

**DEPARTMENT OF CONSERVATION & LAND
MANAGEMENT
CALM SCIENCE DIVISION**

**BRIEF FOR SURVEY
OF WETLAND MONITORING SITES
SOUTH-WEST WESTERN AUSTRALIA**

APRIL 1998

SURVEY OF WETLAND MONITORING SITES

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SURVEY BRIEF FOR SURVEYORS WORKING ON WETLAND MONITORING SITES SOUTH-WEST WESTERN AUSTRALIA

1. GENERAL DESCRIPTION OF WORK

This brief describes the survey work to be carried out at various wetland monitoring sites throughout the South West of Western Australia. Works will be in accordance with this Brief and any on site requirements requested by authorised officers of CALM

1.1 Definitions

In this brief the term CALM shall mean the Department of Conservation and Land Management or its authorised representative.

The "Surveyor" shall mean the contract surveyor whose appointment is accepted by CALM and shall include the contract surveyor's legal personal representatives, successors and all other permitted assigns.

DOLA is the Department of Land Administration.

2. EXTENT OF WORK

The extent of work for which the Surveyor will be responsible shall be as follows:-

2.1 Placement of a new datum benchmark at each of the sixty five (65) designated sites.

2.2 Vertical connection from the newly established benchmark to *CALM* depth gauge/s and any existing *CALM* datum blocks.

2.3 Horizontal location of *CALM* gauge/s with respect to *DOLA AND CALM* datum benchmarkS.

2.4 Level traverse to connect datum benchmarks into the AHD at specified locations.

2.5 Preparation of all survey data in prescribed format.

2.6 Drafting of benchmark summaries.

3. RIGHT OF ENTRY

- 3.1** The majority of monitoring sites are located on Crown Land usually under control of CALM. Access to such sites will be arranged by CALM but it is the Surveyor's responsibility to fully comply with any specific requirements governing such access.
- 3.2** Where entry is necessary onto other land for purposes of either access or survey then such entry is to be governed by the provisions of Section 82 of the Public Works Act, 1902 or Section 17 of the Licensed Surveyors Act, 1909. It remains the Surveyor's responsibility to arrange necessary access approvals prior to such entry.
- 3.3** The entirety of the works are required to be carried out with the minimum damage to property. Particular care shall be taken to close gates and avoid damage to fences to prevent straying of stock. Vehicle damage to crops must be avoided.

Any damage to property or complaints from property owners/occupiers whether related to damage of property or otherwise shall be recorded and promptly transmitted to DOLA for resolution.

If any damage should occur and in the opinion of CALM and/or DOLA it could have been avoided, the Surveyor will be responsible for all costs involved in restoration of the damage which shall be carried out as directed by CALM.

3.4 Public Relations

The Surveyor will be taken by the public to represent CALM and is required at all times to maintain good public relations and in the event of conflict ensure that the requirements of Clause 3.3 are complied with immediately.

4. ENVIRONMENTAL CONSIDERATIONS

4.1 General

The entirety of the service work, whether on or off Crown lands, shall be performed in accordance with the procedures detailed in this Brief in order to minimise damage to the existing environment and so minimise inconvenience to landowners, lessees or controlling authorities.

4.2 Control of Plants and Animals as Required by the Agriculture Western Australia

The Surveyor shall comply with any applicable regulations and requirements of Agriculture Western Australia at all times during the performance of the work in order to maintain control of the plants and animals that are declared under the provisions of the Agricultural and Related Resources Protection Act (1976) and amendments.

4.3 Protection of Flora and Fauna

Flora No flora shall be removed from the site except that necessary to undertake the works. The area trafficked to undertake the works shall be kept to the minimum. Exotic flora species shall not be introduced onto the site.

All restrictions and requirements regarding forest hygiene in respect to the spread of *Phytophthora Cinnamomi* (Jarrah Dieback) shall be complied with in full.

Fauna No existing natural species shall be trapped, killed or injured on the site or otherwise removed. Firearms or other weapons shall not be brought onto the site. Exotic fauna species (*including dogs*) shall not be introduced onto the site.

4.4 Clearing

Clearing is to be kept to the minimum necessary to effect the survey work. As far as possible any clearing should be confined to that necessary for line of sight only.

Compliance is required with any other conditions or restrictions made by authorised officers from CALM whilst working within National Parks, State Forest, Plantations, Conservation Reserves etc

4.5 Fire Prevention

The Surveyor shall provide and maintain in good working order for the period of the survey an appropriate fire extinguisher.

Notwithstanding this sub clause the Surveyor shall comply at all times in all regards with the Bush Fires Act, 1954 and Regulations.

4.6 Access Tracks and Dust Suppression

All vehicular traffic shall be confined where possible to existing access roads and tracks. Every effort shall be made to ensure that dust-raising is kept to a minimum especially in areas close to residences, etc.

5. SURVEY

5.1 Marking

5.1.1 Benchmarks placed as datums shall be constructed in accordance with DOLA Specification 2000/04/015 "Specifications for Placement of Benchmarks". Copy of document is appended to this Brief.

- 5.1.2** Any additional benchmarks placed to facilitate the connection to AHD shall be similarly constructed as per 5.1.1 above.

5.2 Horizontal Surveys

5.2.1 Depth Gauge Locations

To facilitate future relocation of *CALM* depth gauges *AND DATUMS* their positions with respect to the newly established datum benchmarks are to be established.

Such relationship may be determined by distance and magnetic bearing observations.

5.2.2 Datum Benchmark Locations

All new benchmarks placed are to have observed as a minimum AMG 84 GPS navigator derived co-ordinates.

5.3 Vertical Surveys

5.3.1 General

In order to optimise the amount of spirit levelling achieved it is mandatory that the Surveyor utilise an automatic electronic levelling system of the type LEICA NA2002, NA3003 or similar.

5.3.2 Methodology

Spirit levelling at each site from and between datum benchmarks and gauges will be two way metre *whereas connections to existing benchmarks of known AHD value may be one way only*. However where time permits a return run is advisable.

Class LC Specifications as per Intergovernmental Committee on Surveying and Mapping's publication "Standards and Practices for Control Surveys" are to be used as the basis for spirit levelling.

5.3.3 Validation of Benchmarks

Existing benchmarks connected for AHD transfer purposes must be validated from reference marks where ever they are available.

5.4 Field Notes

All recorded horizontal data is required to be lodged in field books. Vertical details recorded in the field are to be submitted in a hard copy level book type format appropriately abstracted on the proforma supplied. Digital image of the level book is also required.

5.5 Co-ordinates

A listing, both hard copy and digital image, of the AMG 84 co-ordinates of all benchmarks placed is required.

6. DRAWING OF BENCHMARK SUMMARIES

The drawings are to be supplied on the DOLA proformas provided and be in accordance with DOLA Specification 2000/04/001 "Specification for Preparation of Benchmark Summary" with the added requirement that the position/s of *CALM* depth gauge/s *AND DATUM* must be shown. Copy of document appended to the Brief.

7. PROGRAM OF WORK

The survey is to be commenced on Monday *4TH* May, 1998 and is to proceed continuously to completion at a rate acceptable to CALM with a final completion date being Saturday 6th June 1998.

CALM may at its option direct a change in the program or in the order of completion of any portion of the work.

Field and level books, sketches and plans, data disks, survey information, etc. are to be submitted promptly on completion.

8. SERVICES AND MATERIALS

DOLA will supply benchmarks and witness plates necessary for use as Datum markers. Benchmark drafting proformas and level abstract sheets will also be provided.

The Surveyor is required to provide all survey instruments, ancillary equipment, vehicles and other materials necessary to effect the survey work. Note the requirement under 5.3.1 above. In addition the Surveyor must have an appropriate ferric metal detector. Should one not be available then DOLA will loan the Surveyor a detector for the duration of the field work

13. PAYMENT

Progress accounts for work completed **MUST** be submitted to DOLA on a fortnightly basis for certification prior to payment by CALM. Final account must be submitted by 8th June 1998.