Dissolved)	< 0.005	080W[I]	mg/l	0.005	-	0.017	0.030	0.008
Sodium (Dissolved)	-	062W[I]	mg/l	0.5	-	-	-	-
Titanium (Dissolved)	-	METS	mg/l	0.02	-	-	-	-
Zinc (Dissolved)	0.010	080W[I]	mg/l	0.005	-	0.023	< 0.005	0.054
Ammoniacal Nitrogen as NH4	-	057W[I]	mg/l	0.05	-	-	-	-
Ammoniacal Nitrogen as N	-	057W[I]	mg/l	0.05	-	-	-	-
Total Cyanide	-	061W[I]	mg/l	0.02	-	< 0.02	< 0.02	< 0.02
Chloride	-	086W[I]	mg/l	10	-	-	-	-
Fluoride	-	086W[I]	mg/l	0.1	-	-	-	-
Nitrate as N	-	086W[I]	mg/l	0.5	-	-	-	-
pH	6.2	084W[I]	pH Units		6.3	6.4	7.1	11.1
Sulphate as SO4	-	086W[I]	mg/l	10	-	-	-	-
Total Alkalinity as CaCO3	-	096W[I]	mg/l	20	-	-	-	-
* * VPH/BTEX SUITE * *								
MTBE	-	068W[I]	mg/l	0.005	-	-	-	-
Benzene	-	068W[I]	mg/l	0.005	-	-	-	-
Toluene	-	068W[I]	mg/l	0.005	-	-	-	-
Ethylbenzene	-	068W[I]	mg/l	0.005	-	-	-	-

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-32092
Matrix : Water
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference	MW39	Method No	Units	LOD	GM05	GM213	GM201	GM202
Sample Depth (m)	-				-	-	-	-
Date Sampled	-				-	-	-	-
Date Scheduled	17/05/07				17/05/07	17/05/07	17/05/07	17/05/07
Laboratory Reference No	230567				230569	230570	230571	230572
Analysis								
m,p-Xylenes	-	068W[I]	mg/l	0.005	-	-	-	-
o-Xylene	-	068W[I]	mg/l	0.005	-	-	-	-
1,3,5-Trimethylbenzene	-	068W[I]	mg/l	0.005	-	-	-	-
1,2,4-Trimethylbenzene	-	068W[I]	mg/l	0.005	-	-	-	-
VPH Compounds (C5-C10)	-	068W[I]	mg/l	0.01	-	-	-	-
VPH Compounds (C10-C12)	-	068W	mg/l	0.01	-	-	-	-
VPH Compounds (C5-C12)	-	068W	mg/l	0.01	-	-	-	-
* * EPH SUITE * *								
EPH (C10-C20)	-	072W	mg/l	0.01	-	-	-	-
EPH (C20-C30)	-	072W	mg/l	0.01	-	-	-	-
EPH (C30-C40)	-	072W	mg/l	0.01	-	-	-	-
EPH (C10-C40)	-	072W[I]	mg/l	0.01	0.04	0.89	-	-

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-32092
Matrix : Water
Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Sample Reference		Method No	Units	LOD
Sample Depth (m)				
Date Sampled				
Date Scheduled				
Laboratory Reference No				
Analysis				
* * CWG SUITE * *				
Aliphatic C5-C6		CWGW	mg/l	0.01
Aliphatic >C6-C8		CWGW	mg/l	0.01
Aliphatic >C8-C10		CWGW	mg/l	0.01
Aliphatic >C10-C12		CWGW	mg/l	0.01
Aliphatic >C12-C16		CWGW	mg/l	0.01
Aliphatic >C16-C21		CWGW	mg/l	0.01
Aliphatic >C21-C35		CWGW	mg/l	0.01
Total Aliphatics (C5-C35)		CWGW	mg/l	0.01
Aromatic C6-C7		CWGW	mg/l	0.01
Aromatic >C7-C8		CWGW	mg/l	0.01
Aromatic >C8-C10		CWGW	mg/l	0.01
Aromatic >C10-C12		CWGW	mg/l	0.01
Aromatic >C12-C16		CWGW	mg/l	0.01
Aromatic >C16-C21		CWGW	mg/l	0.01
Aromatic >C21-C35		CWGW	mg/l	0.01
Total Aromatics (C5-C35)		CWGW	mg/l	0.01
Volatile Hydrocarbons (C5-C12)		CWGW	mg/l	0.01
Extractable Hydrocarbons (C12-C35)		CWGW	mg/l	0.01
Total Hydrocarbons (C5-C35)		CWGW	mg/l	0.01
MTBE		CWGW [I]	mg/l	0.005
Benzene		CWGW [I]	mg/l	0.005
Toluene		CWGW [I]	mg/l	0.005
Ethylbenzene		CWGW [I]	mg/l	0.005
m,p-Xylenes		CWGW [I]	mg/l	0.005
o-Xylene		CWGW [I]	mg/l	0.005
1,3,5-Trimethylbenzene		CWGW [I]	mg/l	0.005
1,2,4-Trimethylbenzene		CWGW [I]	mg/l	0.005

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
EPH Description

Job Number: 07-32092
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Waters
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
230569	GM05	-	-	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
230570	GM213	-	-	The sample chromatogram exhibits two overlapping humps of unresolved complex material the first eluting from before C10 to C22 , the second eluting from C26 to C36 both overlain by several peaks unidentifiable by this analysis.
230571 Product ID	GM201	-	-	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40, overlain by a series of peaks eluting between <C10 and C16, and between C24 and C33, which required qualitative analysis by GC-MS for further identification. <1% v/v product (visual estimate)
230573	GM208	-	-	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to C40 overlain by several peaks unidentifiable by this analysis.
230574	GM07	-	-	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40, overlain by several peaks unidentifiable by this analysis.
230575	GM02	-	-	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to C40 overlain by several peaks unidentifiable by this analysis.

ALcontrol Technichem
EPH Description

Job Number: 07-32092
Client: Environ UK Ltd
Project Code: 64C11647

Matrix: Waters
Project Name: Alcoa

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
230586	MW31	-	-	The sample chromatogram exhibits a hump of unresolved complex material eluting from C10 to beyond C40, overlain by several peaks unidentifiable by this analysis.

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-32092

Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
ProdID	In-house method	Product identification by chromatogram comparison with in-house library standard traces	
METS	In-house method based on MEWAM "Inductively Coupled Plasma Spectrometry", HMSO, 1996	Determination of metals in aqueous samples by nitric digestion followed by ICP-OES detection	
CWGW	In-house method based on "Total Petroleum Hydrocarbon Criteria Working Group" series, 1998-9	Determination of "CWG" banded petroleum hydrocarbons in aqueous samples using a combination of headspace GC-FID (C5-C12) and pentane extraction / silica-alumina aliphatic - aromatic split / GC-FID (C12-C35) techniques with banding by comparison to alkane standards	
096W	In-house method based on MEWAM "Total Alkalinity of Raw Potable and Waste Waters", HMSO, 1981	Determination of total alkalinity in aqueous samples by titration	
086W	In-house method	Determination of anion content in aqueous samples using ion chromatographic determination with electrical conductivity detector	
084W	In-house method	Determination of pH in aqueous samples by direct electrometric measurement	
080W	In-house method based on MEWAM "Inductively Coupled Plasma Spectrometry", HMSO, 1996	Determination of metals in aqueous samples by nitric acid digestion followed by Inductively Coupled Plasma - Mass Spectrometry detection (ICP-MS)	
072W	In-house method	Determination of cyclopentane extractable hydrocarbons in aqueous samples by large volume injection gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	
068W	In-house method	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) including BTEX and MTBE compounds by Headspace GC-FID (VPH).	

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-32092

Project Code: 64C11647

Project Name: Alcoa
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
062W	In-house method based on MEWAM "Inductively Coupled Plasma Spectrometry", HMSO, 1996	Determination of metals in aqueous samples by nitric digestion followed by ICP-OES detection	
061W	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in aqueous samples by continuous flow colorimetry (Skalar)	
057W	In-house method based on Method 18.13 "Environmental Assessment Guidance" Version 3, Second Site Property, March 2003	Determination of ammoniacal nitrogen in aqueous samples by ion selective electrode	
053W	In-house method	Determination of semi-volatile organic compounds in aqueous samples by dichloromethane extraction and GC-MS detection	
040W	In-house method based on EPA624 "Volatile Organic Compounds in Waste Waters"	Determination of volatile organic compounds in aqueous samples by headspace GC-MS	

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29 May 2007

TEST REPORT

Our Report Number: 07-32097

Your Order Reference: Instructions of 15/05/2007

19 water samples submitted for analysis on 15/05/2007

Project Name: ALCOA

Project Code: 64-C11647

Laboratory analysis started on 18/05/2007
All laboratory analysis completed by 29 May 2007

Rhys Ashton
Project Co-Ordinator
ALCONTROL TECHNICHEM

Rexona Rahman
Analytical Reporting Manager
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ALcontrol Technichem
Table Of Results

Job Number : 07-32097
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	BH9S	BH10D	BH10S	MW38	Method No	Units	LOD	BH7D
Sample Depth (m)	-	-	-	-				-
Date Sampled	14/05/07	14/05/07	14/05/07	14/05/07				14/05/07
Date Scheduled	15/05/07	15/05/07	15/05/07	15/05/07				15/05/07
Laboratory Reference No	230611	230612	230613	230614				230616
Analysis								
Arsenic (Dissolved)	< 0.005	< 0.005	< 0.005	< 0.005	080W[I]	mg/l	0.005	< 0.005
Boron (Dissolved)	0.018	0.039	0.17	0.065	080W[I]	mg/l	0.005	0.027
Cadmium (Dissolved)	< 0.001	< 0.001	< 0.001	< 0.001	080W[I]	mg/l	0.001	< 0.001
Chromium (Dissolved)	< 0.005	0.006	0.020	0.007	080W[I]	mg/l	0.005	0.007
Copper (Dissolved)	< 0.005	< 0.005	< 0.005	< 0.005	080W[I]	mg/l	0.005	< 0.005
Lead (Dissolved)	< 0.005	< 0.005	< 0.005	< 0.005	080W[I]	mg/l	0.005	< 0.005
Mercury (Dissolved)	< 0.00005	< 0.00005	< 0.00005	< 0.00005	080W[I]	mg/l	0.00005	< 0.00005
Nickel (Dissolved)	0.008	0.060	0.008	0.076	080W[I]	mg/l	0.005	< 0.005
Selenium (Dissolved)	< 0.005	< 0.005	0.022	< 0.005	080W[I]	mg/l	0.005	0.009
Zinc (Dissolved)	0.018	0.032	0.023	0.051	080W[I]	mg/l	0.005	< 0.005
Ammoniacal Nitrogen as N	< 0.05	-	-	-	057W[I]	mg/l	0.05	-
Ammoniacal Nitrogen as NH4	< 0.05	-	-	-	057W[I]	mg/l	0.05	-
Total Cyanide	< 0.02	0.02	< 0.02	< 0.02	061W[I]	mg/l	0.02	-
pH	6.0	5.1	6.7	5.8	084W[I]	pH Units		-
Sulphate as SO4	34	-	-	-	086W[I]	mg/l	10	-
* * EPH SUITE * *								
EPH (C10-C40)	0.05	0.09	0.09	-	072W[I]	mg/l	0.01	-

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-32097
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	Method No	Units	LOD
Sample Depth (m)			
Date Sampled			
Date Scheduled			
Laboratory Reference No			
Analysis			
Arsenic (Dissolved)	080W[I]	mg/l	0.005
Boron (Dissolved)	080W[I]	mg/l	0.005
Cadmium (Dissolved)	080W[I]	mg/l	0.001
Chromium (Dissolved)	080W[I]	mg/l	0.005
Copper (Dissolved)	080W[I]	mg/l	0.005
Lead (Dissolved)	080W[I]	mg/l	0.005
Mercury (Dissolved)	080W[I]	mg/l	0.00005
Nickel (Dissolved)	080W[I]	mg/l	0.005
Selenium (Dissolved)	080W[I]	mg/l	0.005
Zinc (Dissolved)	080W[I]	mg/l	0.005
Ammoniacal Nitrogen as N	057W[I]	mg/l	0.05
Ammoniacal Nitrogen as NH4	057W[I]	mg/l	0.05
Total Cyanide	061W[I]	mg/l	0.02
pH	084W[I]	pH Units	
Sulphate as SO4	086W[I]	mg/l	10
* * EPH SUITE * *			
EPH (C10-C40)	072W[I]	mg/l	0.01

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-32097
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	T4	BH7S	MW38	BH7D	Method No	Units	LOD
Sample Depth (m)	-	-	-	-			
Date Sampled	14/05/07	14/05/07	14/05/07	14/05/07			
Date Scheduled	15/05/07	15/05/07	15/05/07	15/05/07			
Laboratory Reference No	230609	230610	230614	230616			
Analysis							
* * CWG SUITE * *							
Aliphatic C5-C6	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aliphatic >C6-C8	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aliphatic >C8-C10	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aliphatic >C10-C12	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aliphatic >C12-C16	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aliphatic >C16-C21	< 0.01	0.03	< 0.01	< 0.01	CWGW	mg/l	0.01
Aliphatic >C21-C35	< 0.01	0.02	< 0.01	< 0.01	CWGW	mg/l	0.01
Total Aliphatics (C5-C35)	< 0.01	0.04	< 0.01	< 0.01	CWGW	mg/l	0.01
Aromatic C6-C7	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aromatic >C7-C8	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aromatic >C8-C10	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aromatic >C10-C12	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aromatic >C12-C16	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aromatic >C16-C21	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Aromatic >C21-C35	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Total Aromatics (C5-C35)	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Volatile Hydrocarbons (C5-C12)	< 0.01	< 0.01	< 0.01	< 0.01	CWGW	mg/l	0.01
Extractable Hydrocarbons (C12-C35)	< 0.01	0.04	< 0.01	< 0.01	CWGW	mg/l	0.01
Total Hydrocarbons (C5-C35)	< 0.01	0.04	< 0.01	< 0.01	CWGW	mg/l	0.01
MTBE	< 0.005	< 0.005	< 0.005	< 0.005	CWGW[I]	mg/l	0.005
Benzene	< 0.005	< 0.005	< 0.005	< 0.005	CWGW[I]	mg/l	0.005
Toluene	< 0.005	< 0.005	< 0.005	< 0.005	CWGW[I]	mg/l	0.005
Ethylbenzene	< 0.005	< 0.005	< 0.005	< 0.005	CWGW[I]	mg/l	0.005
m,p-Xylenes	< 0.005	< 0.005	< 0.005	< 0.005	CWGW[I]	mg/l	0.005
o-Xylene	< 0.005	< 0.005	< 0.005	< 0.005	CWGW[I]	mg/l	0.005
1,3,5-Trimethylbenzene	< 0.005	< 0.005	< 0.005	< 0.005	CWGW[I]	mg/l	0.005
1,2,4-Trimethylbenzene	< 0.005	< 0.005	< 0.005	< 0.005	CWGW[I]	mg/l	0.005

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-32097
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	E2	[redacted]	T4	BH7S	Method No	Units	LOD
Sample Depth (m)	-	[redacted]	-	-			
Date Sampled	14/05/07	[redacted]	14/05/07	14/05/07			
Date Scheduled	15/05/07	[redacted]	15/05/07	15/05/07			
Laboratory Reference No	230606	[redacted]	230609	230610			
Analysis		[redacted]					
* * SVOC SUITE Cont.. * *		[redacted]					
2,3,4,6-Tetrachlorophenol	< 30	[redacted]	< 30	< 30	053W	ug/l	30
Pentachlorophenol	< 60	[redacted]	< 60	< 60	053W	ug/l	60
Dimethyl Phthalate	< 20	[redacted]	< 20	< 20	053W[I]	ug/l	20
Diethyl Phthalate	< 30	[redacted]	< 30	< 30	053W[I]	ug/l	30
Di-n-butyl phthalate	< 30	[redacted]	< 30	< 30	053W[I]	ug/l	30
Butyl benzyl phthalate	< 60	[redacted]	< 60	< 60	053W[I]	ug/l	60
Bis(2-chloroethyl)ether	< 15	[redacted]	< 15	< 15	053W[I]	ug/l	15
Bis(2-chloroisopropyl)ether	< 10	[redacted]	< 10	< 10	053W[I]	ug/l	10
4-Chlorophenyl phenyl ether	< 15	[redacted]	< 15	< 15	053W[I]	ug/l	15
Bromo phenyl phenyl ether	< 30	[redacted]	< 30	< 30	053W[I]	ug/l	30
1,3-Dichlorobenzene	< 15	[redacted]	< 15	< 15	053W[I]	ug/l	15
1,2-Dichlorobenzene	< 10	[redacted]	< 10	< 10	053W[I]	ug/l	10
1,4-Dichlorobenzene	< 10	[redacted]	< 10	< 10	053W[I]	ug/l	10
Nitrobenzene	< 20	[redacted]	< 20	< 20	053W[I]	ug/l	20
1,2,4-Trichlorobenzene	< 10	[redacted]	< 10	< 10	053W[I]	ug/l	10
2,6-Dinitrotoluene	< 30	[redacted]	< 30	< 30	053W[I]	ug/l	30
2,4-Dinitrotoluene	< 20	[redacted]	< 20	< 20	053W[I]	ug/l	20
Azobenzene	< 30	[redacted]	< 30	< 30	053W[I]	ug/l	30
Hexachlorobenzene	< 20	[redacted]	< 20	< 20	053W[I]	ug/l	20
Hexachloroethane	< 40	[redacted]	< 40	< 40	053W[I]	ug/l	40
n-Nitro-n-propyl-1-propanamine	< 15	[redacted]	< 15	< 15	053W[I]	ug/l	15
Isophorone	< 20	[redacted]	< 20	< 20	053W[I]	ug/l	20
Bis(2-chloroethoxy)methane	< 15	[redacted]	< 15	< 15	053W[I]	ug/l	15
Hexachlorobutadiene	< 10	[redacted]	< 10	< 10	053W[I]	ug/l	10
Anthraquinone	< 30	[redacted]	< 30	< 30	053W	ug/l	30
2-Methylnapthalene	< 50	[redacted]	< 50	< 50	053W	ug/l	50
Hexachlorocyclopentadiene	< 50	[redacted]	< 50	< 50	053W	ug/l	50
Aniline	< 40	[redacted]	< 40	< 40	053W	ug/l	40
3-nitroaniline	< 50	[redacted]	< 50	< 50	053W	ug/l	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-32097
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	E2	[redacted]	T4	BH7S	Method No	Units	LOD
Sample Depth (m)	-		-	-			
Date Sampled	14/05/07		14/05/07	14/05/07			
Date Scheduled	15/05/07		15/05/07	15/05/07			
Laboratory Reference No	230606		230609	230610			
Analysis							
Bis (2-ethylhexyl) phthalate	< 50		< 50	< 50	053W	ug/l	50
4-Chloroaniline	< 50		< 50	< 50	053W	ug/l	50
Carbazole	< 50		< 50	< 50	053W	ug/l	50
2-nitroaniline	< 50		< 50	< 50	053W	ug/l	50
4-nitroaniline	< 50		< 50	< 50	053W	ug/l	50
Dibenzofuran	< 50		< 50	< 50	053W	ug/l	50
Biphenyl	< 40		< 40	< 40	053W	ug/l	40

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-32097
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	BH9S	BH10D	BH10S	MW38	Method No	Units	LOD
Sample Depth (m)	-	-	-	-			
Date Sampled	14/05/07	14/05/07	14/05/07	14/05/07			
Date Scheduled	15/05/07	15/05/07	15/05/07	15/05/07			
Laboratory Reference No	230611	230612	230613	230614			
Analysis							
* * SVOC SUITE * *							
Naphthalene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2-Chloronaphthalene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Acenaphthylene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Acenaphthene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Fluorene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Phenanthrene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Anthracene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Fluoranthene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Pyrene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Benz(a)anthracene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Chrysene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Benzo(b)fluoranthene	< 25	< 25	< 25	< 25	053W	ug/l	25
Benzo(k)fluoranthene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Benzo(a)pyrene	< 25	< 25	< 25	< 25	053W[I]	ug/l	25
Dibenzo(a,h)anthracene	< 40	< 40	< 40	< 40	053W[I]	ug/l	40
Indeno(1,2,3-cd)pyrene	< 40	< 40	< 40	< 40	053W[I]	ug/l	40
Benzo(g,h,i)perylene	< 40	< 40	< 40	< 40	053W[I]	ug/l	40
Phenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2-Chlorophenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2-Methylphenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
4-Methylphenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2-Nitrophenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,4-Dimethylphenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,4-Dichlorophenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,6-Dichlorophenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
4-Chloro-3-methyl phenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,4,6-Trichlorophenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
2,4,5-Trichlorophenol	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
4-Nitrophenol	< 50	< 50	< 50	< 50	053W	ug/l	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-32097
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	BH9S	BH10D	BH10S	MW38	Method No	Units	LOD
Sample Depth (m)	-	-	-	-			
Date Sampled	14/05/07	14/05/07	14/05/07	14/05/07			
Date Scheduled	15/05/07	15/05/07	15/05/07	15/05/07			
Laboratory Reference No	230611	230612	230613	230614			
Analysis							
* * SVOC SUITE Cont.. * *							
2,3,4,6-Tetrachlorophenol	< 30	< 30	< 30	< 30	053W	ug/l	30
Pentachlorophenol	< 60	< 60	< 60	< 60	053W	ug/l	60
Dimethyl Phthalate	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Diethyl Phthalate	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
Di-n-butyl phthalate	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
Butyl benzyl phthalate	< 60	< 60	< 60	< 60	053W[I]	ug/l	60
Bis(2-chloroethyl)ether	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
Bis(2-chloroisopropyl)ether	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
4-Chlorophenyl phenyl ether	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
Bromo phenyl phenyl ether	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
1,3-Dichlorobenzene	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
1,2-Dichlorobenzene	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
1,4-Dichlorobenzene	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
Nitrobenzene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
1,2,4-Trichlorobenzene	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
2,6-Dinitrotoluene	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
2,4-Dinitrotoluene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Azobenzene	< 30	< 30	< 30	< 30	053W[I]	ug/l	30
Hexachlorobenzene	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Hexachloroethane	< 40	< 40	< 40	< 40	053W[I]	ug/l	40
n-Nitro-n-propyl-1-propanamine	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
Isophorone	< 20	< 20	< 20	< 20	053W[I]	ug/l	20
Bis(2-chloroethoxy)methane	< 15	< 15	< 15	< 15	053W[I]	ug/l	15
Hexachlorobutadiene	< 10	< 10	< 10	< 10	053W[I]	ug/l	10
Anthraquinone	< 30	< 30	< 30	< 30	053W	ug/l	30
2-Methylnapthalene	< 50	< 50	< 50	< 50	053W	ug/l	50
Hexachlorocyclopentadiene	< 50	< 50	< 50	< 50	053W	ug/l	50
Aniline	< 40	< 40	< 40	< 40	053W	ug/l	40
3-nitroaniline	< 50	< 50	< 50	< 50	053W	ug/l	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
Table Of Results

Job Number : 07-32097
Matrix : Water
Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Sample Reference	BH9S	BH10D	BH10S	MW38	Method No	Units	LOD
Sample Depth (m)	-	-	-	-			
Date Sampled	14/05/07	14/05/07	14/05/07	14/05/07			
Date Scheduled	15/05/07	15/05/07	15/05/07	15/05/07			
Laboratory Reference No	230611	230612	230613	230614			
Analysis							
Bis (2-ethylhexyl) phthalate	< 50	< 50	< 50	< 50	053W	ug/l	50
4-Chloroaniline	< 50	< 50	< 50	< 50	053W	ug/l	50
Carbazole	< 50	< 50	< 50	< 50	053W	ug/l	50
2-nitroaniline	< 50	< 50	< 50	< 50	053W	ug/l	50
4-nitroaniline	< 50	< 50	< 50	< 50	053W	ug/l	50
Dibenzofuran	< 50	< 50	< 50	< 50	053W	ug/l	50
Biphenyl	< 40	< 40	< 40	< 40	053W	ug/l	40

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Technichem
EPH Description

Job Number: 07-32097
Client: Environ UK Ltd
Project Code: 64-C11647

Matrix: Waters
Project Name: ALCOA

Laboratory Reference No	Sample Reference	Sample Depth (m)	Date Sampled	EPH Description
230606	E2	-	14/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
[redacted]				
230611	BH9S	-	14/05/07	The sample chromatogram exhibits too little GC-FID amenable material to provide qualitative analysis.
230612	BH10D	-	14/05/07	The sample chromatogram exhibits a hump of unresolved complex material elutngfrom C10 to C32.
230613	BH10S	-	14/05/07	The sample chromatogram exhibits a hump of unresolved complex material elutngfrom C10 to C32.

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-32097

Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
CWGW	In-house method based on "Total Petroleum Hydrocarbon Criteria Working Group" series, 1998-9	Determination of "CWG" banded petroleum hydrocarbons in aqueous samples using a combination of headspace GC-FID (C5-C12) and pentane extraction / silica-alumina aliphatic - aromatic split / GC-FID (C12-C35) techniques with banding by comparison to alkane standards	
086W	In-house method	Determination of anion content in aqueous samples using ion chromatographic determination with electrical conductivity detector	
084W	In-house method	Determination of pH in aqueous samples by direct electrometric measurement	
080W	In-house method based on MEWAM "Inductively Coupled Plasma Spectrometry", HMSO, 1996	Determination of metals in aqueous samples by nitric acid digestion followed by Inductively Coupled Plasma - Mass Spectrometry detection (ICP-MS)	
072W	In-house method	Determination of cyclopentane extractable hydrocarbons in aqueous samples by large volume injection gas chromatography with flame ionisation detection. Note: UKAS accreditation only applies to C10-C40 and excludes other carbon banding.	
061W	In-house method based on Method 4500-CN, "Standard Methods for the Examination of Water and Waste Water", APHA AWWA WEF, Edition 18, 1992	Determination of cyanides and thiocyanate in aqueous samples by continuous flow colorimetry (Skalar)	
057W	In-house method based on Method 18.13 "Environmental Assessment Guidance" Version 3, Second Site Property, March 2003	Determination of ammoniacal nitrogen in aqueous samples by ion selective electrode	
053W	In-house method	Determination of semi-volatile organic compounds in aqueous samples by dichloromethane extraction and GC-MS detection	
040W	In-house method based on EPA624 "Volatile Organic Compounds in Waste Waters"	Determination of volatile organic compounds in aqueous samples by headspace GC-MS	

ALcontrol Technichem
Table Of Results - Appendix

Job Number : 07-32097

Project Code: 64-C11647

Project Name: ALCOA
Client : Environ UK Ltd

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis

Annex G – Sample Analysis 2017

Our Ref: EXR/251932 (Ver. 1)
Your Ref: SOL1710RA

November 13, 2017

Environmental Chemistry
SOCOTEC UK Limited
Bretby Business Park
Ashby Road
Burton-on-Trent
Staffordshire
DE15 0YZ

Telephone: 01283 554400
Facsimile: 01283 554422

Emily Hingston
Sol Environment Ltd
Unit 7
Greenway Farm
Bath Road
Wick
Bristol
B330 SRL

For the attention of Emily Hingston

Dear Emily Hingston

Sample Analysis - Real Alloy

Samples from the above site have been analysed in accordance with the schedule supplied.
The sample details and the results of analyses for these samples are given in the appended report.

An invoice for this work will follow under a separate cover.

Please be aware that our policy for the retention of paper based laboratory records and analysis reports is 6 years.

The work was carried out in accordance with SOCOTEC UK Limited (Multi-Sector Services) Standard Terms and Conditions of Contract.

If I can be of any further assistance please do not hesitate to contact me.

Yours sincerely

for SOCOTEC UK Limited

L Thompson
Project Co-ordinator
01283 554467

TEST REPORT

Report No. EXR/251932 (Ver. 1)

Sol Environment Ltd
Unit 7
Greenway Farm
Bath Road
Wick
Bristol
B330 SRL

Site: Real Alloy

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 03-Nov-2017. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 13-Nov-2017

The following tables are contained in this report:

On behalf of
SOCOTEC UK Lim
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 13-Nov-2017

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

		Units :	pH units	µg/l	mg/l	mg/l	mg/l	mg/l	µg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		Method Codes :	WSLM3	VOCHSAW	ICPWATVAR	ICPMSW	ICPMSW	ICPMSW	PAHMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	KONENS	SFAPI	TPHFID-Si
		Method Reporting Limits :		1	3	0.001	0.001	0.0001		0.001	0.001	0.002	0.001	0.0001	0.001	0.01	0.02	0.01
LAB ID Number EX/	**Client Sample Description**	**Sample Date**	**pH units w**	**VOC HSA-GCMS o**	**Total Sulphur as SO4 (Dissolved) a**	**Nickel as Ni (Dissolved)**	**Chromium as Cr (Dissolved)**	**Cadmium as Cd (Dissolved)**	**PAH GC-MS (16) o**	**Copper as Cu (Dissolved)**	**Lead as Pb (Dissolved)**	**Zinc as Zn (Dissolved)**	**Arsenic as As (Dissolved)**	**Mercury as Hg (Dissolved)**	**Selenium as Se (Dissolved)**	**Ammoniacal Nitrogen as N**	**Cyanide (Total) as CN**	**TPH by GC(SI) o**
1840212	GM07	01-Nov-17	6.2	Req	34	0.008	<0.001	<0.0001	Req	<0.001	<0.001	0.015	0.003	<0.0001	<0.001	1.9	<0.02	Req
1840213	MW38	01-Nov-17	6.8	Req	261	0.013	<0.001	<0.0001	Req	<0.001	<0.001	0.049	0.002	<0.0001	<0.001	0.14	<0.02	Req
1840214	E2	01-Nov-17	7.5	Req	84	0.002	<0.001	<0.0001	Req	<0.001	<0.001	<0.002	0.002	<0.0001	<0.001	1.4	<0.02	Req
1840215	GM204	01-Nov-17	6.6	Req	6	0.001	<0.001	<0.0001	Req	<0.001	<0.001	<0.002	0.002	<0.0001	<0.001	2.1	<0.02	Req
1840216	BH201	01-Nov-17	I.S	Req	I.S	I.S	I.S	I.S		I.S	I.S	I.S	I.S	I.S	I.S	I.S	I.S	

SOCOTEC

Bretby Business Park, Ashby Road

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Client Name **Sol Environment Ltd**

Contact Emily Hingston

Real Alloy

Sample Analysis

Date Printed	**13-Nov-2017**
Report Number	**EXR/251932**
Table Number	**1**

Where individual results are flagged see report notes for status.

		Units :	µg/l	mg/l	mg/l
		Method Codes :	PCBECD	GROHSA	SVOCSW
		Method Reporting Limits :	0.05	0.1	0.002
LAB ID Number EXI	Client Sample Description	Sample Date	PCB - 7 Congeners o	GRO-HSA (AA)	Semi Volatile Organic Compounds
1840212	GM07	01-Nov-17	Req	Req	Req
1840213	MW38	01-Nov-17	Req	Req	Req
1840214	E2	01-Nov-17	Req	Req	Req
1840215	GM204	01-Nov-17	Req	Req	Req
1840216	BH201	01-Nov-17		Req	

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Client Name **Sol Environment Ltd**

Contact Emily Hingston

Real Alloy

Sample Analysis

Date Printed	**13-Nov-2017**
Report Number	**EXR/251932**
Table Number	**1**

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Sol Environment Ltd: Real Alloy		
Sample Details:	GM07	**Job Number:**	W25_1932
LIMS ID Number:	EX1840212	**Date Booked in:**	03-Nov-17
QC Batch Number:	170701	**Date Extracted:**	07-Nov-17
Quantitation File:	Initial Calibration	**Date Analysed:**	08-Nov-17
Directory:	\110717MS10\	**Matrix:**	Water
Dilution:	1.0	**Ext Method:**	Bottle

UKAS accredited?: No

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.020	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	3.99	0.025	80
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.08	0.012	70
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	9.64	0.223	85
Benzo[k]fluoranthene	207-08-9	9.67	0.106	85
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.496	-

* Denotes compound is not UKAS accredited
"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	674
Acenaphthene-d10	102
Phenanthrene-d10	102
Chrysene-d12	110
Perylene-d12	128

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	82
Terphenyl-d14	68

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Sol Environment Ltd: Real Alloy		
Sample Details:	MW38	**Job Number:**	w25_1932
LIMS ID Number:	EX1840213	**Date Booked in:**	03-Nov-17
QC Batch Number:	170699	**Date Extracted:**	06-Nov-17
Quantitation File:	Initial Calibration	**Date Analysed:**	08-Nov-17
Directory:	\110717MS10\	**Matrix:**	Water
Dilution:	1.0	**Ext Method:**	Bottle

UKAS accredited?: No

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.020	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	9.63	0.076	72
Benzo[k]fluoranthene	207-08-9	9.67	0.055	72
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.281	-

* Denotes compound is not UKAS accredited
"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	479
Acenaphthene-d10	99
Phenanthrene-d10	97
Chrysene-d12	97
Perylene-d12	109

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	44
Terphenyl-d14	39

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Sol Environment Ltd: Real Alloy		
Sample Details:	E2	**Job Number:**	W25_1932
LIMS ID Number:	EX1840214	**Date Booked in:**	03-Nov-17
QC Batch Number:	170699	**Date Extracted:**	06-Nov-17
Quantitation File:	Initial Calibration	**Date Analysed:**	08-Nov-17
Directory:	\110717MS10\	**Matrix:**	Water
Dilution:	1.0	**Ext Method:**	Bottle

UKAS accredited?: No

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.020	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	3.99	0.012	91
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.172	-

* Denotes compound is not UKAS accredited
"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	139
Acenaphthene-d10	96
Phenanthrene-d10	97
Chrysene-d12	101
Perylene-d12	104

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	41
Terphenyl-d14	39

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Sol Environment Ltd: Real Alloy		
Sample Details:	GM204	**Job Number:**	w25_1932
LIMS ID Number:	EX1840215	**Date Booked in:**	03-Nov-17
QC Batch Number:	170699	**Date Extracted:**	06-Nov-17
Quantitation File:	Initial Calibration	**Date Analysed:**	08-Nov-17
Directory:	\110717MS10\	**Matrix:**	Water
Dilution:	1.0	**Ext Method:**	Bottle

UKAS accredited?: No

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.020	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	3.99	0.017	81
Fluorene	86-73-7	4.33	0.014	M
Phenanthrene	85-01-8	5.08	0.014	71
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	6.31	0.013	69
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.188	-

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	98
Acenaphthene-d10	99
Phenanthrene-d10	100
Chrysene-d12	107
Perylene-d12	113

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	65
Terphenyl-d14	68

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polychlorinated Biphenyls (congeners)

Customer and Site Details:	Sol Environment Ltd: Real Alloy	**Matrix:**	Water
Job Number:	W25_1932	**Date Booked in:**	03-Nov-17
QC Batch Number:	170122	**Date Extracted:**	07-Nov-17
Directory:	110617PCB.GC8	**Date Analysed:**	07-Nov-17
Method:	Separating Funnel		

Compounds marked * are not UKAS or MCerts accredited

			Concentration, (µg/l)						
	Sample ID	**Customer ID**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB153**	**PCB138**	**PCB180**
*	EX1840212	GM07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
*	EX1840213	MW38	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
*	EX1840214	E2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
*	EX1840215	GM204	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Where individual results are flagged see report notes for status.

Semi-Volatile Organic Compounds

UKAS accredited?: No

Customer and Site Details:	Sol Environment Ltd: Real Alloy			**Matrix:**	Water	**QC Batch Number:**	201
Sample Details:	GM07	**Date Booked in:**	03-Nov-17	**Ext Method:**	Sep. Funnel	**Multiplier:**	0.005
LIMS ID Number:	EX1840212	**Date Extracted:**	07-Nov-17	**Operator:**	AK	**Dilution Factor:**	1
Job Number:	W25_1932	**Date Analysed:**	09-Nov-17	**Directory/Quant File:**	110817_MS16\	**GPC (Y/N)**	N

Target Compounds	CAS #	R.T. (min)	Concentration mg/l	% Fit
Phenol	108-95-2	-	< 0.020	-
bis(2-Chloroethyl)ether	111-44-4	-	< 0.005	-
2-Chlorophenol	95-57-8	-	< 0.020	-
1,3-Dichlorobenzene	541-73-1	-	< 0.005	-
1,4-Dichlorobenzene	106-46-7	-	< 0.005	-
Benzyl alcohol	100-51-6	-	< 0.005	-
1,2-Dichlorobenzene	95-50-1	-	< 0.005	-
2-Methylphenol	95-48-7	-	< 0.005	-
bis(2-Chloroisopropyl)ether	108-60-1	-	< 0.005	-
Hexachloroethane	67-72-1	-	< 0.005	-
N-Nitroso-di-n-propylamine	621-64-7	-	< 0.005	-
3- & 4-Methylphenol	108-39-4/106-44-5	-	< 0.020	-
Nitrobenzene	98-95-3	-	< 0.005	-
Isophorone	78-59-1	-	< 0.005	-
2-Nitrophenol	88-75-5	-	< 0.020	-
2,4-Dimethylphenol	105-67-9	-	< 0.020	-
Benzoic Acid	65-85-0	-	< 0.100	-
bis(2-Chloroethoxy)methane	111-91-1	-	< 0.005	-
2,4-Dichlorophenol	120-83-2	-	< 0.020	-
1,2,4-Trichlorobenzene	120-82-1	-	< 0.005	-
Naphthalene	91-20-3	-	< 0.002	-
4-Chlorophenol	106-48-9	-	< 0.020	-
4-Chloroaniline	106-47-8	-	< 0.005	-
Hexachlorobutadiene	87-68-3	-	< 0.005	-
4-Chloro-3-methylphenol	59-50-7	-	< 0.005	-
2-Methylnaphthalene	91-57-6	-	< 0.002	-
1-Methylnaphthalene	90-12-0	-	< 0.002	-
Hexachlorocyclopentadiene	77-47-4	-	< 0.005	-
2,4,6-Trichlorophenol	88-06-2	-	< 0.020	-
2,4,5-Trichlorophenol	95-95-4	-	< 0.020	-
2-Chloronaphthalene	91-58-7	-	< 0.002	-
Biphenyl	92-52-4	-	< 0.002	-
Diphenyl ether	101-84-8	-	< 0.002	-
2-Nitroaniline	88-74-4	-	< 0.005	-
Acenaphthylene	208-96-8	-	< 0.002	-
Dimethylphthalate	131-11-3	-	< 0.005	-
2,6-Dinitrotoluene	606-20-2	-	< 0.005	-
Acenaphthene	83-32-9	-	< 0.002	-
3-Nitroaniline	99-09-2	-	< 0.005	-

Target Compounds	CAS #	R.T.	Concentration mg/l	% Fit
2,4-Dinitrophenol	51-28-5	-	< 0.010	-
Dibenzofuran	132-64-9	-	< 0.005	-
4-Nitrophenol	100-02-7	-	< 0.050	-
2,4-Dinitrotoluene	121-14-2	-	< 0.005	-
Fluorene	86-73-7	-	< 0.002	-
Diethylphthalate	84-66-2	-	< 0.005	-
4-Chlorophenyl-phenylether	7005-72-3	-	< 0.005	-
4,6-Dinitro-2-methylphenol	534-52-1	-	< 0.050	-
4-Nitroaniline	100-01-6	-	< 0.005	-
N-Nitrosodiphenylamine	86-30-6	-	< 0.005	-
4-Bromophenyl-phenylether	101-55-3	-	< 0.005	-
Hexachlorobenzene	118-74-1	-	< 0.005	-
Pentachlorophenol	87-86-5	-	< 0.050	-
Phenanthrene	85-01-8	-	< 0.002	-
Anthracene	120-12-7	-	< 0.002	-
Di-n-butylphthalate	84-74-2	-	< 0.005	-
Fluoranthene	206-44-0	-	< 0.002	-
Pyrene	129-00-0	-	< 0.002	-
Butylbenzylphthalate	85-68-7	-	< 0.005	-
Benzo[a]anthracene	56-55-3	-	< 0.002	-
Chrysene	218-01-9	-	< 0.002	-
3,3'-Dichlorobenzidine	91-94-1	-	< 0.020	-
bis(2-Ethylhexyl)phthalate	117-81-7	-	< 0.005	-
Di-n-octylphthalate	117-84-0	-	< 0.002	-
Benzo[b]fluoranthene	205-99-2	-	< 0.002	-
Benzo[k]fluoranthene	207-08-9	-	< 0.002	-
Benzo[a]pyrene	50-32-8	-	< 0.002	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.002	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.002	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.002	-
Coronene	191-07-1	-	< 0.050	-

Internal Standards	% Area
1,4-Dichlorobenzene-d4	33
Naphthalene-d8	41
Acenaphthene-d10	51
Phenanthrene-d10	52
Chrysene-d12	63
Perylene-d12	N.D

Surrogates	% Rec
2-Fluorophenol	N.D
Phenol-d5	N.D
Nitrobenzene-d5	76
2-Fluorobiphenyl	81
2,4,6-Tribromophenol	N.D
Terphenyl-d14	59

Concentrations are reported on a wet weight basis.
"M" denotes that % fit has been manually interpreted

Where individual results are flagged see report notes for status.

Semi-Volatile Organic Compounds

UKAS accredited?: No

Customer and Site Details:	Sol Environment Ltd: Real Alloy			**Matrix:**	Water	**QC Batch Number:**	201
Sample Details:	MW38	**Date Booked in:**	03-Nov-17	**Ext Method:**	Sep. Funnel	**Multiplier:**	0.005
LIMS ID Number:	EX1840213	**Date Extracted:**	07-Nov-17	**Operator:**	AK	**Dilution Factor:**	1
Job Number:	W25_1932	**Date Analysed:**	09-Nov-17	**Directory/Quant File:**	110817_MS16\	**GPC (Y/N)**	N

Target Compounds	CAS #	R.T. (min)	Concentration mg/l	% Fit
Phenol	108-95-2	-	< 0.020	-
bis(2-Chloroethyl)ether	111-44-4	-	< 0.005	-
2-Chlorophenol	95-57-8	-	< 0.020	-
1,3-Dichlorobenzene	541-73-1	-	< 0.005	-
1,4-Dichlorobenzene	106-46-7	-	< 0.005	-
Benzyl alcohol	100-51-6	-	< 0.005	-
1,2-Dichlorobenzene	95-50-1	-	< 0.005	-
2-Methylphenol	95-48-7	-	< 0.005	-
bis(2-Chloroisopropyl)ether	108-60-1	-	< 0.005	-
Hexachloroethane	67-72-1	-	< 0.005	-
N-Nitroso-di-n-propylamine	621-64-7	-	< 0.005	-
3- & 4-Methylphenol	108-39-4/106-44-5	-	< 0.020	-
Nitrobenzene	98-95-3	-	< 0.005	-
Isophorone	78-59-1	-	< 0.005	-
2-Nitrophenol	88-75-5	-	< 0.020	-
2,4-Dimethylphenol	105-67-9	-	< 0.020	-
Benzoic Acid	65-85-0	-	< 0.100	-
bis(2-Chloroethoxy)methane	111-91-1	-	< 0.005	-
2,4-Dichlorophenol	120-83-2	-	< 0.020	-
1,2,4-Trichlorobenzene	120-82-1	-	< 0.005	-
Naphthalene	91-20-3	-	< 0.002	-
4-Chlorophenol	106-48-9	-	< 0.020	-
4-Chloroaniline	106-47-8	-	< 0.005	-
Hexachlorobutadiene	87-68-3	-	< 0.005	-
4-Chloro-3-methylphenol	59-50-7	-	< 0.005	-
2-Methylnaphthalene	91-57-6	-	< 0.002	-
1-Methylnaphthalene	90-12-0	-	< 0.002	-
Hexachlorocyclopentadiene	77-47-4	-	< 0.005	-
2,4,6-Trichlorophenol	88-06-2	-	< 0.020	-
2,4,5-Trichlorophenol	95-95-4	-	< 0.020	-
2-Chloronaphthalene	91-58-7	-	< 0.002	-
Biphenyl	92-52-4	-	< 0.002	-
Diphenyl ether	101-84-8	-	< 0.002	-
2-Nitroaniline	88-74-4	-	< 0.005	-
Acenaphthylene	208-96-8	-	< 0.002	-
Dimethylphthalate	131-11-3	-	< 0.005	-
2,6-Dinitrotoluene	606-20-2	-	< 0.005	-
Acenaphthene	83-32-9	-	< 0.002	-
3-Nitroaniline	99-09-2	-	< 0.005	-

Target Compounds	CAS #	R.T.	Concentration mg/l	% Fit
2,4-Dinitrophenol	51-28-5	-	< 0.010	-
Dibenzofuran	132-64-9	-	< 0.005	-
4-Nitrophenol	100-02-7	-	< 0.050	-
2,4-Dinitrotoluene	121-14-2	-	< 0.005	-
Fluorene	86-73-7	-	< 0.002	-
Diethylphthalate	84-66-2	-	< 0.005	-
4-Chlorophenyl-phenylether	7005-72-3	-	< 0.005	-
4,6-Dinitro-2-methylphenol	534-52-1	-	< 0.050	-
4-Nitroaniline	100-01-6	-	< 0.005	-
N-Nitrosodiphenylamine	86-30-6	-	< 0.005	-
4-Bromophenyl-phenylether	101-55-3	-	< 0.005	-
Hexachlorobenzene	118-74-1	-	< 0.005	-
Pentachlorophenol	87-86-5	-	< 0.050	-
Phenanthrene	85-01-8	-	< 0.002	-
Anthracene	120-12-7	-	< 0.002	-
Di-n-butylphthalate	84-74-2	-	< 0.005	-
Fluoranthene	206-44-0	-	< 0.002	-
Pyrene	129-00-0	-	< 0.002	-
Butylbenzylphthalate	85-68-7	-	< 0.005	-
Benzo[a]anthracene	56-55-3	-	< 0.002	-
Chrysene	218-01-9	-	< 0.002	-
3,3'-Dichlorobenzidine	91-94-1	-	< 0.020	-
bis(2-Ethylhexyl)phthalate	117-81-7	-	< 0.005	-
Di-n-octylphthalate	117-84-0	-	< 0.002	-
Benzo[b]fluoranthene	205-99-2	-	< 0.002	-
Benzo[k]fluoranthene	207-08-9	-	< 0.002	-
Benzo[a]pyrene	50-32-8	-	< 0.002	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.002	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.002	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.002	-
Coronene	191-07-1	-	< 0.050	-

Internal Standards	% Area
1,4-Dichlorobenzene-d4	35
Naphthalene-d8	44
Acenaphthene-d10	48
Phenanthrene-d10	N.D
Chrysene-d12	51
Perylene-d12	64

Surrogates	% Rec
2-Fluorophenol	N.D
Phenol-d5	N.D
Nitrobenzene-d5	77
2-Fluorobiphenyl	88
2,4,6-Tribromophenol	N.D
Terphenyl-d14	61

Concentrations are reported on a wet weight basis.
"M" denotes that % fit has been manually interpreted

Where individual results are flagged see report notes for status.

Semi-Volatile Organic Compounds

UKAS accredited?: No

Customer and Site Details:	Sol Environment Ltd: Real Alloy			**Matrix:**	Water	**QC Batch Number:**	201
Sample Details:	E2	**Date Booked in:**	03-Nov-17	**Ext Method:**	Sep. Funnel	**Multiplier:**	0.005
LIMS ID Number:	EX1840214	**Date Extracted:**	07-Nov-17	**Operator:**	AK	**Dilution Factor:**	1
Job Number:	W25_1932	**Date Analysed:**	09-Nov-17	**Directory/Quant File:**	110817_MS16\	**GPC (Y/N)**	N

Target Compounds	CAS #	R.T. (min)	Concentration mg/l	% Fit
Phenol	108-95-2	-	< 0.020	-
bis(2-Chloroethyl)ether	111-44-4	-	< 0.005	-
2-Chlorophenol	95-57-8	-	< 0.020	-
1,3-Dichlorobenzene	541-73-1	-	< 0.005	-
1,4-Dichlorobenzene	106-46-7	-	< 0.005	-
Benzyl alcohol	100-51-6	-	< 0.005	-
1,2-Dichlorobenzene	95-50-1	-	< 0.005	-
2-Methylphenol	95-48-7	-	< 0.005	-
bis(2-Chloroisopropyl)ether	108-60-1	-	< 0.005	-
Hexachloroethane	67-72-1	-	< 0.005	-
N-Nitroso-di-n-propylamine	621-64-7	-	< 0.005	-
3- & 4-Methylphenol	108-39-4/106-44-5	-	< 0.020	-
Nitrobenzene	98-95-3	-	< 0.005	-
Isophorone	78-59-1	-	< 0.005	-
2-Nitrophenol	88-75-5	-	< 0.020	-
2,4-Dimethylphenol	105-67-9	-	< 0.020	-
Benzoic Acid	65-85-0	-	< 0.100	-
bis(2-Chloroethoxy)methane	111-91-1	-	< 0.005	-
2,4-Dichlorophenol	120-83-2	-	< 0.020	-
1,2,4-Trichlorobenzene	120-82-1	-	< 0.005	-
Naphthalene	91-20-3	-	< 0.002	-
4-Chlorophenol	106-48-9	-	< 0.020	-
4-Chloroaniline	106-47-8	-	< 0.005	-
Hexachlorobutadiene	87-68-3	-	< 0.005	-
4-Chloro-3-methylphenol	59-50-7	-	< 0.005	-
2-Methylnaphthalene	91-57-6	-	< 0.002	-
1-Methylnaphthalene	90-12-0	-	< 0.002	-
Hexachlorocyclopentadiene	77-47-4	-	< 0.005	-
2,4,6-Trichlorophenol	88-06-2	-	< 0.020	-
2,4,5-Trichlorophenol	95-95-4	-	< 0.020	-
2-Chloronaphthalene	91-58-7	-	< 0.002	-
Biphenyl	92-52-4	-	< 0.002	-
Diphenyl ether	101-84-8	-	< 0.002	-
2-Nitroaniline	88-74-4	-	< 0.005	-
Acenaphthylene	208-96-8	-	< 0.002	-
Dimethylphthalate	131-11-3	-	< 0.005	-
2,6-Dinitrotoluene	606-20-2	-	< 0.005	-
Acenaphthene	83-32-9	-	< 0.002	-
3-Nitroaniline	99-09-2	-	< 0.005	-

Target Compounds	CAS #	R.T.	Concentration mg/l	% Fit
2,4-Dinitrophenol	51-28-5	-	< 0.010	-
Dibenzofuran	132-64-9	-	< 0.005	-
4-Nitrophenol	100-02-7	-	< 0.050	-
2,4-Dinitrotoluene	121-14-2	-	< 0.005	-
Fluorene	86-73-7	-	< 0.002	-
Diethylphthalate	84-66-2	-	< 0.005	-
4-Chlorophenyl-phenylether	7005-72-3	-	< 0.005	-
4,6-Dinitro-2-methylphenol	534-52-1	-	< 0.050	-
4-Nitroaniline	100-01-6	-	< 0.005	-
N-Nitrosodiphenylamine	86-30-6	-	< 0.005	-
4-Bromophenyl-phenylether	101-55-3	-	< 0.005	-
Hexachlorobenzene	118-74-1	-	< 0.005	-
Pentachlorophenol	87-86-5	-	< 0.050	-
Phenanthrene	85-01-8	-	< 0.002	-
Anthracene	120-12-7	-	< 0.002	-
Di-n-butylphthalate	84-74-2	-	< 0.005	-
Fluoranthene	206-44-0	-	< 0.002	-
Pyrene	129-00-0	-	< 0.002	-
Butylbenzylphthalate	85-68-7	-	< 0.005	-
Benzo[a]anthracene	56-55-3	-	< 0.002	-
Chrysene	218-01-9	-	< 0.002	-
3,3'-Dichlorobenzidine	91-94-1	-	< 0.020	-
bis(2-Ethylhexyl)phthalate	117-81-7	-	< 0.005	-
Di-n-octylphthalate	117-84-0	-	< 0.002	-
Benzo[b]fluoranthene	205-99-2	-	< 0.002	-
Benzo[k]fluoranthene	207-08-9	-	< 0.002	-
Benzo[a]pyrene	50-32-8	-	< 0.002	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.002	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.002	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.002	-
Coronene	191-07-1	-	< 0.050	-

Internal Standards	% Area
1,4-Dichlorobenzene-d4	31
Naphthalene-d8	39
Acenaphthene-d10	51
Phenanthrene-d10	52
Chrysene-d12	62
Perylene-d12	68

Surrogates	% Rec
2-Fluorophenol	26
Phenol-d5	18
Nitrobenzene-d5	80
2-Fluorobiphenyl	80
2,4,6-Tribromophenol	56
Terphenyl-d14	61

Concentrations are reported on a wet weight basis.
"M" denotes that % fit has been manually interpreted

Where individual results are flagged see report notes for status.

Semi-Volatile Organic Compounds

UKAS accredited?: No

Customer and Site Details:	Sol Environment Ltd: Real Alloy			**Matrix:**	Water	**QC Batch Number:**	201
Sample Details:	GM204	**Date Booked in:**	03-Nov-17	**Ext Method:**	Sep. Funnel	**Multiplier:**	0.005
LIMS ID Number:	EX1840215	**Date Extracted:**	07-Nov-17	**Operator:**	AK	**Dilution Factor:**	1
Job Number:	W25_1932	**Date Analysed:**	09-Nov-17	**Directory/Quant File:**	110817_MS16\	**GPC (Y/N)**	N

Target Compounds	CAS #	R.T. (min)	Concentration mg/l	% Fit
Phenol	108-95-2	-	< 0.020	-
bis(2-Chloroethyl)ether	111-44-4	-	< 0.005	-
2-Chlorophenol	95-57-8	-	< 0.020	-
1,3-Dichlorobenzene	541-73-1	-	< 0.005	-
1,4-Dichlorobenzene	106-46-7	-	< 0.005	-
Benzyl alcohol	100-51-6	-	< 0.005	-
1,2-Dichlorobenzene	95-50-1	-	< 0.005	-
2-Methylphenol	95-48-7	-	< 0.005	-
bis(2-Chloroisopropyl)ether	108-60-1	-	< 0.005	-
Hexachloroethane	67-72-1	-	< 0.005	-
N-Nitroso-di-n-propylamine	621-64-7	-	< 0.005	-
3- & 4-Methylphenol	108-39-4/106-44-5	-	< 0.020	-
Nitrobenzene	98-95-3	-	< 0.005	-
Isophorone	78-59-1	-	< 0.005	-
2-Nitrophenol	88-75-5	-	< 0.020	-
2,4-Dimethylphenol	105-67-9	-	< 0.020	-
Benzoic Acid	65-85-0	-	< 0.100	-
bis(2-Chloroethoxy)methane	111-91-1	-	< 0.005	-
2,4-Dichlorophenol	120-83-2	-	< 0.020	-
1,2,4-Trichlorobenzene	120-82-1	-	< 0.005	-
Naphthalene	91-20-3	-	< 0.002	-
4-Chlorophenol	106-48-9	-	< 0.020	-
4-Chloroaniline	106-47-8	-	< 0.005	-
Hexachlorobutadiene	87-68-3	-	< 0.005	-
4-Chloro-3-methylphenol	59-50-7	-	< 0.005	-
2-Methylnaphthalene	91-57-6	-	< 0.002	-
1-Methylnaphthalene	90-12-0	-	< 0.002	-
Hexachlorocyclopentadiene	77-47-4	-	< 0.005	-
2,4,6-Trichlorophenol	88-06-2	-	< 0.020	-
2,4,5-Trichlorophenol	95-95-4	-	< 0.020	-
2-Chloronaphthalene	91-58-7	-	< 0.002	-
Biphenyl	92-52-4	-	< 0.002	-
Diphenyl ether	101-84-8	-	< 0.002	-
2-Nitroaniline	88-74-4	-	< 0.005	-
Acenaphthylene	208-96-8	-	< 0.002	-
Dimethylphthalate	131-11-3	-	< 0.005	-
2,6-Dinitrotoluene	606-20-2	-	< 0.005	-
Acenaphthene	83-32-9	-	< 0.002	-
3-Nitroaniline	99-09-2	-	< 0.005	-

Target Compounds	CAS #	R.T.	Concentration mg/l	% Fit
2,4-Dinitrophenol	51-28-5	-	< 0.010	-
Dibenzofuran	132-64-9	-	< 0.005	-
4-Nitrophenol	100-02-7	-	< 0.050	-
2,4-Dinitrotoluene	121-14-2	-	< 0.005	-
Fluorene	86-73-7	-	< 0.002	-
Diethylphthalate	84-66-2	-	< 0.005	-
4-Chlorophenyl-phenylether	7005-72-3	-	< 0.005	-
4,6-Dinitro-2-methylphenol	534-52-1	-	< 0.050	-
4-Nitroaniline	100-01-6	-	< 0.005	-
N-Nitrosodiphenylamine	86-30-6	-	< 0.005	-
4-Bromophenyl-phenylether	101-55-3	-	< 0.005	-
Hexachlorobenzene	118-74-1	-	< 0.005	-
Pentachlorophenol	87-86-5	-	< 0.050	-
Phenanthrene	85-01-8	-	< 0.002	-
Anthracene	120-12-7	-	< 0.002	-
Di-n-butylphthalate	84-74-2	-	< 0.005	-
Fluoranthene	206-44-0	-	< 0.002	-
Pyrene	129-00-0	-	< 0.002	-
Butylbenzylphthalate	85-68-7	-	< 0.005	-
Benzo[a]anthracene	56-55-3	-	< 0.002	-
Chrysene	218-01-9	-	< 0.002	-
3,3'-Dichlorobenzidine	91-94-1	-	< 0.020	-
bis(2-Ethylhexyl)phthalate	117-81-7	-	< 0.005	-
Di-n-octylphthalate	117-84-0	-	< 0.002	-
Benzo[b]fluoranthene	205-99-2	-	< 0.002	-
Benzo[k]fluoranthene	207-08-9	-	< 0.002	-
Benzo[a]pyrene	50-32-8	-	< 0.002	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.002	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.002	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.002	-
Coronene	191-07-1	-	< 0.050	-

Internal Standards	% Area
1,4-Dichlorobenzene-d4	29
Naphthalene-d8	35
Acenaphthene-d10	44
Phenanthrene-d10	45
Chrysene-d12	53
Perylene-d12	43

Surrogates	% Rec
2-Fluorophenol	N.D
Phenol-d5	N.D
Nitrobenzene-d5	N.D
2-Fluorobiphenyl	80
2,4,6-Tribromophenol	N.D
Terphenyl-d14	60

Concentrations are reported on a wet weight basis.
"M" denotes that % fit has been manually interpreted

Where individual results are flagged see report notes for status.

Gasoline Range Organics
(BTEX and Aliphatic Carbon Ranges)

Customer and Site Details: Sol Environment Ltd : Real Alloy
Job Number: W25_1932
Directory: D:\TES\DATA\2017\1107HSA_GC9\110717 2017-11-07 13-02-51\171B7101.D
Method: Headspace GCFID

Matrix: Water
Date Booked in: 03-Nov-17
Date extracted: 11-Jun-17
Date Analysed: 08-Nov-17, 09:2

*** Sample data with an asterisk are not UKAS accredited.**

			Concentration, (mg/l)					Aliphatics				
	Sample ID	**Client ID**	**Benzene**	**Toluene**	**Ethyl benzene**	**m/p-Xylene**	**o-Xylene**	**C5 - C6**	**>C6 - C7**	**>C7 - C8**	**>C8 - C10**	**Total GRO**
*	EX1840212	GM07	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
*	EX1840213	MW38	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
*	EX1840214	E2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
*	EX1840215	GM204	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
*	EX1840216	BH201	0.825	3.604	0.398	1.560	0.474	5.5	0.6	1.0	5.2	19.1

Note: Benzene elutes between C6 and C7, toluene elutes between C7 and C8, ethyl benzene and the xylenes elute between C8 and C9.

Each BTEX compound is deducted from the appropriate band to give the aliphatic fractions, however aromatic compounds may still be contributing to these fractions

Where individual results are flagged see report notes for status.

ALIPHATIC / AROMATIC FRACTION BY GC/FID

Customer and Site Details: Sol Environment Ltd : Real Alloy
Job Number: W25_1932
QC Batch Number: 170701
Directory: D:\TES\DATA\Y2017\110817TPH_GC3\110817 2017-11-08 13-51-17\099B5901.D
Method: Bottle

Separation: Silica gel
Eluents: Hexane, DCM

Matrix: Water
Date Booked in 03-Nov-17
Date Extracted 07-Nov-17
Date Analysed 09-Nov-17, 02:37:26

*** This sample data is not UKAS accredited.**

		Concentration, (mg/l)											
		>C8 - C10		>C10 - C12		>C12 - C16		>C16 - C21		>C21 - C35		>C8 - C40	
Sample ID	Client ID	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics
* EX1840212	GM07	<0.01*	<0.01*	<0.01	<0.01	<0.01	0.019	<0.01	<0.01	0.021	<0.01	0.022	0.036
* EX1840213	MW38	<0.01*	<0.01*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.021
* EX1840214	E2	<0.01*	<0.01*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013
* EX1840215	GM204	<0.01*	<0.01*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013

Where individual results are flagged see report notes for status.

Volatile Organic Compounds by HSA-GCMS

UKAS accredited?: No

Customer and Site Details:	Sol Environment Ltd: Real Alloy	**Directory/Quant file:**	2017\110617\ Initial Calibration	**Matrix:**	Water
Sample Details:	GM07	**Date Booked in:**	03-Nov-17	**Method:**	Headspace
LIMS ID Number:	EX1840212	**Date Analysed:**	06-Nov-17	**Multiplier:**	1
Job Number:	W25_1932	**Operator:**	PR	**Position:**	14

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Dichlorodifluoromethane	75-71-8	-	< 1	-
Chloromethane	74-87-3	-	< 1	-
Vinyl Chloride	75-01-4	-	< 1	-
Bromomethane	74-83-9	-	< 5	-
Chloroethane	75-00-3	-	< 5	-
Trichlorofluoromethane	75-69-4	-	< 1	-
1,1-Dichloroethene	75-35-4	-	< 1	-
trans 1,2-Dichloroethene	156-60-5	-	< 1	-
1,1-Dichloroethane	75-34-3	-	< 1	-
2,2-Dichloropropane	594-20-7	-	< 1	-
cis 1,2-Dichloroethene	156-59-2	-	< 1	-
Bromochloromethane	74-97-5	-	< 1	-
Chloroform	67-66-3	-	< 1	-
1,1,1-Trichloroethane	71-55-6	-	< 1	-
Carbon Tetrachloride	56-23-5	-	< 1	-
1,1-Dichloropropene	563-58-6	-	< 1	-
Benzene	71-43-2	-	< 1	-
1,2-Dichloroethane	107-06-2	-	< 1	-
Trichloroethene	79-01-6	-	< 5	-
1,2-Dichloropropane	78-87-5	-	< 1	-
Dibromomethane	74-95-3	-	< 1	-
Bromodichloromethane	75-27-4	-	< 1	-
cis 1,3-Dichloropropene	10061-01-5	-	< 1	-
Toluene	108-88-3	-	< 1	-
trans 1,3-Dichloropropene	10061-02-6	-	< 1	-
1,1,2-Trichloroethane	79-00-5	-	< 1	-
Tetrachloroethene	127-18-4	-	< 5	-
1,3-Dichloropropane	142-28-9	-	< 1	-
Dibromochloromethane	124-48-1	-	< 1	-
1,2-Dibromoethane	106-93-4	-	< 1	-
Chlorobenzene	108-90-7	-	< 1	-
Ethylbenzene	100-41-4	-	< 1	-
1,1,1,2-Tetrachloroethane	630-20-6	-	< 1	-
m and p-Xylene	108-38-3/106-42-3	-	< 1	-
o-Xylene	95-47-6	-	< 1	-

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Styrene	100-42-5	-	< 1	-
Bromoform	75-25-2	-	< 1	-
iso-Propylbenzene	98-82-8	-	< 1	-
1,1,2,2-Tetrachloroethane	79-34-5 *	-	< 1	-
Propylbenzene	103-65-1	-	< 1	-
Bromobenzene	108-86-1	-	< 1	-
1,2,3-Trichloropropane	96-18-4	-	< 1	-
2-Chlorotoluene	95-49-8	-	< 1	-
1,3,5-Trimethylbenzene	108-67-8	-	< 1	-
4-Chlorotoluene	106-43-4	-	< 1	-
tert-Butylbenzene	98-06-6	-	< 1	-
1,2,4-Trimethylbenzene	95-63-6	-	< 1	-
sec-Butylbenzene	135-98-8	-	< 1	-
p-Isopropyltoluene	99-87-6	-	< 1	-
1,3-Dichlorobenzene	541-73-1	-	< 1	-
1,4-Dichlorobenzene	106-46-7	-	< 1	-
n-Butylbenzene	104-51-8	-	< 1	-
1,2-Dichlorobenzene	95-50-1	-	< 5	-
1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 5	-
1,2,4-Trichlorobenzene	120-82-1	-	< 5	-
Hexachlorobutadiene	87-68-3	-	< 5	-
Naphthalene	91-20-3	-	< 5	-
1,2,3-Trichlorobenzene	87-61-6	-	< 5	-

Compounds marked * are not UKAS accredited
"M" denotes that % fit has been manually interpreted

Internal standards	R.T.	Area %	Surrogates	% Rec
Pentafluorobenzene	3.56	92	Dibromofluoromethane	117
1,4-Difluorobenzene	3.92	96	Toluene-d8	98
Chlorobenzene-d5	5.06	96	Bromofluorobenzene	93
1,4-Dichlorobenzene-d4	5.86	89		

Where individual results are flagged see report notes for status.

Volatile Organic Compounds by HSA-GCMS

UKAS accredited?: No

Customer and Site Details:	Sol Environment Ltd: Real Alloy	**Directory/Quant file:**	2017\110617\ Initial Calibration	**Matrix:**	Water
Sample Details:	MW38	**Date Booked in:**	03-Nov-17	**Method:**	Headspace
LIMS ID Number:	EX1840213	**Date Analysed:**	06-Nov-17	**Multiplier:**	1
Job Number:	W25_1932	**Operator:**	PR	**Position:**	15

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Dichlorodifluoromethane	75-71-8	-	< 1	-
Chloromethane	74-87-3	-	< 1	-
Vinyl Chloride	75-01-4	-	< 1	-
Bromomethane	74-83-9	-	< 5	-
Chloroethane	75-00-3	-	< 5	-
Trichlorofluoromethane	75-69-4	-	< 1	-
1,1-Dichloroethene	75-35-4	-	< 1	-
trans 1,2-Dichloroethene	156-60-5	-	< 1	-
1,1-Dichloroethane	75-34-3	-	< 1	-
2,2-Dichloropropane	594-20-7	-	< 1	-
cis 1,2-Dichloroethene	156-59-2	-	< 1	-
Bromochloromethane	74-97-5	-	< 1	-
Chloroform	67-66-3	-	< 1	-
1,1,1-Trichloroethane	71-55-6	-	< 1	-
Carbon Tetrachloride	56-23-5	-	< 1	-
1,1-Dichloropropene	563-58-6	-	< 1	-
Benzene	71-43-2	-	< 1	-
1,2-Dichloroethane	107-06-2	-	< 1	-
Trichloroethene	79-01-6	-	< 5	-
1,2-Dichloropropane	78-87-5	-	< 1	-
Dibromomethane	74-95-3	-	< 1	-
Bromodichloromethane	75-27-4	-	< 1	-
cis 1,3-Dichloropropene	10061-01-5	-	< 1	-
Toluene	108-88-3	-	< 1	-
trans 1,3-Dichloropropene	10061-02-6	-	< 1	-
1,1,2-Trichloroethane	79-00-5	-	< 1	-
Tetrachloroethene	127-18-4	-	< 5	-
1,3-Dichloropropane	142-28-9	-	< 1	-
Dibromochloromethane	124-48-1	-	< 1	-
1,2-Dibromoethane	106-93-4	-	< 1	-
Chlorobenzene	108-90-7	-	< 1	-
Ethylbenzene	100-41-4	-	< 1	-
1,1,1,2-Tetrachloroethane	630-20-6	-	< 1	-
m and p-Xylene	108-38-3/106-42-3	-	< 1	-
o-Xylene	95-47-6	-	< 1	-

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Styrene	100-42-5	-	< 1	-
Bromoform	75-25-2	-	< 1	-
iso-Propylbenzene	98-82-8	-	< 1	-
1,1,2,2-Tetrachloroethane	79-34-5 *	-	< 1	-
Propylbenzene	103-65-1	-	< 1	-
Bromobenzene	108-86-1	-	< 1	-
1,2,3-Trichloropropane	96-18-4	-	< 1	-
2-Chlorotoluene	95-49-8	-	< 1	-
1,3,5-Trimethylbenzene	108-67-8	-	< 1	-
4-Chlorotoluene	106-43-4	-	< 1	-
tert-Butylbenzene	98-06-6	-	< 1	-
1,2,4-Trimethylbenzene	95-63-6	-	< 1	-
sec-Butylbenzene	135-98-8	-	< 1	-
p-Isopropyltoluene	99-87-6	-	< 1	-
1,3-Dichlorobenzene	541-73-1	-	< 1	-
1,4-Dichlorobenzene	106-46-7	-	< 1	-
n-Butylbenzene	104-51-8	-	< 1	-
1,2-Dichlorobenzene	95-50-1	-	< 5	-
1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 5	-
1,2,4-Trichlorobenzene	120-82-1	-	< 5	-
Hexachlorobutadiene	87-68-3	-	< 5	-
Naphthalene	91-20-3	-	< 5	-
1,2,3-Trichlorobenzene	87-61-6	-	< 5	-

Compounds marked * are not UKAS accredited
"M" denotes that % fit has been manually interpreted

Internal standards	R.T.	Area %	Surrogates	% Rec
Pentafluorobenzene	3.56	82	Dibromofluoromethane	113
1,4-Difluorobenzene	3.92	86	Toluene-d8	99
Chlorobenzene-d5	5.06	89	Bromofluorobenzene	96
1,4-Dichlorobenzene-d4	5.86	83		

Where individual results are flagged see report notes for status.

Volatile Organic Compounds by HSA-GCMS

UKAS accredited?: No

Customer and Site Details:	Sol Environment Ltd: Real Alloy	**Directory/Quant file:**	2017\110617\ Initial Calibration	**Matrix:**	Water
Sample Details:	E2	**Date Booked in:**	03-Nov-17	**Method:**	Headspace
LIMS ID Number:	EX1840214	**Date Analysed:**	06-Nov-17	**Multiplier:**	1
Job Number:	W25_1932	**Operator:**	PR	**Position:**	16

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Dichlorodifluoromethane	75-71-8	-	< 1	-
Chloromethane	74-87-3	-	< 1	-
Vinyl Chloride	75-01-4	-	< 1	-
Bromomethane	74-83-9	-	< 5	-
Chloroethane	75-00-3	-	< 5	-
Trichlorofluoromethane	75-69-4	-	< 1	-
1,1-Dichloroethene	75-35-4	-	< 1	-
trans 1,2-Dichloroethene	156-60-5	-	< 1	-
1,1-Dichloroethane	75-34-3	-	< 1	-
2,2-Dichloropropane	594-20-7	-	< 1	-
cis 1,2-Dichloroethene	156-59-2	-	< 1	-
Bromochloromethane	74-97-5	-	< 1	-
Chloroform	67-66-3	-	< 1	-
1,1,1-Trichloroethane	71-55-6	-	< 1	-
Carbon Tetrachloride	56-23-5	-	< 1	-
1,1-Dichloropropene	563-58-6	-	< 1	-
Benzene	71-43-2	-	< 1	-
1,2-Dichloroethane	107-06-2	-	< 1	-
Trichloroethene	79-01-6	-	< 5	-
1,2-Dichloropropane	78-87-5	-	< 1	-
Dibromomethane	74-95-3	-	< 1	-
Bromodichloromethane	75-27-4	-	< 1	-
cis 1,3-Dichloropropene	10061-01-5	-	< 1	-
Toluene	108-88-3	-	< 1	-
trans 1,3-Dichloropropene	10061-02-6	-	< 1	-
1,1,2-Trichloroethane	79-00-5	-	< 1	-
Tetrachloroethene	127-18-4	-	< 5	-
1,3-Dichloropropane	142-28-9	-	< 1	-
Dibromochloromethane	124-48-1	-	< 1	-
1,2-Dibromoethane	106-93-4	-	< 1	-
Chlorobenzene	108-90-7	-	< 1	-
Ethylbenzene	100-41-4	-	< 1	-
1,1,1,2-Tetrachloroethane	630-20-6	-	< 1	-
m and p-Xylene	108-38-3/106-42-3	-	< 1	-
o-Xylene	95-47-6	-	< 1	-

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Styrene	100-42-5	-	< 1	-
Bromoform	75-25-2	-	< 1	-
iso-Propylbenzene	98-82-8	-	< 1	-
1,1,2,2-Tetrachloroethane	79-34-5 *	-	< 1	-
Propylbenzene	103-65-1	-	< 1	-
Bromobenzene	108-86-1	-	< 1	-
1,2,3-Trichloropropane	96-18-4	-	< 1	-
2-Chlorotoluene	95-49-8	-	< 1	-
1,3,5-Trimethylbenzene	108-67-8	-	< 1	-
4-Chlorotoluene	106-43-4	-	< 1	-
tert-Butylbenzene	98-06-6	-	< 1	-
1,2,4-Trimethylbenzene	95-63-6	-	< 1	-
sec-Butylbenzene	135-98-8	-	< 1	-
p-Isopropyltoluene	99-87-6	-	< 1	-
1,3-Dichlorobenzene	541-73-1	-	< 1	-
1,4-Dichlorobenzene	106-46-7	-	< 1	-
n-Butylbenzene	104-51-8	-	< 1	-
1,2-Dichlorobenzene	95-50-1	-	< 5	-
1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 5	-
1,2,4-Trichlorobenzene	120-82-1	-	< 5	-
Hexachlorobutadiene	87-68-3	-	< 5	-
Naphthalene	91-20-3	-	< 5	-
1,2,3-Trichlorobenzene	87-61-6	-	< 5	-

Compounds marked * are not UKAS accredited
"M" denotes that % fit has been manually interpreted

Internal standards	R.T.	Area %	Surrogates	% Rec
Pentafluorobenzene	3.56	85	Dibromofluoromethane	120
1,4-Difluorobenzene	3.92	89	Toluene-d8	99
Chlorobenzene-d5	5.06	91	Bromofluorobenzene	96
1,4-Dichlorobenzene-d4	5.86	87		

Where individual results are flagged see report notes for status.

Volatile Organic Compounds by HSA-GCMS

UKAS accredited?: No

Customer and Site Details:	Sol Environment Ltd: Real Alloy	**Directory/Quant file:**	2017\110617\ Initial Calibration	**Matrix:**	Water
Sample Details:	GM204	**Date Booked in:**	03-Nov-17	**Method:**	Headspace
LIMS ID Number:	EX1840215	**Date Analysed:**	06-Nov-17	**Multiplier:**	1
Job Number:	W25_1932	**Operator:**	PR	**Position:**	17

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Dichlorodifluoromethane	75-71-8	-	< 1	-
Chloromethane	74-87-3	-	< 1	-
Vinyl Chloride	75-01-4	-	< 1	-
Bromomethane	74-83-9	-	< 5	-
Chloroethane	75-00-3	-	< 5	-
Trichlorofluoromethane	75-69-4	-	< 1	-
1,1-Dichloroethene	75-35-4	-	< 1	-
trans 1,2-Dichloroethene	156-60-5	-	< 1	-
1,1-Dichloroethane	75-34-3	-	< 1	-
2,2-Dichloropropane	594-20-7	-	< 1	-
cis 1,2-Dichloroethene	156-59-2	-	< 1	-
Bromochloromethane	74-97-5	-	< 1	-
Chloroform	67-66-3	-	< 1	-
1,1,1-Trichloroethane	71-55-6	-	< 1	-
Carbon Tetrachloride	56-23-5	-	< 1	-
1,1-Dichloropropene	563-58-6	-	< 1	-
Benzene	71-43-2	-	< 1	-
1,2-Dichloroethane	107-06-2	-	< 1	-
Trichloroethene	79-01-6	-	< 5	-
1,2-Dichloropropane	78-87-5	-	< 1	-
Dibromomethane	74-95-3	-	< 1	-
Bromodichloromethane	75-27-4	-	< 1	-
cis 1,3-Dichloropropene	10061-01-5	-	< 1	-
Toluene	108-88-3	-	< 1	-
trans 1,3-Dichloropropene	10061-02-6	-	< 1	-
1,1,2-Trichloroethane	79-00-5	-	< 1	-
Tetrachloroethene	127-18-4	-	< 5	-
1,3-Dichloropropane	142-28-9	-	< 1	-
Dibromochloromethane	124-48-1	-	< 1	-
1,2-Dibromoethane	106-93-4	-	< 1	-
Chlorobenzene	108-90-7	-	< 1	-
Ethylbenzene	100-41-4	-	< 1	-
1,1,1,2-Tetrachloroethane	630-20-6	-	< 1	-
m and p-Xylene	108-38-3/106-42-3	-	< 1	-
o-Xylene	95-47-6	-	< 1	-

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Styrene	100-42-5	-	< 1	-
Bromoform	75-25-2	-	< 1	-
iso-Propylbenzene	98-82-8	-	< 1	-
1,1,2,2-Tetrachloroethane	79-34-5 *	-	< 1	-
Propylbenzene	103-65-1	-	< 1	-
Bromobenzene	108-86-1	-	< 1	-
1,2,3-Trichloropropane	96-18-4	-	< 1	-
2-Chlorotoluene	95-49-8	-	< 1	-
1,3,5-Trimethylbenzene	108-67-8	-	< 1	-
4-Chlorotoluene	106-43-4	-	< 1	-
tert-Butylbenzene	98-06-6	-	< 1	-
1,2,4-Trimethylbenzene	95-63-6	-	< 1	-
sec-Butylbenzene	135-98-8	-	< 1	-
p-Isopropyltoluene	99-87-6	-	< 1	-
1,3-Dichlorobenzene	541-73-1	-	< 1	-
1,4-Dichlorobenzene	106-46-7	-	< 1	-
n-Butylbenzene	104-51-8	-	< 1	-
1,2-Dichlorobenzene	95-50-1	-	< 5	-
1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 5	-
1,2,4-Trichlorobenzene	120-82-1	-	< 5	-
Hexachlorobutadiene	87-68-3	-	< 5	-
Naphthalene	91-20-3	-	< 5	-
1,2,3-Trichlorobenzene	87-61-6	-	< 5	-

Compounds marked * are not UKAS accredited
"M" denotes that % fit has been manually interpreted

Internal standards	R.T.	Area %	Surrogates	% Rec
Pentafluorobenzene	3.56	88	Dibromofluoromethane	116
1,4-Difluorobenzene	3.92	91	Toluene-d8	98
Chlorobenzene-d5	5.06	91	Bromofluorobenzene	93
1,4-Dichlorobenzene-d4	5.86	83		

Where individual results are flagged see report notes for status.

Volatile Organic Compounds by HSA-GCMS

UKAS accredited?: No

Customer and Site Details:	Sol Environment Ltd: Real Alloy	**Directory/Quant file:**	2017\110717\ Initial Calibration	**Matrix:**	Water
Sample Details:	BH201	**Date Booked in:**	03-Nov-17	**Method:**	Headspace
LIMS ID Number:	EX1840216	**Date Analysed:**	07-Nov-17	**Multiplier:**	5
Job Number:	W25_1932	**Operator:**	PR	**Position:**	20

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Dichlorodifluoromethane	75-71-8 *	-	< 5	-
Chloromethane	74-87-3	-	< 5	-
Vinyl Chloride	75-01-4	-	< 5	-
Bromomethane	74-83-9 *	-	< 25	-
Chloroethane	75-00-3	-	< 25	-
Trichlorofluoromethane	75-69-4	-	< 5	-
1,1-Dichloroethene	75-35-4	-	< 5	-
trans 1,2-Dichloroethene	156-60-5	-	< 5	-
1,1-Dichloroethane	75-34-3	2.85	91	M
2,2-Dichloropropane	594-20-7 *	-	< 5	-
cis 1,2-Dichloroethene	156-59-2	3.27	32	M
Bromochloromethane	74-97-5	-	< 5	-
Chloroform	67-66-3	-	< 5	-
1,1,1-Trichloroethane	71-55-6	-	< 5	-
Carbon Tetrachloride	56-23-5	-	< 5	-
1,1-Dichloropropene	563-58-6	-	< 5	-
Benzene	71-43-2	3.73	280	77
1,2-Dichloroethane	107-06-2	-	< 5	-
Trichloroethene	79-01-6	4.04	239	69
1,2-Dichloropropane	78-87-5	-	< 5	-
Dibromomethane	74-95-3	-	< 5	-
Bromodichloromethane	75-27-4	-	< 5	-
cis 1,3-Dichloropropene	10061-01-5 *	-	< 5	-
Toluene	108-88-3	4.55	2200	97
trans 1,3-Dichloropropene	10061-02-6 *	-	< 5	-
1,1,2-Trichloroethane	79-00-5	-	< 5	-
Tetrachloroethene	127-18-4	-	< 25	-
1,3-Dichloropropane	142-28-9	-	< 5	-
Dibromochloromethane	124-48-1	-	< 5	-
1,2-Dibromoethane	106-93-4	-	< 5	-
Chlorobenzene	108-90-7	-	< 5	-
Ethylbenzene	100-41-4	5.10	289	57
1,1,1,2-Tetrachloroethane	630-20-6	-	< 5	-
m and p-Xylene	108-38-3/106-42-3	5.14	1150	87
o-Xylene	95-47-6	5.28	247	M

Target Compounds	CAS #	R.T. (min.)	Concentration µg/l	% Fit
Styrene	100-42-5	-	< 5	-
Bromoform	75-25-2	-	< 5	-
iso-Propylbenzene	98-82-8	5.40	244	58
1,1,2,2-Tetrachloroethane	79-34-5 *	-	< 5	-
Propylbenzene	103-65-1	-	< 5	-
Bromobenzene	108-86-1	-	< 5	-
1,2,3-Trichloropropane	96-18-4	-	< 5	-
2-Chlorotoluene	95-49-8	-	< 5	-
1,3,5-Trimethylbenzene	108-67-8	-	< 5	-
4-Chlorotoluene	106-43-4	-	< 5	-
tert-Butylbenzene	98-06-6	-	< 5	-
1,2,4-Trimethylbenzene	95-63-6	5.73	167	M
sec-Butylbenzene	135-98-8	-	< 5	-
p-Isopropyltoluene	99-87-6	-	< 5	-
1,3-Dichlorobenzene	541-73-1	5.84	49	M
1,4-Dichlorobenzene	106-46-7	5.87	52	M
n-Butylbenzene	104-51-8	-	< 5	-
1,2-Dichlorobenzene	95-50-1	-	< 25	-
1,2-Dibromo-3-chloropropane	96-12-8 *	-	< 25	-
1,2,4-Trichlorobenzene	120-82-1	-	< 25	-
Hexachlorobutadiene	87-68-3	-	< 25	-
Naphthalene	91-20-3	6.62	99	M
1,2,3-Trichlorobenzene	87-61-6	-	< 25	-

Compounds marked * are not UKAS accredited
"M" denotes that % fit has been manually interpreted

Internal standards	R.T.	Area %	Surrogates	% Rec
Pentafluorobenzene	3.56	4	Dibromofluoromethane	84
1,4-Difluorobenzene	3.92	2	Toluene-d8	53
Chlorobenzene-d5	5.06	1	Bromofluorobenzene	67
1,4-Dichlorobenzene-d4	5.86	1		

Where individual results are flagged see report notes for status.

Sample Analysis

Socotec Environmental Chemistry
Analytical and Deviating Sample Overview

W251932

Customer **Sol Environment Ltd**
Site **Real Alloy**
Report No **W251932**

Consignment No W128495
Date Logged 03-Nov-2017
In-House Report Due 10-Nov-2017
Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	Report A (CUSTSERV)	GRO-HSA GCFID (AA) (GROHSA)	Nickel as Ni MS (Dissolved) (ICPMSW)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Total Sulphur as SO4 (Diss) VAR (ICPWATVAR)	Ammoniacal Nitrogen (Kone) (KONENS)	PAH GC-MS (16) (PAHMSW)	PCB - 7 Congeners (PCBECD)	Cyanide (Total) as CN SFA (SFAPI)	SVOC (SVOCSW)	TPH by GC(Si) (TPHFID-Si)
EX/1840212	GM07	Unclassified	01/11/17																		
EX/1840213	MW38	Unclassified	01/11/17																		
EX/1840214	E2	Unclassified	01/11/17																		
EX/1840215	GM204	Unclassified	01/11/17																		
EX/1840216	BH201	Unclassified	01/11/17																		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Where individual results are flagged see report notes for status.

Sample Analysis

Socotec Environmental Chemistry
Analytical and Deviating Sample Overview

W251932

Customer **Sol Environment Ltd**
Site **Real Alloy**
Report No **W251932**

Consignment No W128495
Date Logged 03-Nov-2017
In-House Report Due 10-Nov-2017
Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	VOC HSA-GCMS	pH units
			MethodID	VOCHSA/W	WSLM3
EX/1840212	GM07	Unclassified	01/11/17		
EX/1840213	MW38	Unclassified	01/11/17		
EX/1840214	E2	Unclassified	01/11/17		
EX/1840215	GM204	Unclassified	01/11/17		
EX/1840216	BH201	Unclassified	01/11/17		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Where individual results are flagged see report notes for status.

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
GROHSA	EX1840216	Due to matrix interference, the Internal Standard recovery for this Test is below the required QMS specification. This has been confirmed by repeating the analysis. All other Laboratory Process Controls meet the requirements of the QMS unless otherwise stated. These circumstances should be taken into consideration when utilising the data.
VOCHSAS	EX1840216	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated. As the matrix of this sample is believed to be non-amenable for this method these results have been reported unaccredited and should be used for guidance only.
PAHMSUS	EX1840213-0214	Due to matrix interference, the Surrogate recovery for this Test is below the required QMS specification. All other Laboratory Process Controls meet the requirements of the QMS unless otherwise stated. These circumstances should be taken into consideration when utilising the data.
TPHUSSI	EX1840213-0215	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (C8-C10) on the aliphatic and aromatic fraction. These circumstances should be taken into consideration when utilising the data.
PAHMSW	EX1840216	Due to the sample matrix of this sample being Oil, this analysis was reported under S180509
TPHUSSI	EX1840216	Due to the sample matrix of this sample being Oil, this analysis was reported under S180509

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by pentane extraction followed by GCECD detection
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SVOCSW	As Received	Determination of Semi Volatile Organic Compounds (SVOC) by DCM extraction followed by GCMS detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis
Unless stated otherwise results are expressed as mg/l
Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
This may have resulted in deterioration of the sample(s) during transit to the laboratory.
Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : Sol Environment Ltd

Site : Real Alloy

Report Number : W25_1932

Lab ID Number	Client ID	Description
EX/1840212	GM07	Unclassified
EX/1840213	MW38	Unclassified
EX/1840214	E2	Unclassified
EX/1840215	GM204	Unclassified
EX/1840216	BH201	Unclassified

Our Ref: EFS/180509 (Ver. 1)
Your Ref: SOL1710RA

November 14, 2017

Environmental Chemistry
SOCOTEC UK Limited
Bretby Business Park
Ashby Road
Burton-on-Trent
Staffordshire
DE15 0YZ

Telephone: 01283 554400
Facsimile: 01283 554422

Emily Hingston
Sol Environment Ltd
Unit 7
Greenway Farm
Bath Road
Wick
Bristol
B330 SRL

For the attention of Emily Hingston

Dear Emily Hingston

Sample Analysis - Real Alloy

Samples from the above site have been analysed in accordance with the schedule supplied.
The sample details and the results of analyses for these samples are given in the appended report.

An invoice for this work will follow under a separate cover.

Where appropriate the samples will be kept until 21/12/17 when they will be discarded. Please call 01283 554463 for an extension of this date.
Please be aware that our policy for the retention of paper based laboratory records and analysis reports is 6 years.

The work was carried out in accordance with SOCOTEC UK Limited (Multi-Sector Services) Standard Terms and Conditions of Contract.

If I can be of any further assistance please do not hesitate to contact me.

Yours sincerely

for SOCOTEC UK Limited

A Tave
Project Co-ordinator
01283 554463

TEST REPORT

Report No. EFS/180509 (Ver. 1)

Sol Environment Ltd
Unit 7
Greenway Farm
Bath Road
Wick
Bristol
B330 SRL

Site: Real Alloy

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 09-Nov-2017. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 14-Nov-2017

The following tables are contained in this report:

On behalf of
SOCOTEC UK Lim
Tim Barnes
Operations Director
Energy & Waste Services

Date of Issue: 14-Nov-2017

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

		Units :	mg/kg	mg/kg
		Method Codes :	TPHUSSI	PAHMSUS
		Method Reporting Limits :	20	
LAB ID Number CL/	Client Sample Description	Sample Date	TPH by GCFID (AR/Si)	PAH (16) by GCMS
1783092	BH201	01-Nov-17	Req	Req

SOCOTEC

Bretby Business Park, Ashby Road

Burton-on-Trent, Staffordshire, DE15 0YZ

Tel +44 (0) 1283 554400

Fax +44 (0) 1283 554422

Client Name	**Sol Environment Ltd**
Contact	Emily Hingston

Real Alloy

Sample Analysis

Date Printed	**14-Nov-2017**
Report Number	**EFS/180509**
Table Number	**1**

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Sol Environment Ltd: Real Alloy		
Sample Details:	BH201	**Job Number:**	S18_0509
LIMS ID Number:	CL1783092	**Date Booked in:**	09-Nov-17
QC Batch Number:	170706	**Date Extracted:**	08-Nov-17
Quantitation File:	Initial Calibration	**Date Analysed:**	09-Nov-17
Directory:	\110817MS14\	**Matrix:**	Oil
Dilution:	25.0	**Ext Method:**	Dilute + Shoot

UKAS accredited?: No

Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit
Naphthalene	91-20-3	-	< 2.000	-
Acenaphthylene	208-96-8	-	< 2.000	-
Acenaphthene	83-32-9	-	< 2.000	-
Fluorene	86-73-7	-	< 2.000	-
Phenanthrene	85-01-8	5.74	2.100	90
Anthracene	120-12-7	-	< 2.000	-
Fluoranthene	206-44-0	-	< 2.000	-
Pyrene	129-00-0	-	< 2.000	-
Benzo[a]anthracene	56-55-3	9.05	< 2.000	-
Chrysene	218-01-9	-	< 2.000	-
Benzo[b]fluoranthene	205-99-2	10.50	< 2.000	-
Benzo[k]fluoranthene	207-08-9	10.54	< 2.000	-
Benzo[a]pyrene	50-32-8	10.99	< 2.000	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 2.000	-
Dibenzo[a,h]anthracene	53-70-3	-	< 2.000	-
Benzo[g,h,i]perylene	191-24-2	-	< 2.000	-
Total (USEPA16) PAHs	-	-	< 32.100	-

* Denotes compound is not UKAS accredited

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	1907
Acenaphthene-d10	93
Phenanthrene-d10	92
Chrysene-d12	104
Perylene-d12	110

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	125
Terphenyl-d14	103

Concentrations are reported on a wet weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

ALIPHATIC / AROMATIC FRACTION BY GC/FID

Customer and Site Details: Sol Environment Ltd : Real Alloy
Job Number: S18_0509
QC Batch Number: 171216
Directory: D:\TES\DATA\Y2017\111317TPH_GC3\111317 2017-11-13 15-42-01\099B6101.D
Method: Dilute & Shoot

Separation: Silica gel
Eluents: Hexane, DCM

Matrix: Soil
Date Booked ir 09-Nov-17
Date Extracted 13-Nov-17
Date Analysed 14-Nov-17, 04:49:34

*** This sample data is not UKAS accredited.**

		Concentration, (%TPH) - as wet weight											
		>C8 - C10		>C10 - C12		>C12 - C16		>C16 - C21		>C21 - C35		>C8 - C40	
Sample ID	Client ID	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics
* CL1783092	BH201	<0.005%	<0.003%	<0.005%	0.00%	0.01%	0.11%	0.07%	0.01%	1.34%	0.69%	1.49%	0.85%

Where individual results are flagged see report notes for status.

Sample Analysis

Socotec Environmental Chemistry
Analytical and Deviating Sample Overview

S180509

Customer **Sol Environment Ltd**
Site **Real Alloy**
Report No **S180509**

Consignment No S70412
Date Logged 09-Nov-2017
In-House Report Due 15-Nov-2017
Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	CustServ	PAHMSUS	TPHUSSI
		Sampled	REPORT A	PAH (16) by GCMS	TPH by GCFID (AR/Si)
CL/1783092	BH201	01/11/17			

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.
Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis
Unless stated otherwise results are expressed as mg/l
Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^oC

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
This may have resulted in deterioration of the sample(s) during transit to the laboratory.
Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : Sol Environment Ltd
Site : Real Alloy
Report Number : S18_0509

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1783092	BH201	OIL

Annex H – Sample Analysis 2019

Our Ref: EXR/292603 (Ver. 1)
Your Ref: SOL1909RA01

October 28, 2019

Environmental Chemistry
SOCOTEC UK Limited
Bretby Business Park
Ashby Road
Burton-on-Trent
Staffordshire
DE15 0YZ

Telephone: 01283 554400
Facsimile: 01283 554422

Emily Hingston
Sol Environment Ltd
Unit 7
Greenway Farm
Bath Road
Wick
Bristol
B330 SRL

For the attention of Emily Hingston

Dear Emily Hingston

Sample Analysis - Real Alloy

Samples from the above site have been analysed in accordance with the schedule supplied.
The sample details and the results of analyses for these samples are given in the appended report.

An invoice for this work will follow under a separate cover.

Please be aware that our policy for the retention of paper based laboratory records and analysis reports is 6 years.

The work was carried out in accordance with SOCOTEC UK Limited (Multi-Sector Services) Standard Terms and Conditions of Contract.

If I can be of any further assistance please do not hesitate to contact me.

Yours sincerely

for SOCOTEC UK Limited

L Moore
Project Co-ordinator
01283 554400

TEST REPORT

1252

Report No. EXR/292603 (Ver. 1)

Sol Environment Ltd
Unit 7
Greenway Farm
Bath Road
Wick
Bristol
B330 SRL

Site: Real Alloy

The 6 samples described in this report were registered for analysis by SOCOTEC UK Limited on 17-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 28-Oct-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 28-Oct-2019

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

		Units :	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		Method Codes :	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	ICPMSW
		Method Reporting Limits :	5	5	10	5	5	15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.001
		UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	o Xylene	Toluene	Xylenes	GRO >C5->C6	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic	GRO-HSA o	Arsenic as As (Dissolved)
2010507	E2	15-Oct-19	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	<0.001
2010508	MW38	15-Oct-19	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	<0.001
2010509	GM07	15-Oct-19	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	<0.001
2010510	GM202	15-Oct-19	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	0.004
2010511	GM204	15-Oct-19	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	0.004
2010512	GM01	15-Oct-19	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	<0.001

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Client Name	Sol Environment Ltd
Contact	Emily Hingston

Real Alloy

Sample Analysis

Date Printed	28-Oct-2019
Report Number	EXR/292603
Table Number	1

Where individual results are flagged see report notes for status.

LAB ID Number EX/	Client Sample Description	Sample Date	Cadmium as Cd (Dissolved)	Chromium as Cr (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Mercury as Hg (Dissolved)	Nickel as Ni (Dissolved)	Selenium as Se (Dissolved)	Zinc as Zn (Dissolved)	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene
		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
		Method Codes :	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPWATVAR	KONENS	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW
		Method Reporting Limits :	0.00002	0.001	0.001	0.001	0.00003	0.001	0.001	0.002	3	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2010507	E2	15-Oct-19	0.00041	<0.001	0.002	<0.001	<0.00003	0.002	<0.001	0.003	122	1.7	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.02
2010508	MW38	15-Oct-19	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.029	<0.001	0.01	534	0.6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03
2010509	GM07	15-Oct-19	<0.00002	<0.001	<0.001	<0.001	<0.00003	<0.001	<0.001	0.005	4	2.0	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2010510	GM202	15-Oct-19	<0.00002	<0.001	0.002	<0.001	<0.00003	0.003	<0.001	0.003	21	0.4	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
2010511	GM204	15-Oct-19	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.003	<0.001	<0.002	18	1.8	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2010512	GM01	15-Oct-19	0.01205	<0.001	0.113	<0.001	<0.00003	0.088	<0.001	0.531	51	4.3	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

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Client Name **Sol Environment Ltd**

Contact Emily Hingston

Real Alloy

Sample Analysis

Date Printed	**28-Oct-2019**
Report Number	**EXR/292603**
Table Number	**1**

Where individual results are flagged see report notes for status.

LAB ID Number EX/	Client Sample Description	Sample Date	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cyanide (Total) as CN	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene
		Units :	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		Method Codes :	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	SFAPI	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.02	0.005	0.005	0.005	0.005
		UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No
2010507	E2	15-Oct-19	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.18	<0.02	< 0.020	< 0.020	< 0.020	< 0.020
2010508	MW38	15-Oct-19	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03	0.02	< 0.01	< 0.01	< 0.21	<0.02	< 0.005	< 0.005	< 0.005	< 0.005
2010509	GM07	15-Oct-19	< 0.01	< 0.01	0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.01	0.03	0.04	< 0.24	<0.02	< 0.020	< 0.020	< 0.020	< 0.020
2010510	GM202	15-Oct-19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.01	< 0.01	< 0.17	<0.02	< 0.005	< 0.005	< 0.005	< 0.005
2010511	GM204	15-Oct-19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.19	<0.02	< 0.020	< 0.020	< 0.020	< 0.020
2010512	GM01	15-Oct-19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.19	<0.02	< 0.005	< 0.005	< 0.005	< 0.005

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Client Name **Sol Environment Ltd**

Contact Emily Hingston

Real Alloy

Sample Analysis

Date Printed	**28-Oct-2019**
Report Number	**EXR/292603**
Table Number	**1**

Where individual results are flagged see report notes for status.

		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		Method Codes :	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	0.002	0.02	0.02	0.02	0.02	0.01	0.005	0.005	0.002	0.02	0.002	0.005	0.005	0.02	0.02	0.005
		UKAS Accredited :	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
LAB ID Number EX/	Client Sample Description	Sample Date	1-Methylnaphthalene	2,4,5-Trichlorophenol	2,4,6 - Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6 Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3+4-Methylphenol	3-Nitroaniline
2010507	E2	15-Oct-19	< 0.008	< 0.080	< 0.080*	< 0.080	< 0.080*	< 0.040	< 0.020	< 0.020	< 0.008	< 0.080	< 0.008	< 0.020	< 0.020	< 0.080	< 0.080	< 0.020
2010508	MW38	15-Oct-19	< 0.002	< 0.020	< 0.020*	< 0.020	< 0.020*	< 0.010	< 0.005	< 0.005	< 0.002	< 0.020	< 0.002	< 0.005	< 0.005	< 0.020	< 0.020	< 0.005
2010509	GM07	15-Oct-19	< 0.008	< 0.080	< 0.080*	< 0.080	< 0.080*	< 0.040	< 0.020	< 0.020	< 0.008	< 0.080	< 0.008	< 0.020	< 0.020	< 0.080	< 0.080	< 0.020
2010510	GM202	15-Oct-19	< 0.002	< 0.020	< 0.020*	< 0.020	< 0.020*	< 0.010	< 0.005	< 0.005	< 0.002	< 0.020	< 0.002	< 0.005	< 0.005	< 0.020	< 0.020	< 0.005
2010511	GM204	15-Oct-19	< 0.008	< 0.080	< 0.080*	< 0.080	< 0.080*	< 0.040	< 0.020	< 0.020	< 0.008	< 0.080	< 0.008	< 0.020	< 0.020	< 0.080	< 0.080	< 0.020
2010512	GM01	15-Oct-19	< 0.002	< 0.020	< 0.020*	< 0.020	< 0.020*	< 0.010	< 0.005	< 0.005	< 0.002	< 0.020	< 0.002	< 0.005	< 0.005	< 0.020	< 0.020	< 0.005

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Client Name **Sol Environment Ltd**

Contact Emily Hingston

Real Alloy

Sample Analysis

Date Printed	**28-Oct-2019**
Report Number	**EXR/292603**
Table Number	**1**

Where individual results are flagged see report notes for status.

		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		Method Codes :	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	0.05	0.005	0.005	0.005	0.02	0.005	0.005	0.05	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
		UKAS Accredited :	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
LAB ID Number EX/	Client Sample Description	Sample Date	4,6-Dinitro-2-methylphenol	4-Bromophenyl-phenylether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenol	4-Chlorophenyl-phenylether	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene
2010507	E2	15-Oct-19	< 0.200	< 0.020	< 0.020	< 0.020	< 0.080	< 0.020	< 0.020	< 0.200	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
2010508	MW38	15-Oct-19	< 0.050	< 0.005	< 0.005	< 0.005	< 0.020	< 0.005	< 0.005	< 0.050	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
2010509	GM07	15-Oct-19	< 0.200	< 0.020	< 0.020	< 0.020	< 0.080	< 0.020	< 0.020	< 0.200	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
2010510	GM202	15-Oct-19	< 0.050	< 0.005	< 0.005	< 0.005	< 0.020	< 0.005	< 0.005	< 0.050	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
2010511	GM204	15-Oct-19	< 0.200	< 0.020	< 0.020	< 0.020	< 0.080	< 0.020	< 0.020	< 0.200	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
2010512	GM01	15-Oct-19	< 0.050	< 0.005	< 0.005	< 0.005	< 0.020	< 0.005	< 0.005	< 0.050	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

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Client Name	Sol Environment Ltd
Contact	Emily Hingston

Real Alloy

Sample Analysis

Date Printed	28-Oct-2019
Report Number	EXR/292603
Table Number	1

Where individual results are flagged see report notes for status.

		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		Method Codes :	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	0.1	0.005	0.002	0.005	0.005	0.005	0.005	0.005	0.002	0.05	0.002	0.005	0.005	0.005	0.005	0.002
		UKAS Accredited :	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
LAB ID Number EX/	Client Sample Description	Sample Date	Benzoic Acid	Benzyl alcohol	Biphenyl	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzylphthalate	Chrysene	Coronene	Dibenzo[a,h]anthracene	Dibenzofuran	Diethylphthalate	Dimethylphthalate	Di-n-butylphthalate	Di-n-octylphthalate
2010507	E2	15-Oct-19	< 0.400	< 0.020	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008	< 0.200	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008
2010508	MW38	15-Oct-19	< 0.100	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.050	< 0.002	< 0.005	< 0.005	0.007	< 0.005	< 0.002
2010509	GM07	15-Oct-19	< 0.400	< 0.020	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008	< 0.200	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008
2010510	GM202	15-Oct-19	< 0.100	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.050	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002
2010511	GM204	15-Oct-19	< 0.400	< 0.020	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008	< 0.200	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008
2010512	GM01	15-Oct-19	< 0.100	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.050	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002

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Real Alloy

Sample Analysis

Date Printed	**28-Oct-2019**
Report Number	**EXR/292603**
Table Number	**1**

Where individual results are flagged see report notes for status.

		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		Method Codes :	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	0.002	0.002	0.002	0.005	0.005	0.005	0.005	0.002	0.005	0.002	0.005	0.005	0.005	0.05	0.002	0.02
		UKAS Accredited :	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
LAB ID Number EX/	Client Sample Description	Sample Date	Diphenyl Ether	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno[1,2,3-cd]pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitroso-di-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol
2010507	E2	15-Oct-19	< 0.008	< 0.008	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008	< 0.020	< 0.008	< 0.020	< 0.020	< 0.020	< 0.200	< 0.008	< 0.080
2010508	MW38	15-Oct-19	< 0.002	< 0.002	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.005	< 0.002	< 0.005	0.008	< 0.005	< 0.050	< 0.002	< 0.020
2010509	GM07	15-Oct-19	< 0.008	< 0.008	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008	< 0.020	< 0.008	< 0.020	< 0.020	< 0.020	< 0.200	< 0.008	0.118
2010510	GM202	15-Oct-19	< 0.002	< 0.002	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.050	< 0.002	< 0.020
2010511	GM204	15-Oct-19	< 0.008	< 0.008	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008	< 0.020	< 0.008	< 0.020	< 0.020	< 0.020	< 0.200	< 0.008	< 0.080
2010512	GM01	15-Oct-19	< 0.002	< 0.002	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.050	< 0.002	< 0.020

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Real Alloy

Sample Analysis

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Report Number	**EXR/292603**
Table Number	**1**

Where individual results are flagged see report notes for status.

		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	µg/l	ug/l	µg/l
		Method Codes :	SVOCSW	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	VOCHSAW	VOCHSAW	VOCHSAW
		Method Reporting Limits :	0.002	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1	1	1
		UKAS Accredited :	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
LAB ID Number EX/	Client Sample Description	Sample Date	Pyrene	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane
2010507	E2	15-Oct-19	< 0.008	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.016	< 0.010	< 0.010	< 0.010	0.022	< 0.010	0.044	< 1.0	< 1.0*	< 1.0
2010508	MW38	15-Oct-19	< 0.002	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.011	0.024	< 0.010	0.050	< 1.0	< 1.0*	< 1.0
2010509	GM07	15-Oct-19	< 0.008	< 0.010	0.033	0.094	0.588	< 0.010	0.719	< 0.010	0.021	0.023	0.303	< 0.010	0.370	< 1.0	< 1.0*	< 1.0
2010510	GM202	15-Oct-19	< 0.002	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.032	< 0.010	0.046	< 1.0	< 1.0*	< 1.0
2010511	GM204	15-Oct-19	< 0.008	< 0.010	< 0.010	< 0.010	0.086	< 0.010	0.092	< 0.010	0.011	0.012	0.058	< 0.010	0.089	< 1.0	< 1.0*	< 1.0
2010512	GM01	15-Oct-19	< 0.002	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.018	< 1.0	< 1.0*	< 1.0

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Real Alloy

Sample Analysis

Date Printed	28-Oct-2019
Report Number	EXR/292603
Table Number	1

Where individual results are flagged see report notes for status.

		Units :	µg/l	ug/l	µg/l	µg/l	ug/l	µg/l	ug/l	ug/l	µg/l	µg/l	ug/l	ug/l	µg/l	ug/l	ug/l	µg/l
		Method Codes :	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW
		Method Reporting Limits :	1	1	1	1	1	1	5	1	5	1	5	1	1	1	1	1
		UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane
2010507	E2	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2010508	MW38	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2010509	GM07	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2010510	GM202	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2010511	GM204	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2010512	GM01	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Real Alloy

Sample Analysis

Date Printed	**28-Oct-2019**
Report Number	**EXR/292603**
Table Number	**1**

Where individual results are flagged see report notes for status.

		Units :	ug/l	ug/l	µg/l	µg/l	µg/l	µg/l	µg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	µg/l
		Method Codes :	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW
		Method Reporting Limits :	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		UKAS Accredited :	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No
LAB ID Number EX/	Client Sample Description	Sample Date	1,4-Dichlorobenzene	2- Chlorotoluene	2,2-Dichloropropane	4-Chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis 1,3-Dichloropropene
2010507	E2	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010508	MW38	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010509	GM07	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010510	GM202	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010511	GM204	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010512	GM01	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0

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Real Alloy

Sample Analysis

Date Printed	28-Oct-2019
Report Number	EXR/292603
Table Number	1

Where individual results are flagged see report notes for status.

		Units :	ug/l	ug/l	µg/l	ug/l	µg/l	ug/l	ug/l	µg/l	ug/l	µg/l	µg/l	ug/l	µg/l	µg/l	ug/l	µg/l
		Method Codes :	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW
		Method Reporting Limits :	1	1	1	1	1	5	1	1	5	1	1	1	1	1	1	1
		UKAS Accredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Cis-1,2-dichloroethene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	m and p-Xylene	Naphthalene	n-Butylbenzene	o-Xylene	p-Isopropyltoluene	Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene
2010507	E2	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010508	MW38	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010509	GM07	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010510	GM202	15-Oct-19	4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010511	GM204	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0
2010512	GM01	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0

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Real Alloy

Sample Analysis

Date Printed	**28-Oct-2019**
Report Number	**EXR/292603**
Table Number	**1**

Where individual results are flagged see report notes for status.

		Units :	ug/l	µg/l	ug/l	µg/l	ug/l	µg/l	µg/l	pH units
		Method Codes :	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW	WSLM3
		Method Reporting Limits :	1	1	1	1	1	1	1	
		UKAS Accredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Tetrachloroethene	Toluene	Trans 1,2 Dichloroethene	trans 1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl Chloride	pH units w
2010507	E2	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	7.4
2010508	MW38	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	6.2
2010509	GM07	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	6.6
2010510	GM202	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	4.0*	< 1.0	< 1.0	7.1
2010511	GM204	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	6.8
2010512	GM01	15-Oct-19	< 1.0	< 1.0	< 1.0	< 1.0	5.0*	< 1.0	< 1.0	6.6

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Real Alloy

Sample Analysis

Date Printed	28-Oct-2019
Report Number	EXR/292603
Table Number	1

Where individual results are flagged see report notes for status.

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

Customer Sol Environment Ltd
Site Real Alloy
Report No W292603

Consignment No W162158
Date Logged 17-Oct-2019
In-House Report Due 24-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	Report A	GRO-HSA GCFID (AA)	Nickel as Ni MS (Dissolved)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Total Sulphur as SO4 (Diss) VAR	Ammoniacal Nitrogen (Kone)	PAH GC-MS (16)	PCB - 7 Congeners	Cyanide (Total) as CN SFA	SVOC	TPH by GC(Si)
			MethodID	CUSTSERV	GROHSA	ICPMSW									ICPWATVAR	KONENS	PAHMSW	PCBECD	SFAPI	SVOCSW	TPHFID-SI
						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
EX/2010507	E2	Groundwater	15/10/19																		
EX/2010508	MW38	Groundwater	15/10/19																		
EX/2010509	GM07	Groundwater	15/10/19																		
EX/2010510	GM202	Groundwater	15/10/19																		
EX/2010511	GM204	Groundwater	15/10/19																		
EX/2010512	GM01	Groundwater	15/10/19																		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.
Where individual results are flagged see report notes for status.

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

Customer Sol Environment Ltd
Site Real Alloy
Report No W292603

Consignment No W162158
Date Logged 17-Oct-2019
In-House Report Due 24-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	VOC HSA-GCMS	pH units
			MethodID	VOCHSAW	WSLM3
				✓	✓
EX/2010507	E2	Groundwater	15/10/19		
EX/2010508	MW38	Groundwater	15/10/19		
EX/2010509	GM07	Groundwater	15/10/19		
EX/2010510	GM202	Groundwater	15/10/19		
EX/2010511	GM204	Groundwater	15/10/19		
EX/2010512	GM01	Groundwater	15/10/19		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
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C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.
Where individual results are flagged see report notes for status.

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
VOCHSAW	EX2010507-EX2010512	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (1,1,1-Trichloroethane, Naphthalene) . These circumstances should be taken into consideration when utilising the data.
VOCHSAW	EX2010507-EX2010512	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Chloromethane, Styrene, Trichloroethene) . These circumstances should be taken into consideration when utilising the data.
SVOCSW	EX2010507-EX2010512	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (246-TCP, Dimethylphthlate) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SVOCSW	As Received	Determination of Semi Volatile Organic Compounds (SVOC) by DCM extraction followed by GCMS detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis
Unless stated otherwise results are expressed as mg/l
Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^oC

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
This may have resulted in deterioration of the sample(s) during transit to the laboratory.
Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : Sol Environment Ltd

Site : Real Alloy

Report Number : W29_2603

Lab ID Number	Client ID	Description
EX/2010507	E2	Groundwater
EX/2010508	MW38	Groundwater
EX/2010509	GM07	Groundwater
EX/2010510	GM202	Groundwater
EX/2010511	GM204	Groundwater
EX/2010512	GM01	Groundwater

Environmental Chemistry
Sample Receipt / Deviating Sample
Report

To: **Emily Hingston**

Sol Environment Ltd
Unit 7
Greenway Farm
Bath Road
Wick
Bristol
B330 SRL

Phone: 01179 372811
Mobile: 07494920076
E-mail: emily.hingston@sol-environment.co.uk

From: Sample Reception
Environmental Chemistry
SOCOTEC UK Limited
P.O. Box 100
Burton-on-Trent
Staffordshire
DE15 0XD
17th October 2019

Your Order No: **SOL1710RA01**
Your Reference **SOL1909RA01**
Real Alloy

We have registered 6 samples today for the analysis detailed overleaf and have assigned the laboratory identification **W292603**. The expected completion date for in-house Environmental Chemistry work is **24th October 2019**.

Please note any subcontracted analyis (identified with a '^') is likely to take up to an additional five working days. Please refer to your quote for details.

Notes:

Please review the Analytical and Deviating Sample overview on the next page and contact us with any amendments or comments within 24 hours. If we have not received written instruction within this time period, we will proceed as detailed.

Please be advised that the integrity of data for samples/analysis that have been categorised as Deviating may be compromised. The reported data may not be representative of the sample at the time of sampling and this must be taken into consideration when interpreting data.

Sample registration queries should be directed to:
Tel: 01283 554496 email: sample.reception@socotec.com
Results queries should be directed to:
Tel: 01283 554541, email: environmentalchemistrycustomerservices@socotec.com

Yours sincerely

Sample Analysis

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

W292603

Customer Sol Environment Ltd
Site Real Alloy
Report No W292603

Consignment No W162158
Date Logged 17-Oct-2019
In-House Report Due 24-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	Report A	GRO-HSA GCFID (AA)	Nickel as Ni MS (Dissolved)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Total Sulphur as SO4 (Diss) VAR	Ammoniacal Nitrogen (Kone)	PAH GC-MS (16)	PCB - 7 Congeners	Cyanide (Total) as CN SFA	SVOC	TPH by GC(Si)	VOC HSA-GCMS	pH units
		MethodID		CUSTSERV	GROHSA	ICPMSW									ICPWATVAR	KONENS	PAHMSW	PCBECD	SFAPI	SVOCSW	TPHFID-SI	VOCHSAW	WSLM3
Test Method Accredited to ISO17025						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓
EX/2010507	E2	Groundwater	15/10/19																				
EX/2010508	MW38	Groundwater	15/10/19																				
EX/2010509	GM07	Groundwater	15/10/19																				
EX/2010510	GM202	Groundwater	15/10/19																				
EX/2010511	GM204	Groundwater	15/10/19																				
EX/2010512	GM01	Groundwater	15/10/19																				

Note: For analysis where the scheduled turnaround is greater than the holding time we will do our utmost to prioritise these samples. However, it is possible that samples could become deviant whilst being processed in the laboratory.

In this instance please contact the laboratory immediately should you wish to discuss how you would like us to proceed. If you do not respond within 24 hours, we will proceed as originally requested.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis Requirement Completed
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.