

REPORT DATA SHEET

Requirement	Data
Report Reference	Contamination Risk Assessment Summary
Date	August 2017
Client	Alpine Group Limited
Report type	Contamination Risk Assessment Summary
Purpose	Discharge Condition 20 of Planning Consent APP/13/00317
Revisions	-
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ALPINE GROUP LIMITED
CONTAMINATION RISK ASSESSMENT
Contamination Risk Assessment Summary

August 2017

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ALPINE GROUP LIMITED**YACHT HAVEN SITE, HAYLING ISLAND****Contamination Risk Assessment Summary**

August 2017

1. THE SITE AND PROPOSED DEVELOPMENT

- 1.1 The site comprises some 0.5 ha of currently disused industrial land adjacent to Chichester Harbour previously used for a boatyard and subsequently for materials, vehicle and plant storage. The levels of much of the site were raised with fill as part of this earlier development. The site location is at Ordnance Survey Map reference SU 7289 0183. See Appendix A Figure 1.
- 1.2 It is intended to restore and redevelop the site partially for residential use, partly for use as a small boatyard with marina for leisure craft. The remainder of the site will be returned to a natural habitat for environmental enhancement. See Appendix A Proposed Redevelopment.
- 1.3 This summary report is an initial response to the requirements on Conditions 20 - 22 of planning permission reference APP/13/00317.

2. IDENTIFIED CONTAMINATION RISKS

- 2.1 As a consequence of:
 - The site's previous history and use as a commercial boatyard since the 1930s, wartime use for camouflage paint testing and subsequently for materials and vehicle storage.
 - The extensive made ground covering the site.
 - A recent history of burning waste at the site.
 - The proximity of the site to Chichester Harbour SSSI and to other environmentally sensitive areas.
- 2.2 It was required that the risk of contamination of the soils should be assessed particularly in respect to:
 - The risk to users of the site, particularly within the gardens of the residential development.
 - The risk to persons involved during construction, particularly on groundworks and earthworks.

- The risk of contaminated runoff or leaching of contamination into the Harbour with its consequent impact on the neighbouring ecologically sensitive areas.

3. HISTORY OF CONTAMINATION INVESTIGATIONS AT THE SITE

3.1 In view of the above identified contamination risks, the site has been subjected to the following site and soils investigations:

- i. The Contamination Assessment carried out by Environmental Assessment Services Ltd and dated September 2002.
- ii. A site investigation including 73 trial holes and 4 boreholes with the findings logged to provide a record of the soils across the site by L R Pimenta in October 2002. This included the taking and the analysis of 105 soils and groundwater samples. Landfill gas monitoring was also carried out at the four borehole positions.
- iii. Desktop Study Report prepared by L R Pimenta dated October 2010.
- iv. Additional trial pits and soil testing carried out by Environmental Assessment Services Ltd in October 2011 with the results of this testing, and of the previous investigations, assessed against the then current standards. A Contamination Risk Assessment update report was issued in October 2011.
- v. An environmental assessment was completed by Environmental Assessment Services Ltd in 2011 and an Environmental Statement (including a chapter on contamination risk) was issued in December 2011.

3.2 The conclusions from the investigations may be summarised as:

- The site lies on a variable thickness of made ground over Palaeocene Reading Beds (inter-bedded sands and clays). The site is not within a groundwater source protection zone. The site is not considered significantly hydrogeologically sensitive.
- Heavy metal and Polycyclic Aromatic Hydrocarbon contamination was found in soil samples around the site, generally confined to the made ground and concentrated in areas where burning of waste has occurred. Asbestos was not found in the surface soil samples analysed.
- Groundwater sample analysis revealed minimal contamination, and this was taken as an indication that the risk of contamination leaching from the site into the Chichester Harbour SSSI was low.

- Soil gas monitoring at four boreholes across the site revealed some measurable concentrations of methane and significant concentrations of carbon dioxide at one borehole.

3.3 The remediation recommendations were:

- Remove all deposited superficial waste together with demolition waste as part of site clearance. Concrete and brick from demolished buildings, etc., may be crushed and recycled on site for granular fill, road base, etc.
- All garden and soft landscaping areas to have the less suitable upper soil (made ground) removed and replaced with clean topsoil from an uncontaminated source to a depth of 0.6 m. The clean topsoil to be placed on a geotextile membrane and capillary breaker sand layer where the underlying ground is not natural undisturbed soil.
- The condition of soil exposed during site clearance and in excavations should be monitored during the work and any evidence of significant contamination should be investigated, treated and/or removed from site as necessary.
- During site redevelopment extra care should be taken to ensure that no current site contaminants are displaced into the neighbouring SSSI and Ramsar sites. Guidelines should be in place prior to redevelopment commencing and adhered to throughout the construction phase.
- In the wildlife areas, the superficial waste deposits should be removed and the area should be enhanced with brash and wood piles, south facing soil banks (where practicable) and open compost heaps. Apart from the foregoing suggestions, the wildlife areas should be disturbed as little as possible.

4. ADDITIONAL INVESTIGATIONS REQUIRED

- 4.1 Havant Borough Council memorandum from Environmental Health dated 11 September 2012 states that *"unauthorised waste transfer & disposal by burning has occurred on site during 2012 broadly within the area of the infilled drainage pond"*. The memo advised that this should be taken account of in future site investigations. The memo also indicates that the previous site investigations should be updated to reflect changes to the proposed redevelopment scheme.
- 4.2 A letter from Havant Borough Council's Environmental Control Officer to David Grant of Dig-Geotech Limited dated 5 October 2012 confirms that most of the waste, including the burnt waste, has been removed from the site, although it disputes whether the waste (principally miscellaneous demolition waste and some household waste) has been properly represented by the waste transfer notes supplied (which refer to "spoil", "concrete" and "rubble").

- 4.3 Havant Borough Council's Environmental Control Officer's consultation responses requested more information regarding the potential mobility of contaminants (possibly in the form of leachate tests) and testing for the presence of toxic anti-fouling substances, such as tributyltin (TBT), associated with boat building and repairs.

5. PROPOSED SCOPE FOR FURTHER WORK

- 5.1 The proposed scope of work for updating the previous investigations and covering the remaining items of concern will comprise:

- Re-examine the site to identify changes to surface deposits, further evidence of waste burning, etc.
- Excavate trial pits at the locations previously identified as significantly contaminated, plus any new locations identified as potentially contaminated during the site visit or indicated in the Council's memorandum. Take additional samples from the foreshore/intertidal zone to investigate evidence of contaminant migration.
- Carry out analysis for the substances previously identified as contamination, with testing for a full range of potential contaminants for samples from any new locations, plus analysis for TBT and other toxic antifouling substances.
- Carry out leaching tests on the abovementioned samples.
- Revisit any surviving monitoring boreholes for groundwater sampling and soil gas testing.
- Prepare updated Contamination Risk Assessment report.



APPENDIX A

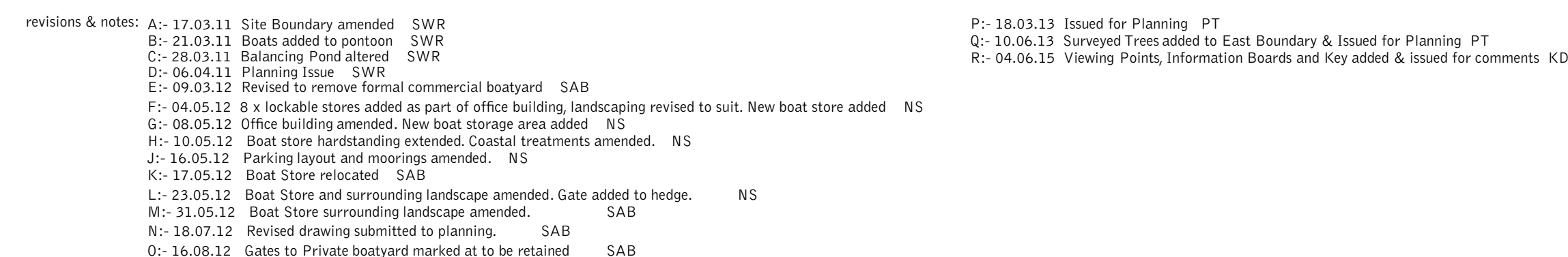
Figure 1: Site Location Proposed Redevelopment



Wildlife and Ecology information boards
located by the controlled view points



1:500

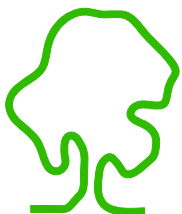


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