

KEY

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|---|---------------------------------------|
|  | LAND OWNERSHIP BOUNDARY |
| | LAND OWNERSHIP BOUNDARY NOT INSPECTED |
|  | AREAS OF INSPECTED FENCE |
|  | AREAS WHERE NO FENCE EXISTS |
|  | CRYMLYN BOG SAC/RAMSAR SITE/SSSI |
|  | PALISADE FENCING (2m HIGH) |
|  | CHAINLINK FENCING (2m HIGH) |
|  | STOCKPROOF FENCING (1.3m HIGH) |



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REVISIONS				Drawn By	Checked By	Date	
To support Technical Note 5041216-OSW-TN-000640				-	PP	08/12/11	
PURPOSE OF ISSUE				Rev.	Authorised for issue	Date	
Atkins Ltd Birmingham Office The Axis, 10 Holliday Street Birmingham West Midlands B1 1TF Tel 0121 483 5000 Fax 0121 483 5252 THIS DRAWING IS NOT TO BE SCALED							
CLIENT 							
PROJECT COED DARCY URBAN VILLAGE							
DRAWING TITLE MEANS OF ENCLOSURE TO CRYMLYN BOG							
Scale 1 : 5000		DRAWN MJ		CHECKED PP		CO-ORD CHECK	
DATE 05/09/11		DATE 05/09/11		DATE			
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DRAWING NO 5041216-OSW-DWG-0001035						REV -	

Appendix D. Railhead and Upper Terrace Margins (Zone D)

Technical Note 1387

Subject:	Coed Darcy – Open Space Zone D (Railhead and Upper Terrace Margins)		
Reference:	5041216-REM-TN-1387	Revision:	A
Author:	Alex Mann	Checker:	Matthew Timmins
Issued to:	Rhys Mander (AECOM)	Reviewer:	Michelle Lee
Date:	October 2015	Authoriser:	Mike Poland

1. Introduction

This Technical Note relates to the assessment and validation of an area of open space known as the ‘Railhead and Upper Terrace Margins’, which forms one part of Monitor Phase 39 (refer to Atkins Drawing 5041216-REM-DWG-1661 P4) within the former Llandarcy Oil Refinery, Neath. Based on the current Masterplan, this area is shown to remain as Open Space (woodland) within the final development.

For ease of reference, the ‘Railhead and Upper Terrace Margins’ is referred to as ‘Zone D’ to correspond with the areas set out in the overarching Monitor Phase 39 report (5041216-REM-RPT-1340 Rev A).

2. The Site

Zone D is an irregular shaped parcel of land covering 6.25ha (hectares) and forms part of existing green space proposed to be enhanced to form a landscaping belt that will bisect the future development on the former refinery. The extent of the area under consideration is shown on Atkins Drawing 5041216-REM-DWG-1788.

Existing vegetation within this area comprises rough gravelled ground, dense semi mature and mature woodland, very overgrown scrub (buddleja and bramble) and gorse dominating the remaining areas. The topography in Zone D varies but is broadly governed by its location on the western flank of an east-west trending sandstone ridge. Levels generally fall from the east to west across Zone D and towards Crymlyn Bog SSSI which lies to the west. The topography ranges from approximately 71 metres above ordnance datum (mAOD) along part of the eastern boundary to 11m AOD along the south western boundary of Zone D. Selected photographs are attached for reference (Appendix A).

Zone D is bound partly to the north, east, and south by proposed residential phases of the wider Coed Darcy site and to the west by the containment area and proposed open space Zone C. The small section of the site which runs along the main entrance to the containment area, is bordered by chainlink fencing preventing access from Crymlyn Bog SSSI.

The final design for this area has not yet been defined but is anticipated to remain as an area of proposed woodland. Strategic proposals for these woodland and heathland areas, within the final development, are discussed in Atkins report 5041216-ECO-RPT-486.

3. Site History

Construction of Llandarcy Oil refinery commenced in 1917 but was temporarily suspended during the war due to the lack of men and resources. Construction started again in 1919 with production beginning in 1921. The refinery was officially opened in 1922.

The purpose of the refinery was to produce motor spirit, kerosene, gas fuel oil, fuel residue and lubricating oil and wax from imported crude oil. Between the wars, the oil industry developed rapidly. By 1939, the refinery had little of the original plant in operation.

In the mid 1980's a number of rationalisations occurred with the closure of the refinery being formally announced in 1997.

Based on the desk study for the former refinery (URS Report BRRP0001), historical activities within Zone D included a range of refinery based process, infrastructure and storage facilities.

Thirty tanks are recorded to have been historically located in the northern and central parts of Zone D. Seventeen of these tanks, located in the north of Zone D, are indicated within BRRP0001 to have been part of a storage area for the filling and emptying of lube oil products for the lube oil pumphouse, located downslope to the northwest of the site boundary. Twelve of these tanks are associated with the storage of LP Gas, propane and butane. The remaining tank was associated with cooling tower 'C' with records not identifying its historical use.

The north eastern boundary of Zone D lies over part of where the No.1 and No.2 CAT Reformer works were formerly located. The CAT reformers used to convert naphthas from a low octane product to a high octane product by utilising a chemical process called Catalytic Reforming.

A pipe track was located in the footprint of Zone D and was orientated approximately north east to south west and was elevated above the ground before crossing over the railhead in the central part of the site. The railhead, to the west of Zone D, and associated sidings facilitated the access and egress of rail traffic at this part of the former refinery.

A set of covered separators are located in the south western corner of the site which used to process the effluent from the rail sidings and barrelling platform before discharging in to South Bay.

Land to the south the site is predominately shown to comprise tanks and associated infrastructure, main process areas of the refinery to the north and east and with open land/ bog to the far west of the site. Immediately adjacent to the southern half of the sites' western boundary, lies the containment area which is known to have historically received wastes from the former refinery and has ongoing product recovery operations as part of surrendering the landfill licence.

The location of known historical refinery activities within Zone D is shown on Drawing 5041216-REM-DWG-1823.

4. Site Walkover

Atkins undertook a site walkover of Zone D in February 2015 to assess the potential for any proposed ground investigation and to also look for any obvious visual indicators of contamination or possible sources of contamination. A selection of photographs, taken during the walkover, are presented as Appendix A and the corresponding location drawing is shown as 5041216-REM-DWG-1788.

During the walkover, approximately 45 percent of the site area within Zone D was not accessible for ground investigation due to heavily water logged areas, dense vegetation and very steep topography. The remainder of Zone D comprises mainly sloping topography comprising overgrown scrub and gravelly disturbed ground.

Details of all constraints to any proposed investigation within Zone D are highlighted on drawing 5041216-REM-DWG-1798. A number of concrete and brick structures were present but no obvious evidence of gross contamination was noted within this area during the walkover.

5. Historical Ground Investigation

Historical ground investigation data for Zone D (URS Report FR1287) suggests a total of 50 exploratory holes from 49 exploratory hole locations (1 locations with a double installations) within, or immediately adjacent to this area, as shown on drawing 5041216-REM-DWG-1807. Copies of available exploratory hole logs for these locations are collated in Appendix B.

A review of the available logs indicate Made Ground was present overlying natural soils in thirty eight locations, which is consistent with the historical uses of these locations (rail sidings and process areas). The Made Ground generally comprises soft to firm clays and loose gravels/sands of ash, clinker, concrete, and brick fragments. Made Ground ranged in thickness from 0.5m in CARW004 to 13m in MSMW151c.

Underlying the Made Ground (where present), the near surface soils comprised varying sequences of silts, clays, sands and gravels which extended, where proven, to depths between 0.5m (WSMW031) and 15.4m bgl (MSMW172d).

Sandstone bedrock is reported in thirteen locations where the base of near surface soils was proven, however, gravelly horizons were encountered at a number of locations above the bedrock which are considered to represent weathered bedrock. The bedrock comprised sandstone with an interbedded 0.1m thick coal band intercepted in MSMW116 at 6m bgl.

A review of the available logs indicates that strong to very strong hydrocarbon odours were encountered with localised product intercepted in three locations at depths from ground level (WSTP19) to 2m bgl (MSTP308).

A summary of the results of historical laboratory analysis on seven samples from Zone D (22 shallow and 18 deep) is presented in Appendix C. These indicate the following exceedances of the adopted thresholds for retention at shallow depth within in area of Public Open Space.

The depth of relevant samples beneath the current surface is given in brackets for reference.

- WSTP018 Arsenic 140mg/kg, Benzo(a)Pyrene 1.7mg/kg (0.4m)
- WSTP085 Benzo(a)Pyrene 1.2mg/kg (0.5m)
- WSTP269 Mercury 1.10mg/kg (0.5m)
- WSMW145 (PIT) Arsenic 96mg/kg, Cadmium 3.6mg/kg, Copper 380mg/kg, Lead 1900mg/kg, Zinc 4500mg/kg
Benzo(a)Pyrene 2.2mg/kg (0.5m)
- WSMW010 Arsenic 180mg/kg , Benzo(a)Pyrene 3.79mg/kg (0.6m)
- MSTP310 Arsenic 218mg/kg (1m)
- MSTP143 Benzo(a)Pyrene 3.9mg/kg (1m)

Asbestos was detected in WSTP085 at 0.4m bgl but quantitative assessment for this samples was not undertaken.

Reference to historic borehole monitoring in URS Report FR1287 of 16 boreholes within, and immediately adjacent to Zone D, indicates that groundwater levels are recorded to lie at approximate depths of between 0.375m bgl (CARW002) to 12.365m bgl (MSMW151c). Product was noted to have been recorded in six wells with a maximum thickness of 0.252m (CARW008). Subsequent monitoring rounds undertaken by URS (FR1287) recorded a steady decline in product thickness with three holes not exhibiting product on the last monitoring round detailed in the report.

6. S106 Remediation Redevelopment Requirements

The existing S106 (Dewey and LeBoeuf, GNP/NJR/13773-2) does not provide specific details for remediation requirements for areas of proposed Open Space, but states the following:

The Developer shall remediate areas of Property which will not be developed for residential or commercial end-uses based on those areas falling into one of the following three broad categories of land-use:

Well managed parks and public gardens;

More lightly managed areas where public access is encouraged;

Areas to which access is discouraged but occasional access and/or trespassing is possible.

Assuming the retention of existing topography within the final development, it is considered that Zone D will fall within the latter category where public access will be generally restricted but possible localised access may be permitted on designated pathways etc within the final development.

In line with the absence of specific details relating to remediation requirements for proposed areas of open space, the S106 states the following with regard to the scope of remedial and/or mitigation works in these areas:

The degree of protection that will need to be afforded to people will be largely dependent upon how the access to these areas is encouraged/discouraged and managed. For guidance only, access may be discouraged by physical barriers such as fencing, or vegetation or actively managed by the provision of walkways along which controlled access is encouraged. The topography of the site may encourage children to use bikes, potentially causing rutting of the ground surface and exposing soils at depth. Detailed designs in this regard will be prepared by the Developer approved by CDL and agree with the Environmental Authorities to (i) protect human health considering the reasonably anticipatable use of the land (ii) achieve the relevant RBSLs (recreational RBSLs being provided in Table 1 above) to an appropriate depth and (iii) include an appropriate scheme of validation testing.

The Risk Based Screening Levels (RBSLs), listed in the S106 for the site, have been combined with Atkins derived Risk Target Concentrations (RTCs) for an open space end use, to assess chemical results in these areas. Details of the adopted thresholds are shown/presented in Appendix I of the overarching Monitor Phase 39 Report, Site wide open space validation, 5041216-REM-RPT-1340.

The general validation sampling frequency agreed with the monitor for Zone D (Table 1) is based upon the absence of significant historic refinery activities across much of this area.

Table 1 –Agreed Validation Frequency

Sampling Strategy	Exploratory Hole	Frequency
Areas of Historical Process Operations and Storage*	Trial Pits/Hand Dug Pits	1 per 400m ²
Areas of little or no development*	Hand Dug Pits	1 per 2500m ²

**only where safe access and egress is possible*

7. Recent Ground Investigations

With the aim of supplementing and updating the limited historical investigation within Zone D, a total of 46 machine excavated trial pits and 3 hand excavated pits were undertaken by Atkins between January and April 2015. In line with the site walkover and the presence of dense semi mature/mature woodland, heavily waterlogged areas and very steep topography in Zone D, trial pits were only excavated where safe access and egress was possible as shown on drawing 5041216-REM-DWG-1823. Copies of all relevant exploratory holes logs are presented in Appendix D.

Ground conditions encountered during the recent ground investigations were similar to that found in previous investigations and generally confirm Zone D to be underlain predominantly by natural soils (silts, sands and gravels) overlying sandstone bedrock (where encountered). Topsoil was found in four exploratory holes, all located in the south west of Zone D, with a thickness of approximately 0.4m.

Made Ground, comprising reworked natural soils containing ash, clinker, brick, concrete and woodchip etc., was identified in twenty locations. The locations were located in, or immediately adjacent to, former tank bases (TPE2621, TPE2674-75, TPE2829-31, TPE2910-12) infrastructure (TPE2996-97, TPE2908, TPE2827 and TPE2449, POS31-33) or the rail sidings (POS22, POS27 and POS29 and POS10) as shown on Drawing 5041216-REM-DWG-1823.

The depth to sandstone bedrock, where encountered, in Zone D, was found to vary between 0.4m bgl (TPE2620) and 4.3m bgl (TPE2678).

The maximum recorded VO class noted during recent investigation was a visual class 5 in Made Ground (POS32). Generally, however, soils encountered in Zone D were between VO classes of 0-3.

A total of 86 environmental samples (42 shallow and 44 deep) were taken from in situ soils within these exploratory holes during the Atkins investigation. The results of the chemical analysis relating to the recent investigation in Zone D are presented in Appendix E. These indicate the following exceedances of the adopted thresholds for retention at shallow depth within in area of Public Open Space.

The depth of relevant samples beneath the current surface is given in brackets for reference.

- TPE2828 Benzo(a)Pyrene 1.23mg/kg (0.5m)

- TPE2996 Copper 246 mg/kg, Zinc 663mg/kg (0.5m)
- TPE2996 Arsenic 70.8mg/kg, Copper 2.93 mg/kg, Zinc 812mg/kg (0-1.5m)
- TPE2447 Lead 350mg/kg (0.5m)
- TPE2723 Arsenic 70.6g/kg, Copper 180mg/kg (0.5m)
- TPE2908 Chromium 138mg/kg, Copper 145mg/kg, Mercury 2.6mg/kg, Zinc 904mg/kg (0.5m)
- TPE2910 Copper 196mg/kg, Lead 201mg/kg, Zinc 484mg/kg (0.5m)
- TPE2911 Lead 1180mg/kg (0.5m)
- POS21 Copper 278mg/kg (0.5m)
- POS27 Mercury 7.43mg/kg, Benzo(a)Pyrene 19.10mg/kg, Dibenzo(ah)Anthracene 2.90mg/kg (0.5m)
- POS29 Arsenic 92.1mg/kg, Cadmium 2.8mg/kg, Copper 439mg/kg, Lead 1000mg/kg, Mercury 1.9mg/kg, Benzo(a)Pyrene 5.66mg/kg (0.5m)
- POS33 Aromatic C16-C21 1740 mg/kg, Aromatic C21-C35 2910 mg/kg (0.5m).

Asbestos was detected in twelve of the samples tested from across Zone C and they were subsequently scheduled for quantitative assessment. The highest analysed concentration was 0.177% in TPE2908 (0.5m bgl) which exceeds the asbestos RBSL threshold. The remaining eleven samples all had concentrations below the RBSL threshold (0.02%) for retention in the top metre below finished floor level in an open space end use.

7.1 Separator and Pipe Clearance

A buried fibreglass separator encased in concrete, was located in the south western corner of the site, immediately adjacent to RAP feature 9B. The feature was redundant and did not have an influent or effluent. Hawk Group Ltd and Hydrock cleaned out, and partially removed, the separator on the 5th October 2015. The sides of the interceptor were exposed and the surround soils removed and taken to the biopad for treatment. The interceptor was emptied using a vacuum bowser and the liquid sent to the Hydrock processing site for treatment. The top of the separator was subsequently removed and remnant sludge extracted with an excavator.

The recovered sludge material was removed from this area and taken elsewhere within the refinery for treatment (bioremediation) where these were mixed with some other site won materials undergoing bioremediation in order to help improve the workability of the materials due to the high water content. Due to the proximity to existing drainage channels, RAP 9B and South Bay, the separator was backfilled with site won material from the surrounding reprofiling of the area.

Further to the removal of the basal sludges the level of remaining risk posed by the retention of this feature is considered low. Photographs of the investigation and works are collated in Appendix G.

The pipes observed in picture 22 and 27 of the photosheet in appendix A were further investigated in October 2015. Additional photographs of the headwall (picture 22) are now shown on pictures 30 to 31 on the photosheet and show three pipes entering the concrete structure vertically and exiting to the south west, horizontally. The pipes have been severed close to the edges of the concrete structure and therefore deemed unlikely to be conduits for future contamination and, hence, does not require removal under the S106 requirements (Schedule 10, para 6).

The small section of pipe (approx. 3m) observed in photograph 27 was removed (see photograph 34) and is thought to have been installed for edge demarcation for safety reasons rather than being associated with the operational processes within the former refinery.

8. Validation

Based on the presence or absence of historical operations, Tables 2 and 3 detail the validation frequencies using the corresponding samples/exploratory holes from each area as discussed in section 6.

Table 2 –Exploratory Hole Validation Frequency

Sampling Strategy	Agreed Frequency	Area within Zone D	Number of Exploratory Holes	Validation Frequency
Areas of Historical Process Operations and Storage*	1 per 400m ²	27,968m ²	45	1 per 621m ²
Areas of little or no development*	1 per 2500m ²	34,557m ²	4	1 per 8639m ²

Table 3 –Sampling Validation Frequency

Sampling Strategy	Area within Zone D	Number of Samples	Validation Frequency
Areas of Historical Process Operations and Storage*	27,968m ²	29	1 per 345m ²
Areas of little or no development*	34,557m ²	5	1 per 6,911m ²

The validation frequencies for both the areas with little or no previous refinery history, and the areas of historical process operations and storage, is above the agreed value. As previously indicated (section 4), access to much of Zone D was found to be restricted by the presence of heavily water logged areas, dense vegetation and very steep topography, thus the extent of the area available for further investigation was limited. The total extent of restricted access for the area with previous refinery history equates to approximately 5,843m². When subtracted from the total area (27,968m²) for this historical use, the validation frequency equates to 1 exploratory hole per 492m².

A comparison of the results of recent laboratory analysis with the permitted thresholds for Parks and Open Spaces, indicate exceedances of the adopted thresholds for a number of inorganic and organic determinands as listed in Section 7.

9. Conceptual Site Model (CSM)

Zone D lies in the central part of the former Llandarcy refinery and comprises rough gravelled ground, dense semi mature and mature woodland, very overgrown scrub (buddleja and bramble) and gorse dominating the remaining areas. The eastern parcel of the site lies downslope of part of the main refinery and in turn, lies upslope of the railhead and other parts of the main refinery. The western parcel of the site lies downslope of the southern railhead and in turn, lies upslope of the Containment Area and Crymlyn Bog SSSI. The small section of the site which runs along the main entrance to the containment area, is bordered by chainlink fencing preventing access from Crymlyn Bog SSSI.

Historical refinery operations within this area include a section of former rail sidings, storage tanks (lube oil, propane and butane) and a section of the No.1&2 CAT reformer (refer to Drawing 5041216-REM-DWG-1823).

Historical ground investigation (refer to section 5) confirms the presence of natural soils underlying much of this zone with the presence of localised Made Ground associated with former historical uses. Recent ground investigation recorded elevated concentrations of inorganic metals/metalloids (arsenic, cadmium, copper, mercury, lead and zinc), polycyclic aromatic hydrocarbons (benzo(a)pyrene and dibenzo(ah)anthracene), two TPH fractions (Aromatic C16-C21 and Aromatic C21-C35) and the presence of asbestos fibres within the near surface soils (section 7).

Key exposure pathways to the anticipated receptors, based on an ongoing end use, include:

- Dermal contact with contaminants in soil, soil-derived dust and entrained surface water run-off from any areas where soil (and contaminants) is exposed at the surface or in perched water/ groundwater if excavation takes place;
- Ingestion of contaminants in soil, soil-derived dust and entrained surface water run-off from any areas where soil (and contaminants) is exposed at the surface or in perched water/ groundwater if excavation takes place;

- Inhalation of contaminants in soil-derived dust from any areas where soil (and contaminants) is exposed at the surface or excavation takes place;
- Migration of contaminants and permeation into plastic drinking water pipes.
- Passive and active uptake through roots of contaminants in migrating perched water/ groundwater and leaf contact with contaminants in windblown, soil-derived dust.

Detailed proposals relating to the final design for this area are not yet defined although it is envisaged that the fencing proposed along the eastern boundary of the western margin (Zone C) will link in to existing and future fencing along the toe of the slope adjacent to the containment area (see Atkins Tech note 5041216-OSW-TN-640). It is anticipated that the majority of this area will need to be fenced from the adjacent development and will, therefore, fall within 'Areas to which access is discouraged but occasional access and/or trespassing is possible', as defined in the S106.

Although future proposals for the covered separators located in the south western corner are not currently known, they are likely to be utilised as part of the ongoing site drainage for this part of the former refinery. It is therefore proposed that these are fenced off in the short to medium term.

Due to the absence of topsoil/subsoil across parts of this area, it is proposed that a minimum thickness of at least 300mm of clean soils, is placed across open areas outside of the containment area to ensure a sufficient growing medium for future planting. Where exceedances of the target criteria were recorded (section 7), it is proposed to install clean cover systems to a nominal thickness of 600mm with the exception of POS33. This location lies within the area to be fenced off and will lie within the immediate vicinity of the containment area which will fall within 'Areas to which access is discouraged but occasional access and/or trespassing is possible' as defined in the S106. The placement of suitable shallow soils will help to minimise the potential risks to final users of Zone D with the inorganic and asbestos exceedances highlighted in section 7. The existing woodland within Zone D is extremely dense with significantly overgrown brambles which hinder access to much of the site. In addition, in line with steep topography, it is assumed that future access to Zone D will need to be restricted to formal, surfaced pathways defined by fencing.

The risk to receptors in the short term is deemed to be mitigated by the presence of 24hour security, secure site perimeter fencing and the wet and marshy ground associated with Crymlyn Bog SSSI. However, to mitigate the risk to long term receptors, the proposed fencing works and new planting is likely to significantly reduce the frequency of receptors entering the site. The works proposed to protect long term receptors will be required upon the development of Zone D and are detailed on drawing 5041216-ATK-REM-DWG-2017. The above CSM and envisaged low frequency of use, suggests the reduced sampling frequency is sufficient for this assessment and the remaining risk to present and future receptors is considered low.

10. Conclusions

Atkins Limited has been commissioned by St. Modwen Developments Ltd to provide a summary of information relating to an area of proposed Open Space known as Zone D of Monitor Phase 39.

Planning condition 41 of the Outline Planning Permission for the redevelopment of the former refinery states that:

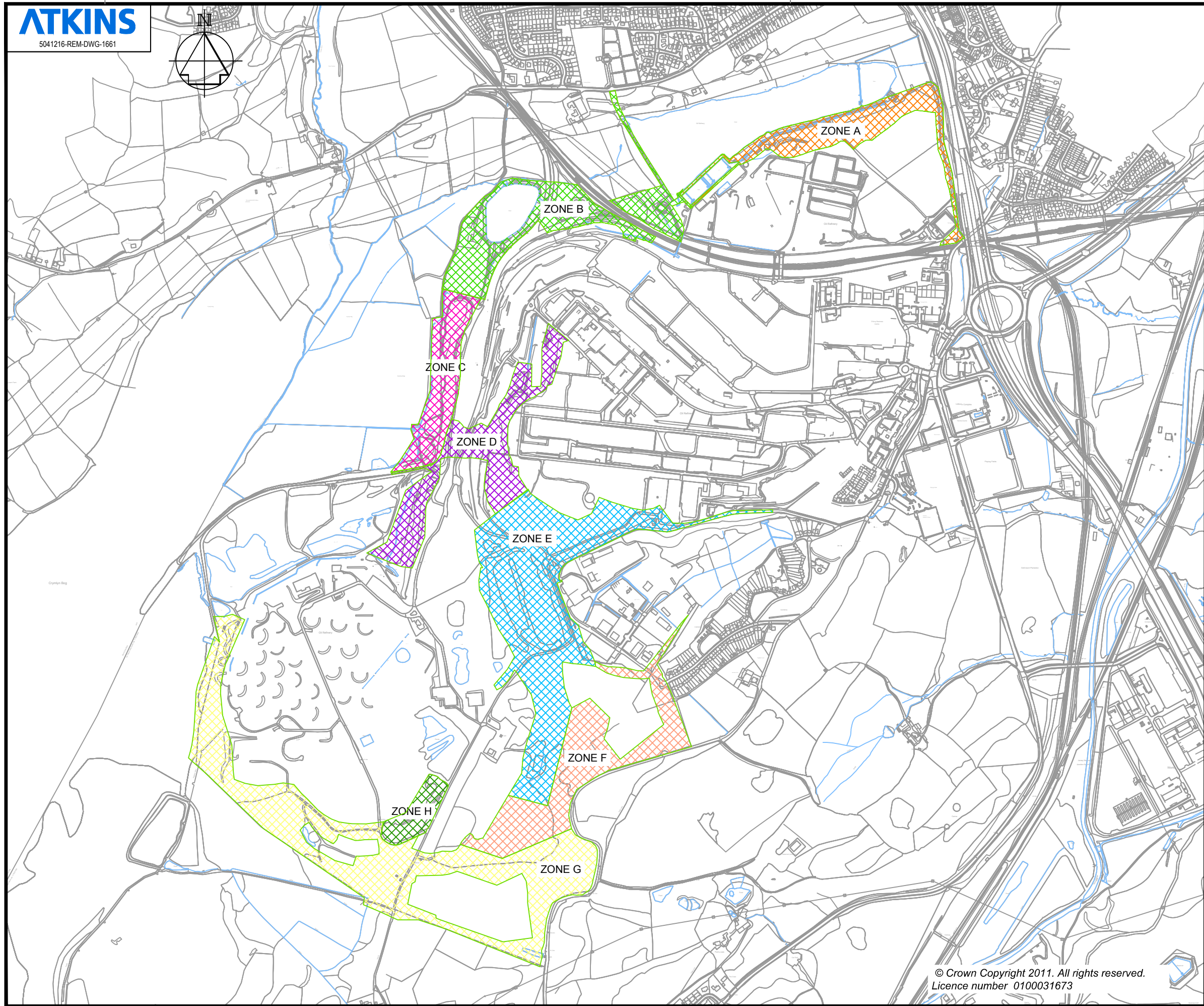
No works shall commence on each development area until a scheme detailing the temporary means of enclosure for each development phase as agreed under Condition 9 of this consent (including details of the means to prevent unauthorised access to a service track or restricted access point) together with full details of temporary protective fencing to safeguard trees, hedgerows and habitat and ecological areas of importance giving full consideration to measures which will allow or restrict wildlife access to areas have been submitted to and approved in writing by the Local Planning Authority. The submitted details shall have due regard for the Environmental Management Plan and include the specifications of the fencing; details of signage stating that the fencing should not be removed; together with plans showing the location of the fencing and the extent of the areas to be protected. The approved details shall be fully implemented on site and shall be retained as such for the duration of the works within these areas.

Within the current site, unauthorised access to this area is restricted by ongoing 24hr security at the site perimeter. Ongoing reclamation works to remove remnant structures within this zone is subject to an engineers watching brief to ensure compliance with the S106 requirements.

Subject to the fencing of existing structures within this area and the placement of suitable soils, Zone D is considered suitable for ongoing and proposed use as Open Space (Woodland) in line with the requirements of the S106.

Drawings

5041216-REM-DWG-1661 (P4)
5041216-REM-DWG-1788
5041216-REM-DWG-1898
5041216-REM-DWG-1807
5041216-REM-DWG-1823
5041216-REM-DWG-1924
5041216-ATK-REM-DWG-2017



KEY

P4	BOUNDARY AMENDMENT	HS	MT	26.10.15
P3	REVISED BOUNDARIES	NR	MT	19.08.15
P2	REVISED BOUNDARIES	MB	MT	31.03.15
P1	FIRST ISSUE	MJ	MT	23.02.15

REVISIONS	Drawn By	Checked By	Date
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PURPOSE OF ISSUE	Rev.	Authorised for issue	Date
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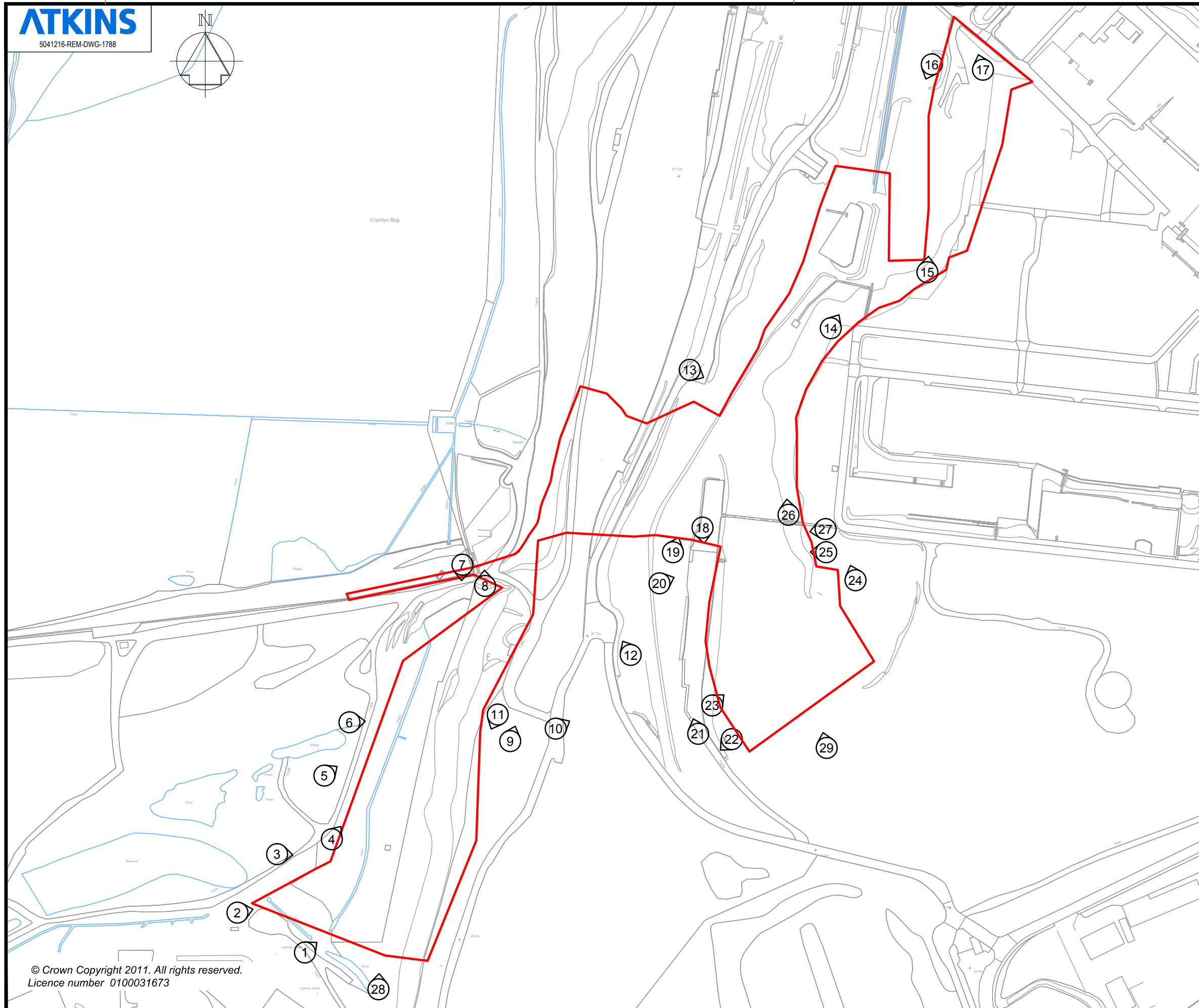
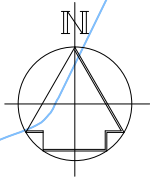
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DRAWING TITLE
MONITOR PHASE 39

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DRAWING NO 5041216-REM-DWG-1661	REV P4
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KEY

PUBLIC OPEN SPACE ZONE D

P1	FIRST ISSUE	MJ	MT	23.02.15
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PURPOSE OF ISSUE	Rev.	Authorised for issue	Date
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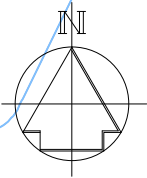
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DRAWING TITLE	PUBLIC OPEN SPACE ZONE D PHOTOGRAPH LOCATIONS
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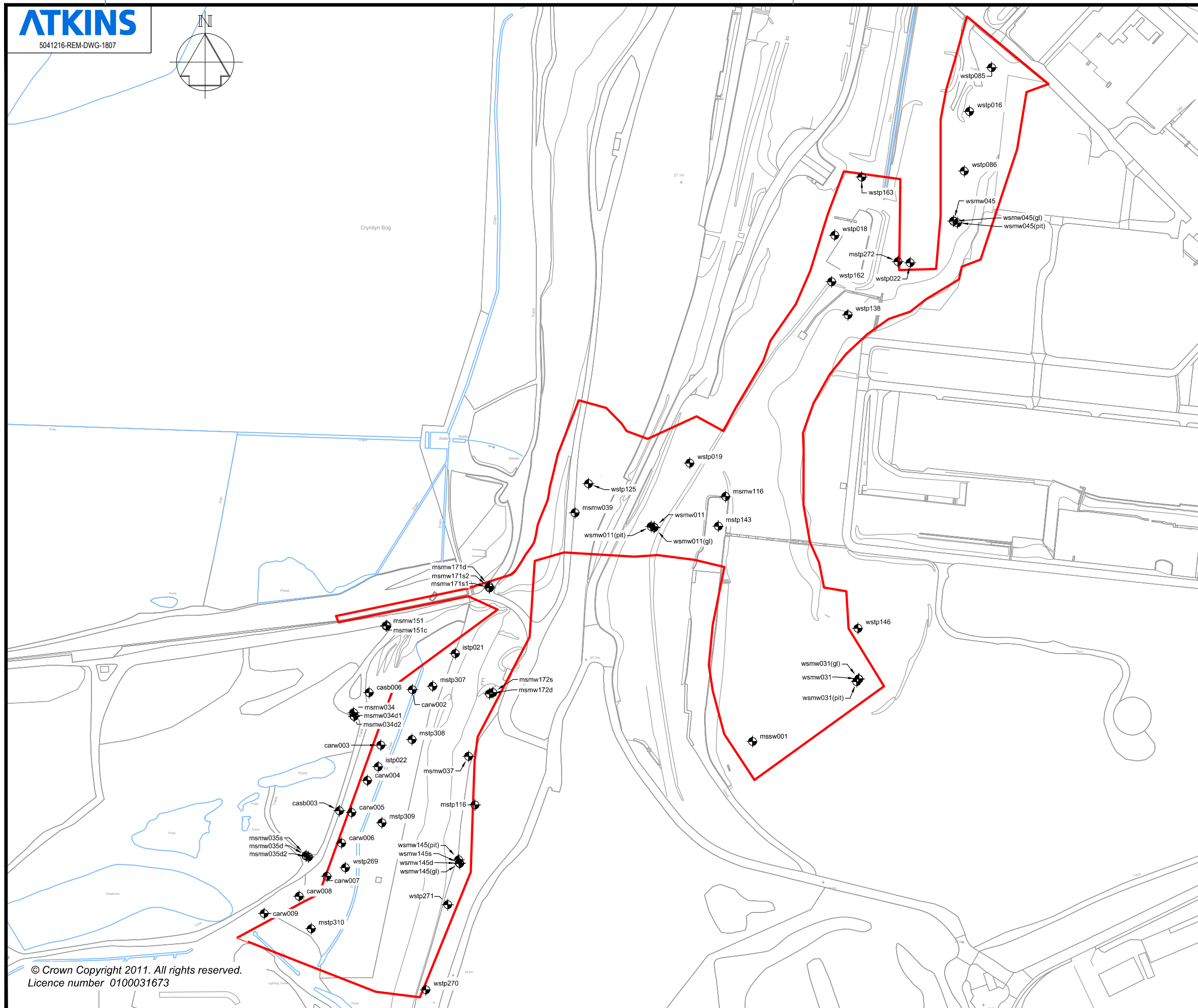
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DRAWING NO	5041216-REM-DWG-1788	REV	P1
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KEY

- PUBLIC OPEN SPACE ZONE D
- HISTORIC EXPLORATORY HOLE



P1	FIRST ISSUE	MJ	MT	05.03.15
REVISIONS		Drawn By	Checked By	Date

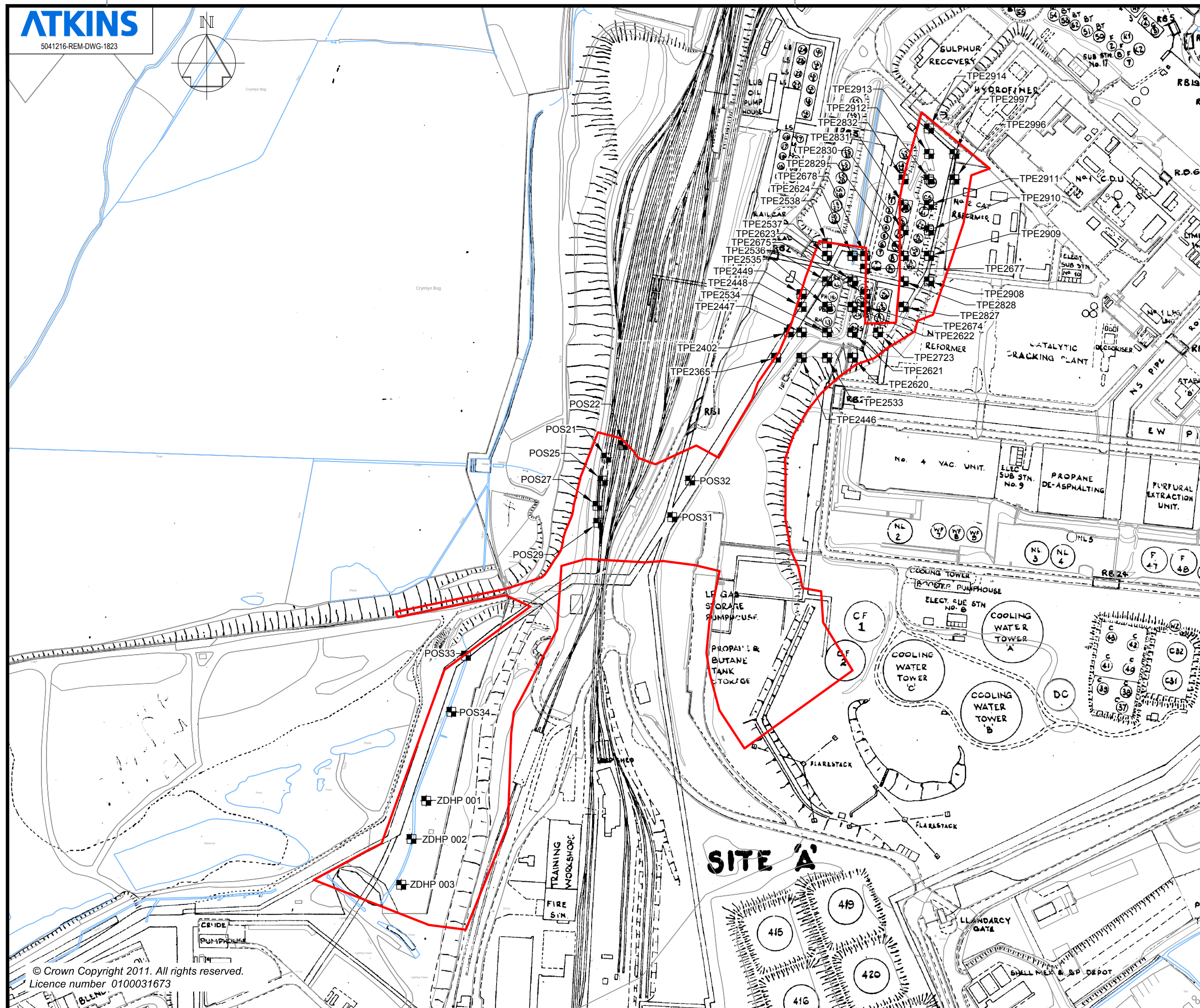
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PROJECT	COED DARCY
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DRAWING TITLE	PUBLIC OPEN SPACE ZONE D HISTORIC EXPLORATORY HOLE LOCATIONS
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SCALES	DRAWN	CHECKED	CO-ORD CHECK
1:2,500	MJ	AM	
	DATE	DATE	DATE
	05.03.15	05.03.15	
DRAWING NO	SHEET	PLOT DATE	REV
5041216-REM-DWG-1807	A3	18.05.15	P1



KEY



PUBLIC OPEN SPACE ZONE D



TRIAL PIT LOCATION

P1	FIRST ISSUE	MJ	MT	24/03/2019
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REVISIONS	Drawn By	Checked By	Date
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PURPOSE OF ISSUE	Rev.	Authorised for issue	Date
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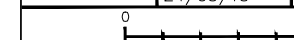
CLIENT



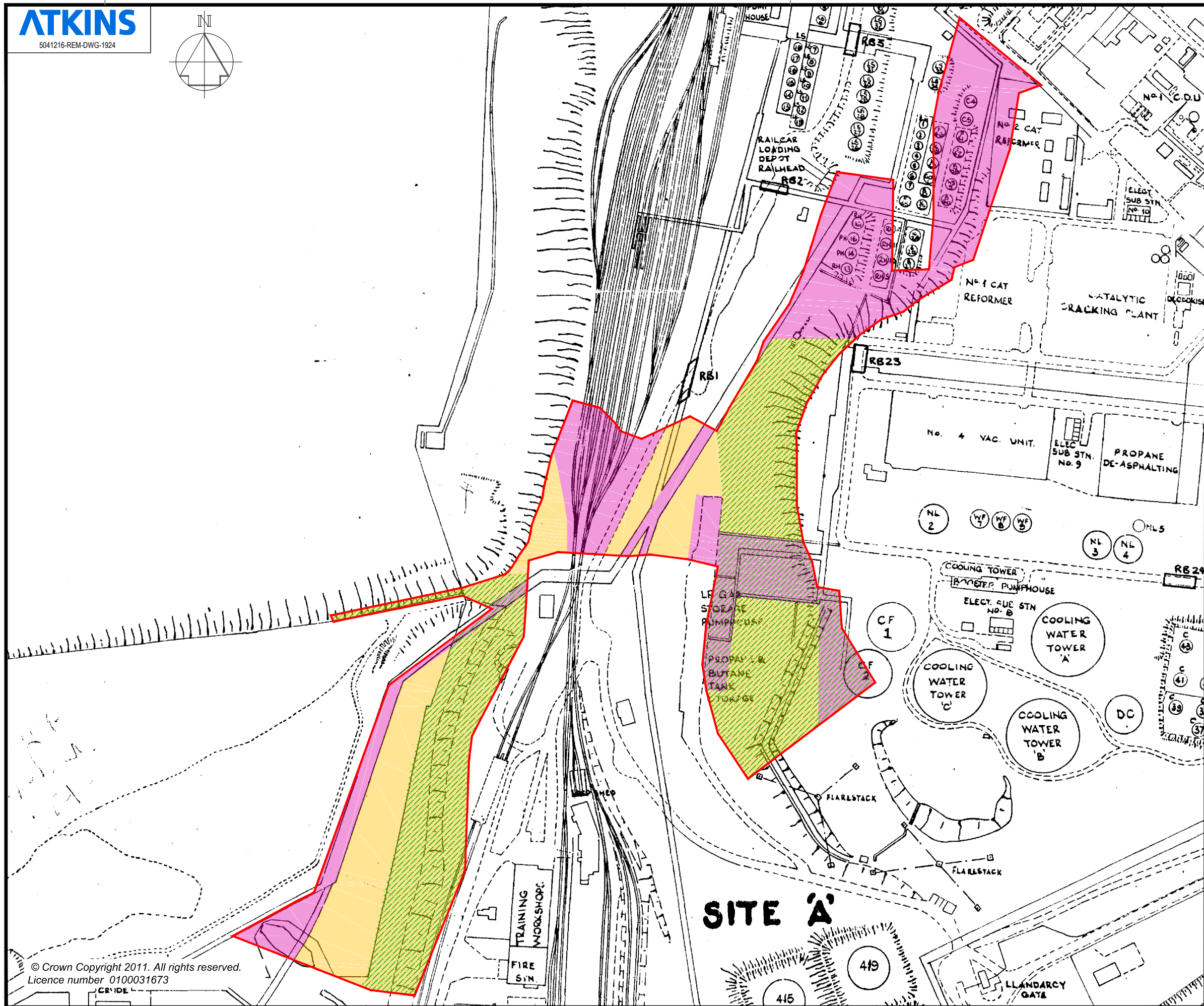
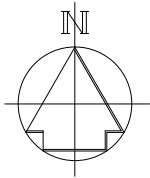
PROJECT
COED DARC

DRAWING TITLE
PUBLIC OPEN SPACE ZONE D
RAILHEAD AND UPPER TERRACE MARGINS
HISTORICAL LAYOUT

2. SCALES	DRAWN MJ	CHECKED MT	CO-ORD CHECK
N.T.S.	DATE 24/03/15	DATE 24/03/15	DATE



DRAWING NO	5041216-REM-DWG-1823	REV	P1
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KEY

- PUBLIC OPEN SPACE ZONE A
- AREA OF RESTRICTED ACCESS
- AREAS OF LITTLE OR NO DEVELOPMENT
- AREA OF HISTORICAL PROCESS OPERATIONS AND STORAGE

P1 FIRST ISSUE MJ/CK MT 18/05/15

REVISIONS Drawn By Checked By Date

PURPOSE OF ISSUE Rev. Authorised for issue Date

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PROJECT

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DRAWING TITLE

PUBLIC OPEN SPACE ZONE D
NORTH SITE WOODLAND
HISTORICAL LAYOUT

SCALES 1:2,500 DRAWN MJ CHECKED MT CO-ORD CHECK

DATE 19/03/15 DATE 19/03/15 DATE

0 10 20 30 40 50 60 70 80 90 100 SHEET A3 PLOT DATE 20.05.15

DRAWING NO. 5041216-REM-DWG-1924 REV P1