**CONTRACT SPECIFIC REQUIREMENTS**

**PART 60W DREDGING**

1. **LIMITATIONS ON PROGRAMMING AND SEQUENCE OF WORK**
	1. ***North Haven***

*The Contractor must not undertake any work inside the breakwaters between 10 pm and 7 am. The Contractor may work 24 hours a day, 7 days a week outside the breakwaters, provided it is also meeting all EPA noise requirements and EPA regulations during working hours (e.g. Sunday starting times, noise levels between 5 pm and 10 pm, etc).*

*Due to the large number of boat movements during the Wednesday Cruising Yacht Club of South Australia (CYC) twilight races, it may not be economical or safe to dredge during that period. An hourly standby rate has been provided in the Schedule of Rates for such standby directed by the Principal.*

*The CYC boat ramp is used by the recreational boating community. It is the Contractor’s responsibility to maintain clear access for ramp users during the course of the dredging works.*

* 1. ***O’Sullivan Beach Boat Haven***

*The Contractor may work 24 hours a day, 7 days a week, provided it is also meeting all EPA noise requirements and EPA regulations during working hours (e.g. Sunday starting times, noise levels between 5 pm and 10 pm, etc).*

* 1. ***Penneshaw Ferry Harbour***

*The Contractor may work 24 hours a day, 7 days a week, except for the sunrise and sunset restricted hours detailed below, and provided it is also meeting all EPA noise requirements and EPA regulations during working hours (e.g. Sunday starting times, noise levels between 5 pm and 10 pm, etc).*

*A penguin reserve and associated viewing facilities are located on the foreshore on the western side of Hog Bay immediately south of the ferry berth. The Contractor must ensure that minimal disruption and inconvenience are caused to the penguin population as a result of the works. The Contractor must ensure that there is no direct impact on the movement of penguins as they enter and leave their colony. Dredging must not be undertaken during the following times:*

1. *from one hour before sunset until two hours after sunset. This will allow any disturbed sediment to settle prior to penguins coming ashore from foraging trips in the evening.*
2. *from three hours prior to sunrise until sunrise. This will allow penguins to leave the colony without being impacted upon by the dredging works.*

*A passenger and vehicle ferry service operates daily between Cape Jervis and Penneshaw. The Contractor must be deemed to be fully informed of the daily ferry movements at the Penneshaw ferry berth during the course of the works. Because the ferry needs to traverse across the proposed area to be dredged during berthing operations, the Contractor must* liaise with Sealink operators in order to avoid disruption to the ferry operations.

1. **CONTRACTOR’S PERSONNEL**

The Contractor’s personnel must meet the following minimum requirements:

|  |  |  |  |
| --- | --- | --- | --- |
| **TITLE** | **QUALIFICATIONS** | **EXPERIENCE REQUIRED** | **TIME REQUIRED ON SITE** |
| Contractor’s Representative |  | 5 years of on-site work of a similar magnitude and complexity. | The CR will not be required to be based permanently on site when works are in progress but must be on site when critical activities are being undertaken. |
| Site Supervisor |  | 3 years of on-site work of a similar magnitude and complexity. | During customary working hours. |
| Quality Management Representative | Demonstrated understanding of the principles and practices of Quality Management or have completed a course in Quality Management | 3 years of on-site work of a similar magnitude and complexity. | The QMR will not be required to be based permanently on site when works are in progress but must be on site when critical activities are being undertaken. |

The Contractor’s Representative may be the Quality Management Representative. Other positions must be filled by separate individuals.

1. **CONTRACTOR'S COMPOUND**

The Contractor must obtain a written agreement with the landholder and local council to establish a compound or any area used for the storage of plant or materials. Copies of these agreements must be submitted to the Principal prior to establishment of the compound. A written release must be obtained from the landholder and local council after de-establishment.

To prevent access by the public, temporary fencing must be erected around the Contractor’s compound and all other areas utilised by the Contractor including stockpiles of materials.

1. **COUNCIL LIAISON**

*North Haven: Mr Gary Baker*

 *Manager Infrastructure, Assets and Maintenance*

 *City of Port Adelaide Enfield*

 *Telephone: (08) 8405 6745 Mobile: 0410 345 213*

 *Email: gary.baker@portenf.sa.gov.au*

*O’Sullivan Beach: Mr Terry McLaaren*

 *Service Officer, City Services, Infrastructure Maintenance*

 *City of Onkaparinga*

 *Telephone: (08) 8384 0152 Mobile: 0416 107 447*

 *Email: termcl@onkaparinga.sa.gov.au*

*Penneshaw: Mr John Fernandez*

 *Project Manager, Asset Services*

 *Kangaroo Island Council*

 *Telephone: (08) 8553 4522 Mobile: 0419 805 824*

 *Email: John.Fernandez@kicouncil.sa.gov.au*

1. **FLOATING PLANT**
	1. ***North Haven Boat Ramp***

*Floating plant can access the site from any seaward direction. Floating plant may also be launched and retrieved from the North Haven boat ramp provided agreement is obtained from the CYC as “owner” of the boat ramp. The Contractor must be responsible for any arrangements and costs associated with the launching and retrieval of plant. Alternative launch points may only be used with the approval of the Principal.*

* 1. ***O’Sullivan Beach Boat Haven***

*Floating plant can access the site from any seaward direction. Floating plant may also be launched and retrieved from the O’Sullivan Beach boat ramp. The Contractor must be responsible for any arrangements and costs associated with the launching and retrieval of plant. Alternative launch points may only be used with the approval of the Principal.*

* 1. ***Penneshaw Ferry Harbour***

*Floating plant can access the site from any seaward direction. The Contractor must be responsible for any arrangements and costs associated with the launching and retrieval of plant. Alternative launch points may only be used with the approval of the Principal.*

1. **DREDGING**
	1. **Quality Requirements**

The Contractor's Procedures must at a minimum address the following:

1. dredging of material;
2. dredging of material/seagrass mix;
3. dredging of seagrass only
4. disposal management methods;
5. determination of shape and depth of dredged areas;
6. verification of channel shape; and
7. frequency and density of measurements.

If not provided beforehand the procedures must be submitted at least 7 days prior to the commencement of site work.

Provision of the procedures listed in this Clause must constitute a **hold point**.

* 1. **Water Quality Management**
	2. **Plant**

The Contractor must use the nominated plant and ensure that it is:

1. properly maintained and in good working order to allow maximum efficiency in operation; and
2. fit and suitable for the work under the Contract.

Access to the site by labour and land based support vehicles must be limited to

1. The Contractor gaining the approval of the Local Council and where applicable; local land owners, lessees or authorities having control over that land; and
2. The use of existing tracks.

The Contractor must not remove plant from the work site prior to completion, without the consent of the Principal, except where conditions pose a threat to the safety of the Contractor’s personnel or equipment.

Where the Contractor elects to remove the plant from a site prior to dredging work at that site being completed, the Contractor must be liable for any costs associated with the demobilising, transport and re-establishment of such plant.

* 1. **Setting out and dredging**

The Contractor is responsible for setting out the works. The dredge must be fitted with a certified Differential Global Positioning Satellite (DGPS) system to ensure positional control to dredge the area accurately.

The Contractor will be given a datum level and detailed drawings clearly demarcating the area to be dredged.

The Contractor must install a standard tide gauge board at a convenient point. Tide levels vary significantly around South Australia and atmospheric conditions can cause further significant departures from predicted tides.

The Contractor must carry out dredging in the areas to be dredged as indicated in the Drawings or in accordance with any direction of the Principal.

* 1. **Debris**

The areas to be dredged may contain debris on the seabed, such as old moorings, anchors, etc. It is the responsibility of the Contractor to "sweep" the area with an anchor handling tug, or similar vessel, to ensure the area to be dredged is clear and safe for the dredge to operate.

* 1. **Material to be dredged**
		1. **General**

The dredged material contains fines capable of producing a noticeable plume at the dredge and disposal site. These fines take a long time to settle thereby leaving the plume noticeable for many days.

The materials likely to be encountered are:

(a) Seagrass

For the purpose of this Contract, seagrass is defined as marine plant growth of any variety that may be found in any area to be dredged. Seagrass may contain significant quantities of sand mixed with it. Seagrasses tend to have a neutral density in seawater, may give erroneous correlation between the dredging plant’s density and pressure graphs, and have the potential to block or otherwise interfere with the pump and suction pipe.

Seagrasses may have established themselves or have been deposited in the areas to be dredged and the Contractor must take measures to effectively deal with these as they arise.

The Contractor must dredge and dispose of seagrass or a seagrass/sand mixture.

Failure on the part of the Contractor to effectively deal with seagrass may attract reduced payment and may be considered a breach of the Conditions of Contract.

(b) Sand

Areas to be dredged may contain various pockets of fine and coarse sand build up (shoaling).

(c) Contamination

Where the Contractor encounters contaminated material, through ground disturbance then, all activities related to the management, stockpiling, relocation, disposal of the soil must be undertaken in accordance with the *Environmental Protection Act*.

Should any potential soil or contamination water be identified during construction through disturbance of acid sulphate soils, the Contractor must immediately notify the Principal. The Contractor must maintain a register of the nature, extent of contaminated area, type and location of contamination encountered on the site.

The Principal will direct the Contractor in the treatment of the contaminated material.

(d) Other Material

The Contractor must also remove any silt, clay or any other material that may be encountered from the areas to be deepened and dispose of the material as directed by the Principal.

* + 1. ***North Haven***

*The areas to be dredged have been dredged previously and the material to be dredged is expected to comprise a mixture of fine sand and a large percentage of seagrass.*

* + 1. ***O’Sullivan Beach***

*The areas to be dredged have been dredged previously and the material to be dredged is mainly clean medium sand that has drifted or washed in. The material is likely to be contaminated with loose rock left behind when the channel and basin were originally constructed by blasting and may also be contaminated with dead and rotting seagrass.*

*The underlying material over large areas of the site is hard rock. The Contractor must remove all silt, sand, clay and other material from the areas to be deepened and dispose of the material to the location stated.*

* + 1. ***Penneshaw Ferry Harbour***

*The areas to be dredged have been dredged previously and the material to be dredged is mainly clean sand that has drifted or washed in. The material is likely to be contaminated with loose rock left behind when the basin was originally constructed and may also be contaminated with dead and rotting seagrass.*

* 1. **Disposal of dredged material**

The Contractor must dispose of all dredged material in accordance with the Water Quality Monitoring Program.

If discharge pipes are to be used, they must be placed either on the sea bed or floating on the water in a direct line from the dredge to the discharge site. The pipeline must be clearly marked with floating buoys with the appropriate navigational signals to prevent other vessels from crossing the pipeline.

If offshore discharge diffusers are to be used, they must be located on a floating pontoon provided with suitable moorings to secure the diffuser in all weather conditions. Discharge from the diffuser will be in a downward direction, with a deflector plate located centrally in the path of the discharge such that the flow is evenly directed horizontally in all directions. The Principal may direct the diffuser to be moved from time to time to prevent accumulation of discharge in one location.

* 1. **Accuracy of dredging**

The Contractor must dredge to the declared/target depths within the range of – 300 mm to + 00 mm over the areas unless otherwise specified, with side slopes not steeper than 1:10 for stability.

The Principal will only consider claims for side slopes mustower than 1:10 under special cases such as the side slope under the toe of a breakwater. The Contractor must provide written notice detailing such an occurrence within 48 hours of the occurrence becoming known to the Contractor.

The Contractor must limit the depth and profile of dredging operations near breakwaters, wharves/jetties revetment structures etc, such that the structural integrity of such structures is not compromised. The Contractor must be responsible for obtaining all information from the Principal relating to such depths and profile limitations in advance of starting operations. The Contractor must be liable for any damage cause to any structure due to over-dredging near the structure.

* 1. **Preservation of existing depths**

The Contractor must ensure that the depths in the existing area and associated areas are not reduced by the operations.

The Contractor must bear the full responsibility and be liable for any damage to boating caused by non-observance of these conditions, and remove, at the Contractor’s cost, any material displaced into adjacent areas by the operations.

* 1. **Measurement of dredging work**

The Contractor must record and maintain a daily productive rate of pumping. The Contractor must carry out a test dredge of the material prior to commencing the dredging operation using the continuous recording devices, pressure gauges and any other associated instrumentation.

The following pressures are to be established under normal operating conditions with the dredge and equipment fully assembled, including the connection of the entire discharge line:

1. Suction and delivery pressures when pumping sea water only; and
2. Suction and delivery pressures when pumping dredge material at a rated capacity.

On completion of the Test Dredge a **HOLD POINT** must apply.

The hours of non productive dredging will be determined by the Principal from the continuous chart records showing the pressures on the suction and delivery sides of the pump. The Principal must be provided with 2 clear and legible copies of all pressure records and the log as soon as practicable after the conclusion of each day's dredging. After checking, an initialled copy of the records and log, will be returned to the Contractor.

The Principal will accept an acceptable data printout from a mass flowmeter or similar device which records the mass of the material passing through the discharge pipe as it leaves the dredge.

1. **CONTRACTOR’S OBLIGATIONS**

The Contractor warrants, represents and undertakes to the Principal that it will:

1. undertake the work under the Contract in the most cost-effective manner consistent with the required level of quality and performance;
2. use adequate and appropriate plant and resources, including personnel with suitable training, education, experience;
3. determine the manner and sequence of the work so as to minimise the cost to the Principal; and
4. maximise the availability of the dredge for undertaking productive dredging each working day.

The Principal may alter the sequence of works depending on dredging efficiencies and direct the Contractor to dredge any given area within or adjacent to the site. Any such directions will be in writing and include reasonable time to re-locate the dredge.

1. **SURVEY**
	1. **Quality requirements**

The Contractor must prepare and implement detailed procedures and documentation for:

1. determination of shape and depth of dredged areas
2. verification of shape
3. frequency and density of measurements.

If not part of the Post Tender Submission, the procedures must be submitted at least 7 days prior to the commencement of site work.

Provision of the procedures listed in this Clause must constitute a **hold point**.

* 1. **Progress surveys**

The Contractor must undertake Progress Surveys immediately prior to commencing dredging works, every four weeks while the works are in progress, and immediately on completion of the works.

Progress Surveys must be reduced to Chart Datum and be used to verify by hydrographic methods that dredging to the required tolerances has been satisfactorily completed. Progress surveys must cover the area dredged and the area to be dredged. Volumes may be used by the Principal as a measure of reasonable rate of progress. The unit of measurement will be cubic metre (solid) for dredged volumes as calculated from the survey.

The Contractor must provide a copy of all Progress Survey results to the Principal within 3 working days of completion of that survey.

The Principal may direct the Contractor to undertake a Progress Survey at any time.

The Principal may alter the sequence of dredging depending on these survey results and dredging efficiency.

Separate payment for Progress Surveys will not be made except for additional Progress Surveys requested by the Principal.

* 1. **Accuracy of progress surveys**

The soundings must be accurate to ± 50 mm (vertical), and the locations at which the soundings are taken must be within ± 1.0 m (horizontal). Soundings within the channel width must be taken at 5 m intervals.

The Contractor’s personnel must be competent in handling all survey equipment such as Depth Sounders (Electronic Distance Measuring equipment) and DGPS systems. The Contractor must submit test certificates of all survey equipment to be used in the works, showing such equipment has been tested by an accredited testing authority within 12 months prior to start of this Contract. The Contractor must also ensure that the Depth Sounder (for example frequency of transducer) being used is of the right type in relation to the seabed characteristics expected.

The Contractor must undertake a Test Survey covering a sample section of the area to be dredged, as directed by the Principal, prior to commencing dredging operations, for comparison to the Principal’s Hydrographic Survey to determine that the Contractor’s survey equipment operates to the required tolerances.

* 1. **Hydrographic survey**

The Principal will carry out a Hydrographic Survey of the area after completion of the dredging operation. The final survey will be carried out only when the Contractor has produced sufficient evidence that the required depths, to allowable tolerances, have been achieved over the entire project area. Any additional survey required due to the work not meeting Specification will be carried out at the Contractor’s expense.

The final survey will be carried out only during fine weather conditions and the Contractor must retain the plant in the area until the survey has been completed and plotted and the work passed as satisfactory. The final survey will not be carried out at weekends and the Contractor must schedule the work accordingly. Standby time will not be paid to the Contractor if the works concludes at the commencement of a weekend.

The Principal may also arrange a Hydrographic Survey of the area dredged during the Contract, at any time. Adjoining areas may also be surveyed to determine the extent of sand migration into dredged areas.

1. **PAYMENT**

If the Contractor is forced to cease operations due to weather conditions, the Contractor will be paid in accordance with the Schedule of Rates.

If the Principal orders work to cease, or the Contractor ceases work, due to requirements of the Water Quality Monitoring Programme, the Contractor will be paid up to a maximum of 8 hours non-productive dredging for that day. The Contractor must not be paid for any subsequent days where work cannot be recommenced for the same continuing reasons.

No payment will be made while the dredge is stopped for maintenance work.

**CH50W ENVIRONMENT PROTECTION ISSUES**

1. **WATER QUALITY MONITORING**

The Contractor must prepare a Water Quality Monitoring Program (WQMP) in accordance with the Contractor’s dredging licence issued by the Environment Protection Authority (EPA) and have the WQMP approved by the EPA prior to works commencing. The Contractor must engage an independent verifier to review the water quality testing undertaken by the Contractor as part of the WQMP. The independent verifier must prepare a report on completion of the works.

The Contractor must submit to the Principal a copy of the approved WQMP and the EPA approval of the WQMP prior to works commencing, and the report of the independent verifier on completion of the works.

1. **DREDGED MATERIAL DISPOSAL SITE**

***CH60 COMMUNITY ENGAGEMENT OBLIGATIONS***

1. ***PUBLIC CONSULTATION***
	1. ***North Haven***

*The Contractor must undertake the following public consultation work:*

1. *The Council contact person must be notified 48 hours prior to the commencement of dredging.*
2. *Letter dropping of residents and businesses in the immediate vicinity of the works area, detailing the nature of the work, working hours, contact details and any restrictions to public activities. A draft letter must be submitted to the Principal for approval. The extent of the letter drop must be as per Appendix XX.*
3. *Advertising in the local Messenger press, detailing the nature of the work, working hours, contact details and any restrictions to public activities. The size of the advertisement must be 100 mm x 60 mm minimum. At least 7 days prior to release of the information, the Contractor must provide a draft copy of the advertisement to the Principal for approval. The Contractor must provide a copy of the newspaper on the day of publication of the advertisement to the Principal.*
4. *Advising the CYC (Craig Evans, telephone 8248 4222) prior to works commencing.*
	1. ***O’Sullivan Beach Boat Haven***

*The Contractor must undertake the following public consultation work:*

1. *The Council contact person must be notified 48 hours prior to the commencement of dredging.*
2. *Letter dropping of residents and businesses in the immediate vicinity of the works area, detailing the nature of the work, working hours, contact details and any restrictions to public activities. A draft letter must be submitted to the Principal for approval. The extent of the letter drop must be as per Appendix XX.*
3. *Advertising in the local Messenger press, detailing the nature of the work, working hours, contact details and any restrictions to public activities. The size of the advertisement must be 100 mm x 60 mm minimum. At least 7 days prior to release of the information, the Contractor must provide a draft copy of the advertisement to the Principal for approval. The Contractor must provide a copy of the newspaper on the day of publication of the advertisement to the Principal.*
	1. ***Penneshaw Ferry Harbour***

*The Contractor must undertake the following public consultation work:*

1. *The Council contact person must be notified 48 hours prior to the commencement of dredging.*
2. *Letter dropping of residents and businesses in the immediate vicinity of the works area, detailing the nature of the work, working hours, contact details and any restrictions to public activities. A draft letter must be submitted to the Principal for approval. The extent of the letter drop must be as per Appendix XX.*
3. *Advertising in the local press (“The Islander”), detailing the nature of the work, working hours, contact details and any restrictions to public activities. The size of the advertisement must be 100 mm x 60 mm minimum. At least 7 days prior to release of the information, the Contractor must provide a draft copy of the advertisement to the Principal for approval. The Contractor must provide a copy of the newspaper on the day of publication of the advertisement to the Principal.*