

Technical Specifications

Section 00 31 21 Hydrographic Surveys

PART I—GENERAL

1.01 GENERAL

- A. “DISTRICT” shall mean Humboldt Bay Harbor, Recreation, and Conservation District.
- B. “CONTRACTOR” shall mean contractor awarded the work.

1.02 DESCRIPTION

- A. The CONTRACTOR shall be responsible for performing pre-dredge and post dredge surveys of Woodley Island Marina (WIM) for payment and final acceptance of all Contract dredging work, including any interim, progress payment and quality control surveys. All contract-required surveys shall be performed in accordance with WIM alignment data provided to the CONTRACTOR by the DISTRICT. The DISTRICT will provide the CONTRACTOR with an AutoCAD™ file detailing the marina alignment data including wharf stationing survey requirements.
- B. The CONTRACTOR shall provide for the services of an Independent Surveyor to perform the pre- and post-dredge surveys for final payment, including performing the related computations and furnishing the required Contract Drawings.
- C. The Independent Surveyor's equipment and work force shall be separate from the CONTRACTOR's. The name of the Surveyor and samples of previous hydrographic survey work shall be submitted to the DISTRICT for review at the preconstruction conference.

1.03 QUALIFICATIONS

- A. The Independent Surveyor shall be required to document and certify in writing to the DISTRICT that he has at least three years of experience in hydrographic surveying of navigable channels and is licensed to practice in the State of California.
- B. The Independent Surveyor shall provide documentation indicating that modern electronic horizontal positioning and depth finding equipment are available for the surveys to be performed including DGPS (Differential Global Positioning System) capability and shall include as a minimum, the name, model, and year of manufacture of the electronic equipment, the electronic frequencies of the horizontal positioning equipment and the depth finding equipment, and the manufacturer's stated positioning accuracy and capability of the equipment proposed for usage. In addition, he shall provide information that a safe and suitable vessel is available for operation in the waters where the surveys are to be performed, and that experienced staff are available for the operation of the vessel as well as the electronic positioning and depth finding equipment calibration. Accuracy and other standards outlined in the U.S. Army Corps of Engineer Manual "Hydrographic Surveying", EM 1110-2-1003 (30 November 2013) shall be followed when performing any survey for payment.

1.04 SUBMITTALS

Submit the following for the pre-dredge and post-dredge surveys:

- A. Plan View: One (1) set of half-size paper drawings for each survey showing the bottom elevation of the WIM dredging area limits of work along the survey lines, one (1) copy on USB Flash drive utilizing AutoCAD™, Release 2016 or higher, and one (1) pdf file of both half and full-size drawings. Additionally, two (2) sets of full-size paper drawings for the post-dredge survey only.
- B. Cross-Sections: One (1) set of half-size paper drawings for each survey, one (1) copy on USB Flash drive utilizing AutoCAD™, Release 2016 or more recent, and one (1) pdf file of both half and full-size drawings.
- C. Quantity Computations: One (1) of computer sheet printouts and one electronic file of dredging quantities as required by Paragraph 3.04, Quantity Computations.
- D. Field Notes: One (1) set for each survey
- E. Electronic Graphic Information: The CONTRACTOR shall submit for each survey, the ASCII file of raw and corrected survey data. Raw data from the hydrosurvey computer shall be provided upon DISTRICT request. Data shall be on a USB Flash drive, operating under Windows 7 or newer version. The adjusted data shall be corrected to Mean Lower Low Water (MLLW) datum at the locality. Each adjusted record shall consist of the following information: index; "x" coordinate; "y" coordinate; "z" elevation; time; and height of tide (MLLW datum). The recording distance between the hydrosurvey points shall be ten feet or less.

PART 2–PRODUCTS (Not Used)

PART 3–EXECUTION

3.01 HYDROGRAPHIC SURVEYS

- A. Hydrographic surveys may be performed by single beam transducer, multiple vertical beam transducer sweep, or multi-beam sweep methods.
- B. Hydrographic survey procedures shall conform to Class 1 criteria as set forth in the U.S. Army Corps of Engineers Manual "Hydrographic Surveying", EM 1110-2-1003 (30 November 2013). Data recording, annotation, and processing procedures shall be in accordance with the hydrographic survey manual specified above and these specifications. In the event of a conflict between these specifications and the U.S. Army Corps of Engineers Class 1 criteria, the CONTRACTOR will present such conflicts to the DISTRICT for resolution. Failure to perform and process such surveys in accordance with the Corps of Engineers Manual and these Specifications will result in a rejection and nonpayment for work performed.
- C. Horizontal position of soundings shall be stated in California State Plane Coordinates, Zone III, North American Datum of 1983 (NAD 83), U.S. Survey Foot. Depths shall be stated in terms of MLLW datum at the locality.
- D. The CONTRACTOR shall conduct surveys using electronic system positioning method approved by the DISTRICT. The CONTRACTOR shall use an echo sounder to obtain soundings. The analog recording of soundings shall indicate a calibration check (bar check) of the echo sounding at the beginning and end of each analog paper change and at such times as necessary to ensure sounding accuracy. Echo sounder shall have a frequency of 200-210 KHZ. The top of the return signal trace shall be the point of interpretation of sounding. The bar check shall be taken at identical locations.
- E. If single beam methods are used, sounding lines shall be perpendicular to the wharf as shown on the Contract Drawings. Sounding line station intervals shall not be greater than 50 feet apart or as approved by the DISTRICT. Interval between soundings on each line shall not exceed ten (10) feet left or right from the station survey line. In addition, a longitudinal sounding line shall be run along the centerline of the dredging limits.
- F. If multi-beam technology is used, the survey line plan shall be sufficient in that 100% overlap of the multi-beam swath is achieved over the project area (all data shall be duplicated in overlapping swaths).
- G. Sounding coverage shall extend a minimum of 100-feet beyond the edge of the dredging limits, with the exception of behind the face of the wharf, as shown on the Plans or as otherwise approved.

- H. Tidal control shall be through the means of an automatic recording tide gauge with water level sensor. The tide gauge shall provide a continuous recording of tidal change for every five (5) minute interval or each 0.1-foot change, whichever occurs first. Tidal changes shall be recorded in MLLW datum with these changes synchronized in time with cross-section survey time. A printed record of the tidal changes and time correlation shall become part of the CONTRACTOR's survey records. In lieu of an automatic tide recording gauge, the CONTRACTOR may submit a manual method of keeping track of tidal changes for approval by the DISTRICT.

3.02 FIELD NOTES

Field notes shall be submitted with all surveys and include the following information:

- A. Survey personnel, all equipment used, controls, weather/sea conditions, and calibration notes.
- B. For single beam surveys, stations of each sounding line, the date and the time (hour and minutes) each sounding line was taken and explanation for any line terminated early.
- C. The height of tide (MLLW datum), bar checks, date and time of tide readings, location of tide gauge, level line notes, benchmarks, temporary benchmarks, and location of all control used by Contractor. Field notes may be made on electronic media.

3.03 CROSS SECTIONS

- A. The hydrographic sounding line survey results shall be plotted at a maximum scale of 1"=100' or as approved by the DISTRICT. Soundings shall be plotted on paper sheets and show design channel template with survey cross-section. The CONTRACTOR's surveying firm name shall be printed on each sheet along with contract name, number and date of survey. Plot scales shall be as approved by the DISTRICT. Cross sections must include the required dredge template, which includes minimum required depth, pay limit of plus one foot of paid overdepth, and allowable slopes. The submitted product shall be stamped by a licensed professional surveyor.

3.04 QUANTITY COMPUTATIONS

- A. For payment purpose, quantities shall be computed to the nearest cubic yard based on the sounding lines surveyed and the limits of dredging indicated on the Contract Drawings. Tabular summaries shall be submitted to show dredging quantities both incrementally and cumulative per 50-foot stations or less of WIM dredge stationing, as shown on the Plans.
- B. The following quantities shall be reported for the pre-dredge survey:
 - 1. Volume available within limits of dredging to required project depth
 - 2. Volume available within limits of dredging to allowable overdepth
 - 3. Total Volume available within limits of dredging (volume to required project depth plus overdepth)

- C. The following quantities shall be reported for the post-dredge survey:
 - 1. Volume removed within limits of dredging to required project depth
 - 2. Volume removed within limits of dredging to allowable overdepth
 - 3. Total Volume removed within limits of dredging (volume to required project depth plus overdepth)
 - 4. Volume removed outside limits of dredging
 - 5. Total volume removed

3.05 DRAWINGS AND COMPUTATIONS

- A. The Contractor shall submit all Drawings, field notes and quantity computations within seven (7) calendar days after completion of each survey. The number of sets of Drawings shall be as specified in Paragraph 1.03 herein above. The Contractor shall mail or deliver Drawings and computations to:

Humboldt Bay Harbor, Recreation and Conservation District
601 Startare Drive, Eureka, CA 95501
Attention: Larry Oetker

3.06 SURVEY EQUIPMENT

- A. The Contractor's Surveyor shall provide a complete listing of hydrographic equipment he will use on the project, along with the other qualifications as specified in Paragraph 1.02 herein above, at the pre-construction conference.

3.07 SURVEYS TO BE PERFORMED

- A. The Contractor shall perform hydrographic surveys as specified at the below listed times during this contract. These surveys shall verify that all contract dredging area dimensions are being obtained as specified. All surveys shall completely cover the limits of the dredging areas as detailed on the Contract Drawings and specified in Paragraph 3.01 D above.
 - 1. Pre-dredge survey of Woodley Island Marina dredging areas prior to the start of any dredging work
 - 2. Post-dredge survey for acceptance of Woodley Island Marina dredging areas as shown on the Contract Drawings—furnish one copy of plan plot and/or cross sections in accordance with Paragraph "Cross Sections" and "Submittals" herein above

***** End of Section *****

Section 01 10 00 Summary of Work

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Contract Documents and Plans, including Invitation For Bids, Notice To Bidders, Proposal, Bidder Certifications, Agreement, General Conditions and other sections of the Technical Provisions, apply to this Section.
- B. "DISTRICT" shall mean Humboldt Bay Harbor, Recreation and Conservation District.
- C. "CONTRACTOR" shall mean contractor awarded the work.

1.02 WORK COVERED BY THE CONTRACT DOCUMENTS

- A. **Description.** The Work of this Contract includes work covered by lump sum and unit prices. The Work of this Contract consists of maintenance dredging of Woodley Island Marina (WIM) and dredged material disposal. Work includes regulatory submittals, dredging activities, and reporting. Regulatory submittals include the production of a Dredge Operations Plan (DOP) and reporting requirements. Dredging activities include using bucket excavator, or crane with closed clam shell, to remove sediment from WIM for final placement. Final dredged material placement is assumed to occur at the Humboldt Open Ocean Disposal Site (HOODS). Alternative final placement, if the option becomes available, will be by dewatering dredged material at Redwood Marine Terminal II (RMTII). Dewatering at RMTII will require regulatory approval of a permitted dredge material beneficial reuse site. Work of the Contract also includes pre- and post- hydrographic surveys. Prior to initiation of dredging activities, CONTRACTOR is to attend a pre-construction meeting at Woodley Island with the DISTRICT, and the permitting agencies if available to review the permit conditions of approval. CONTRACTOR to review information from pre-dredge hydrographic survey with DISTRICT to confirm dredge location, volumes and schedule. Work must be completed by October 15, 2023 unless extended by DISTRICT and other regulatory agencies.
- B. **Location of Project** The Permitted Project Area is located at the Woodley Island Marina in Eureka, California and encompasses the area 100 feet west of Breakwater (BW) to 180 feet east of "I" dock and 50 feet south of the end ties of Woodley Island Marina as shown on the Plans. Attachment 1 is a site map that illustrates where the Permitted Project Area is located. The CONTRACTOR is able to utilize all the area within the Permitted Project Area to complete the work. Dredging is limited to the approved Dredge Work Area as outlined in Section C below.

C. **Dredge Work Area. Woodley Island Marina:** Due to funding limitations the authorized Dredge Work Area is a subset of the Permitted Project Area described in Section B above. The Dredge Work area is divided into the “Base Bid” and “Alternative 1 to Base Bid”. The following table outlines the sub areas and estimated cubic yards [cy] of material to be removed [Cut Volume]. The work does not include the removal of any material under the walkways and other covered areas. The evaluation of proposals will be based on the Base Bid. The CONTRACTOR is requested to provide a unit cost to remove the additional cubic yards of Cut Volume in the Alternative 1 to Base Bid. The DISTRICT at its sole election may add all or one or more, of the Sub Areas listed in the Alternate 1 to Base Bid to the contract. Appendix A, Attachment 1 is a Dredge Area and Depths map the illustrates where the dredge sub areas are located.

	Sub Area	Dredge Area	Depth Below MLLW [ft]	Cut Volume [cy]	Total Estimated Cut Volume [cy]
Base Bid	1	BW West	14	2,151	64,753
	2	BW East to C West	13	32,771	
	3	C East to G West (C22E-G27W)	12	8,641	
	4	C East to G West (C02E-G19W)	10	11,094	
	5	G East to H West (G22E-H27W)	10	2,151	
	6	G East to H West (G02E-H19W)	8	4,648	
	7	H-I Fairway (H02E-I27W)	8	2,075	
	8	H East to I West (H22E-I35W)	10	1,220	
Alternative 1 to Base Bid	a	Slips H02E to H20E	8	1,065	14,073
	b	Slips I01W to I27W	8	935	
	c	I East (slips and fairway)	10	814	
	d	I East (slips and fairway)	8	1,235	
	e	Slips A00E through B00E	13	2,250	
	f	Slips C00E through G00W	10	2,189	
	g	Slip G00E through I00E Fairway	8	1,641	
	h	End-Ties (BW West to C Dock East)	14	321	
	i	End-Ties (C East to I East Fairways)	13	3,622	
Total				78,826	

1.03 WORK RESTRICTIONS

- A. **Access:** Access shall be shared access with the access required by DISTRICT Tenant's and other contractors in connection with activities being performed by other DISTRICT Tenant's and contractors at the Site and adjacent sites and access shall be through project sites where there are activities being performed by others. Access may be moved at the DISTRICT's discretion to accommodate adjacent work activities. Access to the site from the Bay shall be in accordance with the requirements of all permits obtained at the time of the work, including requirements of the Permits listed in Paragraph 1.05 "PERMITS" and U.S. Coast Guard.
- B. **Notification:** CONTRACTOR to notify the DISTRICT a minimum of 72 hours prior to dredging. HBHRCD will be responsible for notifying boat owners and clearing sites prior to dredging activities as needed.

1.04 SPECIAL CONDITIONS AND RESTRICTIONS PERTAINING TO WORK

- A. CONTRACTOR shall attend a mandatory preconstruction meeting with the DISTRICT and permitting agencies as available to review permit conditions.
- B. CONTRACTOR shall comply with the United States Coast Guard requirements for the safe boating and other navigational operations while performing work on Humboldt Bay or any other area where the Coast Guard has jurisdiction.
- C. CONTRACTOR will not be compensated for materials removed beyond limits of dredging or greater than one foot of overdraft. CONTRACTOR will not be compensated beyond the Base Bid Total and any amount awarded by the DISTRICT for the Alternate 1 Bid.
- D. CONTRACTOR shall only utilize commercial grade vessels and the Executive Director of the DISTRICT retains the right to reject any vessels or equipment that is determined to be either not seaworthy for the type of operation; not properly maintained to ensure that no hazardous materials enter Humboldt Bay; or do not meet air quality or other regulatory standards.

1.05 PERMITS

- A. The CONTRACTOR will be responsible for complying with the following permits: A U.S. Army Corps of Engineers Dredging Permit, a Regional Water Quality Control Board Water Quality Certification, a California Coastal Commission Coastal Development Permit, a Humboldt Bay Harbor District Permit and standard conditions for use of HOODS. Obtained permits and permit amendments as of the time of this solicitation are included in the Appendices to these Contract Documents. The Project is exempt from the California Environmental Quality Act (CEQA).
- B. CONTRACTOR acknowledges that the Scope of the Work includes services not provided under specific Bid items that are reasonably necessary to comply with the Environmental Permits. In the event that an additional Environmental Permit necessary for the performance of the Work is issued, or an existing Environmental Permit is modified, after the Bid Submission date, the CONTRACTOR recognizes the terms, conditions and requirements of such Environmental Permit or modification may require the CONTRACTOR to perform services or to provide services or to provide materials which are different from the Scope of Work in the Contract Documents. In such event, the CONTRACTOR shall not be entitled to any adjustment in the Contract Sum or Contract Times unless such change in the Work materially differs from the Work in the Contract Documents and such change could not be reasonably expected by the CONTRACTOR given the ordinarily encountered and generally recognized implementation of similar Environmental Permits. CONTRACTOR shall be responsible for its costs of evaluating the implications for the Work of the terms, conditions, and restrictions of the Environmental Permits, and of responding to any Requests for Proposals or Field Changes of the DISTRICT which are issued in connection with the issuance of the Environmental Permits.
- C. The specification of specific permits applying to the Work shall not limit or restrict the obligation of the CONTRACTOR in the performance of the Work to comply with any and all other laws, regulations or permits which are described in the Contract Documents or which apply to the performance of the Work.

1.06 GEOTECHNICAL/PARTICLE SIZE INFORMATION

- A. Particle-size information was obtained from dredged material samples collected within the DISTRICT's Woodley Island Marina in April 2023. Dredged material samples were tested by SHN according to ASTM D422 Method—Particle Size Analysis. A copy of the particle-size information is attached as Technical Specification B. Results of these investigations may be used as a general guide for classifying materials for the intended purposes, but should not be relied upon to provide a complete and total representation of the project site subsurface conditions. The CONTRACTOR shall make his or her own interpretation and conclusions on the information presented in the report. The report is available for review at the offices of the DISTRICT.

End of Section

Section 01 22 00 Measurement and Payment

PART 1 GENERAL

1.01 General:

- A. Unless otherwise specified in other individual sections of these Specifications, quantities of work shall be determined from measurements or dimensions in horizontal planes.
- B. Units of measurement shall be in accordance with U.S. Standard Measures.
- C. Materials and unit price items of work that are to be paid for on a measurement basis in accordance with Part 2 of this section.
- D. "DISTRICT" shall mean Humboldt Bay Harbor, Recreation and Conservation District.
- E. "CONTRACTOR" shall mean contractor awarded the work.

1.02 Lump Sum Price Breakdown:

- A. Immediately after award of the Contract and prior to approval of initial payment request, the CONTRACTOR shall submit a cost breakdown list to the DISTRICT for lump sum bid items. This list shall consist of the major components of work that make up the bid items and shall be used for determining progress pay estimates. The CONTRACTOR shall fill in the amounts for each component, prorating general costs such as setup, overhead, and profit in each component. The total of all components of each lump sum bid item shall equal the total of that lump sum bid item. If the amount indicated in the Contract for any item on the list appears unbalanced, it may be revised as deemed necessary by the DISTRICT, unless the CONTRACTOR can substantiate these costs.
- B. Only work items of value to the Owner shall be included in the list. An item for cleanup shall be listed in the breakdown, in the amount of at least 1/4 of 1 percent (0.25%) of the total bid item. If cleanup proceeds as the job progresses, then partial payments of these amounts will be made accordingly.

PART 2 PRODUCTS

2.01 General:

- A. All work shall be completed and placed in compliance with the Plans and Specifications, and as directed by the DISTRICT.

2.02 Measurement and Payment Items:

- A. Bid items are defined and measured as follows:

Item 1. Pre- and Post-Dredging Hydrographic Survey (Base Bid)

Measurement shall be on the basis of a fixed lump sum bid price less retention, and shall be considered as full compensation for furnishing all labor, equipment, and materials necessary to conduct one pre-dredging hydrographic survey, and one post-dredging hydrographic survey of Woodley Island Marina, as shown on the Plans, as specified in the Contract Documents and these Technical Specifications, as required for volume estimates of dredge material removed, and as directed by the DISTRICT. Fifty percent (50%) of the Bid Amount for this item shall be paid upon completion of the pre-dredging Hydrographic Survey satisfactory to the DISTRICT, and fifty percent (50%) of the Bid Amount for this item shall be paid upon completion of the post-dredging Hydrographic Survey satisfactory to the DISTRICT.

Item 2. Mobilization and Demobilization (Base Bid)

Payment for mobilization shall be on the basis of a fixed lump sum bid price less retention, and shall be considered as full compensation for furnishing all labor, equipment, and materials necessary to establish and maintain a physical presence at the project site for the duration of the work, including, but not limited to attendance at periodic project meetings, compliance with applicable project reporting, invoicing, and progress payment processes, mobilization, temporary shelters, temporary office space and utilities for construction management personnel, temporary fencing as required, costs associated with acquiring additional work and staging areas as necessary, preparation of submittals, and demobilization. Two-thirds (67%) of the bid amount for this item shall be paid to the CONTRACTOR in the first progress payment. Upon completion of demobilization and complete project clean-up satisfactory to the DISTRICT, one-third (33%) of the bid amount for this item shall be paid to the CONTRACTOR in the final progress payment.

Items 3 and 4. Dredging and Disposal (Base Bid and Alternate Bid Item 1)

1. Measurement: All dredge areas found to be in compliance with the contract requirements, as verified by the DISTRICT, will be measured for payment. Payment will be made for all material removed within the limits of dredging, including the allowable overdepth and side slopes as specified in Paragraph "3.04: Overdepth and Side Slopes," of "Section 02 48 20: Dredging and Disposal" as measured by the in situ cubic yard based on the difference between pre- and post-dredge surveys. However, in no case will compensation exceed the Base Bid Total Cost and any amount awarded by the DISTRICT for the Alternate Bid unless pre-approved by the DISTRICT.
2. Project plans (Appendix A) show the limits of work, final dredging elevation and the July 2022 sediment surface. Raw hydrographic survey data from July 2022 is provided in drawing C-3 of project plans Appendix A. The depths shown thereon shall be verified and corrected by soundings taken during pre-dredge surveys. Determination of quantities removed and the deductions made therefrom to determine quantities by in-place measurements to be paid in the area specified, after having once been made, will not be reopened, except on evidence of collusion, fraud, or obvious error. Should the pre-dredge survey indicate bottom conditions and/or dredge quantities significantly different than shown on the plans, the contractor shall notify the DISTRICT immediately before proceeding further.
3. Monthly Partial Payment less retainage will be based on approximate quantities determined by soundings taken from completed dredged areas. Copies of all field notes, field computations, other records taken in the field by the contractor for the purpose of layout and progress shall be furnished to the Engineer at the site of work for his use to the extent necessary in determining the proper amount of progress payments due to the CONTRACTOR.
4. Payment for dredging will be made at the respective Contract unit price for "Dredging" in the schedule under which contract award is made, which price and payment thereof shall constitute full compensation for dredging and permitted dredge material disposal, including overdepth and materials removed from side slopes in accordance with the drawings and these specifications. In no case will compensation exceed the Base Bid Total and any amount awarded by the DISTRICT for the Alternate Bid Item No. 1 unless pre-approved by the DISTRICT.

END OF SECTION

Section 02 48 20

Dredging and Disposal

PART 1—GENERAL

1.01 WORK INCLUDED

- A. The work under this Section consists of providing all labor, plant, equipment, supplies, and materials necessary to dredge, haul, and dispose of all shoaled materials within designated limits of dredging from the Humboldt Bay Harbor, Recreation and Conservation District's (DISTRICT) Woodley Island Marina (WIM). The actual quantity and locations of dredging will be determined by the DISTRICT based on the winning bid and in consultation with the Contractor awarded the work (CONTRACTOR). The DISTRICT encourages CONTRACTOR to determine methods, equipment and dredging locations that maximize the quantity of dredged material that can be removed.

1.02 MOBILIZATION AND DEMOBILIZATION

- A. As applicable, mobilization shall consist of all work required to prepare the CONTRACTOR's dredging plant and equipment for transfer to the job site; transport dredging plant and equipment, labor, supplies and incidentals to the job site; prepare equipment for dredging; and maintaining dredging plant and equipment in working condition at the job site during the dredging period.
- B. Demobilization shall consist of all work required to prepare the CONTRACTOR's dredging plant and equipment for transfer and removing all dredging plant, equipment, labor and unused supplies and incidentals from the job site at the completion of contract work, including the cleanup of all land based staging areas and other areas used in the execution of the work.

1.03 SEQUENCE OF WORK

- A. Prior to initiation of work, the DISTRICT must approve, in writing, the Contractor's proposed sequence of dredging work. Changes to the proposed sequence may be made only with the DISTRICT's written approval.
- B. The DISTRICT reserves the right to make reasonable changes to the Sequence of Work at no extra cost to the DISTRICT.

1.04 RELATED DOCUMENTS

- A. Section 01 10 00–Summary of Work
- B. Section 01 22 00–Measurement and Payment
- C. Section 00 31 21 – Bathymetric Survey

1.05 SUBMITTALS

- A. Within seven (7) calendar days following Notice of Award, the CONTRACTOR shall submit the following submittals to the DISTRICT for review and comment. The DISTRICT will review and forward the documents to the U.S. Army Corps of Engineers (USACE) for approval. After receipt and DISTRICT approval of these documents, the USACE will issue an Authorization to Dredge (ATD) letter. This letter will supplement the existing USACE permit and confirm the approved disposal volume appropriations and disposal site restrictions. Dredging may not commence prior to receipt of the ATD.

1. **DREDGING OPERATIONS PLAN**: Shall incorporate all permit constraints and restrictions. The dredging operations plan shall include, but not be limited to, the following items:
 - a. U.S. Army Corps of Engineers permit and other applicable permit numbers (a copy of all existing DISTRICT provided permits is contained in Attachment D of these Contract Documents.).
 - b. Episode number: This is the third dredging episode to occur under the U.S. Army Corps of Engineers permit.
 - c. The CONTRACTOR's business name, telephone number, dredging site representatives and emergency contact phone numbers.
 - d. Anticipated dredging schedule (schedule to include submittal dates, pre-dredge survey date, dredging start date, dredging finish date and post-dredge survey date.)
 - e. Proposed equipment and method of dredging, including proposed dredge cuts. The equipment description should contain, at a minimum, the type, name or number, capacity, overall dimensions, radio call signs, and other relevant specifications as may be required by permit conditions.
 - f. The method and equipment utilized to transport the dredged material to the Humboldt Open Ocean Disposal Site (HOODS) for disposal.

- g. The method and equipment to be used for dredging position control indicating how horizontal and vertical position control will be maintained.
 - h. The method and equipment used for determining the positioning by electronic methods of the dredge and dump scow(s) during entire dredging and disposal operation.
 - i. Documentation of quality control procedures, including samples of daily and weekly forms, reports and submittals.
 - j. Security and safety methods to keep the public away from and clear of all dredging and disposal activities including compliance with appropriate U.S. Coast Guard rules.
 - k. A copy of the Notice to Mariners.
 - l. Any and all other information required by the U.S. Army Corps of Engineers for approval of the Dredging Operations Plan.
2. **SOLID DEBRIS MANAGEMENT PLAN:** Shall incorporate all permit constraints and restrictions. The solid debris management plan shall include, but not be limited to, the following items:
- a. U.S. Army Corps of Engineers permit number
 - b. Episode number (to be provided by the DISTRICT).
 - c. Source and expected type of debris.
 - d. Debris retrieval and separation method
 - e. Debris disposal method and location.
 - f. Schedule for disposal operations.
 - g. Debris containment method to be used, if floatable debris is involved.
3. **DISPOSAL AT HOODS:** For disposal of material at HOODS, the CONTRACTOR shall follow the requirements in EPA Standard Ocean Disposal Conditions for HOODS in Attachment C.

4. **DREDGE OPERATIONS DAILY REPORTS:** The CONTRACTOR will be required to prepare and maintain a daily report of operations and furnish a copy thereof to the DISTRICT. Forms to be used shall be developed by the CONTRACTOR and accepted by the DISTRICT prior to start of work. Copies of the daily reports shall be provided to the DISTRICT on a weekly basis. Progress payments for dredging will not be made until a complete set of reports covering the payment period are in the DISTRICT's possession.
5. **VESSEL TRAFFIC LOG:** The CONTRACTOR shall submit a copy of the Vessel Traffic Control Log to the DISTRICT on a weekly basis.
6. **SPECIAL NOTICES:** The CONTRACTOR shall provide immediate written notification with documentation of work stoppages and delays that may affect the dredging plan and schedule.

1.06 SITE CONDITIONS

- A. The material to be removed is the material which composes the shoaling that has occurred since the areas were last dredged. Debris, rubbish, anchors, chain, and other articles typical of ship channels and berthing areas may also be encountered. Such material removed from the areas to be dredged shall become the property of the CONTRACTOR and shall be removed from the project site and disposed of in an acceptable manner.
- B. The records of previous maintenance dredging for the Woodley Island Marina are available for inspection at the U.S. Army Corps of Engineers, San Francisco District, 1455 Market Street, San Francisco, CA 94103-1398.
- C. The CONTRACTOR is responsible for contacting all agencies and utility companies having jurisdiction or services in the project area for additional information.

1.07 PERMIT REQUIREMENTS

- A. All project activities shall comply with all project permits including the requirements of applicable codes, ordinances and requirements of local, state, and federal agencies.
- B. DISTRICT provided permits include Clean Water Act Section 401 Certification, Clean Water Act Section 404 Permit (Army Corps Permit) and Coastal Act Coastal Development Permit. The CONTRACTOR shall be responsible for obtaining any other required permits. Permit status is further described in Attachment D.
- C. Current DISTRICT provided permits generally allow for (1) dredging using a clamshell bucket; (2) channel smoothing and knockdown methods; (3) dredged material disposal at HOODS; and (4) Dewatering and stockpiling dredge materials at Redwood Marine Terminal II (RMTII) for up to one year. Dredge material disposal is assumed to occur at HOODS. In order for the CONTRACTOR to use the dewatering and stockpiling facilities at RMTII, the CONTRACTOR must obtain DISTRICT approval by providing documentation of a permitted dredge material beneficial reuse site to deliver the dredged material within one-year of stock-piling.
- D. The CONTRACTOR shall be prepared for, and allow for, U.S. Army Corps of Engineers, Regional Water Quality Control Board, State Department of Fish and Wildlife, NOAA Fisheries, and/or other regulatory agencies inspection at any time during dredging operations.

PART 2–PRODUCTS (Not Used)

PART 3—EXECUTION

3.01 GENERAL

- A. CONTRACTOR shall excavate and dredge to the amounts determined by the bid or as directed by the DISTRICT. The DISTRICT will designate the order of dredging operations, Priority order for dredging are shown in Table 1, but the DISTRICT may modify the priorities. It is recognized that bids may not allow for dredging of all the material shown in Appendix A, Attachment 1. Over-excavation, or dredging outside the limits shown will not be paid for and reinstatement of over-excavated material may be required as directed by the DISTRICT at the CONTRACTOR's expense. Volumes presented below in Table 1 are based off of July 2022 survey by Thomas Gast & Associates.
- B. All material that sloughs into dredged areas from outside the dredging limits shall, prior to acceptance and at no additional cost to the DISTRICT, be removed to the required dredge limits.
- C. Dredging operations shall be conducted using equipment and procedures designed to minimize water turbidity. Turbidity monitoring and reporting as described in the permits will be conducted by the contractor.
- D. The CONTRACTOR shall comply with all permit conditions, as set forth in the permits.
- E. The CONTRACTOR shall operate and maintain proper lighting and signals during both daytime and nighttime operations on all floating equipment, ranges, markers, and buoys in accordance with U.S. Coast Guard requirements. The CONTRACTOR shall be responsible for all damage resulting from negligence or failure in this respect.
- F. The CONTRACTOR shall comply with all permit conditions, as set forth in the permits, regarding participation in the Coast Guard's Vessel Traffic Control Service (VTS).

3.02 DISPOSAL OF DREDGED MATERIAL

- A. Unless noted or specified otherwise, one hundred percent (100%) of dredge material shall be transported from the dredge site and disposed of at HOODS and/or Redwood Marine Terminal II (RMT II) dewatering facility. For disposal operations at HOODS, CONTRACTOR shall read attached Appendix, EPA Standard Conditions for Disposal at HOODS. For dredge material dewatering at RMTII, the CONTRACTOR shall provide the DISTRICT with final site placement authorization from the North Coast Regional Water Quality Control Board (NCRWQCB) and an operations plan to ensure dredge material stockpiled at RMTII does not exceed permitted amounts or residence times.

- B. CONTRACTOR shall record and maintain electronic positioning records of the dredge or dump scow during entire dredging operation at the dredge site, disposal site and in route to and from disposal site. These records are to be submitted on a weekly basis each Friday during dredging to the U.S. Army Corps of Engineers, with a copy to the DISTRICT. Electronic positioning records shall conform to all requirements in effect at the time of dredging, as set forth in the U.S. Army Corps of Engineers Permit.
- C. The CONTRACTOR shall comply with all permit conditions, as set forth in the permits, regarding overflow requirements.
- D. Misplaced Material: Any dredged material that escapes, sloughs, or is lost at any time while dredging, loading, or transporting shall be re-dredged or retrieved, and disposed as directed by the DISTRICT, at the CONTRACTOR's expense. Likewise, any material disposed of in an area other than that designated on the Contract Drawings or stated in the Permit, unless approved in writing by the DISTRICT, shall be re-dredged or retrieved and disposed as directed by the DISTRICT, at the CONTRACTOR's expense.

3.03 DREDGING OPERATIONS

- A. Excavate the channel material within the required dredging limits as determined by the DISTRICT, but not to exceed the volume described in the bid document.

3.04 OVERDEPTH AND SIDE SLOPES

- A. Overdepth: Horizontal plane overdepth allowance shall be 1 foot in all dredging areas. Material actually removed from within the specific areas to be dredged to a depth of not more than the allowable overdepth limit, as shown on the Contract Drawings, will be measured and paid for at the Contract unit price. However, total compensation shall not exceed the bid amount unless approved in writing by the DISTRICT.
- B. Side Slopes
 - 1. Material actually removed within limits of dredging on the side slopes will be measured and paid for at the Contract unit price. However, total compensation shall not exceed the bid amount awarded unless approved in writing by the DISTRICT.
 - 2. Side slopes are given for measurement and payment purposes only and are not necessarily the angle of repose of the soil. Sloughing side slopes shall not be the basis for claims against the DISTRICT. End slopes, where indicated on the Contract Drawings, shall be treated in the same manner as side slopes.
 - 3. Measurement for payment will be to the limits of dredging as shown on the Contract Drawings.
- C. Excessive Dredging: Material taken from beyond the allowable overdepth set forth in subparagraphs "Overdepth" and "Side Slopes" above, will not be paid for.

3.05 EQUIPMENT

- A. Dredging equipment shall be limited to clam shell bucket, excavator, or alternate method approved by the DISTRICT's Executive Director. Suction dredge equipment is not permitted for this Project.
- B. The CONTRACTOR's equipment shall be of sufficient size and capacity to meet the productivity, tolerance, and schedule requirements of the Work, and shall be kept in good working condition in order to perform the Work efficiently.
- C. If an electric dredge is to be used, the CONTRACTOR shall make all arrangements and pay all costs associated with installing, removing and operating the electrical service for the dredge.
- D. CONTRACTOR shall only utilize commercial grade vessels and the Executive Director of the DISTRICT retains the right to reject any vessels or equipment that is determined to be either not seaworthy for the type of operation; not properly maintained to ensure that no hazardous materials enter Humboldt Bay; or do not meet air quality or other regulatory standards.

- E. If a diesel dredge, pumps or generator is to be used, CONTRACTOR shall observe all applicable standards and regulations regarding air quality emissions and fueling of dredge and other attendant plant.
- F. The CONTRACTOR shall provide a positioning system for horizontal control capable of functioning during all waterborne activity hours. The CONTRACTOR shall establish and maintain all survey monuments, shore stations and control points necessary to operate the waterborne positioning system.
- G. The DISTRICT shall be given free access to monitor positioning and measuring activities on the CONTRACTOR's positioning system. The CONTRACTOR shall provide copies of calibration, positioning and measuring data and results to the DISTRICT upon this request. The CONTRACTOR shall place and maintain the positioning system and all gauges, range lights, buoys and other markings required to assure the accuracy of the surveys. The CONTRACTOR shall submit a description of the positioning system equipment, including accuracy's, to the DISTRICT for review and acceptance. The CONTRACTOR shall take necessary measures to confirm that the selected system is operational at all times during dredging and can operate under the conditions present at the dredging site.
- H. Should the CONTRACTOR (during the progress of the Work) lose, dump, throw overboard, sink or misplace any material, plant, machinery or appliance which may be dangerous to intended uses of the waterway, or cause pollution of the waters, the CONTRACTOR shall give immediate notice, with a description and location of such obstructions, to the DISTRICT, and, when required, shall mark, boom or buoy such obstructions until they are removed. The CONTRACTOR shall remove such obstructions within three (3) days after being directed to do so by the DISTRICT. Should the CONTRACTOR refuse, neglect or delay compliance with the above requirements, such obstructions may be removed by the DISTRICT, and the cost of such removal may be deducted from any money due or become due to the CONTRACTOR.

3.06 SURVEYS

- A. The CONTRACTOR will be required to perform a pre-dredge survey of the Marina dredging limits within ten (10) calendar days after receipt of Notice to Proceed in accordance with Specification Section 00 31 21. For all surveys, the CONTRACTOR shall notify the DISTRICT at least five (5) days prior to performance of work.

- B. Immediately after completion of the entire work, the CONTRACTOR shall perform a post-dredge survey. All areas found to be in compliance with the contract requirements will be accepted and be measured for payment as stated in "Section 01 22 00: Measurement and Payment."

3.07 SCHEDULE

- A. The schedule for the dredging work may be subject to regulatory dredging "windows"; these will be described in the U.S. Army Corps of Engineers permit, if applicable, and shall be adhered to by the CONTRACTOR. It is expected that dredging work window will be between July 1 - October 15, 2023.

***** End of Section *****

Appendices

Project Plans

A

Description

Attachment A includes the project plan set for the 2023 Maintenance Dredging at Woodley Island Marina (WIM). The plan set includes the following:

- Sheet G-1 - Cover Sheet
- Sheet C-1 - Permitted Dredge Limits
- Sheet C-2 - Dredge Profile Across Dredge Limits
- Attachment 1 - Bid Schedule Dredge Areas and Depths
- Attachment 2 – July 2022 Thomas Gast Hydrographic Survey

HUMBOLDT BAY HARBOR RECREATION AND CONSERVATION DISTRICT

WOODLEY ISLAND MARINA MAINTENANCE DREDGING

EUREKA, CALIFORNIA

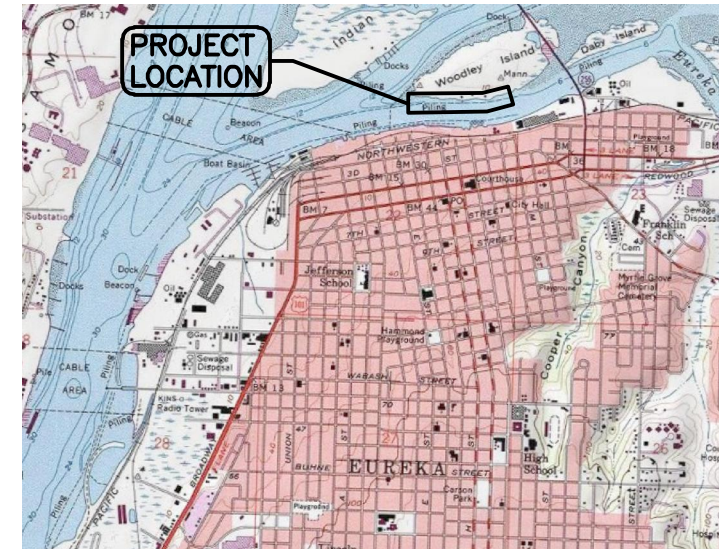
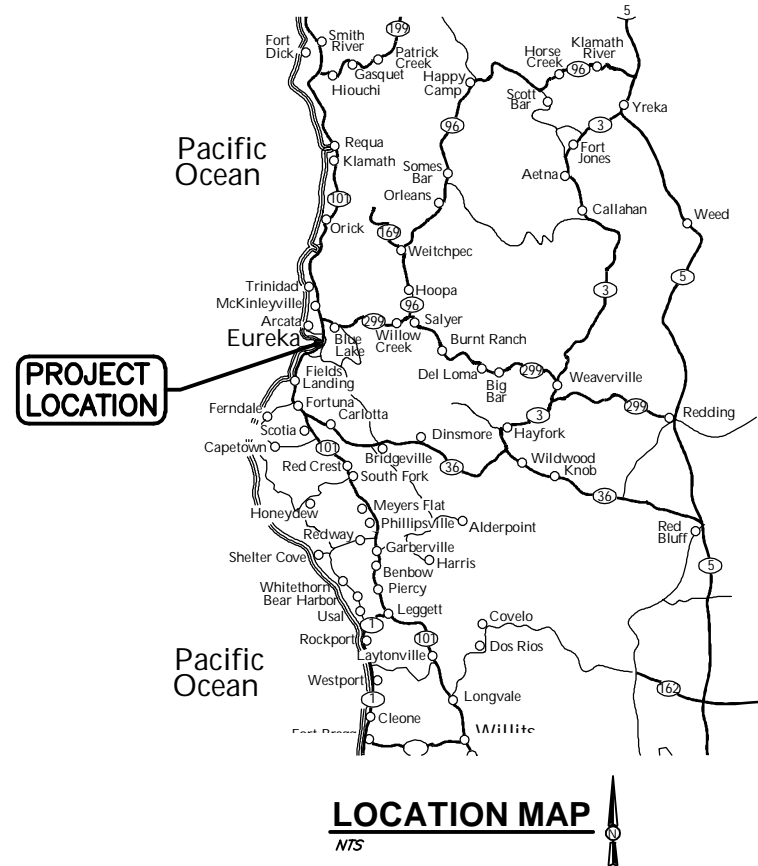
PREPARED BY:



MAY 2023

INDEX OF SHEETS

SEQ	SHEET	TITLE
1	G-1	COVER
2	C-1	WOODLEY ISLAND MARINA LIMITS OF WORK
3	C-2	WOODLEY ISLAND MARINA DREDGING PLAN AND PROFILE
4	ATTACHMENT 1	WOODLEY ISLAND MARINA DREDGE AREAS AND DEPTHS
5	ATTACHMENT 2	WOODLEY ISLAND MARINA BATHYMETRY SURVEY 7/6/2022



SAVED: 5/19/2023 12:59 PM JFOSTER, PLOTTED: 5/19/2023 2:43 PM JOHN FOSTER
\\LEUREKASVRNEW\Projects\2016\1016240-Engr-HBHRCD\020-dredge-supp\020-020-COVER.dwg

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1" IF NOT ONE INCH ON THIS SHEET, SCALES ACCORDINGLY

812 W. WABASH AVE.
EUREKA, CA 95501
WWW.SW-ENR.COM
707-441-8885



NO.	DATE	REVISION	BY

DESIGN MKF
DR CNL
CHK MKF
APVD
HBHRCD
WOODLEY ISLAND MARINA MAINTENANCE DREDGING
EUREKA, CALIFORNIA
COVER

SHEET
G-1
SEQ
DATE 05/2023
PROJ. NO.
016240.020

SAVED: 5/22/2023 9:24 AM CNEWELL, PLOTTED: 5/22/2023 9:25 AM NEWELL, CHRIS
 \\LEUREKAS\SR\NEW\Projects\2016\016240-Engr-HBHRCD\020-dredge-suppor\Draws\016240-020-WDY-LIMITS.dwg



LIMITS OF WORK

PLAN
 1"=100'



VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 IF NOT ONE INCH ON THIS SHEET
 SCALES ACCORDINGLY

812 W. WABASH AVE.
 EUREKA, CA 95501
 WWW.S&W-ENR.COM
 707-441-8885



NO.	DATE	REVISION	BY

DR	CDN	MKF
CHK	APVD	

HBHRCD
 WOODLEY ISLAND MARINA MAINTENANCE DREDGING
 EUREKA, CALIFORNIA
**WOODLEY ISLAND
 LIMITS OF WORK**

SHEET
C-1

SEQ

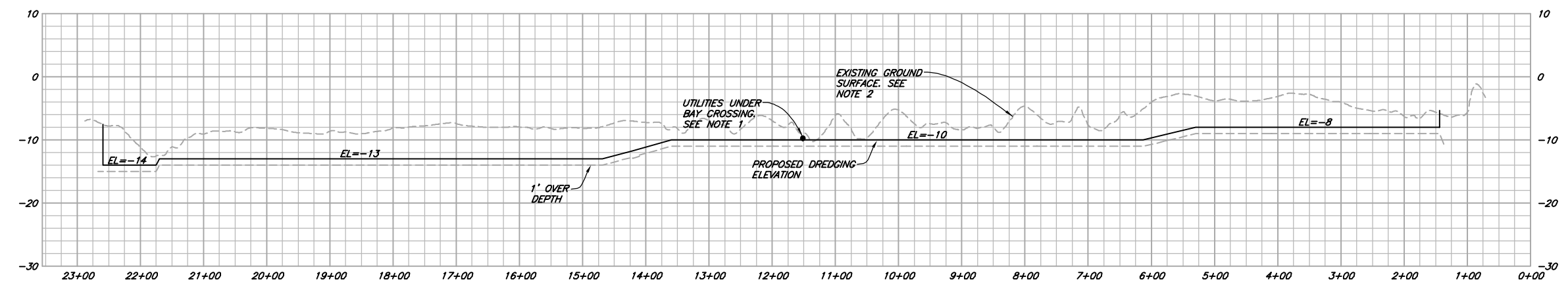
DATE **05/2023**

PROJ. NO.
016240.020

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 F:\Eureka\2016\016240-Eng-HBHRCD\020-dredge-support\Draws\016240-020-WDLY-DRDG-PWP.dwg



PLAN
 1"=100'



PROFILE
 SCALE: 1"=100' H
 1"=10' V

- NOTES:**
1. CONTRACTOR TO CONFIRM DEPTH OF UTILITIES FOR UNDERBAY CROSSING.
 2. EXISTING GROUND SURFACE ELEVATIONS BASED ON BATHYMETRY SURVEY BY THOMAS GAST & ASSOCIATES ENVIRONMENTAL CONSULTANTS, 7/6/2022. CONTRACTOR TO CONDUCT NEW HYDROGRAPHIC SURVEY PRIOR TO DREDGING.
 3. CONTRACTOR WILL TIE BATHYMETRY DATA TO A TIDAL BENCHMARK LOCATED AT THE US COAST GUARD STATION NEAR THE NORTH JETTY. BENCHMARK TO BE UTILIZED WILL BE 941 8767 TIDAL 11(PID LV0359).

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 IF NOT ONE INCH ON THIS SHEET, SCALES ACCORDINGLY

812 W. WABASH AVE.
 EUREKA, CA 95501
 WWW.S&W-ENR.COM
 707-441-8885



BY	REVISION	DATE	NO.

DESIGN	CUL
DR	CUL/CDN
CHK	MKF
APVD	

HBHRCD
 WOODLEY ISLAND MARINA MAINTENANCE DREDGING
 EUREKA, CALIFORNIA
**WOODLEY ISLAND MARINA
 DREDGING PLAN AND PROFILE**

SHEET	C-2
SEQ	
DATE	05/2023
PROJ. NO.	016240.020

Woodley Island Marina 2023 Dredge Areas



Map Version:
2023-05-22-11:05

City of Eureka

Adorni Center

Aerial Image - Bing 2023

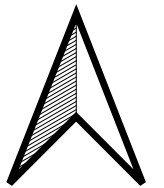
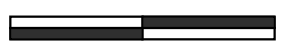


Woodley Island Marina
601 Startare Drive
Eureka, CA 95501
(707)443-0801

	Sub Area	Dredge Area	Depth Below MLLW [ft]	Cut * Volume [cy]
Base Bid	1	BW West	14	2,151
	2	BW East to C West	13	32,771
	3	C East to G West (C22E-G27W)	12	8,641
	4	C East to G West (C02E-G19W)	10	11,094
	5	G East to H West (G22E-H27W)	10	2,151
	6	G East to H West (G02E-H19W)	8	4,648
	7	H-I Fairway (H02E-I27W)	8	2,075
	8	H East to I West (H22E-I35W)	10	1,220
		Total		64,753

	Sub Area	Dredge Area	Depth Below MLLW [ft]	Cut * Volume [cy]
Alternative 1 Bid	a	Slips H02E to H20E	8	1,065
	b	Slips I01W to I27W	8	935
	c	I East (slips and fairway)	10	814
	d	I East (slips and fairway)	8	1,235
	e	Slips A00E through B00E	13	2,250
	f	Slips C00E through G00W	10	2,189
	g	Slip G00E through I00E Fairway	8	1,641
	h	End-Ties (BW West to C Dock East)	14	321
	i	End-Ties (C East to I East Fairways)	13	3,622
				14,073

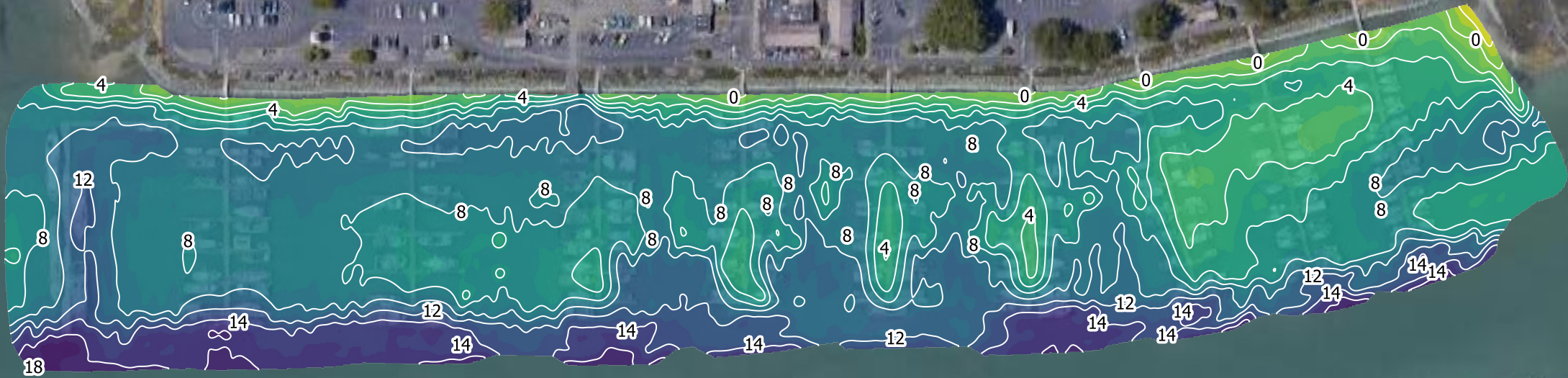
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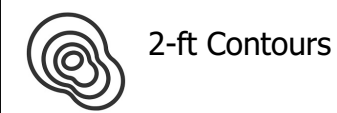
ATTACHMENT 1

DREDGE AREAS AND DEPTHS

* Estimated cut volume based on July 2022 bathymetric survey by Thomas Gast and Associates.



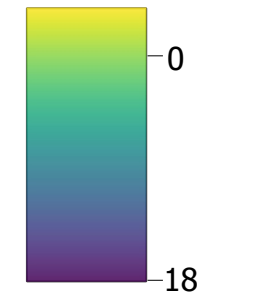
Legend



2-ft Contours

Imagery: Google, 2022
Projection: NAD83 /
California Zone I

Depth
(ft below MLLW)

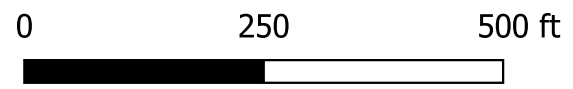


Woodley Island Marina Bathymetry

Map design by Thomas Gast & Associates Environmental Consultants, 2022

Date of Bathymetric Survey: 7/6/2022

Attachment 2



Sediment Characterization **B**

Description

Approval to place dredged materials at the Humboldt Open Ocean Disposal Site (HOODS) is given by the San Francisco Dredge Material Management Office (DMMO). DMMO approval requires physical, chemical, and biological testing per the Inland Testing Manual.

Sediments were collected from Woodley Island Marina (WIM) in April 2023 for testing. The following documents are included:

- Exhibit A includes results from the WIM sediment particle size testing.
- Exhibit B includes results from the WIM sediment chemical testing.
- Exhibit C includes an e-mail providing a status update on biological testing. Preliminary biological accumulation testing results are also attached.

A pending sediment characterization report will be submitted to the DMMO for final approval to place WIM sediments at HOODS. Due to the delays in biological accumulation testing noted in Exhibit C, the final reports are expected to be submitted in late June 2023 with final DMMO approval expected by early July 2023.

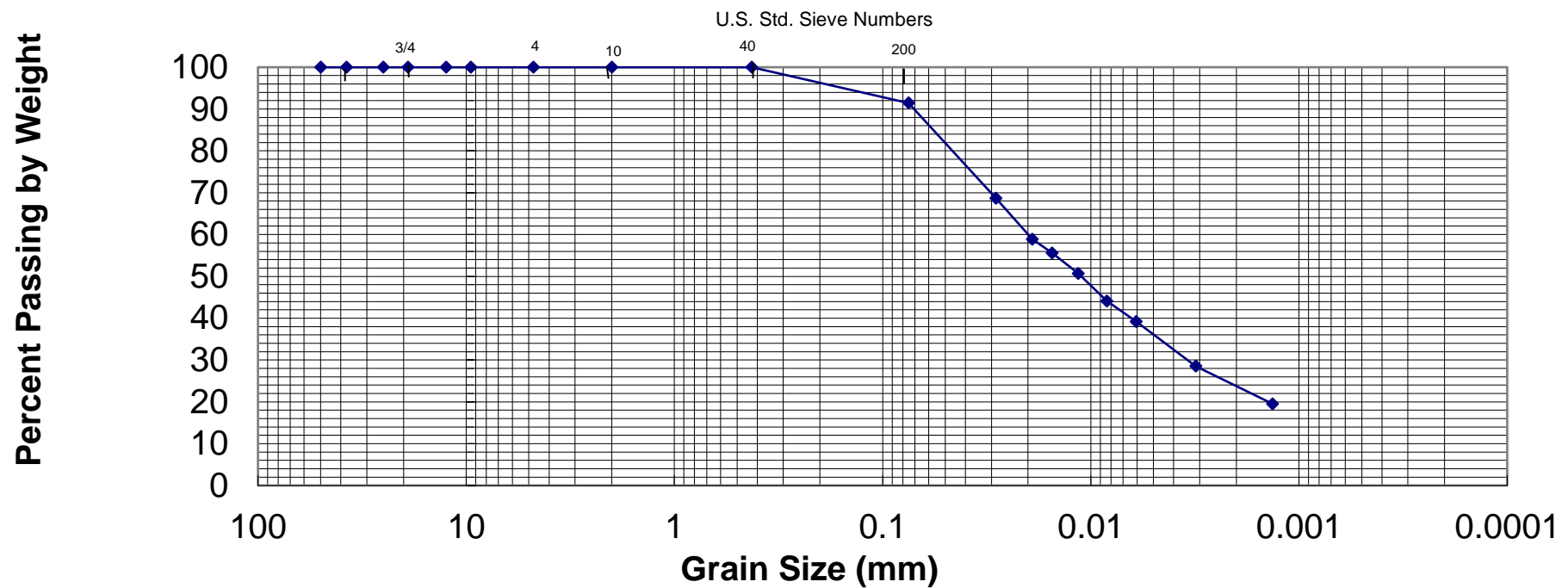


Phone: (707) 441-8855 Email: info@shn-engr.com Web: shn-engr.com
 812 W. Wabash Avenue, Eureka, CA 95501-2138

Project Name:	Humboldt Bay Harbor District	Project Number:	016240.020
Boring ID:	WIM-1	Lab #:	23-371
Sample Depth:	--	Checked By:	DJG
Sample Number:	--	Date:	4/26/23

SIEVE	2"	1.5"	1"	0.75"	0.5"	0.375"	#4	#10	#40	#200								
SIEVE SIZE (mm)	50	37.50	25	19.00	12.5	9.5	4.75	2.00	0.425	0.075	0.0286	0.0191	0.0153	0.0115	0.0084	0.0061	0.0031	0.0013
PERCENT PASSING	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	91.5	68.7	58.9	55.6	50.7	44.1	39.2	28.5	19.5

Gradation Test Results



GRAVEL		SAND			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		

% Gravel **0.0** % Sand **8.5** % Silt **69.5** % Clay **22.0**

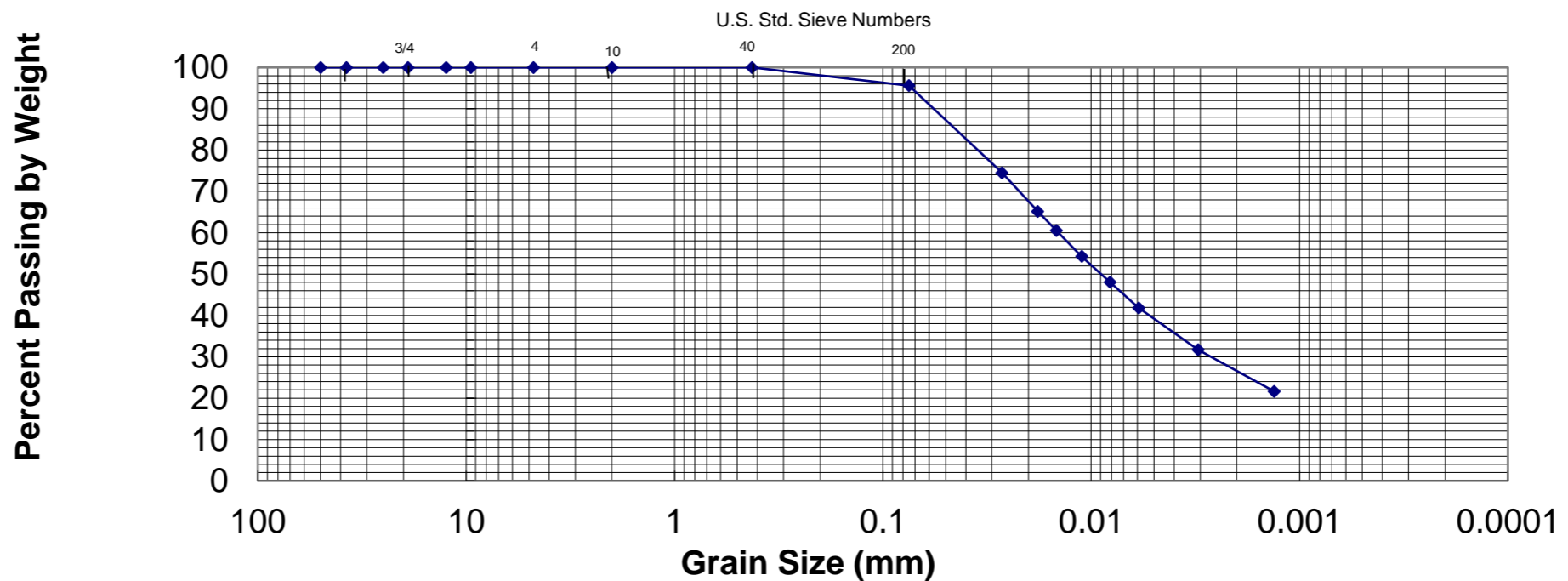


Phone: (707) 441-8855 Email: info@shn-engr.com Web: shn-engr.com
 812 W. Wabash Avenue, Eureka, CA 95501-2138

Project Name:	Humboldt Bay Harbor District	Project Number:	016240.020
Boring ID:	WIM-2	Lab #:	23-372
Sample Depth:	--	Checked By:	DJG
Sample Number:	--	Date:	4/26/23

SIEVE	2"	1.5"	1"	0.75"	0.5"	0.375"	#4	#10	#40	#200								
SIEVE SIZE (mm)	50	37.50	25	19.00	12.5	9.5	4.75	2.00	0.425	0.075	0.0268	0.0181	0.0147	0.0111	0.0081	0.0059	0.0031	0.0013
PERCENT PASSING	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	95.6	74.5	65.2	60.5	54.3	48.1	41.8	31.7	21.6

Gradation Test Results



GRAVEL		SAND			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		

% Gravel **0.0** % Sand **4.4** % Silt **71.6** % Clay **24.0**

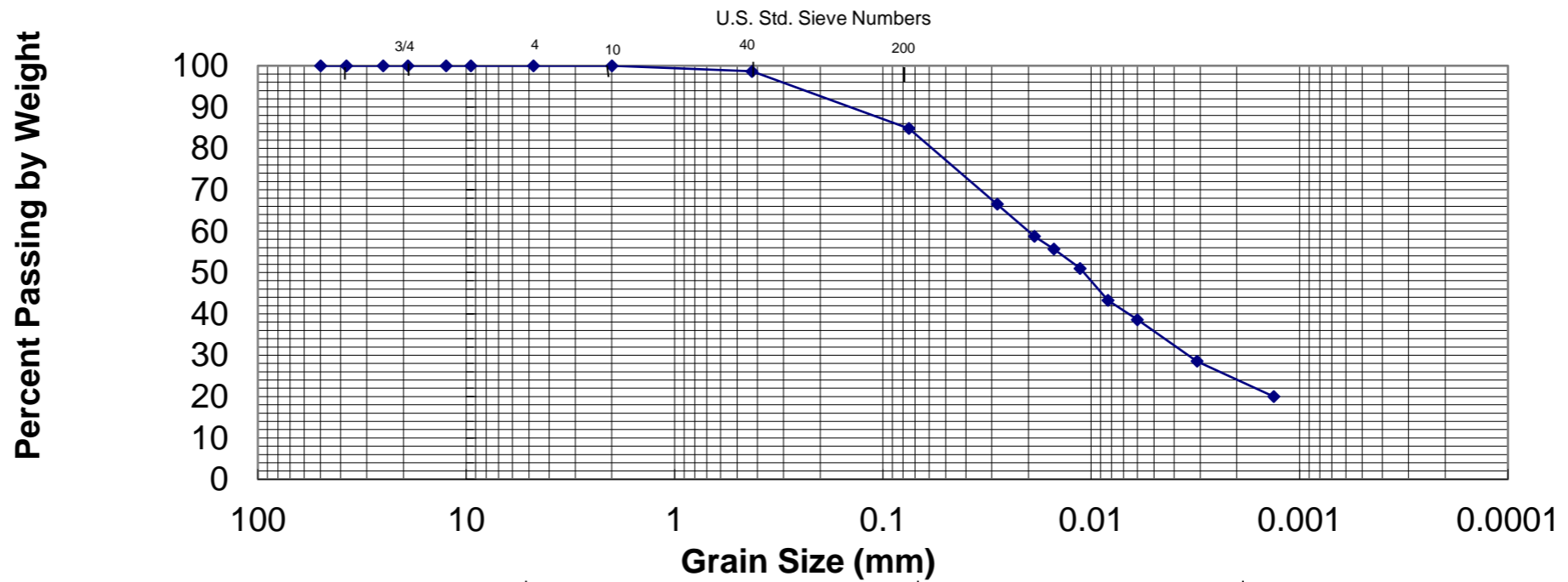


Phone: (707) 441-8855 Email: info@shn-engr.com Web: shn-engr.com
 812 W. Wabash Avenue, Eureka, CA 95501-2138

Project Name:	Humboldt Bay Harbor District	Project Number:	016240.020
Boring ID:	WIM-3	Lab #:	23-373
Sample Depth:	--	Checked By:	DJG
Sample Number:	--	Date:	4/26/23

SIEVE	2"	1.5"	1"	0.75"	0.5"	0.375"	#4	#10	#40	#200								
SIEVE SIZE (mm)	50	37.50	25	19.00	12.5	9.5	4.75	2.00	0.425	0.075	0.0283	0.0187	0.0151	0.0113	0.0083	0.0060	0.0031	0.0013
PERCENT PASSING	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.6	84.8	66.5	58.8	55.7	51.0	43.3	38.6	28.5	20.0

Gradation Test Results



GRAVEL		SAND			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		

% Gravel **0.0** % Sand **15.2** % Silt **60.8** % Clay **24.0**



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2304D23

Report Created for: Humboldt Bay Harbor

601 Startare Dr.
Eureka, CA 95501

Project Contact: Doug Saucedo
Project P.O.: 1921
Project: 1996-22216; Sediment Testing

Project Received: 04/19/2023

Analytical Report reviewed & approved for release on 05/03/2023 by:

Jennifer Lagerbom
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.



	McC Campbell Analytical, Inc. "When Quality Counts"	1534 Willow Pass Road, Pittsburg, CA 94565-1701 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269 http://www.mccampbell.com / E-mail: main@mccampbell.com
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Glossary of Terms & Qualifier Definitions

Client: Humboldt Bay Harbor

WorkOrder: 2304D23

Project: 1996-22216; Sediment Testing

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit ¹
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting limit ²
RPD	Relative Percent Difference
RRT	Relative Retention Time
RSD	Relative Standard Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure

¹ MDL is the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, 40CFR, Part 136, Appendix B, EPA 821-R-16-006, December 2016.

² RL is the lowest level that can be reliably determined within specified limits of precision and accuracy during routine laboratory operating conditions. (The RL cannot be lower than the lowest calibration standard used in the initial calibration of the instrument and must be greater than the MDL.)



Glossary of Terms & Qualifier Definitions

Client: Humboldt Bay Harbor

WorkOrder: 2304D23

Project: 1996-22216; Sediment Testing

TEQ Toxicity Equivalents
TZA TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC) Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

H Sample was analyzed out of hold time
J Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
M Estimated Maximum Possible Concentration.
a2 Sample diluted due to cluttered chromatogram.
a3 Sample diluted due to high organic content interfering with quantitative/or qualitative analysis.
h7 Copper (EPA 3660B) cleanup

Quality Control Qualifiers

F2 LCS/LCSD recovery and/or RPD/RSD is out of acceptance criteria.



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"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
<http://www.mccampbell.com> / E-mail: main@mccampbell.com

Case Narrative

Client: Humboldt Bay Harbor
Project: 1996-22216; Sediment Testing

Work Order: 2304D23
May 03, 2023

Percent Moisture

In accordance with SW-846, 8000, percent moisture is reported as:

$$[\text{Moisture Weight (g)}] / [\text{Sample Wet Weight (g)}] \times 100$$

 <p>McC Campbell Analytical, Inc. "When Quality Counts"</p>	1534 Willow Pass Road, Pittsburg, CA 94565-1701 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269 http://www.mccampbell.com / E-mail: main@mccampbell.com
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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: E1613B
Analytical Method: E1613B
Unit: pg/g-dry

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Client ID	Lab ID	Matrix	Date Collected
WIM-1	2304D23-001A	Soil	04/12/2023 09:20

Analytes	TEF WHO '05	Result	Qualifiers	MDL	ML	DF	Ion Ratio	RRT	TEQ	Date Analyzed
2,3,7,8-TCDD		ND		0.340	1.00	1				05/01/2023 23:19
1,2,3,7,8-PeCDD		ND		0.420	5.00	1				05/01/2023 23:19
1,2,3,4,7,8-HxCDD		ND		0.560	5.00	1				05/01/2023 23:19
1,2,3,6,7,8-HxCDD		1.04	J	0.510	5.00	1	1.12	1		05/01/2023 23:19
1,2,3,7,8,9-HxCDD		ND		0.840	5.00	1				05/01/2023 23:19
1,2,3,4,6,7,8-HpCDD	0.01	15.2		0.870	5.00	1	1.04	1	0.152	05/01/2023 23:19
OCDD	0.0003	116		2.60	10.0	1	0.89	1	0.0348	05/01/2023 23:19
2,3,7,8-TCDF		0.250	J	0.200	1.00	1	0.84	1		05/01/2023 23:19
1,2,3,7,8-PeCDF		ND		0.540	5.00	1				05/01/2023 23:19
2,3,4,7,8-PeCDF		ND		0.520	5.00	1				05/01/2023 23:19
1,2,3,4,7,8-HxCDF		ND		0.730	5.00	1				05/01/2023 23:19
1,2,3,6,7,8-HxCDF		ND		0.760	5.00	1				05/01/2023 23:19
1,2,3,7,8,9-HxCDF		ND		0.850	5.00	1				05/01/2023 23:19
2,3,4,6,7,8-HxCDF		ND		0.790	5.00	1				05/01/2023 23:19
1,2,3,4,6,7,8-HpCDF		4.10	J	0.960	5.00	1	1.10	1		05/01/2023 23:19
1,2,3,4,7,8,9-HpCDF		ND		0.800	5.00	1				05/01/2023 23:19
OCDF		7.70	J	1.80	10.0	1	0.9	1.01		05/01/2023 23:19
Total-Tetradoxins		1.39		0.340	1.00	1				05/01/2023 23:19
Total-Pentadoxins		0.797	J	0.420	5.00	1				05/01/2023 23:19
Total-Hexadoxins		11.4		0.840	5.00	1				05/01/2023 23:19
Total-Heptadoxins		43.6		0.870	5.00	1				05/01/2023 23:19
Total-Tetrafurans		21.1	M	0.200	1.00	1				05/01/2023 23:19
Total-Pentafurans		9.33	M	0.540	5.00	1				05/01/2023 23:19
Total-Hexafurans		9.31		0.850	5.00	1				05/01/2023 23:19
Total-Heptafurans		12.0		0.960	5.00	1				05/01/2023 23:19
Total PCDD+PCDF		233	J	NA	1.00	1				05/01/2023 23:19

Total Toxicity Equivalence (TEQ):

0.187

Cleanup Standard	REC (%)	Limits	Date Analyzed
37Cl-2,3,7,8-TCDD	83	35-197	05/01/2023 23:19
Labeled Compound Recovery	REC (%)	Limits	Date Analyzed
13C-2,3,7,8-TCDD	74	25-164	05/01/2023 23:19
13C-1,2,3,7,8-PeCDD	64	25-181	05/01/2023 23:19
13C-1,2,3,4,7,8-HxCDD	74	32-141	05/01/2023 23:19
13C-1,2,3,6,7,8-HxCDD	76	28-130	05/01/2023 23:19
13C-1,2,3,4,6,7,8-HpCDD	79	23-140	05/01/2023 23:19

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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: E1613B
Analytical Method: E1613B
Unit: pg/g-dry

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Client ID	Lab ID	Matrix	Date Collected
WIM-1	2304D23-001A	Soil	04/12/2023 09:20

Analytes	TEF WHO '05	Result	Qualifiers	MDL	ML	DF	Ion Ratio	RRT	TEQ	Date Analyzed
Labeled Compound Recovery					Limits					
13C-OCDD		74			17-157					05/01/2023 23:19
13C-2,3,7,8-TCDF		74			24-169					05/01/2023 23:19
13C-1,2,3,7,8-PeCDF		62			24-185					05/01/2023 23:19
13C-2,3,4,7,8-PeCDF		66			21-178					05/01/2023 23:19
13C-1,2,3,4,7,8-HxCDF		74			26-152					05/01/2023 23:19
13C-1,2,3,6,7,8-HxCDF		72			26-123					05/01/2023 23:19
13C-2,3,4,6,7,8-HxCDF		76			28-136					05/01/2023 23:19
13C-1,2,3,7,8,9-HxCDF		77			29-147					05/01/2023 23:19
13C-1,2,3,4,6,7,8-HpCDF		77			28-143					05/01/2023 23:19
13C-1,2,3,4,7,8,9-HpCDF		79			26-138					05/01/2023 23:19

Date Analyzed	InstrumentID	FileID	Analyst	Comments	BatchID	Date Prepared
05/01/2023 23:19	GC36	5012317	KBO	-	268335	04/24/2023 11:54

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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: E1613B
Analytical Method: E1613B
Unit: pg/g-dry

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Client ID			Lab ID				Matrix					Date Collected
WIM-2			2304D23-002A				Soil					04/11/2023 14:20
Analytes	TEF WHO '05	Result	Qualifiers	MDL	ML	DF	Ion Ratio	RRT	TEQ	Date Analyzed		
2,3,7,8-TCDD		ND		0.340	1.00	1				05/02/2023 00:26		
1,2,3,7,8-PeCDD		ND		0.420	5.00	1				05/02/2023 00:26		
1,2,3,4,7,8-HxCDD		ND		0.560	5.00	1				05/02/2023 00:26		
1,2,3,6,7,8-HxCDD		1.10	J	0.510	5.00	1	1.29	1		05/02/2023 00:26		
1,2,3,7,8,9-HxCDD		ND		0.840	5.00	1				05/02/2023 00:26		
1,2,3,4,6,7,8-HpCDD	0.01	15.1		0.870	5.00	1	1.06	1	0.151	05/02/2023 00:26		
OCDD	0.0003	113		2.60	10.0	1	0.9	1	0.0339	05/02/2023 00:26		
2,3,7,8-TCDF		0.242	J	0.200	1.00	1	0.82	1		05/02/2023 00:26		
1,2,3,7,8-PeCDF		ND		0.540	5.00	1				05/02/2023 00:26		
2,3,4,7,8-PeCDF		ND		0.520	5.00	1				05/02/2023 00:26		
1,2,3,4,7,8-HxCDF		ND		0.730	5.00	1				05/02/2023 00:26		
1,2,3,6,7,8-HxCDF		ND		0.760	5.00	1				05/02/2023 00:26		
1,2,3,7,8,9-HxCDF		ND		0.850	5.00	1				05/02/2023 00:26		
2,3,4,6,7,8-HxCDF		ND		0.790	5.00	1				05/02/2023 00:26		
1,2,3,4,6,7,8-HpCDF		4.16	J	0.960	5.00	1	1.01	1		05/02/2023 00:26		
1,2,3,4,7,8,9-HpCDF		ND		0.800	5.00	1				05/02/2023 00:26		
OCDF		6.85	J	1.80	10.0	1	0.91	1.01		05/02/2023 00:26		
Total-Tetradoxins		1.32		0.340	1.00	1				05/02/2023 00:26		
Total-Pentadoxins		1.95	JM	0.420	5.00	1				05/02/2023 00:26		
Total-Hexadoxins		10.8		0.840	5.00	1				05/02/2023 00:26		
Total-Heptadoxins		39.4		0.870	5.00	1				05/02/2023 00:26		
Total-Tetrafurans		27.0	M	0.200	1.00	1				05/02/2023 00:26		
Total-Pentafurans		7.53	M	0.540	5.00	1				05/02/2023 00:26		
Total-Hexafurans		10.7		0.850	5.00	1				05/02/2023 00:26		
Total-Heptafurans		11.7		0.960	5.00	1				05/02/2023 00:26		
Total PCDD+PCDF		230	J	NA	1.00	1				05/02/2023 00:26		
Total Toxicity Equivalence (TEQ):									0.185			

Cleanup Standard	REC (%)	Limits	
37Cl-2,3,7,8-TCDD	88	35-197	05/02/2023 00:26
Labeled Compound Recovery	REC (%)	Limits	
13C-2,3,7,8-TCDD	83	25-164	05/02/2023 00:26
13C-1,2,3,7,8-PeCDD	72	25-181	05/02/2023 00:26
13C-1,2,3,4,7,8-HxCDD	84	32-141	05/02/2023 00:26
13C-1,2,3,6,7,8-HxCDD	82	28-130	05/02/2023 00:26
13C-1,2,3,4,6,7,8-HpCDD	88	23-140	05/02/2023 00:26

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Analytical Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Received: 04/19/2023 13:48	Extraction Method: E1613B
Project: 1996-22216; Sediment Testing	Analytical Method: E1613B
	Unit: pg/g-dry

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Client ID	Lab ID	Matrix	Date Collected
WIM-2	2304D23-002A	Soil	04/11/2023 14:20

Analytes	TEF WHO '05	Result	Qualifiers	MDL	ML	DF	Ion Ratio	RRT	TEQ	Date Analyzed
Labeled Compound Recovery					Limits					
13C-OCDD		80			17-157					05/02/2023 00:26
13C-2,3,7,8-TCDF		76			24-169					05/02/2023 00:26
13C-1,2,3,7,8-PeCDF		69			24-185					05/02/2023 00:26
13C-2,3,4,7,8-PeCDF		73			21-178					05/02/2023 00:26
13C-1,2,3,4,7,8-HxCDF		84			26-152					05/02/2023 00:26
13C-1,2,3,6,7,8-HxCDF		81			26-123					05/02/2023 00:26
13C-2,3,4,6,7,8-HxCDF		84			28-136					05/02/2023 00:26
13C-1,2,3,7,8,9-HxCDF		80			29-147					05/02/2023 00:26
13C-1,2,3,4,6,7,8-HpCDF		87			28-143					05/02/2023 00:26
13C-1,2,3,4,7,8,9-HpCDF		91			26-138					05/02/2023 00:26

Date Analyzed	InstrumentID	FileID	Analyst	Comments	BatchID	Date Prepared
05/02/2023 00:26	GC36	5012318	KBO	-	268335	04/24/2023 11:54

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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: E1613B
Analytical Method: E1613B
Unit: pg/g-dry

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Client ID	Lab ID	Matrix	Date Collected
WIM-3	2304D23-003A	Soil	04/11/2023 12:40

Analytes	TEF <small>WHO '05</small>	Result	Qualifiers	MDL	ML	DF	Ion Ratio	RRT	TEQ	Date Analyzed
2,3,7,8-TCDD		ND		0.340	1.00	1				05/02/2023 01:23
1,2,3,7,8-PeCDD		ND		0.420	5.00	1				05/02/2023 01:23
1,2,3,4,7,8-HxCDD		ND		0.560	5.00	1				05/02/2023 01:23
1,2,3,6,7,8-HxCDD		0.891	J	0.510	5.00	1	1.36	1		05/02/2023 01:23
1,2,3,7,8,9-HxCDD		ND		0.840	5.00	1				05/02/2023 01:23
1,2,3,4,6,7,8-HpCDD	0.01	13.5		0.870	5.00	1	1.07	1	0.135	05/02/2023 01:23
OCDD	0.0003	86.9		2.60	10.0	1	0.87	1	0.02607	05/02/2023 01:23
2,3,7,8-TCDF		ND		0.200	1.00	1				05/02/2023 01:23
1,2,3,7,8-PeCDF		ND		0.540	5.00	1				05/02/2023 01:23
2,3,4,7,8-PeCDF		ND		0.520	5.00	1				05/02/2023 01:23
1,2,3,4,7,8-HxCDF		ND		0.730	5.00	1				05/02/2023 01:23
1,2,3,6,7,8-HxCDF		ND		0.760	5.00	1				05/02/2023 01:23
1,2,3,7,8,9-HxCDF		ND		0.850	5.00	1				05/02/2023 01:23
2,3,4,6,7,8-HxCDF		ND		0.790	5.00	1				05/02/2023 01:23
1,2,3,4,6,7,8-HpCDF		3.44	J	0.960	5.00	1	1.05	1		05/02/2023 01:23
1,2,3,4,7,8,9-HpCDF		ND		0.800	5.00	1				05/02/2023 01:23
OCDF		6.42	J	1.80	10.0	1	0.91	1.01		05/02/2023 01:23
Total-Tetradoxins		1.07	M	0.340	1.00	1				05/02/2023 01:23
Total-Pentadoxins		0.721	J	0.420	5.00	1				05/02/2023 01:23
Total-Hexadoxins		10.5		0.840	5.00	1				05/02/2023 01:23
Total-Heptadoxins		44.0		0.870	5.00	1				05/02/2023 01:23
Total-Tetrafurans		25.6	M	0.200	1.00	1				05/02/2023 01:23
Total-Pentafurans		6.80	M	0.540	5.00	1				05/02/2023 01:23
Total-Hexafurans		8.98		0.850	5.00	1				05/02/2023 01:23
Total-Heptafurans		10.4		0.960	5.00	1				05/02/2023 01:23
Total PCDD+PCDF		201	J	NA	1.00	1				05/02/2023 01:23
Total Toxicity Equivalence (TEQ):									0.161	

Cleanup Standard	REC (%)	Limits	Date Analyzed
37Cl-2,3,7,8-TCDD	86	35-197	05/02/2023 01:23
Labeled Compound Recovery	REC (%)	Limits	Date Analyzed
13C-2,3,7,8-TCDD	83	25-164	05/02/2023 01:23
13C-1,2,3,7,8-PeCDD	70	25-181	05/02/2023 01:23
13C-1,2,3,4,7,8-HxCDD	85	32-141	05/02/2023 01:23
13C-1,2,3,6,7,8-HxCDD	84	28-130	05/02/2023 01:23
13C-1,2,3,4,6,7,8-HpCDD	85	23-140	05/02/2023 01:23

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Analytical Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Received: 04/19/2023 13:48	Extraction Method: E1613B
Project: 1996-22216; Sediment Testing	Analytical Method: E1613B
	Unit: pg/g-dry

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Client ID	Lab ID	Matrix	Date Collected
WIM-3	2304D23-003A	Soil	04/11/2023 12:40

Analytes	TEF WHO '05	Result	Qualifiers	MDL	ML	DF	Ion Ratio	RRT	TEQ	Date Analyzed
Labeled Compound Recovery					Limits					
13C-OCDD		77			17-157					05/02/2023 01:23
13C-2,3,7,8-TCDF		79			24-169					05/02/2023 01:23
13C-1,2,3,7,8-PeCDF		68			24-185					05/02/2023 01:23
13C-2,3,4,7,8-PeCDF		70			21-178					05/02/2023 01:23
13C-1,2,3,4,7,8-HxCDF		84			26-152					05/02/2023 01:23
13C-1,2,3,6,7,8-HxCDF		83			26-123					05/02/2023 01:23
13C-2,3,4,6,7,8-HxCDF		86			28-136					05/02/2023 01:23
13C-1,2,3,7,8,9-HxCDF		84			29-147					05/02/2023 01:23
13C-1,2,3,4,6,7,8-HpCDF		86			28-143					05/02/2023 01:23
13C-1,2,3,4,7,8,9-HpCDF		86			26-138					05/02/2023 01:23

Date Analyzed	InstrumentID	FileID	Analyst	Comments	BatchID	Date Prepared
05/02/2023 01:23	GC36	5012319	KBO	-	268335	04/24/2023 11:54



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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 05/02/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: SW3060A
Analytical Method: SW7199
Unit: mg/Kg-dry

Hexavalent chromium by Alkaline Digestion and IC Analysis

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-1	2304D23-001A	Soil	04/12/2023 09:20	IC2 23050229.CHW	268848

Analytes	Result	MDL	RL	DF	Date Analyzed
Hexavalent chromium	ND	0.35	0.35	1	05/02/2023 19:24

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-2	2304D23-002A	Soil	04/11/2023 14:20	IC2 23050230.CHW	268848

Analytes	Result	MDL	RL	DF	Date Analyzed
Hexavalent chromium	ND	0.37	0.37	1	05/02/2023 19:34

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023 12:40	IC2 23050231.CHW	268848

Analytes	Result	MDL	RL	DF	Date Analyzed
Hexavalent chromium	ND	0.36	0.36	1	05/02/2023 19:44

Analyst(s): ND

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Analytical Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Received: 04/19/2023 13:48	Extraction Method: SW3550B/3640Am/3630Cm
Date Prepared: 04/20/2023	Analytical Method: SW8081A/8082
Project: 1996-22216; Sediment Testing	Unit: mg/kg-dry

Organochlorine Pesticides + PCBs w/ Florisil Clean-up

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
WIM-1	2304D23-001A	Soil	04/12/2023	09:20		GC40 04242372.d	268061
Analytes	Result	MDL	RL	DF	Date Analyzed		
Aldrin	ND	0.00082	0.0017	10	04/25/2023 00:33		
a-BHC	ND	0.00078	0.0017	10	04/25/2023 00:33		
b-BHC	ND	0.00066	0.0017	10	04/25/2023 00:33		
d-BHC	ND	0.00069	0.0017	10	04/25/2023 00:33		
g-BHC	ND	0.00097	0.0017	10	04/25/2023 00:33		
Chlordane (Technical)	ND	0.028	0.043	10	04/25/2023 00:33		
a-Chlordane	ND	0.00068	0.0017	10	04/25/2023 00:33		
g-Chlordane	ND	0.00075	0.0017	10	04/25/2023 00:33		
o,p-DDD	ND	0.00061	0.0017	10	04/26/2023 10:57		
o,p-DDE	ND	0.00062	0.0017	10	04/26/2023 10:57		
o,p-DDT	ND	0.00078	0.0017	10	04/26/2023 10:57		
p,p-DDD	ND	0.00071	0.0017	10	04/25/2023 00:33		
p,p-DDE	ND	0.00082	0.0017	10	04/25/2023 00:33		
p,p-DDT	ND	0.0012	0.0017	10	04/25/2023 00:33		
Dieldrin	ND	0.0011	0.0017	10	04/25/2023 00:33		
Endosulfan I	ND	0.00066	0.0017	10	04/25/2023 00:33		
Endosulfan II	ND	0.0010	0.0017	10	04/25/2023 00:33		
Endosulfan sulfate	ND	0.00061	0.0017	10	04/25/2023 00:33		
Endrin	ND	0.0015	0.0017	10	04/25/2023 00:33		
Endrin aldehyde	ND	0.00085	0.0017	10	04/25/2023 00:33		
Endrin ketone	ND	0.0014	0.0017	10	04/25/2023 00:33		
Heptachlor	ND	0.0011	0.0017	10	04/25/2023 00:33		
Heptachlor epoxide	ND	0.00050	0.0017	10	04/25/2023 00:33		
Hexachlorobenzene	ND	0.0013	0.017	10	04/25/2023 00:33		
Hexachlorocyclopentadiene	ND	0.0054	0.035	10	04/25/2023 00:33		
Methoxychlor	ND	0.0016	0.0035	10	04/25/2023 00:33		
Toxaphene	ND	0.078	0.17	10	04/25/2023 00:33		
Aroclor1016	ND	0.035	0.087	10	04/25/2023 00:33		
Aroclor1221	ND	0.035	0.087	10	04/25/2023 00:33		
Aroclor1232	ND	0.035	0.087	10	04/25/2023 00:33		
Aroclor1242	ND	0.035	0.087	10	04/25/2023 00:33		
Aroclor1248	ND	0.035	0.087	10	04/25/2023 00:33		
Aroclor1254	ND	0.035	0.087	10	04/25/2023 00:33		
Aroclor1260	ND	0.035	0.087	10	04/25/2023 00:33		
PCBs, total	ND	NA	0.087	10	04/25/2023 00:33		

(Cont.)

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Analytical Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Received: 04/19/2023 13:48	Extraction Method: SW3550B/3640Am/3630Cm
Date Prepared: 04/20/2023	Analytical Method: SW8081A/8082
Project: 1996-22216; Sediment Testing	Unit: mg/kg-dry

Organochlorine Pesticides + PCBs w/ Florisil Clean-up

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
WIM-2	2304D23-002A	Soil	04/11/2023	14:20		GC40 04242371.d	268061
Analytes	Result	MDL	RL	DF	Date Analyzed		
Aldrin	ND	0.00086	0.0018	10	04/25/2023 00:19		
a-BHC	ND	0.00083	0.0018	10	04/25/2023 00:19		
b-BHC	ND	0.00070	0.0018	10	04/25/2023 00:19		
d-BHC	ND	0.00074	0.0018	10	04/25/2023 00:19		
g-BHC	ND	0.0010	0.0018	10	04/25/2023 00:19		
Chlordane (Technical)	ND	0.029	0.046	10	04/25/2023 00:19		
a-Chlordane	ND	0.00072	0.0018	10	04/25/2023 00:19		
g-Chlordane	ND	0.00079	0.0018	10	04/25/2023 00:19		
o,p-DDD	ND	0.00064	0.0018	10	04/26/2023 11:13		
o,p-DDE	ND	0.00066	0.0018	10	04/26/2023 11:13		
o,p-DDT	ND	0.00083	0.0018	10	04/26/2023 11:13		
p,p-DDD	ND	0.00075	0.0018	10	04/25/2023 00:19		
p,p-DDE	ND	0.00086	0.0018	10	04/25/2023 00:19		
p,p-DDT	ND	0.0013	0.0018	10	04/25/2023 00:19		
Dieldrin	ND	0.0012	0.0018	10	04/25/2023 00:19		
Endosulfan I	ND	0.00070	0.0018	10	04/25/2023 00:19		
Endosulfan II	ND	0.0011	0.0018	10	04/25/2023 00:19		
Endosulfan sulfate	ND	0.00064	0.0018	10	04/25/2023 00:19		
Endrin	ND	0.0016	0.0018	10	04/25/2023 00:19		
Endrin aldehyde	ND	0.00090	0.0018	10	04/25/2023 00:19		
Endrin ketone	ND	0.0015	0.0018	10	04/25/2023 00:19		
Heptachlor	ND	0.0012	0.0018	10	04/25/2023 00:19		
Heptachlor epoxide	ND	0.00053	0.0018	10	04/25/2023 00:19		
Hexachlorobenzene	ND	0.0014	0.018	10	04/25/2023 00:19		
Hexachlorocyclopentadiene	ND	0.0057	0.037	10	04/25/2023 00:19		
Methoxychlor	ND	0.0017	0.0037	10	04/25/2023 00:19		
Toxaphene	ND	0.083	0.18	10	04/25/2023 00:19		
Aroclor1016	ND	0.037	0.092	10	04/25/2023 00:19		
Aroclor1221	ND	0.037	0.092	10	04/25/2023 00:19		
Aroclor1232	ND	0.037	0.092	10	04/25/2023 00:19		
Aroclor1242	ND	0.037	0.092	10	04/25/2023 00:19		
Aroclor1248	ND	0.037	0.092	10	04/25/2023 00:19		
Aroclor1254	ND	0.037	0.092	10	04/25/2023 00:19		
Aroclor1260	ND	0.037	0.092	10	04/25/2023 00:19		
PCBs, total	ND	NA	0.092	10	04/25/2023 00:19		

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Analytical Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Received: 04/19/2023 13:48	Extraction Method: SW3550B/3640Am/3630Cm
Date Prepared: 04/20/2023	Analytical Method: SW8081A/8082
Project: 1996-22216; Sediment Testing	Unit: mg/kg-dry

Organochlorine Pesticides + PCBs w/ Florisil Clean-up

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023	12:40		GC40 04242333.d	268061
Analytes	Result	MDL	RL	DF	Date Analyzed		
Aldrin	ND	0.00084	0.0018	10	04/24/2023 15:27		
a-BHC	ND	0.00080	0.0018	10	04/24/2023 15:27		
b-BHC	ND	0.00068	0.0018	10	04/24/2023 15:27		
d-BHC	ND	0.00071	0.0018	10	04/24/2023 15:27		
g-BHC	ND	0.0010	0.0018	10	04/24/2023 15:27		
Chlordane (Technical)	ND	0.029	0.045	10	04/24/2023 15:27		
a-Chlordane	ND	0.00070	0.0018	10	04/24/2023 15:27		
g-Chlordane	ND	0.00077	0.0018	10	04/24/2023 15:27		
o,p-DDD	ND	0.00062	0.0018	10	04/28/2023 10:28		
o,p-DDE	ND	0.00064	0.0018	10	04/28/2023 10:28		
o,p-DDT	ND	0.00080	0.0018	10	04/28/2023 10:28		
p,p-DDD	ND	0.00073	0.0018	10	04/24/2023 15:27		
p,p-DDE	ND	0.00084	0.0018	10	04/24/2023 15:27		
p,p-DDT	ND	0.0012	0.0018	10	04/24/2023 15:27		
Dieldrin	ND	0.0012	0.0018	10	04/24/2023 15:27		
Endosulfan I	ND	0.00068	0.0018	10	04/24/2023 15:27		
Endosulfan II	ND	0.0011	0.0018	10	04/24/2023 15:27		
Endosulfan sulfate	ND	0.00062	0.0018	10	04/24/2023 15:27		
Endrin	ND	0.0016	0.0018	10	04/24/2023 15:27		
Endrin aldehyde	ND	0.00087	0.0018	10	04/24/2023 15:27		
Endrin ketone	ND	0.0015	0.0018	10	04/24/2023 15:27		
Heptachlor	ND	0.0011	0.0018	10	04/24/2023 15:27		
Heptachlor epoxide	ND	0.00052	0.0018	10	04/24/2023 15:27		
Hexachlorobenzene	ND	0.0014	0.018	10	04/24/2023 15:27		
Hexachlorocyclopentadiene	ND	0.0055	0.036	10	04/24/2023 15:27		
Methoxychlor	ND	0.0016	0.0036	10	04/24/2023 15:27		
Toxaphene	ND	0.080	0.18	10	04/24/2023 15:27		
Aroclor1016	ND	0.036	0.089	10	04/24/2023 15:27		
Aroclor1221	ND	0.036	0.089	10	04/24/2023 15:27		
Aroclor1232	ND	0.036	0.089	10	04/24/2023 15:27		
Aroclor1242	ND	0.036	0.089	10	04/24/2023 15:27		
Aroclor1248	ND	0.036	0.089	10	04/24/2023 15:27		
Aroclor1254	ND	0.036	0.089	10	04/24/2023 15:27		
Aroclor1260	ND	0.036	0.089	10	04/24/2023 15:27		
PCBs, total	ND	NA	0.089	10	04/24/2023 15:27		

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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 04/20/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: SW3550B/3640Am/3630Cm
Analytical Method: SW8081A/8082
Unit: mg/kg-dry

Organochlorine Pesticides + PCBs w/ Florisil Clean-up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023 12:40	GC40 04242333.d	268061

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
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<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>
Decachlorobiphenyl	110	20-145

Analyst(s): CK, CN

Analytical Comments: a2,h7

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Analytical Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Received: 04/19/2023 13:48	Extraction Method: SW3550B/3640A
Date Prepared: 04/24/2023	Analytical Method: SW8270C
Project: 1996-22216; Sediment Testing	Unit: mg/kg-dry

Polynuclear Aromatic Hydrocarbons (PNAs) using SIM Mode w/ GPC Clean-up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-1	2304D23-001A	Soil	04/12/2023 09:20	GC21 04252314.D	268236

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acenaphthene	0.0017	J	0.0015	0.0045	2	04/25/2023 15:29
Acenaphthylene	0.0012	J	0.00080	0.0045	2	04/25/2023 15:29
Anthracene	ND		0.0021	0.0045	2	04/25/2023 15:29
Benzo (a) anthracene	0.011	J	0.010	0.045	2	04/25/2023 15:29
Benzo (a) pyrene	0.0092		0.0028	0.0087	2	04/25/2023 15:29
Benzo (b) fluoranthene	0.011	J	0.010	0.023	2	04/25/2023 15:29
Benzo (g,h,i) perylene	0.0087		0.0030	0.0087	2	04/25/2023 15:29
Benzo (k) fluoranthene	ND		0.0042	0.0045	2	04/25/2023 15:29
Chrysene	0.0056	J	0.0026	0.0087	2	04/25/2023 15:29
Dibenzo (a,h) anthracene	ND		0.0045	0.0087	2	04/25/2023 15:29
Fluoranthene	0.021		0.0026	0.0045	2	04/25/2023 15:29
Fluorene	0.0057	J	0.0028	0.0087	2	04/25/2023 15:29
Indeno (1,2,3-cd) pyrene	0.0075	J	0.0049	0.045	2	04/25/2023 15:29
1-Methylnaphthalene	0.0085		0.0012	0.0045	2	04/25/2023 15:29
2-Methylnaphthalene	0.011		0.0015	0.0087	2	04/25/2023 15:29
Naphthalene	ND		0.011	0.021	2	04/25/2023 15:29
Phenanthrene	0.015	J	0.0035	0.017	2	04/25/2023 15:29
Pyrene	0.021		0.0023	0.0087	2	04/25/2023 15:29

Surrogates	REC (%)	Limits	Date Analyzed
4-Terphenyl-d14	87	60-130	04/25/2023 15:29
2-Fluorobiphenyl	83	46-140	04/25/2023 15:29

Analyst(s): LAT

(Cont.)

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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 04/24/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: SW3550B/3640A
Analytical Method: SW8270C
Unit: mg/kg-dry

Polynuclear Aromatic Hydrocarbons (PNAs) using SIM Mode w/ GPC Clean-up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-2	2304D23-002A	Soil	04/11/2023 14:20	GC21 04252315.D	268236

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acenaphthene	ND		0.0016	0.0048	2	04/25/2023 15:57
Acenaphthylene	0.00099	J	0.00085	0.0048	2	04/25/2023 15:57
Anthracene	ND		0.0022	0.0048	2	04/25/2023 15:57
Benzo (a) anthracene	ND		0.011	0.048	2	04/25/2023 15:57
Benzo (a) pyrene	0.0077	J	0.0029	0.0092	2	04/25/2023 15:57
Benzo (b) fluoranthene	ND		0.011	0.024	2	04/25/2023 15:57
Benzo (g,h,i) perylene	0.0059	J	0.0031	0.0092	2	04/25/2023 15:57
Benzo (k) fluoranthene	ND		0.0044	0.0048	2	04/25/2023 15:57
Chrysene	0.0066	J	0.0028	0.0092	2	04/25/2023 15:57
Dibenzo (a,h) anthracene	ND		0.0048	0.0092	2	04/25/2023 15:57
Fluoranthene	0.016		0.0028	0.0048	2	04/25/2023 15:57
Fluorene	0.0035	J	0.0029	0.0092	2	04/25/2023 15:57
Indeno (1,2,3-cd) pyrene	0.0072	J	0.0051	0.048	2	04/25/2023 15:57
1-Methylnaphthalene	0.0055		0.0013	0.0048	2	04/25/2023 15:57
2-Methylnaphthalene	0.0068	J	0.0016	0.0092	2	04/25/2023 15:57
Naphthalene	ND		0.012	0.022	2	04/25/2023 15:57
Phenanthrene	0.0094	J	0.0037	0.018	2	04/25/2023 15:57
Pyrene	0.018		0.0024	0.0092	2	04/25/2023 15:57

Surrogates	REC (%)	Limits	Date Analyzed
4-Terphenyl-d14	104	60-130	04/25/2023 15:57
2-Fluorobiphenyl	73	46-140	04/25/2023 15:57

Analyst(s): LAT

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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 04/24/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: SW3550B/3640A
Analytical Method: SW8270C
Unit: mg/kg-dry

Polynuclear Aromatic Hydrocarbons (PNAs) using SIM Mode w/ GPC Clean-up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023 12:40	GC21 04252316.D	268236

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acenaphthene	0.0064		0.0016	0.0046	2	04/25/2023 16:24
Acenaphthylene	ND		0.00082	0.0046	2	04/25/2023 16:24
Anthracene	0.0086		0.0021	0.0046	2	04/25/2023 16:24
Benzo (a) anthracene	0.048		0.011	0.046	2	04/25/2023 16:24
Benzo (a) pyrene	0.053		0.0029	0.0089	2	04/25/2023 16:24
Benzo (b) fluoranthene	0.064		0.010	0.023	2	04/25/2023 16:24
Benzo (g,h,i) perylene	0.041		0.0030	0.0089	2	04/25/2023 16:24
Benzo (k) fluoranthene	0.025		0.0043	0.0046	2	04/25/2023 16:24
Chrysene	0.055		0.0027	0.0089	2	04/25/2023 16:24
Dibenzo (a,h) anthracene	0.013		0.0046	0.0089	2	04/25/2023 16:24
Fluoranthene	0.13		0.0027	0.0046	2	04/25/2023 16:24
Fluorene	0.012		0.0029	0.0089	2	04/25/2023 16:24
Indeno (1,2,3-cd) pyrene	0.034	J	0.0050	0.046	2	04/25/2023 16:24
1-Methylnaphthalene	0.0098		0.0012	0.0046	2	04/25/2023 16:24
2-Methylnaphthalene	0.011		0.0016	0.0089	2	04/25/2023 16:24
Naphthalene	ND		0.011	0.021	2	04/25/2023 16:24
Phenanthrene	0.098		0.0036	0.018	2	04/25/2023 16:24
Pyrene	0.084		0.0023	0.0089	2	04/25/2023 16:24

Surrogates	REC (%)	Limits	Date Analyzed
4-Terphenyl-d14	82	60-130	04/25/2023 16:24
2-Fluorobiphenyl	75	46-140	04/25/2023 16:24

Analyst(s): LAT



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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 04/20/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg-dry

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
WIM-1	2304D23-001A	Soil	04/12/2023 09:20			ICP-MS5 261SMPL.d	268025
Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed	
Antimony	0.26	J	0.21	0.87	1	04/20/2023 21:24	
Arsenic	8.3		0.19	0.87	1	04/20/2023 21:24	
Barium	100		1.2	8.7	1	04/20/2023 21:24	
Beryllium	0.62	J	0.17	0.87	1	04/20/2023 21:24	
Cadmium	ND		0.16	0.87	1	04/20/2023 21:24	
Chromium	110		0.23	0.87	1	04/20/2023 21:24	
Cobalt	16		0.11	0.87	1	04/20/2023 21:24	
Copper	40		0.23	0.87	1	04/20/2023 21:24	
Lead	11		0.11	0.87	1	04/20/2023 21:24	
Mercury	0.10		0.066	0.087	1	04/20/2023 21:24	
Molybdenum	0.95		0.16	0.87	1	04/20/2023 21:24	
Nickel	130		0.14	0.87	1	04/20/2023 21:24	
Selenium	ND		0.36	0.87	1	04/20/2023 21:24	
Silver	0.12	J	0.099	0.87	1	04/20/2023 21:24	
Thallium	0.14	J	0.12	0.87	1	04/20/2023 21:24	
Vanadium	73		0.19	0.87	1	04/20/2023 21:24	
Zinc	110		4.3	8.7	1	04/20/2023 21:24	

Surrogates	REC (%)	Limits	
Terbium	99	70-130	04/20/2023 21:24

Analyst(s): AL

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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 04/20/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg-dry

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
WIM-2	2304D23-002A	Soil	04/11/2023 14:20	ICP-MS5 279SMPL.d	268025	
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	0.28	J	0.22	0.92	1	04/20/2023 22:27
Arsenic	8.5		0.20	0.92	1	04/20/2023 22:27
Barium	100		1.3	9.2	1	04/20/2023 22:27
Beryllium	0.66	J	0.18	0.92	1	04/20/2023 22:27
Cadmium	ND		0.17	0.92	1	04/20/2023 22:27
Chromium	110		0.24	0.92	1	04/20/2023 22:27
Cobalt	16		0.12	0.92	1	04/20/2023 22:27
Copper	42		0.24	0.92	1	04/20/2023 22:27
Lead	12		0.12	0.92	1	04/20/2023 22:27
Mercury	0.10		0.070	0.092	1	04/20/2023 22:27
Molybdenum	0.94		0.17	0.92	1	04/20/2023 22:27
Nickel	130		0.15	0.92	1	04/20/2023 22:27
Selenium	ND		0.39	0.92	1	04/20/2023 22:27
Silver	0.12	J	0.10	0.92	1	04/20/2023 22:27
Thallium	0.15	J	0.13	0.92	1	04/20/2023 22:27
Vanadium	75		0.20	0.92	1	04/20/2023 22:27
Zinc	110		4.6	9.2	1	04/20/2023 22:27
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>			
Terbium	103		70-130			04/20/2023 22:27
<u>Analyst(s):</u> AL						

(Cont.)



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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 04/20/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg-dry

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023 12:40			ICP-MS5 280SMPL.d	268025
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>	
Antimony	0.23	J	0.21	0.89	1	04/20/2023 22:31	
Arsenic	7.8		0.20	0.89	1	04/20/2023 22:31	
Barium	89		1.3	8.9	1	04/20/2023 22:31	
Beryllium	0.61	J	0.18	0.89	1	04/20/2023 22:31	
Cadmium	ND		0.16	0.89	1	04/20/2023 22:31	
Chromium	110		0.23	0.89	1	04/20/2023 22:31	
Cobalt	16		0.11	0.89	1	04/20/2023 22:31	
Copper	39		0.23	0.89	1	04/20/2023 22:31	
Lead	11		0.12	0.89	1	04/20/2023 22:31	
Mercury	0.096		0.068	0.089	1	04/20/2023 22:31	
Molybdenum	1.1		0.16	0.89	1	04/20/2023 22:31	
Nickel	120		0.14	0.89	1	04/20/2023 22:31	
Selenium	ND		0.37	0.89	1	04/20/2023 22:31	
Silver	ND		0.10	0.89	1	04/20/2023 22:31	
Thallium	0.13	J	0.13	0.89	1	04/20/2023 22:31	
Vanadium	71		0.20	0.89	1	04/20/2023 22:31	
Zinc	100		4.5	8.9	1	04/20/2023 22:31	

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	
Terbium	101	70-130	04/20/2023 22:31

Analyst(s): AL

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Analytical Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Received: 04/19/2023 13:48	Extraction Method: SW7471B
Date Prepared: 04/20/2023	Analytical Method: SW7471B
Project: 1996-22216; Sediment Testing	Unit: mg/Kg-dry

Mercury by Cold Vapor Atomic Absorption

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-1	2304D23-001A	Soil	04/12/2023 09:20	AA1 _22	268124

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Mercury	0.090	0.014	0.030	1	04/21/2023 15:05

Analyst(s): DMA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-2	2304D23-002A	Soil	04/11/2023 14:20	AA1 _23	268124

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Mercury	0.099	0.014	0.031	1	04/21/2023 15:08

Analyst(s): DMA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023 12:40	AA1 _24	268124

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Mercury	0.094	0.014	0.030	1	04/21/2023 15:11

Analyst(s): DMA



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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 04/24/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: ASTM D2216
Analytical Method: SW8000
Unit: wet wt%

Percent Moisture

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-1	2304D23-001A	Soil	04/12/2023 09:20	WetChem	268286

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
% Moisture	42.4	0.100	0.100	1	04/25/2023 14:35

Analyst(s): JRA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-2	2304D23-002A	Soil	04/11/2023 14:20	WetChem	268286

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
% Moisture	45.6	0.100	0.100	1	04/25/2023 14:40

Analyst(s): JRA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023 12:40	WetChem	268286

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
% Moisture	43.9	0.100	0.100	1	04/25/2023 14:45

Analyst(s): JRA



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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 04/19/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg-dry

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
WIM-1	2304D23-001A	Soil	04/12/2023 09:20			GC31B 04252313.D	268026
<u>Analytes</u>		<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>	
TPH-Diesel (C10-C23)		ND	2.3	3.5	1	04/25/2023 18:57	
TPH-Motor Oil (C18-C36)		ND	9.5	17	1	04/25/2023 18:57	
<u>Surrogates</u>		<u>REC (%)</u>	<u>Limits</u>				
C9		94	70-130			04/25/2023 18:57	
<u>Analyst(s):</u> JIS							

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
WIM-2	2304D23-002A	Soil	04/11/2023 14:20			GC31B 04252317.D	268026
<u>Analytes</u>		<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)		ND		2.4	3.7	1	04/25/2023 20:18
TPH-Motor Oil (C18-C36)		11	J	10	18	1	04/25/2023 20:18
<u>Surrogates</u>		<u>REC (%)</u>	<u>Limits</u>				
C9		93	70-130			04/25/2023 20:18	
<u>Analyst(s):</u> JIS							

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023 12:40			GC11B 04252311.D	268026
<u>Analytes</u>		<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>	
TPH-Diesel (C10-C23)		ND	2.3	3.6	1	04/25/2023 14:35	
TPH-Motor Oil (C18-C36)		ND	9.8	18	1	04/25/2023 14:35	
<u>Surrogates</u>		<u>REC (%)</u>	<u>Limits</u>				
C9		97	70-130			04/25/2023 14:35	
<u>Analyst(s):</u> JIS							



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Analytical Report

Client: Humboldt Bay Harbor
Date Received: 04/19/2023 13:48
Date Prepared: 04/24/2023
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
Extraction Method: SM2540 G-1997
Analytical Method: SM2540B
Unit: wet wt%

Total Solids

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-1	2304D23-001A	Soil	04/12/2023 09:20	WetChem	268308

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Solids	58.3	H	0.00690	0.00690	6.905	04/25/2023 16:05

Analyst(s): MGO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-2	2304D23-002A	Soil	04/11/2023 14:20	WetChem	268308

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Solids	54.7	H	0.00544	0.00544	5.44	04/25/2023 16:15

Analyst(s): MGO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023 12:40	WetChem	268308

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Solids	54.9	H	0.00391	0.00391	3.908	04/25/2023 16:20

Analyst(s): MGO

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Analytical Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Received: 04/19/2023 13:48	Extraction Method: SW9060A
Date Prepared: 04/21/2023	Analytical Method: SW9060A
Project: 1996-22216; Sediment Testing	Unit: mg/kg-dry

Total Organic Carbon (TOC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-1	2304D23-001A	Soil	04/12/2023 09:20	WC_CNS F042123-2_1016_14	268153

Analytes	Result	MDL	RL	DF	Date Analyzed
TOC	14,000	350	540	1	04/21/2023 20:53

Analyst(s): DMA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-2	2304D23-002A	Soil	04/11/2023 14:20	WC_CNS F042123-2_1016_15	268153

Analytes	Result	MDL	RL	DF	Date Analyzed
TOC	17,000	390	590	1	04/21/2023 21:09

Analyst(s): DMA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WIM-3	2304D23-003A	Soil	04/11/2023 12:40	WC_CNS F042123-2_1016_16	268153

Analytes	Result	MDL	RL	DF	Date Analyzed
TOC	16,000	390	610	1	04/21/2023 21:24

Analyst(s): DMA

CLIENT: Humboldt Bay Harbor

ANALYTICAL QC SUMMARY REPORT

Work Order: 2304D23

Project: 1996-22216; Sediment Testing

BatchID:

268335

SampleID: MB-268335	TestCode: 1613_FULL_S	Units: pg/g-dry	Prep Date: 4/24/2023
Batch ID: 268335	TestNo: E1613B	Run ID: GC36_230502E	Analysis Date: 5/1/2023
Analyte	Result	MDL	ML SPKValue SPKRefVal %REC Limits RPDRefVal %RPD RPDLimit Qual
2,3,7,8-TCDD	ND	0.340	1.00 -
1,2,3,7,8-PeCDD	ND	0.420	5.00 -
1,2,3,4,7,8-HxCDD	ND	0.560	5.00 -
1,2,3,6,7,8-HxCDD	ND	0.510	5.00 -
1,2,3,7,8,9-HxCDD	ND	0.840	5.00 -
1,2,3,4,6,7,8-HpCDD	ND	0.870	5.00 -
OCDD	ND	2.60	10.0 -
2,3,7,8-TCDF	ND	0.200	1.00 -
1,2,3,7,8-PeCDF	ND	0.540	5.00 -
2,3,4,7,8-PeCDF	ND	0.520	5.00 -
1,2,3,4,7,8-HxCDF	ND	0.730	5.00 -
1,2,3,6,7,8-HxCDF	ND	0.760	5.00 -
1,2,3,7,8,9-HxCDF	ND	0.850	5.00 -
2,3,4,6,7,8-HxCDF	ND	0.790	5.00 -
1,2,3,4,6,7,8-HpCDF	ND	0.960	5.00 -
1,2,3,4,7,8,9-HpCDF	ND	0.800	5.00 -
OCDF	ND	1.80	10.0 -
Total-Tetradoxins	ND	0.340	1.00 -
Total-Pentadoxins	ND	0.420	5.00 -
Total-Hexadoxins	ND	0.840	5.00 -
Total-Heptadoxins	ND	0.870	5.00 -
Total-Tetrafurans	ND	0.200	1.00 -
Total-Pentafurans	ND	0.540	5.00 -
Total-Hexafurans	ND	0.850	5.00 -
Total-Heptafurans	ND	0.960	5.00 -
Total PCDD+PCDF	ND	0	1.00 -

Cleanup Standard

37Cl-2,3,7,8-TCDD 7.80 10 78 35 - 197

Labeled Compound Recovery

13C-2,3,7,8-TCDD	77.3	100	77	25 - 164
13C-1,2,3,7,8-PeCDD	87.1	100	87	25 - 181
13C-1,2,3,4,7,8-HxCDD	81.1	100	81	32 - 141
13C-1,2,3,6,7,8-HxCDD	80.8	100	81	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	84.9	100	85	23 - 140
13C-OCDD	164	200	82	17 - 157
13C-2,3,7,8-TCDF	80.4	100	80	24 - 169
13C-1,2,3,7,8-PeCDF	84.5	100	85	24 - 185
13C-2,3,4,7,8-PeCDF	82.6	100	83	21 - 178
13C-1,2,3,4,7,8-HxCDF	79.3	100	79	26 - 152
13C-1,2,3,6,7,8-HxCDF	76.2	100	76	26 - 123
13C-2,3,4,6,7,8-HxCDF	79.8	100	80	28 - 136
13C-1,2,3,7,8,9-HxCDF	79.5	100	80	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	82.8	100	83	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	81.7	100	82	26 - 138

CLIENT: Humboldt Bay Harbor

ANALYTICAL QC SUMMARY REPORT

Work Order: 2304D23

Project: 1996-22216; Sediment Testing

BatchID:

268335

SampleID: LCS-268335	TestCode: 1613_FULL_S			Units: pg/g-dry				Prep Date: 4/24/2023			
Batch ID: 268335	TestNo: E1613B			Run ID: GC36_230502D				Analysis Date: 5/1/2023			
Analyte	Result	MDL	ML	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	10.9	0.340	1.00	10	0	109	67 - 158				
1,2,3,7,8-PeCDD	56.0	0.420	5.00	50	0	112	70 - 142				
1,2,3,4,7,8-HxCDD	55.1	0.560	5.00	50	0	110	70 - 164				
1,2,3,6,7,8-HxCDD	58.1	0.510	5.00	50	0	116	76 - 134				
1,2,3,7,8,9-HxCDD	58.2	0.840	5.00	50	0	116	64 - 162				
1,2,3,4,6,7,8-HpCDD	54.5	0.870	5.00	50	0	109	70 - 140				
OCDD	111	2.60	10.0	100	0	111	78 - 144				
2,3,7,8-TCDF	10.3	0.200	1.00	10	0	103	75 - 158				
1,2,3,7,8-PeCDF	57.0	0.540	5.00	50	0	114	80 - 134				
2,3,4,7,8-PeCDF	56.5	0.520	5.00	50	0	113	68 - 160				
1,2,3,4,7,8-HxCDF	56.8	0.730	5.00	50	0	114	72 - 134				
1,2,3,6,7,8-HxCDF	57.5	0.760	5.00	50	0	115	84 - 130				
1,2,3,7,8,9-HxCDF	57.2	0.850	5.00	50	0	114	78 - 130				
2,3,4,6,7,8-HxCDF	56.3	0.790	5.00	50	0	113	70 - 156				
1,2,3,4,6,7,8-HpCDF	54.3	0.960	5.00	50	0	109	82 - 122				
1,2,3,4,7,8,9-HpCDF	54.3	0.800	5.00	50	0	109	78 - 138				
OCDF	106	1.80	10.0	100	0	106	63 - 170				

Cleanup Standard

37Cl-2,3,7,8-TCDD	8.15			10		82	31 - 191				
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Labeled Compound Recovery

13C-2,3,7,8-TCDD	78.3			100		78	20 - 175				
13C-1,2,3,7,8-PeCDD	89.7			100		90	21 - 227				
13C-1,2,3,4,7,8-HxCDD	87.0			100		87	21 - 193				
13C-1,2,3,6,7,8-HxCDD	86.6			100		87	25 - 163				
13C-1,2,3,4,6,7,8-HpCDD	90.8			100		91	26 - 166				
13C-OCDD	174			200		87	13 - 199				
13C-2,3,7,8-TCDF	84.1			100		84	22 - 152				
13C-1,2,3,7,8-PeCDF	87.1			100		87	21 - 192				
13C-2,3,4,7,8-PeCDF	84.8			100		85	13 - 328				
13C-1,2,3,4,7,8-HxCDF	85.4			100		85	19 - 202				
13C-1,2,3,6,7,8-HxCDF	83.3			100		83	21 - 159				
13C-2,3,4,6,7,8-HxCDF	86.6			100		87	22 - 176				
13C-1,2,3,7,8,9-HxCDF	87.1			100		87	17 - 205				
13C-1,2,3,4,6,7,8-HpCDF	88.2			100		88	21 - 158				
13C-1,2,3,4,7,8,9-HpCDF	67.5			100		68	20 - 186				

CLIENT: Humboldt Bay Harbor

Work Order: 2304D23

Project: 1996-22216; Sediment Testing

ANALYTICAL QC SUMMARY REPORT

BatchID: 268335

SampleID: LCSD-268335	TestCode: 1613_FULL_S	Units: pg/g-dry	Prep Date: 4/24/2023								
Batch ID: 268335	TestNo: E1613B	Run ID: GC36_230502D	Analysis Date: 5/1/2023								
Analyte	Result	MDL	ML	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	10.9	0.340	1.00	10	0	109	67 - 158	10.9234	0.0183	20	
1,2,3,7,8-PeCDD	57.0	0.420	5.00	50	0	114	70 - 142	56.0452	1.62	20	
1,2,3,4,7,8-HxCDD	56.4	0.560	5.00	50	0	113	70 - 164	55.1144	2.27	20	
1,2,3,6,7,8-HxCDD	57.3	0.510	5.00	50	0	115	76 - 134	58.0908	1.33	20	
1,2,3,7,8,9-HxCDD	58.3	0.840	5.00	50	0	117	64 - 162	58.1834	0.207	20	
1,2,3,4,6,7,8-HpCDD	54.5	0.870	5.00	50	0	109	70 - 140	54.5202	0.0128	20	
OCDD	110	2.60	10.0	100	0	110	78 - 144	110.8598	0.523	20	
2,3,7,8-TCDF	10.7	0.200	1.00	10	0	107	75 - 158	10.2986	4.19	20	
1,2,3,7,8-PeCDF	56.4	0.540	5.00	50	0	113	80 - 134	57.0406	1.12	20	
2,3,4,7,8-PeCDF	56.4	0.520	5.00	50	0	113	68 - 160	56.5324	0.201	20	
1,2,3,4,7,8-HxCDF	57.4	0.730	5.00	50	0	115	72 - 134	56.8134	1.00	20	
1,2,3,6,7,8-HxCDF	58.1	0.760	5.00	50	0	116	84 - 130	57.473	1.02	20	
1,2,3,7,8,9-HxCDF	56.7	0.850	5.00	50	0	113	78 - 130	57.2452	0.878	20	
2,3,4,6,7,8-HxCDF	56.2	0.790	5.00	50	0	112	70 - 156	56.3306	0.232	20	
1,2,3,4,6,7,8-HpCDF	54.1	0.960	5.00	50	0	108	82 - 122	54.3292	0.395	20	
1,2,3,4,7,8,9-HpCDF	54.5	0.800	5.00	50	0	109	78 - 138	54.295	0.335	20	
OCDF	106	1.80	10.0	100	0	106	63 - 170	105.681	0.108	20	

Cleanup Standard

37Cl-2,3,7,8-TCDD	8.19	10	82	31 - 191
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Labeled Compound Recovery

13C-2,3,7,8-TCDD	76.3	100	76	20 - 175
13C-1,2,3,7,8-PeCDD	89.2	100	89	21 - 227
13C-1,2,3,4,7,8-HxCDD	84.0	100	84	21 - 193
13C-1,2,3,6,7,8-HxCDD	84.1	100	84	25 - 163
13C-1,2,3,4,6,7,8-HpCDD	89.4	100	89	26 - 166
13C-OCDD	172	200	86	13 - 199
13C-2,3,7,8-TCDF	79.7	100	80	22 - 152
13C-1,2,3,7,8-PeCDF	86.7	100	87	21 - 192
13C-2,3,4,7,8-PeCDF	84.4	100	84	13 - 328
13C-1,2,3,4,7,8-HxCDF	81.6	100	82	19 - 202
13C-1,2,3,6,7,8-HxCDF	79.3	100	79	21 - 159
13C-2,3,4,6,7,8-HxCDF	83.0	100	83	22 - 176
13C-1,2,3,7,8,9-HxCDF	85.1	100	85	17 - 205
13C-1,2,3,4,6,7,8-HpCDF	87.0	100	87	21 - 158
13C-1,2,3,4,7,8,9-HpCDF	67.2	100	67	20 - 186

CLIENT: Humboldt Bay Harbor

ANALYTICAL QC SUMMARY REPORT

Work Order: 2304D23

Project: 1996-22216; Sediment Testing

BatchID:

268335

SampleID: 2304696-001AMS	TestCode: 1613_FULL_S	Units: pg/g-dry					Prep Date: 4/24/2023				
Batch ID: 268335	TestNo: E1613B	Run ID: GC36_230502F					Analysis Date: 5/2/2023				
Analyte	Result	MDL	ML	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	11.4	0.340	0.500	10	0	114	67 - 158				
1,2,3,7,8-PeCDD	58.0	0.420	2.50	50	0	116	70 - 142				
1,2,3,4,7,8-HxCDD	57.0	0.560	2.50	50	0	114	70 - 164				
1,2,3,6,7,8-HxCDD	58.9	0.510	2.50	50	0	118	76 - 134				
1,2,3,7,8,9-HxCDD	57.2	0.840	2.50	50	0	114	64 - 162				
1,2,3,4,6,7,8-HpCDD	61.9	0.870	2.50	50	0.9	122	70 - 140				
OCDD	141	2.60	5.00	100	2.729	138	78 - 144				
2,3,7,8-TCDF	11.7	0.200	0.500	10	0	117	75 - 158				
1,2,3,7,8-PeCDF	60.6	0.540	2.50	50	0	121	80 - 134				
2,3,4,7,8-PeCDF	59.5	0.520	2.50	50	0	119	68 - 160				
1,2,3,4,7,8-HxCDF	59.5	0.730	2.50	50	0	119	72 - 134				
1,2,3,6,7,8-HxCDF	61.4	0.760	2.50	50	0	123	84 - 130				
1,2,3,7,8,9-HxCDF	60.8	0.850	2.50	50	0	122	78 - 130				
2,3,4,6,7,8-HxCDF	59.1	0.790	2.50	50	0	118	70 - 156				
1,2,3,4,6,7,8-HpCDF	58.2	0.960	2.50	50	0	116	82 - 122				
1,2,3,4,7,8,9-HpCDF	59.1	0.800	2.50	50	0	118	78 - 138				
OCDF	117	1.80	5.00	100	0	117	63 - 170				

Cleanup Standard

37Cl-2,3,7,8-TCDD	9.31			10		93	31 - 191				
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Labeled Compound Recovery

13C-2,3,7,8-TCDD	86.1			100		86	20 - 175				
13C-1,2,3,7,8-PeCDD	79.8			100		80	21 - 227				
13C-1,2,3,6,7,8-HxCDD	87.0			100		87	25 - 163				
13C-1,2,3,4,6,7,8-HpCDD	85.9			100		86	26 - 166				
13C-OCDD	162			200		81	13 - 199				
13C-2,3,7,8-TCDF	82.3			100		82	22 - 152				
13C-1,2,3,7,8-PeCDF	80.6			100		81	21 - 192				
13C-1,2,3,4,7,8-HxCDF	86.2			100		86	19 - 202				
13C-1,2,3,4,6,7,8-HpCDF	97.9			100		98	21 - 158				

CLIENT: Humboldt Bay Harbor

ANALYTICAL QC SUMMARY REPORT

Work Order: 2304D23

Project: 1996-22216; Sediment Testing

BatchID:

268335

SampleID: 2304696-001AMSD	TestCode: 1613_FULL_S	Units: pg/g-dry					Prep Date: 4/24/2023				
Batch ID: 268335	TestNo: E1613B	Run ID: GC36_230502F					Analysis Date: 5/2/2023				
Analyte	Result	MDL	ML	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	11.2	0.340	0.500	10	0	112	67 - 158	11.4392	1.85	20	
1,2,3,7,8-PeCDD	58.0	0.420	2.50	50	0	116	70 - 142	58.051	0.119	20	
1,2,3,4,7,8-HxCDD	56.2	0.560	2.50	50	0	112	70 - 164	56.9996	1.42	20	
1,2,3,6,7,8-HxCDD	58.0	0.510	2.50	50	0	116	76 - 134	58.8942	1.61	20	
1,2,3,7,8,9-HxCDD	55.8	0.840	2.50	50	0	112	64 - 162	57.1764	2.47	20	
1,2,3,4,6,7,8-HpCDD	59.4	0.870	2.50	50	0.9	117	70 - 140	61.8662	4.15	20	
OCDD	125	2.60	5.00	100	2.729	123	78 - 144	140.945	11.7	20	
2,3,7,8-TCDF	11.3	0.200	0.500	10	0	113	75 - 158	11.709	3.19	20	
1,2,3,7,8-PeCDF	59.2	0.540	2.50	50	0	118	80 - 134	60.6542	2.43	20	
2,3,4,7,8-PeCDF	58.8	0.520	2.50	50	0	118	68 - 160	59.545	1.32	20	
1,2,3,4,7,8-HxCDF	59.4	0.730	2.50	50	0	119	72 - 134	59.5412	0.201	20	
1,2,3,6,7,8-HxCDF	60.1	0.760	2.50	50	0	120	84 - 130	61.371	2.10	20	
1,2,3,7,8,9-HxCDF	59.2	0.850	2.50	50	0	118	78 - 130	60.7618	2.63	20	
2,3,4,6,7,8-HxCDF	57.5	0.790	2.50	50	0	115	70 - 156	59.0678	2.67	20	
1,2,3,4,6,7,8-HpCDF	55.6	0.960	2.50	50	0	111	82 - 122	58.1958	4.47	20	
1,2,3,4,7,8,9-HpCDF	57.8	0.800	2.50	50	0	116	78 - 138	59.069	2.13	20	
OCDF	112	1.80	5.00	100	0	112	63 - 170	117.3932	4.81	20	

Cleanup Standard

37Cl-2,3,7,8-TCDD	8.77			10		88	31 - 191				
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Labeled Compound Recovery

13C-2,3,7,8-TCDD	84.4			100		84	20 - 175				
13C-1,2,3,7,8-PeCDD	68.1			100		68	21 - 227				
13C-1,2,3,6,7,8-HxCDD	90.9			100		91	25 - 163				
13C-1,2,3,4,6,7,8-HpCDD	90.6			100		91	26 - 166				
13C-OCDD	169			200		84	13 - 199				
13C-2,3,7,8-TCDF	84.6			100		85	22 - 152				
13C-1,2,3,7,8-PeCDF	73.0			100		73	21 - 192				
13C-1,2,3,4,7,8-HxCDF	95.0			100		95	19 - 202				
13C-1,2,3,4,6,7,8-HpCDF	90.0			100		90	21 - 158				

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Quality Control Report

<p>Client: Humboldt Bay Harbor</p> <p>Date Prepared: 05/02/2023</p> <p>Date Analyzed: 05/02/2023</p> <p>Instrument: IC2</p> <p>Matrix: Soil</p> <p>Project: 1996-22216; Sediment Testing</p>	<p>WorkOrder: 2304D23</p> <p>BatchID: 268848</p> <p>Extraction Method: SW3060A</p> <p>Analytical Method: SW7199</p> <p>Unit: mg/Kg</p> <p>Sample ID: MB/LCS/LCSD-268848</p>
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QC Summary Report for SW7199 (Hexavalent chromium)

Analyte	MB Result	MDL	RL			
Hexavalent chromium	ND	0.20	0.20	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Hexavalent chromium	4.3	4.4	4	107	109	70-130	2.50	10

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Quality Control Report

<p>Client: Humboldt Bay Harbor</p> <p>Date Prepared: 04/20/2023</p> <p>Date Analyzed: 04/20/2023</p> <p>Instrument: GC40</p> <p>Matrix: Soil</p> <p>Project: 1996-22216; Sediment Testing</p>	<p>WorkOrder: 2304D23</p> <p>BatchID: 268061</p> <p>Extraction Method: SW3550B/3640Am/3630Cm</p> <p>Analytical Method: SW8081A/8082</p> <p>Unit: mg/kg</p> <p>Sample ID: MB/LCS/LCSD-268061</p>
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QC Summary Report for SW8081A/8082

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aldrin	ND	0.000047	0.00010	-	-	-
a-BHC	ND	0.000045	0.00010	-	-	-
b-BHC	ND	0.000038	0.00010	-	-	-
d-BHC	ND	0.000040	0.00010	-	-	-
g-BHC	ND	0.000056	0.00010	-	-	-
a-Chlordane	ND	0.000039	0.00010	-	-	-
g-Chlordane	ND	0.000043	0.00010	-	-	-
p,p-DDD	ND	0.000041	0.00010	-	-	-
p,p-DDE	ND	0.000047	0.00010	-	-	-
p,p-DDT	ND	0.000069	0.00010	-	-	-
Dieldrin	ND	0.000066	0.00010	-	-	-
Endosulfan I	ND	0.000038	0.00010	-	-	-
Endosulfan II	ND	0.000059	0.00010	-	-	-
Endosulfan sulfate	ND	0.000035	0.00010	-	-	-
Endrin	ND	0.000088	0.00010	-	-	-
Endrin aldehyde	ND	0.000049	0.00010	-	-	-
Endrin ketone	ND	0.000083	0.00010	-	-	-
Heptachlor	ND	0.000064	0.00010	-	-	-
Heptachlor epoxide	ND	0.000029	0.00010	-	-	-
Hexachlorobenzene	ND	0.000077	0.0010	-	-	-
Hexachlorocyclopentadiene	ND	0.00031	0.0020	-	-	-
Methoxychlor	ND	0.000092	0.00020	-	-	-
Surrogate Recovery						
Decachlorobiphenyl	0.0052			0.005	104	28-170

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Quality Control Report

Client: Humboldt Bay Harbor

Date Prepared: 04/20/2023

Date Analyzed: 04/20/2023

Instrument: GC40

Matrix: Soil

Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23

BatchID: 268061

Extraction Method: SW3550B/3640Am/3630Cm

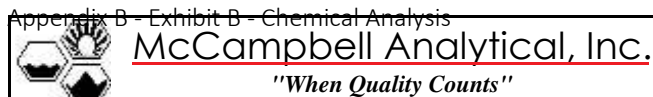
Analytical Method: SW8081A/8082

Unit: mg/kg

Sample ID: MB/LCS/LCSD-268061

QC Summary Report for SW8081A/8082

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aldrin	0.0032	0.0037	0.0050	64	74	31-155	14.3	20
a-BHC	0.0031	0.0036	0.0050	63	73	32-160	14.1	20
b-BHC	0.0033	0.0039	0.0050	66	77	44-149	15.3	20
d-BHC	0.0034	0.0040	0.0050	69	80	37-157	14.9	20
g-BHC	0.0031	0.0037	0.0050	63	73	43-154	15.4	20
a-Chlordane	0.0033	0.0038	0.0050	66	76	39-150	14.4	20
g-Chlordane	0.0037	0.0042	0.0050	73	84	39-151	13.6	20
p,p-DDD	0.0035	0.0040	0.0050	69	80	30-158	13.6	20
p,p-DDE	0.0031	0.0036	0.0050	62	72	47-149	14.6	20
p,p-DDT	0.0033	0.0039	0.0050	65	77	56-166	17.0	20
Dieldrin	0.0035	0.0039	0.0050	70	79	50-163	12.4	20
Endosulfan I	0.0036	0.0040	0.0050	71	79	45-159	10.6	20
Endosulfan II	0.0040	0.0044	0.0050	80	88	41-155	9.71	20
Endosulfan sulfate	0.0041	0.0045	0.0050	82	90	45-156	9.17	20
Endrin	0.0044	0.0051	0.0050	88	101	54-154	14.2	20
Endrin aldehyde	0.0038	0.0043	0.0050	77	85	27-159	10.6	20
Endrin ketone	0.0037	0.0042	0.0050	74	83	40-147	11.0	20
Heptachlor	0.0030	0.0035	0.0050	60	70	52-165	15.6	20
Heptachlor epoxide	0.0034	0.0039	0.0050	69	78	46-145	13.0	20
Hexachlorobenzene	0.0029	0.0034	0.0050	58	68	22-156	15.6	20
Hexachlorocyclopentadiene	0.0028	0.0035	0.0050	57	69	43-173	20.6,F2	20
Methoxychlor	0.0040	0.0046	0.0050	80	91	49-150	12.8	20
Surrogate Recovery								
Decachlorobiphenyl	0.0044	0.0048	0.0050	88	97	28-170	9.85	20



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Quality Control Report

Client: Humboldt Bay Harbor
Date Prepared: 04/24/2023
Date Analyzed: 04/24/2023
Instrument: GC48
Matrix: Soil
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
BatchID: 268236
Extraction Method: SW3550B/3640A
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS/LCSD-268236

QC Summary Report for SW8270C

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Acenaphthene	ND	0.00044	0.0013	-	-	-
Acenaphthylene	ND	0.00023	0.0013	-	-	-
Anthracene	ND	0.00060	0.0013	-	-	-
Benzo (a) anthracene	ND	0.0030	0.013	-	-	-
Benzo (a) pyrene	ND	0.00078	0.0025	-	-	-
Benzo (b) fluoranthene	ND	0.0029	0.0063	-	-	-
Benzo (g,h,i) perylene	ND	0.00086	0.0025	-	-	-
Benzo (k) fluoranthene	ND	0.0012	0.0013	-	-	-
1,1-Biphenyl	ND	0.0054	0.013	-	-	-
Chrysene	ND	0.00073	0.0025	-	-	-
Dibenzo (a,h) anthracene	ND	0.0013	0.0025	-	-	-
Fluoranthene	ND	0.00073	0.0013	-	-	-
Fluorene	ND	0.00078	0.0025	-	-	-
Indeno (1,2,3-cd) pyrene	ND	0.0014	0.013	-	-	-
1-Methylnaphthalene	ND	0.00035	0.0013	-	-	-
2-Methylnaphthalene	ND	0.00044	0.0025	-	-	-
Naphthalene	ND	0.0031	0.0062	-	-	-
Phenanthrene	ND	0.0010	0.0050	-	-	-
Pyrene	ND	0.00065	0.0025	-	-	-

Surrogate Recovery

2-Fluorophenol	1.0			1.25	81	60-130
Phenol-d5	0.97			1.25	78	60-130
Nitrobenzene-d5	1.0			1.25	83	60-130
2-Fluorobiphenyl	0.95			1.25	76	60-130
2,4,6-Tribromophenol	0.72			1.25	57	50-130
4-Terphenyl-d14	0.96			1.25	77	50-130

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Quality Control Report

Client: Humboldt Bay Harbor
Date Prepared: 04/24/2023
Date Analyzed: 04/24/2023
Instrument: GC48
Matrix: Soil
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
BatchID: 268236
Extraction Method: SW3550B/3640A
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS/LCSD-268236

QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acenaphthene	0.063	0.072	0.062	100	116	60-130	14.3	30
Acenaphthylene	0.055	0.064	0.062	87	103	60-130	15.9	30
Anthracene	0.063	0.068	0.062	102	108	60-130	6.52	30
Benzo (a) anthracene	0.067	0.071	0.062	108	114	60-130	5.47	30
Benzo (a) pyrene	0.067	0.072	0.062	108	115	60-130	5.96	30
Benzo (b) fluoranthene	0.067	0.071	0.062	107	114	40-130	6.42	30
Benzo (g,h,i) perylene	0.065	0.066	0.062	104	106	60-130	1.83	30
Benzo (k) fluoranthene	0.071	0.073	0.062	113	117	60-130	3.59	30
Chrysene	0.065	0.069	0.062	105	111	60-130	5.82	30
Dibenzo (a,h) anthracene	0.067	0.068	0.062	108	109	60-130	0.945	30
Fluoranthene	0.062	0.067	0.062	99	107	60-130	7.40	30
Fluorene	0.066	0.078	0.062	106	125	60-130	16.5	30
Indeno (1,2,3-cd) pyrene	0.065	0.067	0.062	105	107	60-130	2.13	30
1-Methylnaphthalene	0.061	0.066	0.062	98	105	60-130	6.91	30
2-Methylnaphthalene	0.062	0.065	0.062	100	104	60-130	4.84	30
Naphthalene	0.059	0.062	0.062	94	100	60-130	5.65	30
Phenanthrene	0.066	0.069	0.062	105	110	60-130	4.80	30
Pyrene	0.070	0.073	0.062	112	117	60-130	5.03	30
Surrogate Recovery								
Phenol-d5	0.98	1.0	1.25	78	82	60-130	4.31	30
Nitrobenzene-d5	1.1	1.1	1.25	85	89	60-130	4.54	30
2-Fluorobiphenyl	0.92	1.0	1.25	74	83	60-130	11.6	30
2,4,6-Tribromophenol	0.97	1.0	1.25	77	80	50-130	3.91	30
4-Terphenyl-d14	1.0	1.1	1.25	82	85	50-130	3.76	30

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Quality Control Report

<p>Client: Humboldt Bay Harbor</p> <p>Date Prepared: 04/20/2023</p> <p>Date Analyzed: 04/20/2023</p> <p>Instrument: ICP-MS5</p> <p>Matrix: Soil</p> <p>Project: 1996-22216; Sediment Testing</p>	<p>WorkOrder: 2304D23</p> <p>BatchID: 268025</p> <p>Extraction Method: SW3050B</p> <p>Analytical Method: SW6020</p> <p>Unit: mg/kg</p> <p>Sample ID: MB/LCS/LCSD-268025 2304D23-001AMS/MSD</p>
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QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Antimony	ND	0.12	0.50	-	-	-
Arsenic	ND	0.11	0.50	-	-	-
Barium	ND	0.71	5.0	-	-	-
Beryllium	ND	0.10	0.50	-	-	-
Cadmium	ND	0.092	0.50	-	-	-
Chromium	ND	0.13	0.50	-	-	-
Cobalt	ND	0.064	0.50	-	-	-
Copper	ND	0.13	0.50	-	-	-
Lead	ND	0.065	0.50	-	-	-
Mercury	ND	0.038	0.050	-	-	-
Molybdenum	ND	0.092	0.50	-	-	-
Nickel	ND	0.080	0.50	-	-	-
Selenium	ND	0.21	0.50	-	-	-
Silver	ND	0.057	0.50	-	-	-
Thallium	ND	0.072	0.50	-	-	-
Vanadium	ND	0.11	0.50	-	-	-
Zinc	ND	2.5	5.0	-	-	-
Surrogate Recovery						
Terbium	530			500	106	70-130

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Quality Control Report

Client: Humboldt Bay Harbor
Date Prepared: 04/20/2023
Date Analyzed: 04/20/2023
Instrument: ICP-MS5
Matrix: Soil
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
BatchID: 268025
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/kg
Sample ID: MB/LCS/LCSD-268025
2304D23-001AMS/MSD

QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Antimony	47	44	50	93	87	75-125	6.85	20
Arsenic	48	45	50	96	91	75-125	5.18	20
Barium	480	450	500	97	90	75-125	6.87	20
Beryllium	48	46	50	96	92	75-125	4.93	20
Cadmium	48	45	50	95	89	75-125	6.82	20
Chromium	48	46	50	96	91	75-125	5.18	20
Cobalt	48	46	50	97	92	75-125	4.58	20
Copper	48	45	50	97	91	75-125	6.38	20
Lead	47	44	50	94	89	75-125	5.70	20
Mercury	1.2	1.1	1.25	93	89	75-125	4.48	20
Molybdenum	48	45	50	95	89	75-125	6.41	20
Nickel	48	45	50	95	90	75-125	5.55	20
Selenium	48	45	50	96	91	75-125	6.27	20
Silver	45	42	50	90	84	75-125	6.85	20
Thallium	49	46	50	97	93	75-125	5.03	20
Vanadium	48	45	50	96	91	75-125	5.48	20
Zinc	480	460	500	96	91	75-125	5.24	20

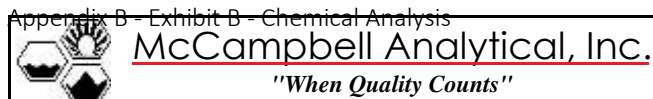
Surrogate Recovery

Terbium	510	470	500	102	94	70-130	7.83	20
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Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	1	44	47	50	ND	88	94	75-125	5.92	20
Arsenic	1	51	52	50	4.762	92	95	75-125	3.46	20
Barium	1	560	580	500	60.14	100	104	75-125	4.05	20
Beryllium	1	45	47	50	ND	89	93	75-125	5.07	20
Cadmium	1	45	48	50	ND	90	97	75-125	6.63	20
Chromium	1	110	110	50	62.77	90	92	75-125	0.796	20
Cobalt	1	53	55	50	8.974	88	92	75-125	3.34	20
Copper	1	67	68	50	22.88	88	91	75-125	1.75	20
Lead	1	52	54	50	6.516	90	95	75-125	4.54	20
Mercury	1	1.2	1.2	1.25	0.05900	91	95	75-125	4.26	20
Molybdenum	1	46	49	50	0.5480	91	97	75-125	6.11	20
Nickel	1	110	110	50	72.73	83	82	75-125	0.360	20
Selenium	1	45	48	50	ND	90	95	75-125	5.05	20
Silver	1	42	45	50	ND	85	90	75-125	5.61	20

(Cont.)

CA ELAP 1644 • NELAP 4033ORELAP



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Quality Control Report

Client: Humboldt Bay Harbor
Date Prepared: 04/20/2023
Date Analyzed: 04/20/2023
Instrument: ICP-MS5
Matrix: Soil
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
BatchID: 268025
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/kg
Sample ID: MB/LCS/LCSD-268025
 2304D23-001AMS/MSD

QC Summary Report for Metals

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Thallium	1	47	49	50	ND	94	99	75-125	5.24	20
Vanadium	1	92	92	50	41.73	100	101	75-125	0.383	20
Zinc	1	510	530	500	61.34	90	94	75-125	3.02	20
Surrogate Recovery										
Terbium	1	480	500	500		96	101	70-130	4.22	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Antimony	ND	ND	100	-
Arsenic	4.4	4.8	7.08	-
Barium	55	60	9.14	-
Beryllium	ND	ND	100	-
Cadmium	ND	ND		-
Chromium	59	63	6.52	20
Cobalt	8.7	9.0	2.55	-
Copper	21	23	8.12	20
Lead	6.5	6.5	0.292	-
Mercury	ND	0.059	100	-
Molybdenum	ND	0.55	10.4	-
Nickel	67	73	8.04	20
Selenium	ND	ND		-
Silver	ND	ND	100	-
Thallium	ND	ND	100	-
Vanadium	39	42	6.32	20
Zinc	55	61	10.9	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.

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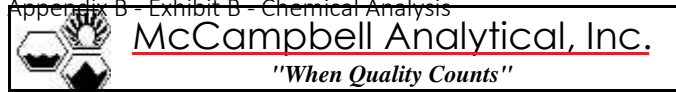
Quality Control Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Prepared: 04/20/2023	BatchID: 268124
Date Analyzed: 04/21/2023	Extraction Method: SW7471B
Instrument: AA1	Analytical Method: SW7471B
Matrix: Soil	Unit: mg/Kg
Project: 1996-22216; Sediment Testing	Sample ID: MB/LCS/LCSD-268124

QC Summary Report for Mercury

Analyte	MB Result	MDL	RL			
Mercury	ND	0.0078	0.017	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Mercury	0.16	0.15	0.17	95	91	80-120	4.01	20



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Quality Control Report

Client: Humboldt Bay Harbor
Date Prepared: 04/24/2023
Date Analyzed: 04/25/2023
Instrument: WetChem
Matrix: Soil
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
BatchID: 268286
Extraction Method: ASTM D2216
Analytical Method: SW8000
Unit: wet wt%
Sample ID: MB-268286

QC Summary Report for Percent Moisture

Analyte	MB Result	MDL	RL			
% Moisture	ND	0.100	0.100	-	-	-

 <p style="font-size: 1.2em; margin: 0;">McC Campbell Analytical, Inc.</p> <p style="font-size: 0.8em; margin: 0;"><i>"When Quality Counts"</i></p>	1534 Willow Pass Road, Pittsburg, CA 94565-1701 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269 http://www.mccampbell.com / E-mail: main@mccampbell.com
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Quality Control Report

<p>Client: Humboldt Bay Harbor</p> <p>Date Prepared: 04/19/2023</p> <p>Date Analyzed: 04/21/2023 - 04/25/2023</p> <p>Instrument: GC11B, GC6A, GC9b</p> <p>Matrix: Soil</p> <p>Project: 1996-22216; Sediment Testing</p>	<p>WorkOrder: 2304D23</p> <p>BatchID: 268026</p> <p>Extraction Method: SW3550B/3630C</p> <p>Analytical Method: SW8015B</p> <p>Unit: mg/Kg</p> <p>Sample ID: MB/LCS/LCSD-268026 2304D23-001AMS/MSD</p>
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QC Report for SW8015B w/ Silica Gel Clean-Up

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	1.3	2.0	-	-	-
TPH-Motor Oil (C18-C36)	ND	5.5	10	-	-	-
Surrogate Recovery						
C9	26			25	105	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	39	36	40	98	91	70-130	7.85	20
Surrogate Recovery								
C9	26	24	25	104	95	70-130	9.85	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1	36	34	40	ND	91	85	70-130	6.62	20
Surrogate Recovery										
C9	1	24	23	25		96	94	70-130	2.28	20



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Quality Control Report

Client: Humboldt Bay Harbor
Date Prepared: 04/24/2023
Date Analyzed: 04/25/2023
Instrument: WetChem
Matrix: Soil
Project: 1996-22216; Sediment Testing

WorkOrder: 2304D23
BatchID: 268308
Extraction Method: SM2540 G-1997
Analytical Method: SM2540B
Unit: wet wt%

QC Summary Report for SM2540B (Total Solids)

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
2304D23-001A	58.3	6.905	58.5	6.88	0.40	<10

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Quality Control Report

Client: Humboldt Bay Harbor	WorkOrder: 2304D23
Date Prepared: 04/21/2023	BatchID: 268153
Date Analyzed: 04/21/2023	Extraction Method: SW9060A
Instrument: WC_CNS	Analytical Method: SW9060A
Matrix: Soil	Unit: mg/kg
Project: 1996-22216; Sediment Testing	Sample ID: MB/LCS/LCSD-268153

QC Summary Report for SW9060A

Analyte	MB Result	MDL	RL			
TOC	ND	130	200	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TOC	8100	8200	8200	99	100	80-120	0.765	20

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WaterTrax CLIP EDF

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2304D23 **ClientCode:** HBH **QuoteID:** 232912
 EQuIS Dry-Weight Email HardCopy ThirdParty J-flag
 Detection Summary Excel

Report to:

Doug Saucedo
Humboldt Bay Harbor
601 Startare Dr.
Eureka, CA 95501
(707) 443-0801 FAX:

Email: dsaucedo@humboldtbay.org
cc/3rd Party: enielsen@shn-engr.com;
PO: 1921
Project: 1996-22216; Sediment Testing

Bill to:

Adam Wagschal
Humboldt Bay Harbor
601 Startare Dr.
Eureka, CA 95501
dsaucedo@humboldtbay.org; clerk@hu

Requested TATs: 15 days;
5 days;

Date Received: 04/19/2023

Date Logged: 04/19/2023

Lab ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
2304D23-001	WIM-1	Soil	4/12/2023 09:20	<input type="checkbox"/>	A	A	A	A	A	A	A	A	A	A	A	A	A
2304D23-002	WIM-2	Soil	4/11/2023 14:20	<input type="checkbox"/>	A	A	A	A	A	A	A	A	A	A	A	A	A
2304D23-003	WIM-3	Soil	4/11/2023 12:40	<input type="checkbox"/>	A	A	A	A	A	A	A	A	A	A	A	A	A

Test Legend:

1	1613_FULL_S	2	7199_TTLC_LL_S	3	8081pcB_ESL_LL_S	4	8270_PNA_GPC_S
5	CAM17MS_TTLC_S	6	cnsTOC_S	7	HG_S	8	OrganoTins_S
9	PERmoist_S	10	PRDisposal Fee	11	TPH(DMO)WSG_S	12	TS_S(%)

Project Manager: Susan Thompson

Prepared by: Adrianna Cardoza

Comments:

NOTE: Soil samples are discarded 60 days after receipt unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



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WORK ORDER SUMMARY

Client Name: HUMBOLDT BAY HARBOR

Project: 1996-22216; Sediment Testing

Work Order: 2304D23

Client Contact: Doug Saucedo

QC Level: LEVEL 2

Contact's Email: dsaucedo@humboldtby.org

Comments:

Date Logged: 4/19/2023

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	WIM-1	Soil	SM2540B (Total Solids)	2	16OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4/12/2023 9:20	5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW8015B (TPH-d,mo w/ S.G. Clean-Up)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW 8000 (Percent Moisture)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			Organotin Compounds by GC-MS <Dibutyltin, Monobutyltin, Tetrabutyltin, Tributyltin>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/28/2023		<input type="checkbox"/>	<input checked="" type="checkbox"/>
			SW7471B (Mercury)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW9060A (TOC)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/27/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW6020 (CAM 17)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

U** = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.



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WORK ORDER SUMMARY

Client Name: HUMBOLDT BAY HARBOR

Project: 1996-22216; Sediment Testing

Work Order: 2304D23

Client Contact: Doug Saucedo

QC Level: LEVEL 2

Contact's Email: dsaucedo@humboldtby.org

Comments:

Date Logged: 4/19/2023

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	WIM-1	Soil	SW8270C (PAHs/PNAs w/ GPC) <1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene>	2	16OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4/12/2023 9:20	5 days	4/28/2023	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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WORK ORDER SUMMARY

Client Name: HUMBOLDT BAY HARBOR

Project: 1996-22216; Sediment Testing

Work Order: 2304D23

Client Contact: Doug Saucedo

QC Level: LEVEL 2

Contact's Email: dsaucedo@humboldtby.org

Comments:

Date Logged: 4/19/2023

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 EDF
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 EQUIS
 Email
 HardCopy
 ThirdParty
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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	WIM-1	Soil	SW8081A/8082 (OC Pesticides+PCBs) ESLS w/ Florisil <a-BHC_1, a-Chlordane_1, Aldrin_1, Aroclor1016_1, Aroclor1221_1, Aroclor1232_1, Aroclor1242_1, Aroclor1248_1, Aroclor1254_1, Aroclor1260_1, b-BHC_1, Chlordane (Technical)_1, d-BHC_1, Dieldrin_1, Endosulfan I_1, Endosulfan II_1, Endosulfan sulfate_1, Endrin aldehyde_1, Endrin ketone_1, Endrin_1, g-BHC_1, g-Chlordane_1, Heptachlor epoxide_1, Heptachlor_1, Hexachlorobenzene_1, Hexachlorocyclopentadiene_1, Methoxychlor_1, o,p-DDD_1, o,p-DDE_1, o,p-DDT_1, p,p-DDD_1, p,p-DDE_1, p,p-DDT_1, PCBs, total_1, Toxaphene_1>	2	16OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4/12/2023 9:20	5 days	4/28/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW7199 (Hexavalent chromium, Low-Level)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			E1613B (PCDDs & PCDFs)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		15 days	5/10/2023		<input type="checkbox"/>	<input type="checkbox"/>

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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WORK ORDER SUMMARY

Client Name: HUMBOLDT BAY HARBOR

Project: 1996-22216; Sediment Testing

Work Order: 2304D23

Client Contact: Doug Saucedo

QC Level: LEVEL 2

Contact's Email: dsaucedo@humboldtby.org

Comments:

Date Logged: 4/19/2023

WaterTrax
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 EQUIS
 Email
 HardCopy
 ThirdParty
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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
002A	WIM-2	Soil	SM2540B (Total Solids)	2	16OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4/11/2023 14:20	5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW8015B (TPH-d,mo w/ S.G. Clean-Up)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW 8000 (Percent Moisture)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			Organotin Compounds by GC-MS <Dibutyltin, Monobutyltin, Tetrabutyltin, Tributyltin>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/28/2023		<input type="checkbox"/>	<input checked="" type="checkbox"/>
			SW7471B (Mercury)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW9060A (TOC)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/27/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW6020 (CAM 17)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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WORK ORDER SUMMARY

Client Name: HUMBOLDT BAY HARBOR

Project: 1996-22216; Sediment Testing

Work Order: 2304D23

Client Contact: Doug Saucedo

QC Level: LEVEL 2

Contact's Email: dsaucedo@humboldtby.org

Comments:

Date Logged: 4/19/2023

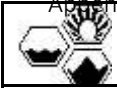
WaterTrax
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 HardCopy
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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
002A	WIM-2	Soil	SW8270C (PAHs/PNAs w/ GPC) <1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene>	2	16OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4/11/2023 14:20	5 days	4/28/2023		<input type="checkbox"/>	<input type="checkbox"/>

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
 http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: HUMBOLDT BAY HARBOR

Project: 1996-22216; Sediment Testing

Work Order: 2304D23

Client Contact: Doug Saucedo

QC Level: LEVEL 2

Contact's Email: dsaucedo@humboldtby.org

Comments:

Date Logged: 4/19/2023

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
002A	WIM-2	Soil	SW8081A/8082 (OC Pesticides+PCBs) ESLs w/ Florisil <a-BHC_1, a-Chlordane_1, Aldrin_1, Aroclor1016_1, Aroclor1221_1, Aroclor1232_1, Aroclor1242_1, Aroclor1248_1, Aroclor1254_1, Aroclor1260_1, b-BHC_1, Chlordane (Technical)_1, d-BHC_1, Dieldrin_1, Endosulfan I_1, Endosulfan II_1, Endosulfan sulfate_1, Endrin aldehyde_1, Endrin ketone_1, Endrin_1, g-BHC_1, g-Chlordane_1, Heptachlor epoxide_1, Heptachlor_1, Hexachlorobenzene_1, Hexachlorocyclopentadiene_1, Methoxychlor_1, o,p-DDD_1, o,p-DDE_1, o,p-DDT_1, p,p-DDD_1, p,p-DDE_1, p,p-DDT_1, PCBs, total_1, Toxaphene_1>	2	16OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4/11/2023 14:20	5 days	4/28/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW7199 (Hexavalent chromium, Low-Level)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			E1613B (PCDDs & PCDFs)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		15 days	5/10/2023		<input type="checkbox"/>	<input type="checkbox"/>

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WORK ORDER SUMMARY

Client Name: HUMBOLDT BAY HARBOR

Project: 1996-22216; Sediment Testing

Work Order: 2304D23

Client Contact: Doug Saucedo

QC Level: LEVEL 2

Contact's Email: dsaucedo@humboldtby.org

Comments:

Date Logged: 4/19/2023

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
003A	WIM-3	Soil	SM2540B (Total Solids)	2	16OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4/11/2023 12:40	5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW8015B (TPH-d,mo w/ S.G. Clean-Up)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW 8000 (Percent Moisture)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			Organotin Compounds by GC-MS <Dibutyltin, Monobutyltin, Tetrabutyltin, Tributyltin>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/28/2023		<input type="checkbox"/>	<input checked="" type="checkbox"/>
			SW7471B (Mercury)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW9060A (TOC)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/27/2023		<input type="checkbox"/>	<input type="checkbox"/>
			SW6020 (CAM 17)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>

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Work Order: 2304D23

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Comments:

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
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Project: 1996-22216; Sediment Testing

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			SW7199 (Hexavalent chromium, Low-Level)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		5 days	4/26/2023		<input type="checkbox"/>	<input type="checkbox"/>
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ANALYTE LIST

Pacific ExoRisk
 2250 Cordelia Rd.
 Fairfield, CA 94534

Project Proponent	Woodley Island Marina
Project #:	37646
Site #:	WIM-1-Comp, WIM-2-Comp, & WIM-3-Comp

ANALYTE	METHOD	TARGETED MRL	ANALYSIS REQUESTED
Solids, Total	EPA 160.3	0.10%	X
Total Organic Carbon	EPA 9060A	0.10%	X
Antimony	EPA 6010B	0.2 mg/kg	X
Arsenic	EPA 6010B	2 mg/kg	X
Barium	EPA 6010B	2 mg/kg	X
Beryllium	EPA 6010B	0.2 mg/kg	X
Cadmium	EPA 6010B	0.2 mg/kg	X
Chromium	EPA 6010B	0.5 mg/kg	X
Chromium (VI)	EPA 6010B	0.5 mg/kg	X
Cobalt	EPA 6020	1 mg/kg	X
Copper	EPA 6010B	1 mg/kg	X
Lead	EPA 6010B	1 mg/kg	X
Molybdenum	EPA 6010B	2 mg/kg	X
Mercury	EPA 7471B	0.02 mg/kg	X
Nickel	EPA 6010B	0.1 mg/kg	X
Selenium	EPA 6010B	0.1 mg/kg	X
Silver	EPA 6010B	0.2 mg/kg	X
Thallium	EPA 6010B	2 mg/kg	X
Vanadium	EPA 6010B	0.5 mg/kg	X
Zinc	EPA 6010B	1 mg/kg	X
2,4'-DDD	EPA 8081B	1 µg/kg	X
2,4'-DDE	EPA 8081B	1 µg/kg	X
2,4'-DDT	EPA 8081B	1 µg/kg	X
4,4'-DDD	EPA 8081B	1 µg/kg	X
4,4'-DDE	EPA 8081A	1 µg/kg	X
4,4'-DDT	EPA 8081A	1 µg/kg	X
Total DDTs	EPA 8081A	1 µg/kg	X
Aldrin	EPA 8081A	1 µg/kg	X
alpha-BHC	EPA 8081A	1 µg/kg	X
beta-BHC	EPA 8081A	1 µg/kg	X
gamma-BHC (Lindane)	EPA 8081A	1 µg/kg	X
delta-BHC	EPA 8081A	1 µg/kg	X
Alpha Chlordane	EPA 8081A	1 µg/kg	X
Gamma Chlordane	EPA 8081A	1 µg/kg	X
Dieldrin	EPA 8081A	1 µg/kg	X
Endosulfan I	EPA 8081A	1 µg/kg	X
Endosulfan II	EPA 8081A	1 µg/kg	X
Endosulfan sulfate	EPA 8081A	1 µg/kg	X
Endrin	EPA 8081A	1 µg/kg	X
Endrin aldehyde	EPA 8081A	1 µg/kg	X
Endrin ketone	EPA 8081A	1 µg/kg	X
Heptachlor	EPA 8081A	1 µg/kg	X
Heptachlor epoxide	EPA 8081A	1 µg/kg	X
Methoxychlor	EPA 8081A	1 µg/kg	X
Toxaphene	EPA 8081A	20 µg/kg	X
PCB 005+008	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 018	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 028	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 031	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 033	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 044	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 049	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 052	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 056	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 060	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 066	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 070	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 074	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 087	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 095	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 097	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 099	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 101	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 105	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 110	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 118	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 128	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 132 + 153	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 138 + 158	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 141	EPA 8082 (GC-ECD)	0.5 µg/kg	X

ANALYTE LIST

Pacific EcoRisk
 2250 Cordelia Rd.
 Fairfield, CA 94534

Project Proponent:	Woodley Island Marina
Project #:	37646
Site #:	WIM-1-Comp, WIM-2-Comp, & WIM-3-Comp

ANALYTE	METHOD	TARGETED MRL	ANALYSIS REQUESTED
PCB 149	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 151	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 153	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 156	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 170	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 174	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 177	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 180	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 183	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 187	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 194	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 195	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 201	EPA 8082 (GC-ECD)	0.5 µg/kg	X
PCB 203	EPA 8082 (GC-ECD)	0.5 µg/kg	X
Total PCBs	EPA 8082 (GC-ECD)	0.5 µg/kg	X
Acenaphthylene	EPA 8270C	10 µg/kg	X
Acenaphthene	EPA 8270C	10 µg/kg	X
Anthracene	EPA 8270C	10 µg/kg	X
Benz(a)anthracene	EPA 8270C	10 µg/kg	X
Benzo(a)pyrene	EPA 8270C	10 µg/kg	X
Benzo(b)fluoranthene	EPA 8270C	10 µg/kg	X
Benzo(g,h,i)perylene	EPA 8270C	10 µg/kg	X
Chrysene	EPA 8270C	10 µg/kg	X
Dibenz(a,h)anthracene	EPA 8270C	10 µg/kg	X
Fluoranthene	EPA 8270C	10 µg/kg	X
Fluorene	EPA 8270C	10 µg/kg	X
Indeno(1,2,3-cd)pyrene	EPA 8270C	10 µg/kg	X
Naphthalene	EPA 8270C	10 µg/kg	X
Phenanthrene	EPA 8270C	10 µg/kg	X
Pyrene	EPA 8270C	10 µg/kg	X
Mono-Butyltin	Krone 1989	10 µg/kg	X
Di-butyltin	Krone 1989	10 µg/kg	X
Tri-butyltin	Krone 1989	10 µg/kg	X
Tetra-butyltin	Krone 1989	10 µg/kg	X
Total Butyltins	Krone 1989	10 µg/kg	X
Dioxins/Furans (TEQ Values Requested)			
2,3,7,8-TCDD	EPA 1613 B	1 ng/kg	X
2,3,7,8-TCDF	EPA 1613 B	1 ng/kg	X
1,2,3,7,8-PeCDD	EPA 1613 B	1 ng/kg	X
1,2,3,7,8-PeCDF	EPA 1613 B	1 ng/kg	X
2,3,4,7,8-PeCDF	EPA 1613 B	1 ng/kg	X
1,2,3,4,7,8-HxCDD	EPA 1613 B	1 ng/kg	X
1,2,3,4,7,8-HxCDF	EPA 1613 B	1 ng/kg	X
1,2,3,4,7,8,9-HxCDD	EPA 1613 B	1 ng/kg	X
1,2,3,4,7,8,9-HxCDF	EPA 1613 B	1 ng/kg	X
1,2,3,6,7,8-HxCDF	EPA 1613 B	1 ng/kg	X
1,2,3,7,8,9-HxCDF	EPA 1613 B	1 ng/kg	X
2,3,4,6,7,8-HxCDF	EPA 1613 B	1 ng/kg	X
1,2,3,4,6,7,8-HpCDD	EPA 1613 B	1 ng/kg	X
1,2,3,4,6,7,8-HpCDF	EPA 1613 B	1 ng/kg	X
1,2,3,4,7,8,9-HpCDF	EPA 1613 B	1 ng/kg	X
OCDD	EPA 1613 B	1 ng/kg	X
OCDF	EPA 1613 B	1 ng/kg	X
QA/QC			
Standard TAT.			
Samples frozen (except TOC & grain size).			

If you have any questions regarding this request as checked,
 please call Jeff Cotsifas at Pacific EcoRisk (707) 207-7760 or
 Erik Nielsen at SHN Engineering (707) 441-8855.

 <p style="margin: 0;">McC Campbell Analytical, Inc. "When Quality Counts"</p>	<p style="margin: 0; font-size: small;">1534 Willow Pass Road, Pittsburg, CA 94565-1701 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269 http://www.mccampbell.com / E-mail: main@mccampbell.com</p>
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Sample Receipt Checklist

Client Name:	Humboldt Bay Harbor	Date and Time Received:	4/19/2023 13:48
Project:	1996-22216; Sediment Testing	Date Logged:	4/19/2023
WorkOrder No:	2304D23	Received by:	Adrianna Cardoza
Carrier:	Patrick Johnson (MAI Courier)	Logged by:	Adrianna Cardoza
	Matrix: <u>Soil</u>		

Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
COC agrees with Quote?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE)

Sample/Temp Blank temperature		Temp: 1.1°C	NA <input type="checkbox"/>
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

UCMR Samples:

pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments:

Doug Saucedo

From: Mike McElroy <mmcelroy@pacificecorisk.com>
Sent: Wednesday, May 24, 2023 1:54 PM
To: Erik Nielsen
Cc: Jeffrey Cotsifas; Doug Saucedo
Subject: Re: Woodley Island Marina
Attachments: SHN Woodley Island Marina Toxicity Testing Summary Tables.docx

Hello Erik,

I have attached summary results of the completed testing, however we just found out today about an issue with the planned *Ampelisca abdita* re-test. The vendor collected organisms and when they prepared to ship them they found that they had spawned. They went to another location to collect and found only neonates. The supplier said the population is about 3 weeks away from being able to collect proper aged/sized organisms at this time which would be past hold time for the samples that were collected. We have ordered *Leptocheirus plumulosus* as a replacement, a species that has been substituted in the past for projects in the area. The *Leptocheirus plumulosus* testing is currently scheduled to initiate on 5/31/23 and terminate on 6/10/23. My apologies for the delay.

Mytilus SET testing is complete, however test enumerations are ongoing, so those results have not been included in the attached summary.

The bioaccumulation tissue samples are frozen and ready to ship at your direction to the analytical laboratory of your choice.

Please let me know if you have any questions.

Regards,

Mike

Mike McElroy
Senior Project Manager

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534
Direct: 707.207.7778
Mobile: 707.688.7405
Main: 707.207.7760
Fax: 707.207.7916
Email: mmcelroy@pacificecorisk.com

Confidentiality Notice: This e-mail and document(s) accompanying this e-mail contain confidential information that is legally privileged. The information is intended only for the use of the intended recipient(s) named above. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or the taking of any action in reliance on the contents of this e-mail and its attachments, except its direct delivery to the intended recipient(s) named above, is strictly prohibited. If you have received this e-mail in error, please notify us immediately by telephone.

***Neanthes arenaceodentata* survival in the Woodley Island Marina Sediments.**

Sediment Site	% Survival in Test Replicates					Mean % Survival
	Rep A	Rep B	Rep C	Rep D	Rep E	
Lab Control	90	100	100	100	100	98
WIM-1-Comp	100	100	100	100	100	100
WIM-2-Comp	100	100	100	100	100	100
WIM-3-Comp	100	100	100	100	100	100

Effects of WIM-1-Comp sediment elutriate on *Americamysis bahia*.

Elutriate Treatment	Mean % Survival
Lab Control	100
1%	98
10%	100
50%	100
100%	100
Site Water	100
Survival LC50 =	>100% Elutriate

Effects of WIM-2-Comp sediment elutriate on *Americamysis bahia*.

Elutriate Treatment	Mean % Survival
Lab Control	100
1%	100
10%	100
50%	100
100%	100
Site Water	100
Survival LC50 =	>100% Elutriate

Effects of WIM-3-Comp sediment elutriate on *Americamysis bahia*.

Elutriate Treatment	Mean % Survival
Lab Control	100
1%	100
10%	100
50%	100
100%	100
Site Water	100
Survival LC50 =	>100% Elutriate

Effects of WIM-1-Comp sediment elutriate on *Menidia beryllina*.

Elutriate Treatment	Mean % Survival
Lab Control	96
1%	94
10%	90
50%	96
100%	98
Site Water	100
Survival LC50 =	>100% Elutriate

Effects of WIM-2-Comp sediment elutriate on *Menidia beryllina*.

Elutriate Treatment	Mean % Survival
Lab Control	94
1%	96
10%	92
50%	96
100%	96
Site Water	100
Survival LC50 =	>100% Elutriate

Effects of WIM-3-Comp sediment elutriate on *Menidia beryllina*.

Elutriate Treatment	Mean % Survival
Lab Control	92
1%	92
10%	90
50%	86
100%	84
Site Water	100
Survival LC ₅₀ =	>100% Elutriate

Woodley Island Marina Sediment Bioaccumulation Testing with *Macoma nasuta*.

Sample I.D.	Percent of Bivalves that Survived					Mean % Survival
	Rep A	Rep B	Rep C	Rep D	Rep E	
Lab Control	87.5	93.8	100	87.5	93.8	92.5
WIM-1-Comp	100	87.5	81.2	100	87.5	91.2
WIM-2-Comp	87.5	93.8	100	100	100	96.2
WIM-3-Comp	100	93.8	100	100	93.8	97.5

Woodley Island Marina Sediment Bioaccumulation Testing with *Nereis virens*.

Sample I.D.	Percent of Polychaetes that Survived					Mean % Survival
	Rep A	Rep B	Rep C	Rep D	Rep E	
Lab Control	100	100	100	100	100	100
WIM-1-Comp	100	100	100	100	100	100
WIM-2-Comp	100	100	100	100	100	100
WIM-3-Comp	100	100	100	100	100	100

**EPA Ocean Disposal
Special Conditions**

C



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

May 5, 2021

**EPA Ocean Disposal Special Conditions for
USACE Use of the Expanded
Humboldt Open Ocean Disposal Site (HOODS)**

The following mandatory conditions for disposal operations at the HOODS are provided pursuant to EPA's authority under sections 102 and 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA), and the ocean dumping regulations at 40 CFR Parts 220-228. Please note that these conditions and reporting requirements apply both to USACE using its owned and operated dredging equipment (e.g., the hopper dredge *Essayons*) as well as to any company contracted by USACE to perform dredging and ocean disposal with non-USACE owned and operated equipment (e.g., under USACE's West Coast Hopper Contract). These conditions also apply to any and all dredging episodes by or for USACE throughout calendar year 2021.

Also note that these conditions differ somewhat from past years, because as of January 2021 EPA expanded the boundaries of HOODS. As part of that action, **no further disposal is allowed within the original HOODS site**. All disposal operations must now take place in specified cells within the expanded HOODS boundaries, as described below and shown on the attached figure.

Definitions:

1. **"Permit"** and **"permittee"** as used here mean USACE ocean dumping permits issued to others under Section 103 of the MPRSA, and to USACE itself and its contracts or other authorizations for USACE dredging projects (see MPRSA section 103(e) and 40 CFR Part 220.2).
2. **"Towing vessel"** is any self-propelled tug or other marine vessel used to transport (tow or push) the "disposal vessel" (see #3 following) for any portion of the transit to G-DODS.
3. **"Disposal vessel"** is any barge, scow, or self-propelled vessel (such as a hopper dredge) that carries dredged material during transit and from which the dredged material is discharged, typically by opening doors in the bottom of the hull or by splitting the hull.
4. **"Transit"** or **"transport"** to the disposal site begins as soon as dredged material loading into the disposal vessel is completed and a towing vessel begins moving the disposal vessel to the disposal site.
5. **"Buffer cells"** are the outermost cells of the overall disposal site, adjacent to the site boundaries. NO DISPOSAL is allowed in the buffer cells unless specified by EPA on a project-by-project basis.
6. **"Closed cells"** are specified (smaller) cells in the interior of the overall disposal site; disposal site that EPA has identified as having mounded to a degree that DISPOSAL IS NO LONGER ALLOWED.
7. **"Allowable Disposal Cells"** are specified (smaller) cells in the interior of the overall disposal site within which the disposal vessel must discharge all of the dredged material.

EPA Conditions for use of the Humboldt Open Ocean Disposal Site (HOODS) in 2021:

1. All disposal operations at the HOODS shall be conducted in accordance with the most recent update of the Site Management and Monitoring Plan (SMMP) (https://www.epa.gov/sites/production/files/2020-12/documents/epa-r09-ow-2020-0188-hoods_smmp_2021_final-2020-10-19.pdf), as well as these specific conditions. (In the event of any contradictions, these conditions prevail.)
2. Dredged material shall not be leaked or spilled from disposal vessels during transit to the HOODS. Transportation of dredged material to the HOODS shall only be allowed when weather and sea state conditions will not interfere with safe transportation and will not create risk of spillage, leak or other loss of dredged material in transit to the HOODS. No disposal vessel trips shall be initiated when the National Weather Service has issued a gale warning for local waters during the time period necessary to complete dumping operations, or when wave heights are 16 feet or greater.
3. No more than one disposal vessel may be present within the HOODS at any time.
4. **NO DISPOSAL in buffer cells or closed cells:** Disposal may only occur in certain interior cells of the expanded HOODS (refer to attached schematic of the expanded HOODS and Condition 5, below). **Specifically, no disposal shall occur in buffer cells A1 through A12, L1 through L12, B1 through K1, or B12 through K12. Similarly, no disposal shall occur in the original HOODS which is now closed (Quadrant 1 on the attached schematic).**
5. **Allowable disposal cells:** Disposal events for this project shall occur **only** over the northeast and northwest slopes of the existing mound where depths currently exceed 130 feet MLLW. Specifically, **all disposal events must occur within the 11 cells labeled B6 through G6, and G7 through G11** as shown on the attached schematic. (Coordinates for the corners of these allowable disposal cells are also provided on the schematic.) Dredged material from sequential trips shall not be disposed in the same cell; rather, to the maximum extent practicable consistent with safe vessel operation, disposal events shall progress to all allowable disposal cells before returning to a previously used cell. (Note, this does not mean disposal must happen in order from one cell to the next. Nor does it mean that single disposal events cannot cross a cell's boundary and discharge material in multiple authorized cells.)
6. The disposal vessel must have a disposal tracking system, and the system must be operational before any individual disposal trip to HOODS is initiated. Throughout transit to the disposal site, during disposal, and for at least 10 minutes after disposal is complete, the disposal tracking system must automatically indicate and record the position, speed and draft of the disposal vessel, and the load level within the bin. These data must be generated at a maximum 1-minute interval while en route to the HOODS, and at a maximum 15-second interval while within 1/4 mile of and inside the HOODS boundary. The tracking system must also indicate and record the time and location of the beginning and end of each disposal event (e.g., opening and closing of scow hull or hopper doors).
7. "E-mail alerts" regarding any degree of apparent dumping outside the HOODS boundary, and regarding any apparent substantial leakage/spillage or other loss of material en route to the HOODS must be sent within 24 hours of USACE becoming aware of the apparent issue, to Brian Ross (ross.brian@epa.gov) and Allan Ota (ota.allan@epa.gov) at EPA Region IX, the San Francisco District USACE project manager, and Mark Delaplaine at the California Coastal Commission (mdelaplaine@coastal.ca.gov). Substantial leakage/spillage or other loss shall be

defined as an apparent loss of draft of one foot or more between the time that the disposal vessel begins transport to the HOODS and the time of actual disposal.

8. In addition to any alerts pursuant to Condition 7 above, data recorded from the disposal tracking system must be provided to EPA Region IX, the San Francisco District USACE, and the California Coastal Commission at a minimum on a weekly basis during disposal operations. For each disposal trip the records must include disposal trip number and date, estimated bin volume of material disposed, and a visual display of the beginning and ending locations of the disposal event relative to the expanded HOODS boundaries and its internal disposal cells. The reports shall include a cover letter describing any problems complying with these Ocean Disposal Special Conditions, the cause(s) of the problems, any steps taken to rectify the problems, and whether the problems occurred on subsequent disposal trips.
9. A post-disposal bathymetric survey of the expanded HOODS, extending at least 500 feet outside the site boundaries in all directions, shall be conducted within 60 days of completion of disposal operations, and provided to EPA Region IX within 30 days of completion.

ALSO SEE ATTACHED FIGURE AND COORDINATE TABLE SHOWING UPDATED ALLOWABLE CELLS FOR 2021.

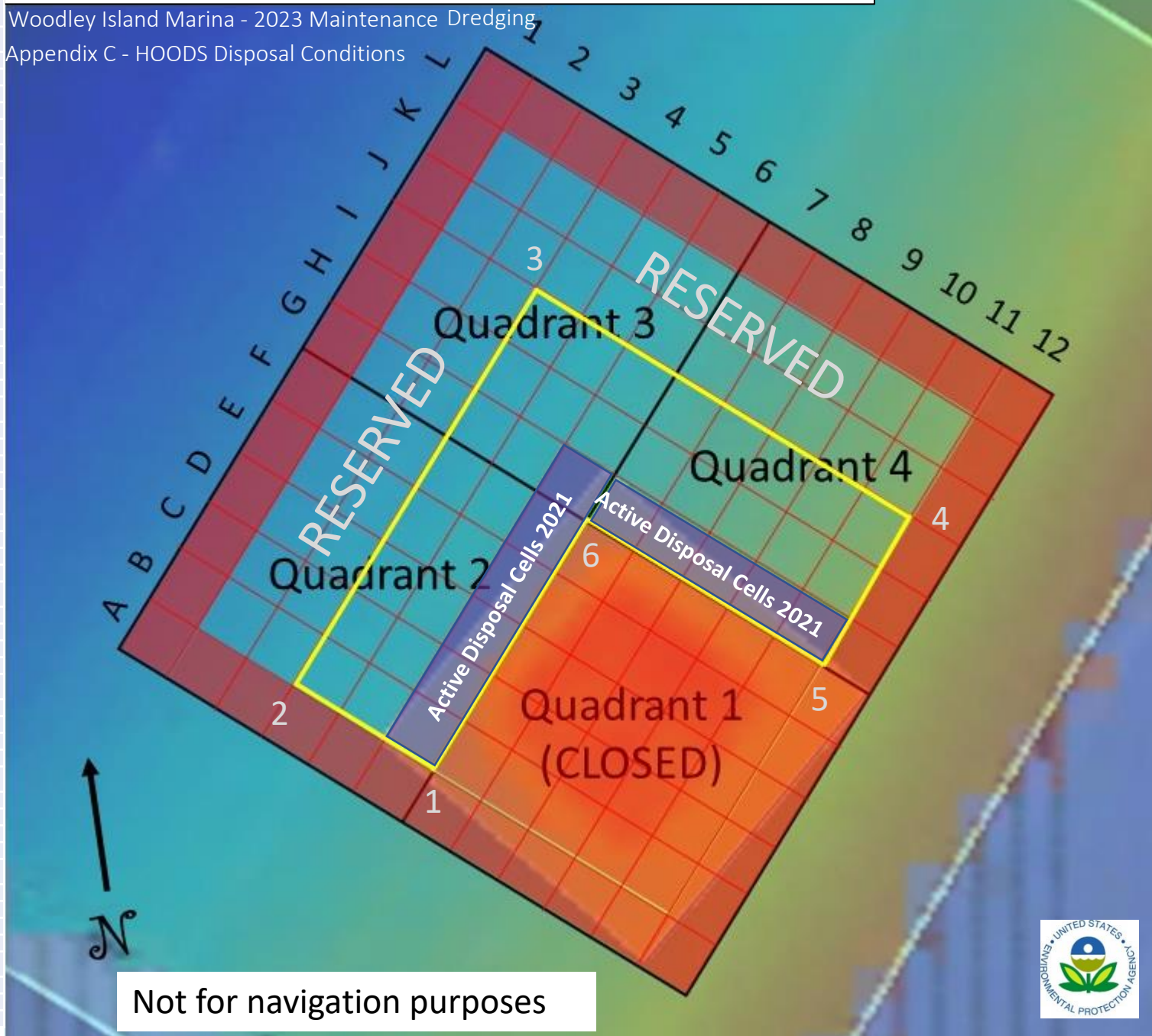
-end-

Coordinates of Disposal Zone Vertices (starting 2021)

Woodley Island Marina - 2023 Maintenance Dredging

Appendix C - HOODS Disposal Conditions

2021 Active Disposal Cell	N Latitude	W Longitude
B6	40° 48' 19"	124° 18' 16"
	40° 48' 13"	124° 18' 05"
	40° 48' 27"	124° 18' 10"
	40° 48' 22"	124° 17' 59"
C6	40° 48' 27"	124° 18' 10"
	40° 48' 22"	124° 17' 59"
	40° 48' 36"	124° 18' 03"
	40° 48' 30"	124° 17' 52"
D6	40° 48' 36"	124° 18' 03"
	40° 48' 30"	124° 17' 52"
	40° 48' 44"	124° 17' 57"
	40° 48' 39"	124° 17' 45"
E6	40° 48' 44"	124° 17' 57"
	40° 48' 39"	124° 17' 45"
	40° 48' 53"	124° 17' 50"
	40° 48' 48"	124° 17' 39"
F6	40° 48' 53"	124° 17' 50"
	40° 48' 48"	124° 17' 39"
	40° 49' 02"	124° 17' 43"
	40° 48' 56"	124° 17' 32"
G6	40° 49' 02"	124° 17' 43"
	40° 48' 56"	124° 17' 32"
	40° 49' 10"	124° 17' 37"
	40° 49' 05"	124° 17' 25"
G7	40° 49' 05"	124° 17' 25"
	40° 48' 56"	124° 17' 32"
	40° 48' 59"	124° 17' 14"
	40° 48' 51"	124° 17' 21"
G8	40° 48' 59"	124° 17' 14"
	40° 48' 51"	124° 17' 21"
	40° 48' 55"	124° 17' 03"
	40° 48' 46"	124° 17' 10"
G9	40° 48' 55"	124° 17' 03"
	40° 48' 46"	124° 17' 10"
	40° 48' 50"	124° 16' 52"
	40° 48' 41"	124° 16' 59"
G10	40° 48' 50"	124° 16' 52"
	40° 48' 41"	124° 16' 59"
	40° 48' 44"	124° 16' 40"
	40° 48' 36"	124° 16' 47"
G11	40° 48' 44"	124° 16' 40"
	40° 48' 36"	124° 16' 47"
	40° 48' 39"	124° 16' 29"
	40° 48' 30"	124° 16' 36"



**District Provided
Permits and CEQA
Notice of Exemption**

D

Appendix D – Permits Description

The Humboldt Bay Harbor, Recreation, and Conservation District (DISTRICT) maintains all permits required for mechanical dredging at Woodley Island Marina (WIM) with final dredged material placement at the Humboldt Open Ocean Disposal Site (HOODS). Permit amendments are also included allowing for channel smoothing, knockdown methods, and dredge material offloading at Redwood Terminal II using a clamshell bucket for delivery to an upland dewatering area. The following documents are included below:

- **Exhibit A** includes permits for mechanical dredging at Woodley Island Marina with dredged material placement at HOODS.
 - US Army Corps of Engineers Permit
 - California Coastal Commission Permit Exemption
 - North Coast Regional Water Quality Control Board Certification
 - California Environmental Quality Act (CEQA) Exemption
- **Exhibit B** includes a California Coastal Commission permit exemption for channel smoothing and knockdown operations associated with WIM dredging.
- **Exhibit C** includes permit amendments obtained that allow for offloading of dredged material at Redwood Terminal II using pumping methods and subsequent dewatering.
- **Exhibit D** includes the California Coastal Commission amendment to the existing Coastal Development Permit (in Exhibit A) to (1) allow for offloading of dredged material at Redwood Terminal II using a clamshell bucket; and (2) expand the allowable area for dewatering dredged material. Other existing permits do not require amendments to allow for offloading of dredged material using a clamshell bucket or for the larger dewatering area.

Exhibit A

Approvals for Dredging and Dredged Material Disposal at the Humboldt Open Ocean Disposal Site

1. US Army Corps of Engineers Permit
2. California Coastal Commission Exemption
3. North Coast Regional Water Quality Control Board Certification
4. California Environmental Quality Act Exemption



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

SEP 04 2018

REPLY TO

Regulatory Division

Subject: File Number: 1996-22216, Woodley Island Marina Maintenance Dredging; Individual Permit; Second Transmittal

Mr. Larry Oetker
Executive Director
Humboldt Bay Harbor Recreation and Conservation District
601 Startare Drive
Eureka, California 95501

Dear Mr. Oetker:

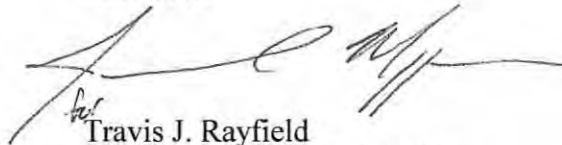
Enclosed is your signed copy of a Department of the Army permit (Enclosure 1) to dredge approximately 300,000 cubic yards of sediments from Woodley Island Marina and dispose the suitable material at the Humboldt Open Ocean Disposal Site (HOODS).

Please complete the appropriate parts of the "Project Status" form (Enclosure 2) for each episode, and return them to this office. You are responsible for ensuring that the contractor (or workers) executing the activity authorized herein is knowledgeable with the terms and conditions of this authorization.

Be advised that your signed permit will NOT be an authorization to proceed. You must first fulfill the requirements of Standard DMMO Conditions 8b, 8c, and 8d on pages 3B and 3C. The conditions are for the submittal, to this office for approval, of a dredge operations plan, a before-dredge survey and a solid-debris management plan. Once these items have been submitted and approved, by this office, you will receive written authorization to commence your work. It is important that all the information requested in the above-mentioned Standard DMMO Conditions is submitted as specified or the submittal might be considered incomplete. An incomplete submittal can be returned for completion, causing delays to your project. You are also responsible for all other general and special conditions contained in your permit.

You may refer any questions on this matter to Debra O'Leary by telephone at (415) 503-6807 or by e-mail at Debra.A.O'Leary@usace.army.mil. All correspondence should be addressed to Debra O'Leary, Operations and Readiness Division, referencing the 1996-22216.

Sincerely,

A handwritten signature in black ink, appearing to read 'Travis J. Rayfield', with a stylized flourish at the end.

Travis J. Rayfield
Lieutenant Colonel, U.S. Army
District Engineer

Enclosures

Copy Furnished (w/encl 1 only):

US EPA, San Francisco, CA,
CA CCC, Arcata, CA
CA RWQCB, Eureka, CA
CA SLC, Sacramento, CA
US NMFS, Santa Rosa, CA
US FWS, Arcata, CA

PROJECT STATUS

Please use the forms below to report the dates when you start and finish the work authorized by the enclosed permit. Also if you suspend work for an extended period of time, use the forms below to report the dates you suspended and resumed work. If you find that you cannot complete the work within the time granted by the permit, please apply for a time extension at least one month before your permit expires. If you materially change the plan or scope of the work, it will be necessary for you to submit new drawings and a request for a modification of your permit.

(cut as needed) -----

Date: _____

NOTICE OF COMPLETION OF WORK under Department of the Army Permit No. 1996-22213, Episode 1

TO: District Engineer, US Army Corps of Engineers, Operations and Readiness Division, 1455 Market Street, 16th Floor, San Francisco, CA 94103-1398

In compliance with the conditions of Permit No. 1996-22213, this is to notify you that work was completed on _____.

Permittee: Humboldt Bay Harbor Recreation and Conservation District,

Address: 601 Startare Drive, Eureka, California 95501

(cut as needed) -----

Date: _____

NOTICE OF RESUMPTION OF WORK under Department of the Army Permit No. 1996-22213, Episode 1

TO: District Engineer, US Army Corps of Engineers, Operations and Readiness Division, 1455 Market Street, 16th Floor, San Francisco, CA 94103-1398

In compliance with the conditions of Permit No. 1996-22213, this is to notify you that work was resumed on _____.

Permittee: Humboldt Bay Harbor Recreation and Conservation District,

Address: 601 Startare Drive, Eureka, California 95501

(cut as needed) -----

Date: _____

NOTICE OF SUSPENSION OF WORK under Department of the Army Permit No. 1996-22213, Episode 1

TO: District Engineer, US Army Corps of Engineers, Operations and Readiness Division, 1455 Market Street, 16th Floor, San Francisco, CA 94103-1398

In compliance with the conditions of Permit No. 1996-22213, this is to notify you that work was suspended on _____.

Permittee: Humboldt Bay Harbor Recreation and Conservation District,

Address: 601 Startare Drive, Eureka, California 95501

(cut as needed) -----

Date: _____

NOTICE OF COMMENCEMENT OF WORK under Department of the Army Permit No. 1996-22213, Episode 1

TO: District Engineer, US Army Corps of Engineers, Operations and Readiness Division, 1455 Market Street, 16th Floor, San Francisco, CA 94103-1398

In compliance with the conditions of Permit No. Permit No. 1996-22213, this is to notify you that work commenced on _____.

Permittee: Humboldt Bay Harbor Recreation and Conservation District,

Address: 601 Startare Drive, Eureka, California 95501



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

DEPARTMENT OF THE ARMY PERMIT

PERMITTEE: Humboldt Bay Harbor Recreation & Conservation District

PERMIT NUMBER: 1996-22216

ISSUING OFFICE: **San Francisco District, U.S. Army Corps of Engineers (USACE)**

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate District or Division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below:

PROJECT DESCRIPTION

The permittee is authorized to dredge a maximum of approximately 300,000 cubic yards (cys) of sediment over the 10-year life of the permit and no more than approximately 100,000 annually from the 19.3-acre (approximately) Woodley Island Marina in Eureka, Humboldt County, California. The design depth for the Woodley Island Marina is -14 feet mean lower low water (MLLW) plus an additional 1-foot overdredge allowance. The material will be removed mechanically and barged to the Humboldt Open Ocean Disposal Site (HOODS). Work shall be conducted in accordance with the attached drawings entitled, "USACE File: 1996-22216 Woodley Island Marina Maintenance Dredging" in 4 sheets, dated April 2018.

Prior to each dredging episode, this office and the U.S. Environmental Protection agency shall evaluate the suitability of any sediment proposed to be disposed at HOODS.

PROJECT LOCATION: The Woodley Island Marina is located in Eureka, Humboldt County, California (APNs 40503109 and 40503110)

GENERAL CONDITIONS:

1. The time limit for completing the work authorized ends on December 31, 2028. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as Special Conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions. (Reference document: *In the Matter of Water Quality Certification for the Woodley Island Maintenance Dredging Project, WDID No. 1B180035WNHU* dated July 23, 2018 (Attachment 2).)

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the Terms and Conditions of your permit.

7. You understand and agree that, if future operations by the United States require the removal, relocation or other alteration of the structure or work authorized herein, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, you will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration (Section 10 only).

SPECIAL CONDITIONS:

1. The National Marine Fisheries Service (NMFS) concurred with the Corps' determination that the project was not likely to adversely affect the following species and designated critical habitats for the following species:

- California coast Chinook salmon (*Oncorhynchus tshawytscha*),
- North coast steelhead trout (*Oncorhynchus mykiss*),
- Southern Oregon northern California coast coho salmon (*Oncorhynchus kisutch*),
- North American green sturgeon (*Acipenser medirostris*),

These concurrences are premised, in part, on project work restrictions outlined in the Minimization and Conservation Measures on pages 2 and 3 of the June 5, 2018 NMFS letter (Attachment 3). These work restrictions are incorporated as special conditions to this authorization for your project to ensure unauthorized incidental take of species and loss of critical habitat does not occur.

2. Dredging shall be limited to July 1 through October 15 each year for the following reasons in order to minimize impacts to endangered species. Any dredging outside this environmental work window would require additional consultation between this office and the NMFS pursuant to Section 7 of the Endangered Species Act.

3. The permittee shall monitor turbidity at the dredge site and background turbidity at least 1,000 feet away from the dredge site every 3 hours during dredge operation and keep a log of the results. If the turbidity at the dredge site exceeds background turbidity by 20% the permittee shall take steps to reduce turbidity at the dredge site by halting dredging until the project site turbidity returns to background level or until there is an ebb tide at the dredge site. The log shall be forwarded to this office on a weekly basis.

4. If you encounter any previously unknown historic or archeological artifacts or deposits, or human remains, while accomplishing the work authorized by this permit, you must immediately halt work at the discovery location plus a 50-foot minimum buffer, and notify the Corps, San Francisco District, Dredged Material Management Office (Ms. Debra O'Leary at (415) 503-6807) about what you have found. The permittee will be responsible for hiring a qualified professional archaeologist to assist with development of a treatment program in accordance with the *Protocol for Inadvertent Archaeological Discoveries for Ground Disturbing Project Permits, Leases and Franchises Issued by the Humboldt Bay Harbor, Recreation and Conservation District, Humboldt Bay, California* dated May 7, 2018 (or subsequent versions of the document)(Attachment 4). Work will cease until the Corps has completed consultation with the interested Tribes and,

if necessary, the State Historic Preservation Office.

5. Additional Standard DMMO Conditions found on pages 3A-E shall be adhered to at all times.

STANDARD DMMO CONDITIONS TO PERMIT NUMBER 1996-22216

1. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.
2. You must have a copy of this permit available on the vessel used for the authorized transportation and disposal of dredged material.
3. You must advise this office as per Special Condition 12, on page 2D, **before** you start dredging activities under the authorization of this permit.
4. To provide notification of activities affecting navigation, the permittee shall provide the following information by fax, e-mail or standard mail to the contact listed below **at least two weeks before commencing work**:
 - a. Name and telephone number of the dredge and or project manager.
 - b. Size and placement of any floating construction equipment.
 - c. Radio telephone frequencies and call signs of any marine equipment.
 - d. Anticipated work start and completion dates.

Commander (dpw)
11th Coast Guard District
Coast Guard Island, Bldg 50-3
Alameda, California 94501-5100

POC:
Local Notice to Mariners
Waterways Management Branch
PH: 510-437-2980
FAX: 510-437-5836
E-MAIL: D11LNM@uscg.mil

5. The Coast Guard Captain of the Port of San Francisco Bay may require modifications to marine construction equipment deployment or mooring systems to safeguard navigation while work is in progress.
6. All vessels operated for disposal of dredged material are required to participate in the Coast Guard's Vessel Traffic Control Service (VTS). Five minutes before each departure, the permittee shall notify the VTS by radio, via Channel 14, of the following: The name of vessel; time of departure from dredge site; and time of departure from disposal site.
7. When utilizing the Humboldt Open Ocean Disposal Site (HOODS), the permittee shall comply with the episode specific conditions specified in the U.S. Environmental Protection Agency's Ocean Disposal Special Conditions for the City of Eureka Use of the Humboldt Open Ocean Disposal. These conditions will be included in the Dredge Operation Plan Approval Letter (Special Condition 8b).
8. The permittee shall submit the following reports for review and comment to:

U.S. Army Corps of Engineers, San Francisco District
Chief, Operations and Readiness Branch
Attn: Debra O'Leary
1455 Market Street, 16th Floor
San Francisco, California 94103-1398

- a. **Dredge Material Analysis:** Submit, for approval, no earlier than 60 days prior to the proposed commencement of any authorized successive dredging episodes, dredge material analysis (Physical, Chemical, and Biological) sampling and testing information. **Please include the U.S. Army Corps of Engineers (Corps) permit number and dredge episode number with this submittal.** Also submit Regional Water Quality Control Board (RWQCB) water quality certification or waiver for disposal of the material. For each dredging episode, the permittee shall obtain the approval of the District Engineer for formulating specific sediment testing procedures for the Dredged Material Analysis. The testing protocol will be in accordance with the testing guidelines as published in the Corps and U.S. Environmental Protection Agency publication entitled, "Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual" (The Inland Testing Manual or ITM, EPA-823-B-98-004), dated February 1998, and subsequent amendments thereto. The permittee shall provide a copy of the Dredged Material Analysis to the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife concurrent with the San Francisco Bay Conservation and Development Commission's RWQCB's, and the Corps' receipt of this information. Agency comments submitted to the Corps within 15 calendar days thereafter will be given full consideration in the decision on dredged material disposal.
- b. **Dredge Operation Plan:** Submit, for approval by this office, no earlier than 60 calendar days and no later than 20 calendar days before the proposed commencement of dredging, a plan which includes the following: **Corps permit number, dredge episode number**, a copy of the dredging contract or description of the work under which the contractor will do the permitted work; name and telephone numbers of the dredging contractor's representative on site; dredging start and completion dates; names of vessel; dump scow numbers or identification; bin or barge capacities; identification of work as either maintenance dredging or new dredging; discussion of proposed dredging procedures, as governed under Special Condition No. 11, with detailed drawings or specifications of the grid or centrifugal pump system; quantity of material to be removed; dredging design depth and typical cross section including overdepth; and date of last dredging episode and design depth. The Dredge Operational Plan shall also provide the following information:
- 1) The controls being established to insure that dredging operations occur within the limits defined by the channel dimensions and typical channel section. The horizontal and vertical positioning systems being utilized must be indicated as noted in 3, below.
 - 2) The controls being established to insure that disposal of the dredged material at the disposal site is at the assigned location and depth. The horizontal and vertical positioning systems being utilized must be indicated as noted in 3, below.
 - 3) Method of determining electronic positioning of dredge or dump scow during entire dredging operation at dredge site, disposal site and en route to and from disposal site.

Please note that failure to provide all of the above information may result in delays to your project. When your Dredge Operation Plan has been approved, you will receive a written authorization to commence with your project.

- c. **Pre-Dredge Survey:** Submit no earlier than 60 calendar days and no later than 20 calendar days before commencement of dredging, a survey with accuracy to one-tenth foot that delineates and labels the following: areas to be dredged with overdepth allowances; existing depths; estimated quantities to be dredged to the design depth; and estimated quantities to the overdepth limit. **All surveys shall be signed by the permittee to certify their accuracy. Please include the Corps permit number and dredge episode number.**

Please note that failure to provide all the above information may result in delays to your project.

- d. **Solid Debris Management Plan:** Submit no earlier than 60 calendar days and no later than 20 calendar days before commencement of work, a plan which describes measures to ensure that solid debris generated during

any authorized dredging, demolition or construction operation is retained and properly disposed in areas not under Corps jurisdiction. **At a minimum, the plan shall include the following: source and expected type of debris; debris retrieval method; Corps permit number and dredge episode number; disposal method and site; schedule of disposal operations; and debris containment method to be used, if floatable debris is involved.**

Please note that failure to provide all the above information may result in delays to your project.

- e. Post-Dredge Survey: Submit, **within 30 days of the last disposal activity** ("last" is defined as that activity after which no further activity occurs for 15 calendar days), a survey with accuracy to one-tenth foot that delineates and labels the areas dredged and the dredged depths. **Also, include the Corps permit number, dredge episode number, dates of dredging commencement and completion, actual quantities dredged to the design depth, and actual quantities to the overdepth limit.** The permittee shall substantiate the total quantity dredged by including calculations used to determine the volume difference (in cubic yards) between the Pre- and Post-Dredging Surveys and **explain any variation in quantities greater than 15% beyond estimated quantities or dredging deeper than is permitted (design plus overdepth allowance).** All surveys shall be accomplished by a licensed surveyor and signed by the permittee to certify their accuracy. A copy of the Post-Dredge Survey should be sent to the National Ocean Service for chart updating:

NOAA/National Ocean Service
Nautical Data Branch
N/CS26, SSMC3, Room 7230
1315 East-West Highway
Silver Spring, Maryland 20910-3282.

9. Disposal Site Verification Log (DSVL): Submit on a weekly basis by noon Monday, the log (downloadable from <http://www.spn.usace.army.mil/Portals/68/docs/Dredging/guidance/document2010-09-07-132110.pdf>) that enumerates work accomplished during the preceding week. Mail to:

U.S. Army Corps of Engineers, San Francisco District
Attn: Shelah Sweatt, DMMO
1455 Market Street, 16th Floor
San Francisco, California 94103-1398;

FAXed to Ms. Shelah Sweatt at (415) 503-6693; or e-mail to shelah.sweatt@usace.army.mil. **Please include the Corps permit number and dredge episode number.** The log will be provided when the Corps approves the Dredge Operation Plan and authorizes the commencement of the dredging.

10. Overflow requirements:

- a. No overflow or decant water shall be discharged from the barge, with the exception of spillage incidental to mechanical dredge operations.
- b. During transportation from the dredging site to the disposal site, no material shall be permitted to overflow, leak or spill from barge, bins or dump scows.
- c. For hopper dredge only, during dredging operations, overflow shall be limited to a maximum of 15 minutes. Adjustments to the dredging operation may be required to insure that once overflow commences, it will not exceed the 15-minute limit.
- d. For approved sand dredging, overflow will not exceed 15 minutes or the economic load, whichever occurs first.

11. If the material is mechanically dredged, passed through a debris grid, with a maximum opening size of 12 inches by 12 inches that will cover the entire loading area of the dump scow. Everything that does not pass through the grid will be considered solid debris and shall be disposed in areas outside of Corps jurisdiction. All such material shall be promptly removed from the grid at the end of each 8 hour shift or sooner.
12. **The permittee or dredge contractor shall inform this office when: 1) a dredge episode actually commences, 2) when dredging is suspended (suspension is when the dredge contractor leaves the dredge site for more than 48 hours for reasons other than equipment maintenance), 3) when dredging is restarted, and 4) when dredging is complete. Each notification should include the Corps permit number and dredge episode number.** The information can be sent to the attention of Debra O'Leary, in writing to the address below; FAXed to (415) 503-6693; e-mailed to debra.a.o'leary@usace.army.mil or via telephone message at (415) 503-6807.

U.S. Army Corps of Engineers, San Francisco District
Operations and Readiness Division
Attn: Debra A. O'Leary
1455 Market Street, 16th Floor
San Francisco, California 94103-1398

13. The permittee, as directed by the District Engineer under authority pursuant to the policies and procedures of 33 CFR 325.7, may be required to modify disposal schedules and monthly disposal quantities for particular dredging episodes.
14. The permittee shall allow the dredging area and equipment to be inspected by the Corps staff upon request.
15. For each dredge episode, the permittee shall be responsible for obtaining a letter of water quality certification from the Regional Water Control Quality Board and authorization from the California Coastal Commission. Water quality certification and BCDC authorization will be a prerequisite to the District Engineer's decision to approve or disapprove specific dredge episodes pursuant to the policies and 33 CFR 325.2(b)(1)(ii) and 325.2(b)(2)(ii).
16. **If a land, ocean, or other aquatic disposal site becomes available for use during the life of the permit, the permittee shall evaluate these disposal alternatives, taking into consideration cost, existing technology, and logistics in light of the overall project purpose to facilitate compliance with the 404(b)(1) Guidelines (40 CFR 230). This evaluation shall be submitted to the Corps at least 60 calendar days before commencement of subsequent dredging episodes. The District Engineer, upon review of this information and after consultation with other resource agencies, may direct the permittee to use such sites in lieu of or in addition to the Alcatraz Disposal Site (SF-11), under authority of 33 CFR 325.7 and 40 CFR 230.10(a).**

FURTHER INFORMATION:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403). Section 10 of the Rivers and Harbors Act generally regulates all structures and work occurring below the plane of mean high water in tidal waters of the United States; in former diked baylands currently below mean high water; outside the limits of mean high water but affecting the navigable capacity of tidal waters; or below the plane of ordinary high water in non-tidal waters designated as navigable waters of the United States. Navigable waters of the United States generally include all waters subject to the ebb and flow of the tide; and/or all waters presently used, or have been used in the past, or may be susceptible for future use to transport interstate or foreign commerce. The term "structure" includes, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island or reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, or any other obstacle or obstruction. The term "structure" does **not** include bridges and causeways constructed in or over navigable or tidal waters of the United States, since this regulatory responsibility has been delegated to the U.S. Coast Guard under the Department of Transportation Act of 1966 (Pub. L. No. 89-670). The term "work" includes, without limitation, any dredging or disposal of dredged material, filling, or other modification of a navigable water of the United States.

() Section 404 of the Clean Water Act (33 U.S.C. § 1344). Section 404 of the Clean Water Act generally regulates all discharges of dredged or fill material occurring below the plane of ordinary high water in non-tidal waters of the United States; or below the high tide line in tidal waters of the United States; and within the lateral extent of wetlands adjacent to these waters. Waters of the United States generally include the territorial seas; all traditional navigable waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters subject to the ebb and flow of the tide; wetlands adjacent to traditional navigable waters; non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally; and wetlands directly abutting such tributaries. Where a case-specific analysis determines the existence of a "significant nexus" effect with a traditional navigable water, waters of the United States may also include non-navigable tributaries that are not relatively permanent; wetlands adjacent to non-navigable tributaries that are not relatively permanent; and wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary. The term "dredged material" means material that is excavated or dredged from waters of the United States. The term "fill material" means material placed in waters of the United States where the material has the effect of replacing any portion of a water of the United States with dry land or of changing the bottom elevation of any portion of a water of the United States. Examples of such fill material include, but are not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities, and materials used to create any structure or infrastructure in waters of the United States. The term "fill material" does not include trash or garbage.

(X) Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. § 1413). Section 103 of the Marine Protection, Research, and Sanctuaries Act generally regulates the transport of dredged material for the purpose of disposal in ocean waters. Ocean waters is defined as those waters of the open seas lying seaward of the base line from which the territorial seas is measured, as defined in the Convention of the Territorial Sea and the Contiguous Zone (15 UST 1606; TIAS 5639).

2. Limits of this authorization:

- a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate. (See Item 4 above.)
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 C.F.R. Section 325.7 or enforcement procedures such as those contained in 33 C.F.R. Sections 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the Terms and Conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 C.F.R. Section 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Paul Oee 8-24-18
(PERMITTEE) (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

for Travis J. Rayfield 04 SEP 2018
Lieutenant Colonel, U.S. Army
District Engineer (DATE)

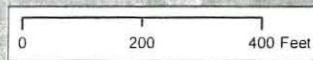
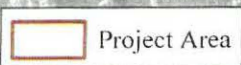
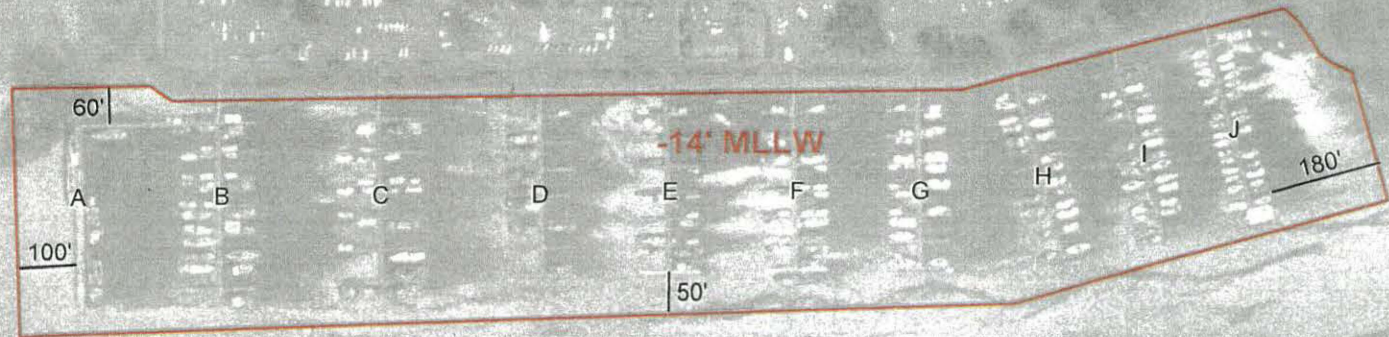
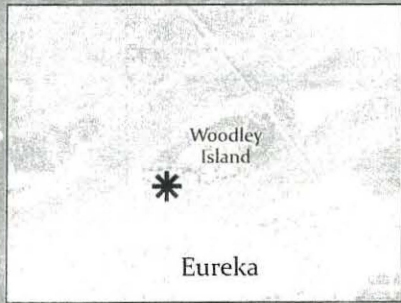
When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE) (DATE)

USACE File: 1996-22216

Woodley Island Marina
Maintenance Dredging

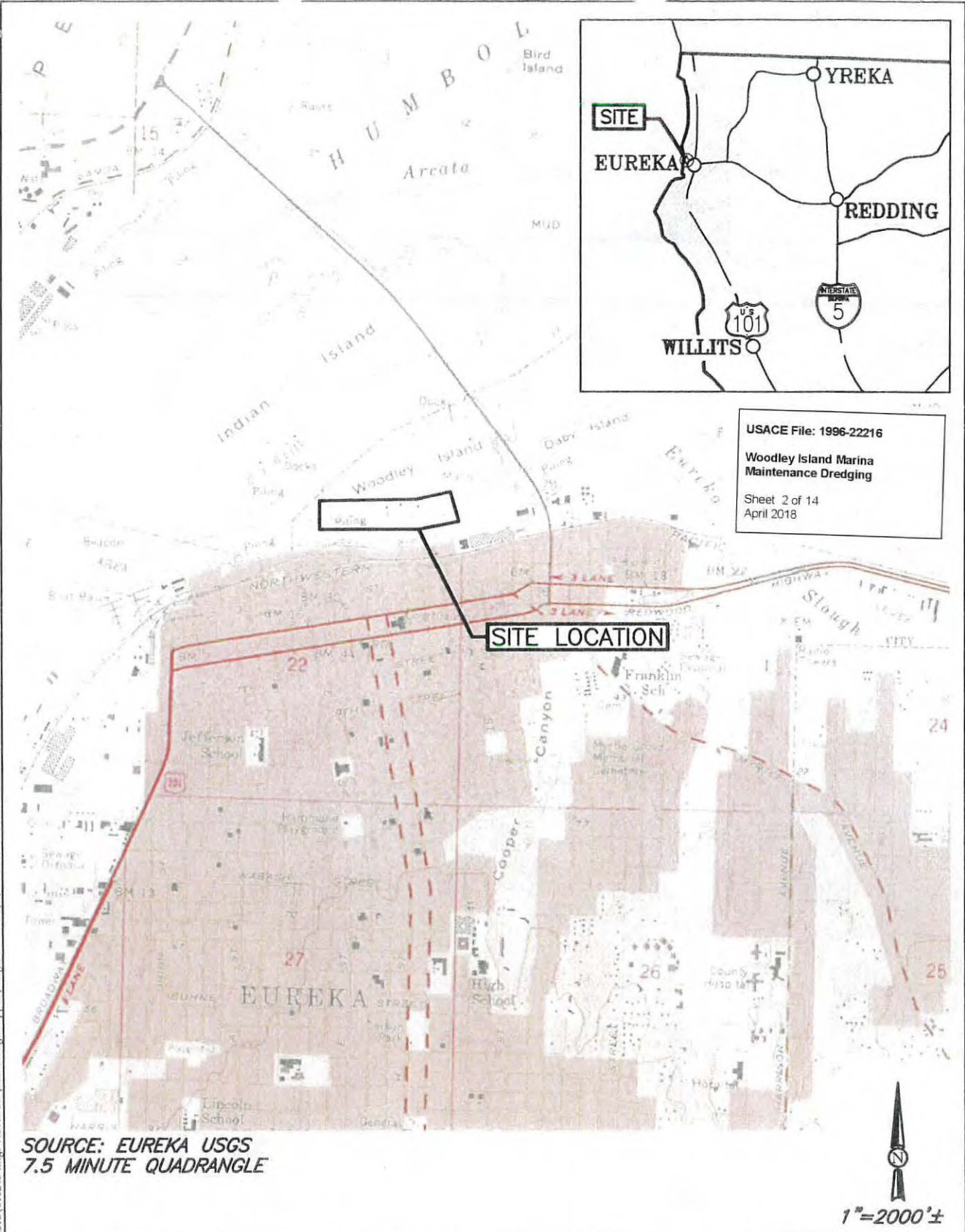
Sheet 1 of 14
April 2018




Woodley Island Marina Dredge Site

Figure 1a - Vicinity Map

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SOURCE: EUREKA USGS
7.5 MINUTE QUADRANGLE

	Harbor District Woodley Island Maintenance Dredging Eureka, California	Site Location Map	
	March 2018	016240-020-SITE-LCTN	SHN 016240 Figure 1

USACE File: 1996-22216

Woodley Island Marina
Maintenance Dredging

Sheet 3 of 14
April 2018

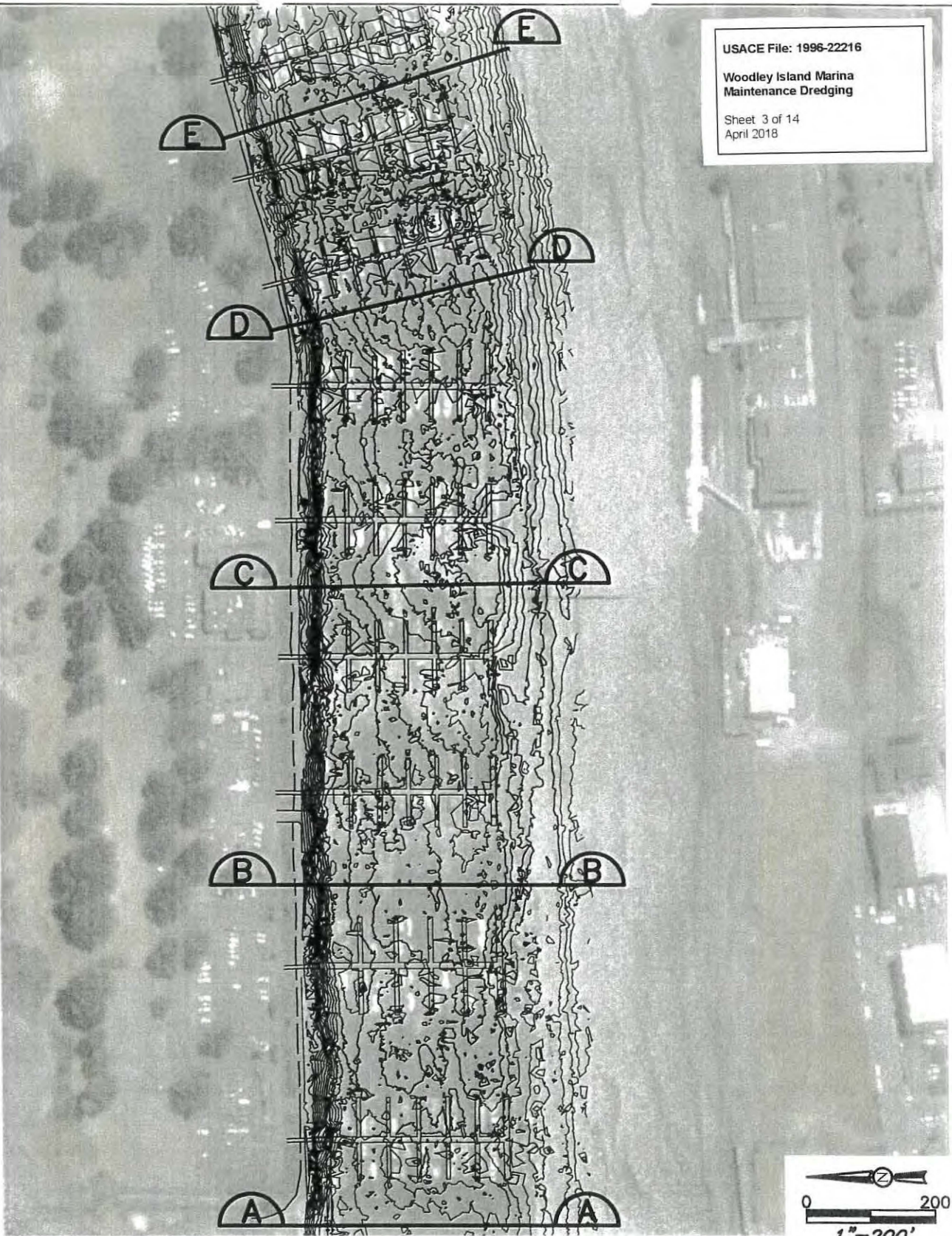


IMAGE SOURCE: ESRI

SHN
Consulting Engineers
& Geologists, Inc.

Harbor District
Woodley Island Maintenance Dredging
Eureka, California

Aerial View showing
Section Locations
SHN 016240

March 2018

016240-020-XSECT

Figure 2

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USACE File: 1996-22216

Woodley Island Marina
Maintenance Dredging

Sheet 4 of 14
April 2018

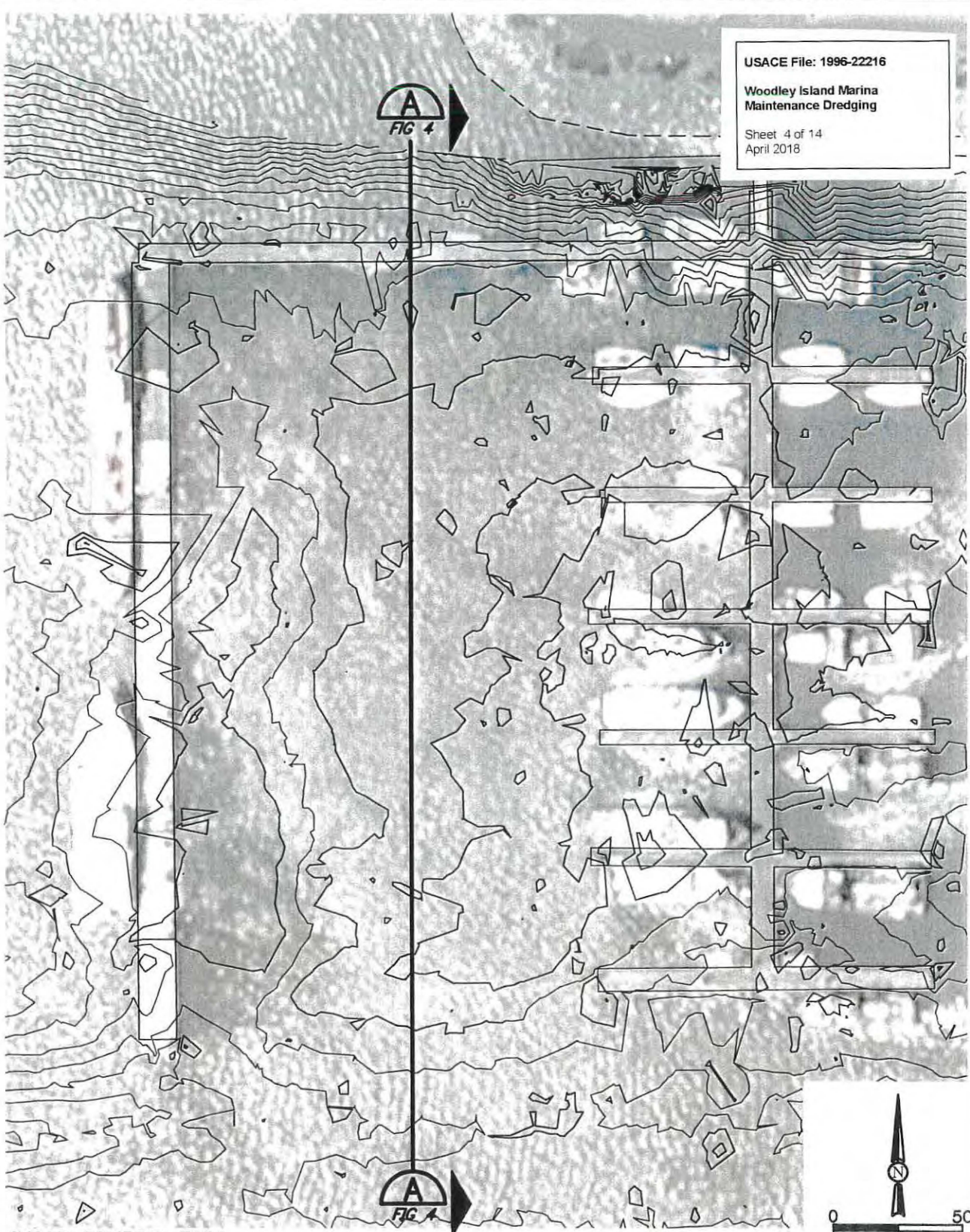
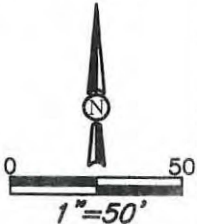


IMAGE SOURCE: ESRI



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Harbor District
Woodley Island Maintenance Dredging
Eureka, California

Aerial View showing
Section A Location
SHN 016240

March 2018

016240-020-XSECT

Figure 3

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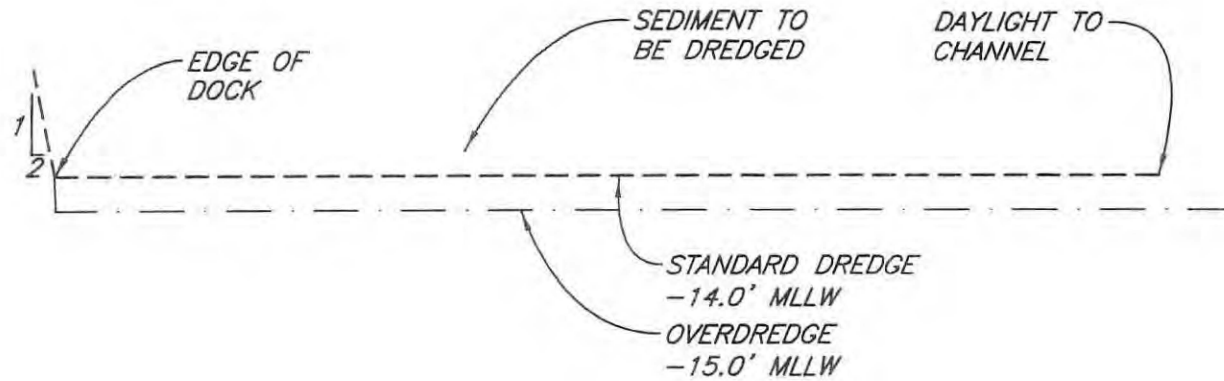
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SECTION A

SCALE: 1"=50' H
1"=5' V

FIG 3



Harbor District
Woodley Island Maintenance Dredging
Eureka, California

Section A

SHN 016240

March 2018

016240-020-XSECT

Figure 4

USACE File: 1996-22216

Woodley Island Marina
Maintenance Dredging

Sheet 6 of 14
April 2018

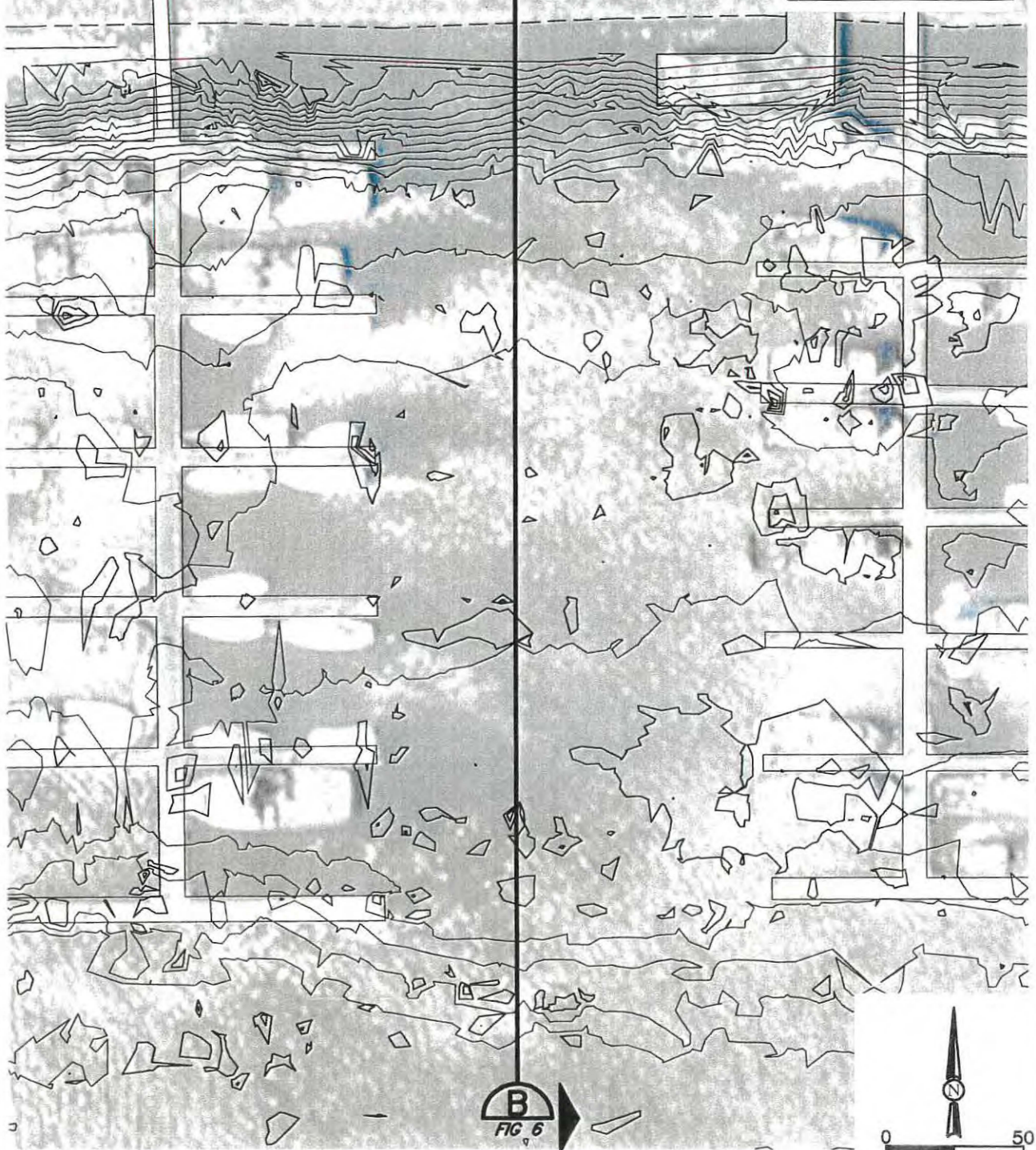
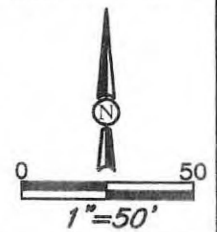


IMAGE SOURCE: ESRI



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SH
Consulting Engineers
& Geologists, Inc.

Harbor District
Woodley Island Maintenance Dredging
Eureka, California

Aerial View showing
Section B Location
SHN 016240

March 2018

016240-020-XSECT

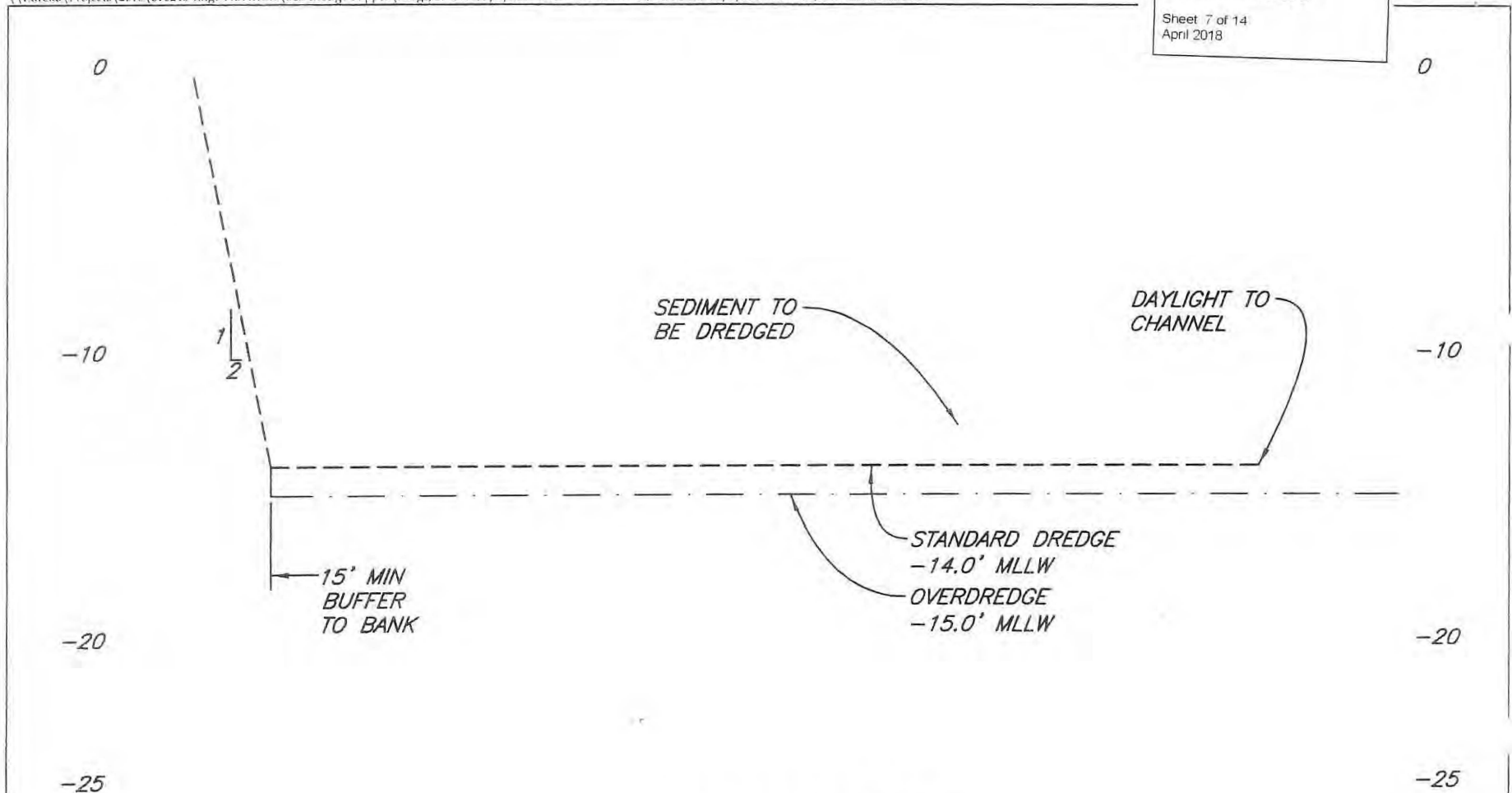
Figure 5

USACE File: 1996-22216

Woodley Island Marina
Maintenance Dredging

Sheet 7 of 14
April 2018

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SECTION B

SCALE: 1"=50' H
1"=5' V

FIG 5

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Consulting Engineers
& Geologists, Inc.

Harbor District
Woodley Island Maintenance Dredging
Eureka, California

Section B

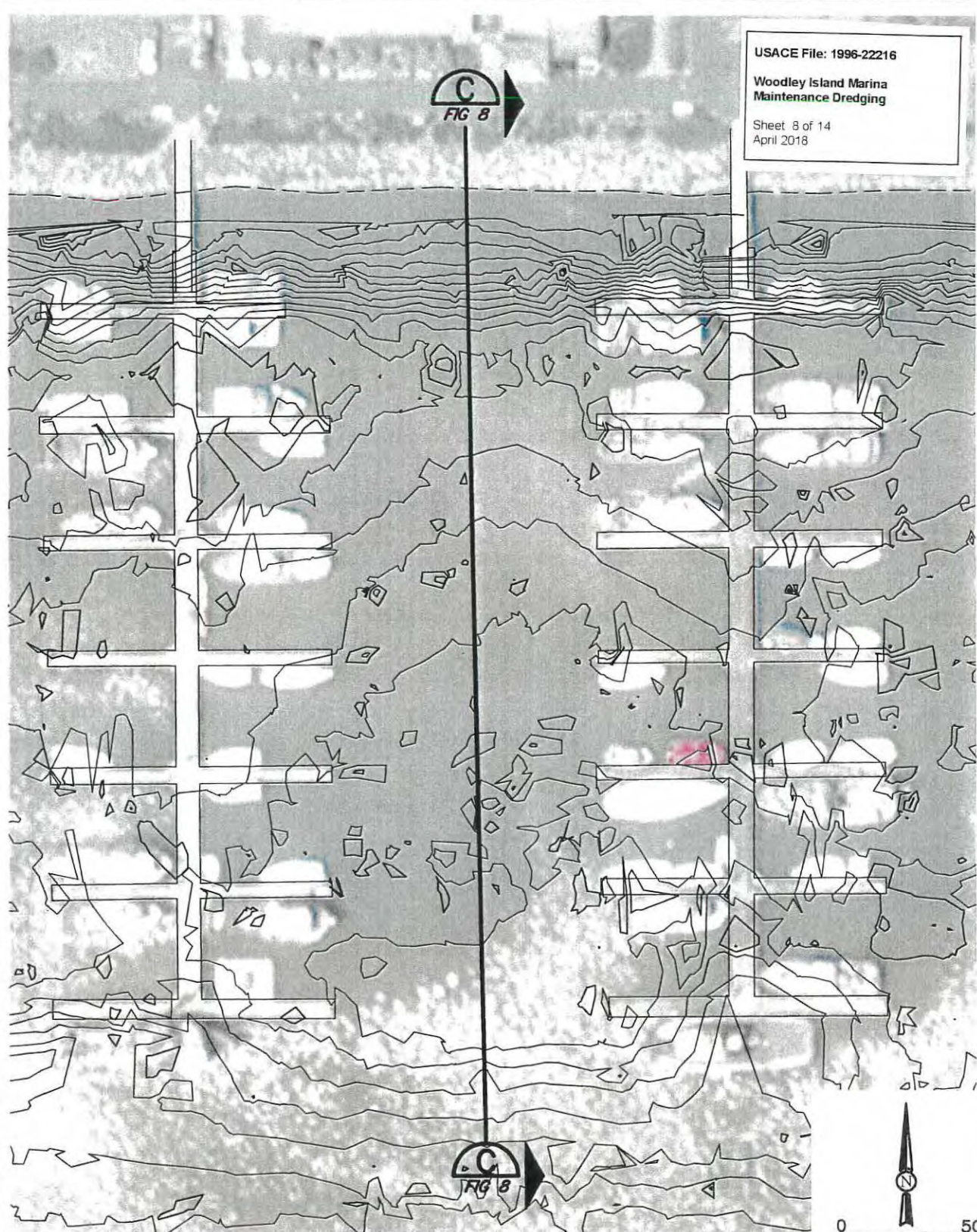
SHN 016240

March 2018

016240-020-XSECT

Figure 6

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USACE File: 1996-22216
Woodley Island Marina
Maintenance Dredging
Sheet 8 of 14
April 2018

IMAGE SOURCE: ESRI

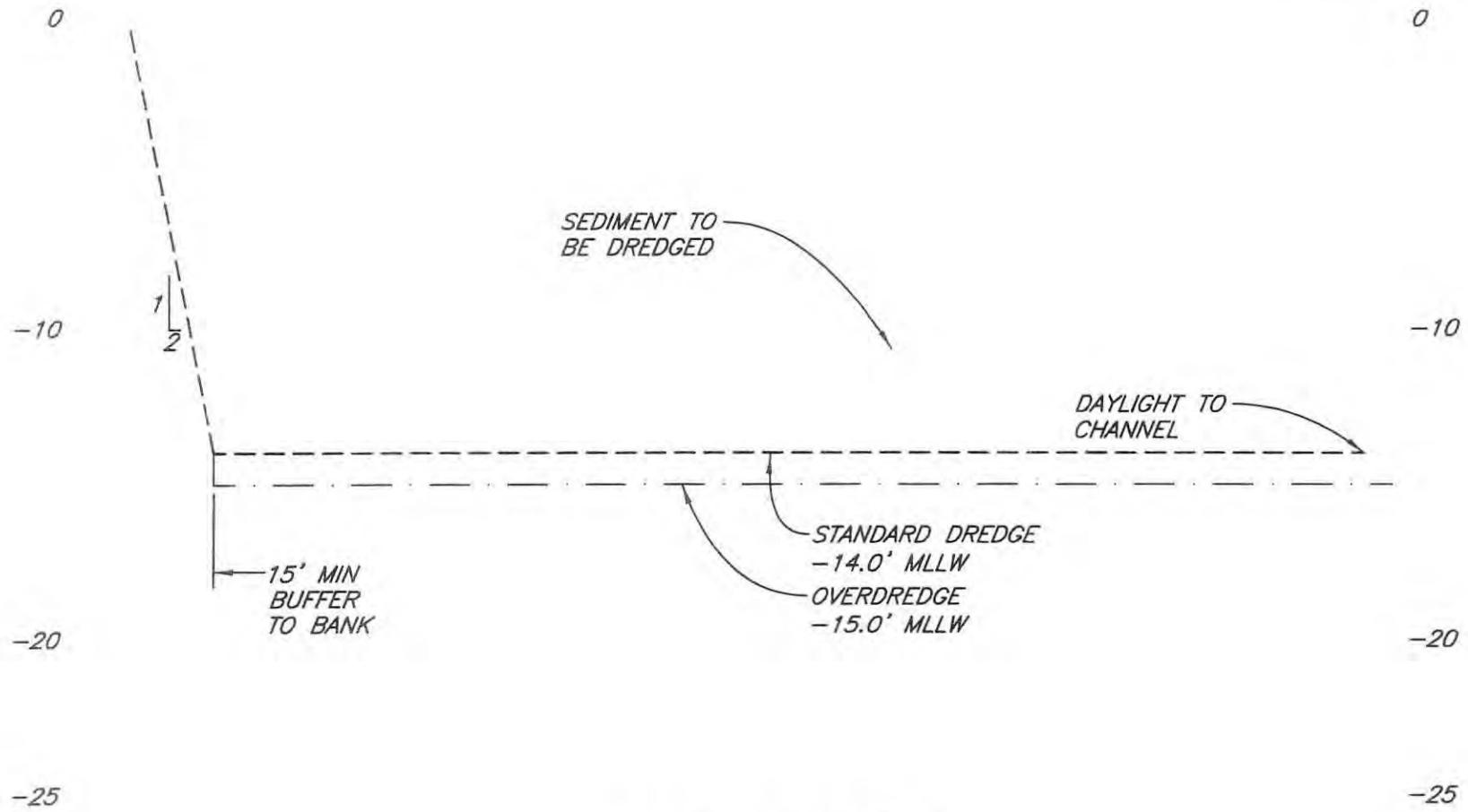


Harbor District
Woodley Island Maintenance Dredging
Eureka, California
March 2018

Aerial View showing
Section C Location
SHN 016240
Figure 7

016240-020-XSECT

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SECTION C
 SCALE: 1"=50' H
 1"=5' V
 FIG 7

 SHW Consulting Engineers & Geologists, Inc.	Harbor District Woodley Island Maintenance Dredging Eureka, California	Section C SHN 016240
	March 2018	016240-020-XSECT

USACE File: 1996-22216

Woodley Island Marina
Maintenance Dredging

Sheet 10 of 14
April 2018

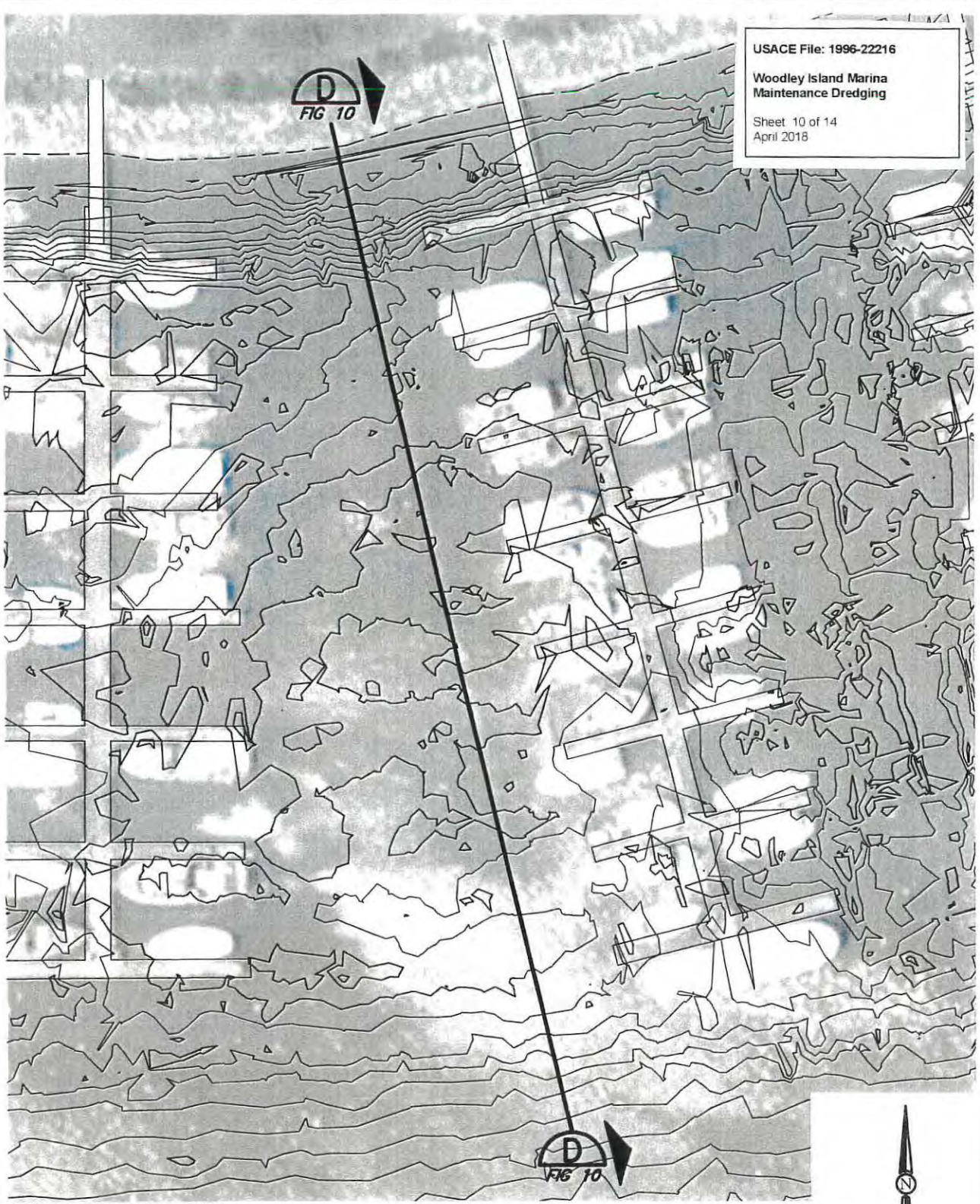
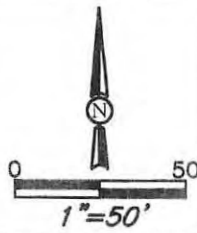



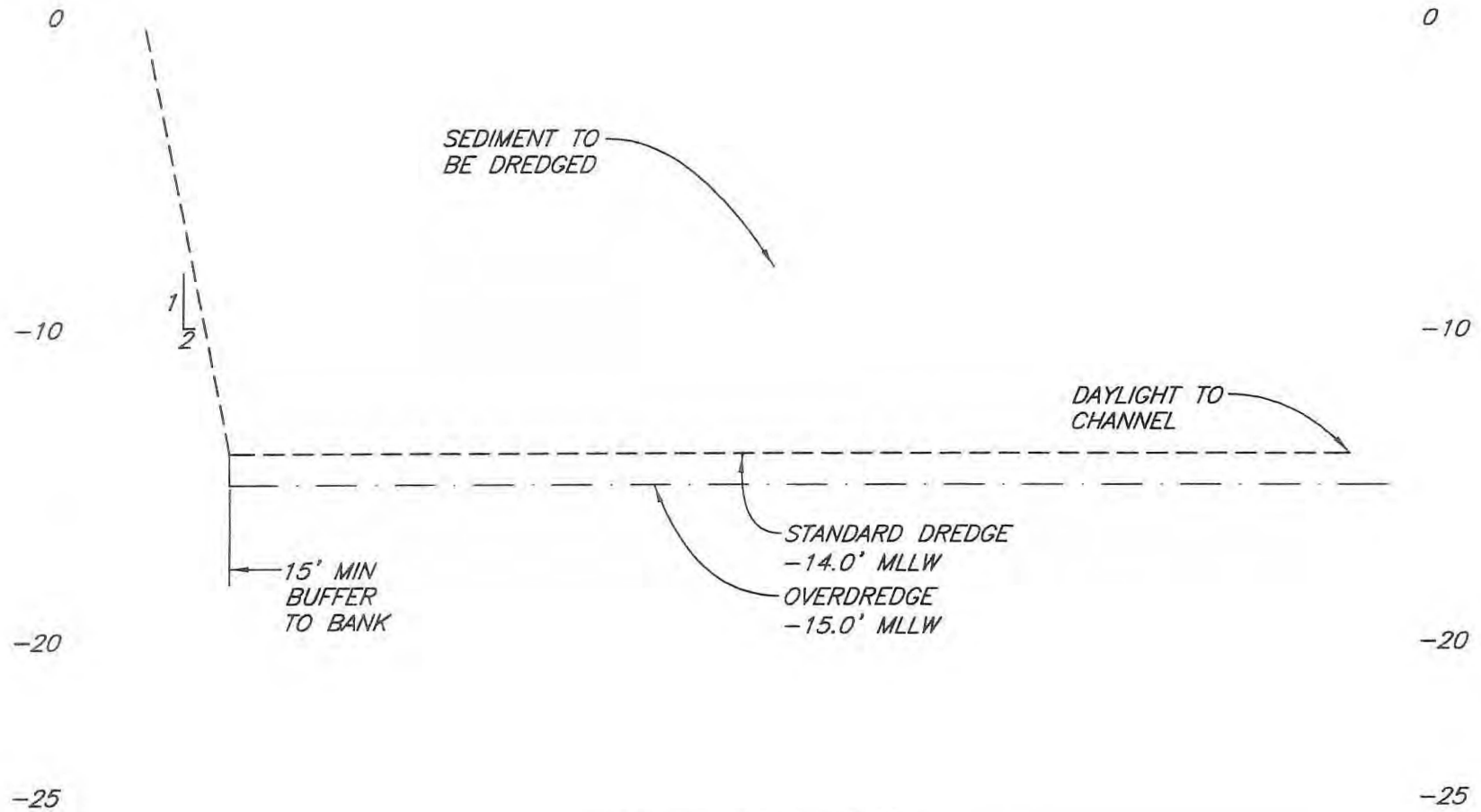
IMAGE SOURCE: ESRI




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	Harbor District Woodley Island Maintenance Dredging Eureka, California	Aerial View showing Section D Location SHN 016240
	March 2018	016240-020-XSECT

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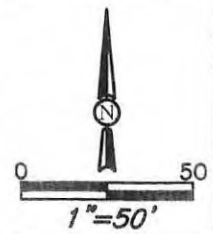
SECTION D
SCALE: 1"=50' H
1"=5' V
FIG 9

	Harbor District Woodley Island Maintenance Dredging Eureka, California	Section D SHN 016240
	March 2018	016240-020-XSECT

USACE File: 1996-22216
 Woodley Island Marina
 Maintenance Dredging
 Sheet 12 of 14
 April 2018



IMAGE SOURCE: ESRI



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SHN
 Consulting Engineers
 & Geologists, Inc.

Harbor District
 Woodley Island Maintenance Dredging
 Eureka, California

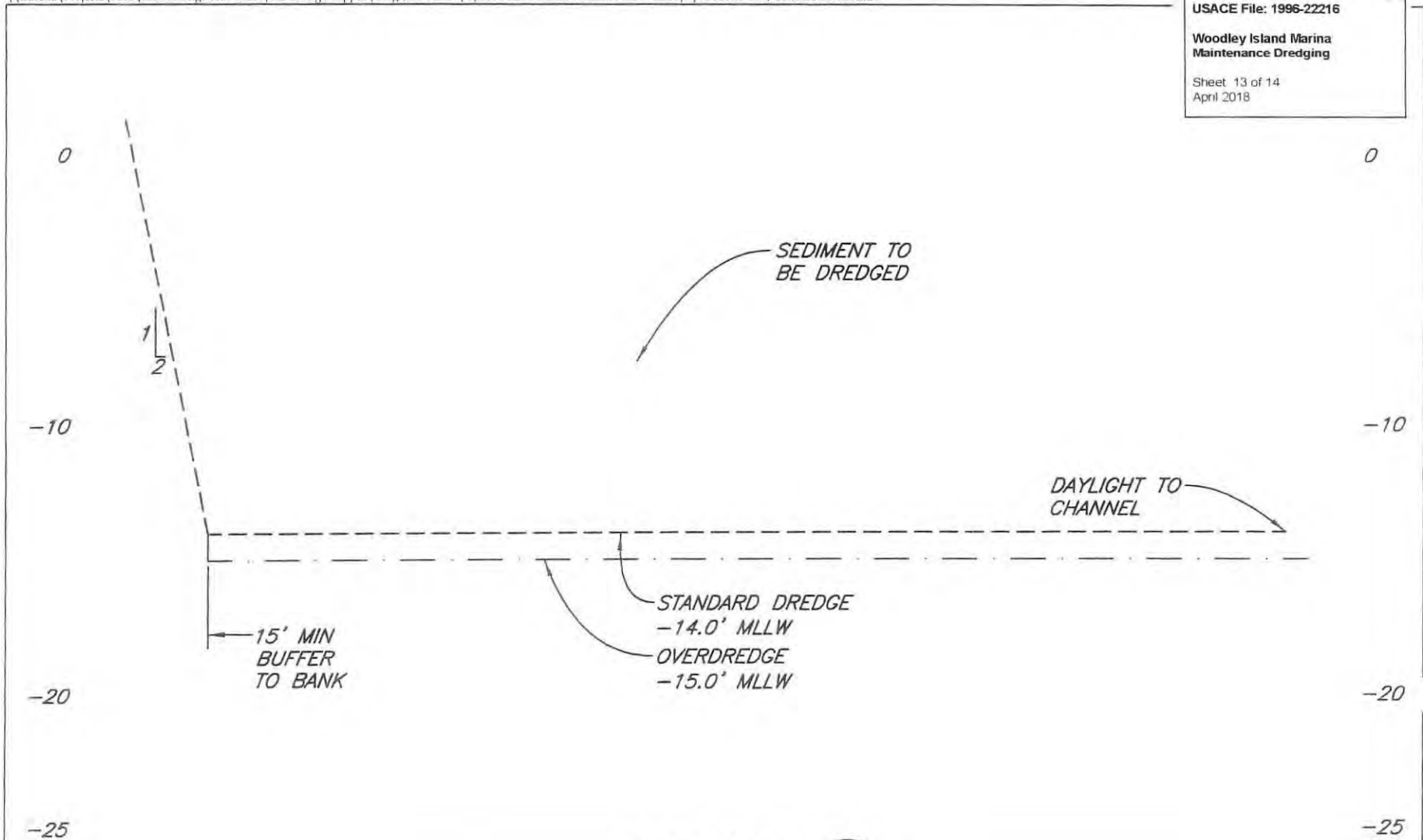
Aerial View showing
 Section E Location
 SHN 016240

March 2018

016240-020-XSECT

Figure 11




USACE File: 1996-22216
 Woodley Island Marina
 Maintenance Dredging
 Sheet 13 of 14
 April 2018



SECTION E
 SCALE: 1"=50' H 1"=5' V FIG 11

	Harbor District Woodley Island Maintenance Dredging Eureka, California	Section E SHN 016240
	March 2018	016240-020-XSECT

Region 9 Ocean Dumping Sites

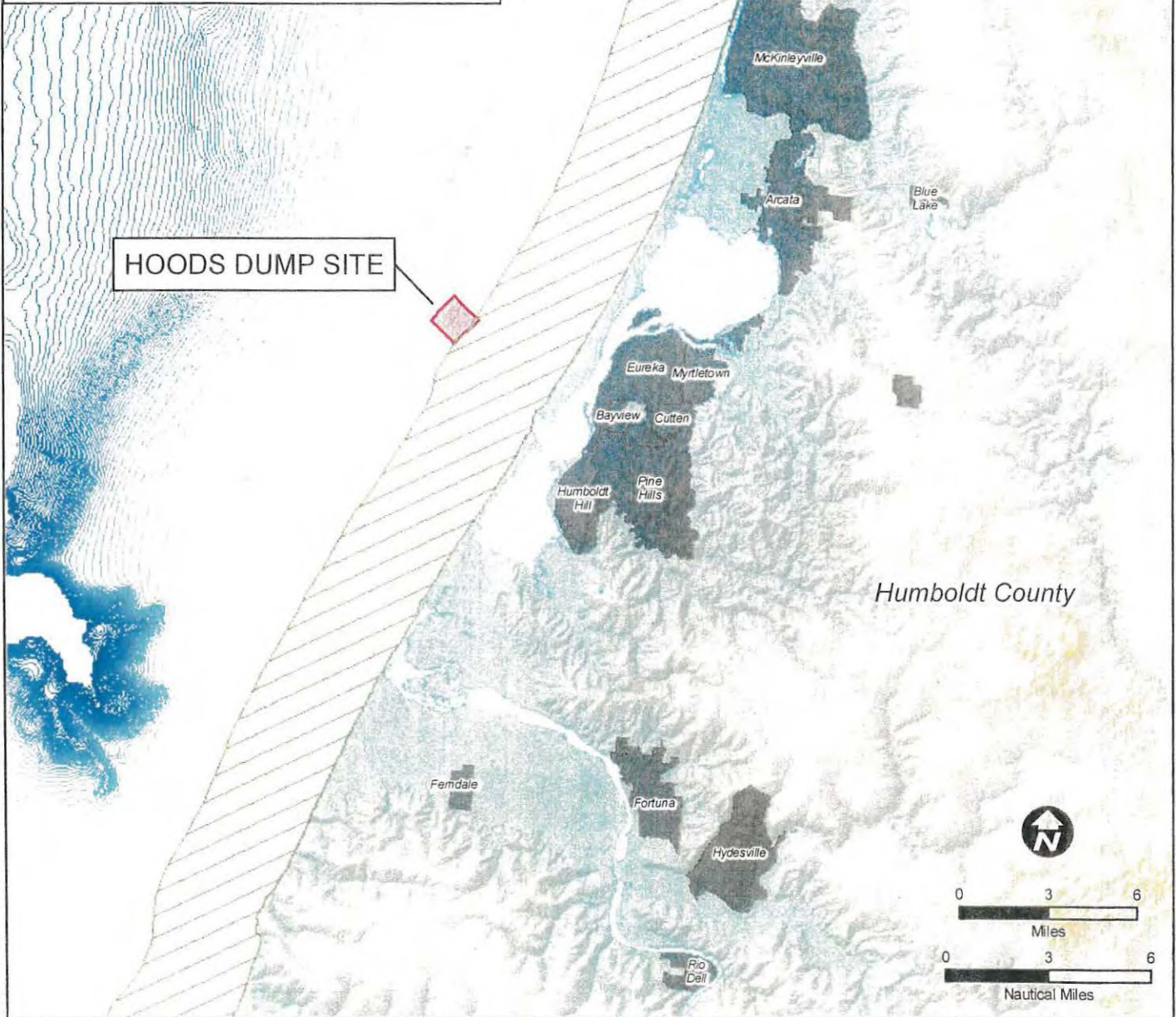
-  HOODS Dump Site
-  3-mile Maritime Limit (Nautical Miles)
-  10-meter Bathymetric Contour Lines

Data Sources:
 Bathymetric Contours: California Department of Fish and Game, 10 meter bathymetric contour lines to 600 meters depth on the California coast, July 2000
 3-mile Maritime Limit: NOAA's Office of Coast Survey (OCS), September 2005
 Shaded Relief: USGS National Elevation Data (100K)

WTR0601347.1 May 2006



USACE File: 1996-22216
 Woodley Island Marina
 Maintenance Dredging
 Sheet 14 of 14
 April 2018





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1655 Heindon Road
Arcata, California 95521-4573

JUN 05 2018 Refer to NMFS No: WCR-2018-9936

Rick M. Bottoms, Ph.D.
Chief, Regulatory Division
U.S. Department of the Army
San Francisco District, Corps of Engineers
1455 Market Street
San Francisco, California 94103-1398

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Humboldt Bay Harbor, Recreation, and Conservation District's Woodley Island Marina Maintenance Dredging Project in Eureka, Humboldt County, California (Corps File Number 1996-22216)

Dear Dr. Bottoms:

On May 29, 2018, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the United States Army Corps of Engineers' (Corps) proposed authorization of the Humboldt Bay Harbor, Recreation, and Conservation District's (District) Woodley Island Maintenance Dredging Project (Project) pursuant to Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 *et seq.*) and Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 *et seq.*) is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The concurrence letter will be available through NMFS' Public Consultation Tracking System <https://pets.nmfs.noaa.gov/pets-web/homepage/pets>. A complete record of this consultation is on file at NMFS' West Coast Region, Arcata, California office.



Proposed Action

The Corps proposes to issue a 10-year Department of the Army Permit pursuant to Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 *et seq.*) and Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 *et seq.*) to permit the Project. The District proposes to dredge the 19.3-acre Woodley Island Marina (WIM) using a mechanical clamshell dredge, removing as much as 300,000 cubic yards (cy) over the life of the permit, with no more than 100,000 cy removed in any 12-month period. Work would be completed during the July 1 to October 15 work window. The proposed dredging would remove accumulated sediment from the WIM area to restore adequate navigational and mooring depths. The dredged material would be placed in a sealed dump scow and transported to the Humboldt Open Ocean Disposal Site (HOODS), located three miles offshore of Humboldt Bay in the Pacific Ocean.

The District has not yet selected a dredging contractor and each contractor will have unique means and methods to complete the project based on their experience and equipment. As such, specific details, such as types of equipment, barge/scow size, number of trips to HOODS, schedule, etc., are still unknown. However, the general dredging methodology will consist of heavy equipment removing material from the bay floor with a clamshell bucket and placing it into a scow for transport to the disposal site at HOODS. Prior to dredging, pre-project hydrographic surveys will be completed. Updated dredge volumes will be generated and verified with post project hydrographic surveys.

The dredge barge will be moved into position and will anchor, typically by setting two spud piles attached to the barge. A tugboat will then move the dump scow into position nearby the work barge. A crane outfitted with a closed clamshell bucket will be used. Other than the negligible amount of sediment on the exterior of the bucket during loading, there will be no water or sediment released back into Humboldt Bay. Dredged material will be placed in the water tight dump scow positioned adjacent to the work barge. Once the scow is full, it will be towed out of Humboldt Bay to the HOODS ocean disposal site. The barge and scow will be repositioned frequently throughout the project in order to access all the areas to be dredged and will work 24-hours a day.

Dredging WIM will include removal of sediment from within vessel mooring berths, fairways in between docks, slips, and from beneath all floating and fixed structures and encompass 19.3-acres. Dock structures may be dismantled as necessary and any broken docks will be repaired or replaced. Side slopes will be cut at a 2:1 angle or the natural angle of repose. Overdredge depth is one foot below the design depth of (-)14 feet mean lower low water (MLLW). The current volume of sediment in need of removal from the WIM is estimated to be 130,000 cy, requiring two seasons of work to remove.

Minimization and Conservation Measures

The Corps proposes to authorize the following measures as part of the proposed action.

- Dredging is limited to July 1 to October 15 to minimize effects to listed species
- Dredge volume will be limited to 100,000 cy in any 12 month period of time

- Spoils will be deposited at HOODS in accordance with the Corps and Environmental Protection Agency criteria
- Clamshell and excavator dredging is a slow and controlled process allowing marine life time to escape as the equipment approaches. There are no suction or jetting pressures involved. Operator has the ability to limit descent speeds to minimize sediment dispersion.
- Vegetable based or biodegradable hydraulic fluids shall be used, if possible, in equipment operating over water or without secondary containment
- Equipment will be routinely inspected before, during, and after use
- Spill and containment kits will be kept on site
- Dredging will not extend beyond the over-dredging limits identified
- Turbidity will be monitored upstream and downstream of the Project to ensure turbidity is limited to only 500-feet from work sites in Humboldt Bay

Action Area

The action area includes the WIM as well as a 500-foot buffer, representing the extent sediment and turbidity is likely to extend. The action area also includes the HOODS offshore disposal site and the area of Humboldt Bay and the Pacific Ocean in which vessels, tugs, barges, and scows will be travelling to deposit dredge spoils at the disposal site at HOODS and return to the work sites.

Action Agency's Effects Determination

Available information indicates the following listed species (Evolutionarily Significant Units (ESU) or Distinct Population Segments [DPS]) under the jurisdiction of NMFS may be affected by the proposed project:

Southern Oregon/Northern California Coast (SONCC) coho salmon ESU

(Oncorhynchus kisutch)

Threatened (70 FR 37160; June 28, 2005)

Critical habitat (64 FR 24049; May 5, 1999);

California Coastal (CC) Chinook salmon ESU

(O. tshawytscha)

Threatened (70 FR 37160; June 28, 2005)

Critical habitat (70 FR 52488; September 2, 2005);

Northern California (NC) steelhead DPS

(O. mykiss)

Threatened (71 FR 834; January 5, 2006)

Critical habitat (70 FR 52488; September 2, 2005);

North American green sturgeon Southern DPS

(Acipenser medirostris)

Threatened (71 FR 17757; April 7, 2006)

Critical habitat (74 FR 52300; October 9, 2009).

The Corps determined the Project may affect, but is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, and Southern DPS green sturgeon and their designated critical habitats. The Corps rationale for their determination includes the areas proposed for dredging and disposal have been previously used several times and considered to be highly disturbed; the work window minimizes exposure of listed species; availability of suitable habitat elsewhere; and the effects would be short term with rapid recolonization of infaunal species. The Corps has also determined that the Project may adversely affect EFH.

SONCC Coho Salmon, CC Chinook Salmon, and NC Steelhead Life History and Use of Humboldt Bay

SONCC Coho Salmon Life History: Coho salmon have a generally simple 3-year life history. The adults typically migrate from the ocean and into Humboldt Bay towards their freshwater spawning grounds in late summer and fall, and spawn by mid-winter. Adults die after spawning. The eggs are buried in nests, called redds, in the rivers and streams where the adults spawn. The eggs incubate in the gravel until fish hatch and emerge from the gravel the following spring as fry. These 0+ age fish typically rear in freshwater for about 15 months before migrating to the ocean. The juveniles go through a physiological change during the transition from fresh to salt water called smoltification. Coho salmon typically rear in the ocean for two growing seasons, returning to their natal streams as 3-year old fish to renew the cycle.

Recent studies have identified the importance of the greater transition zone, or ecotone, between fresh and brackish water to juvenile salmonids (Miller and Sadro 2003). Wallace et al. (2015) defined this stream-estuary ecotone to include the area of low gradient stream extending from stream entrance to the wide valley floor, through the upper limit of tidal influence downstream to the area where the channel becomes bordered by tidal mudflats (including fringing marsh habitats, side channels, and off channel ponds). Sampling by California Department of Fish and Wildlife (CDFW) suggest that 0+ age coho salmon from Freshwater Creek (a tributary to Humboldt Bay) primarily rear in the stream-estuary ecotone during the spring and summer and then migrate back into Freshwater Creek to over-winter before emigrating to the ocean the following year as age 1+ smolts (Wallace and Allen 2007). An estimated 40% of coho salmon smolts originated from the stream-estuary ecotone of Freshwater Creek in 2007 and 2008 (Ricker and Anderson 2011).

CC Chinook Salmon Life History: The CC Chinook salmon ESU are typically fall spawners, returning to Humboldt Bay before entering their natal streams in the early fall. The adults tend to spawn in the mainstem or larger tributaries of rivers. As with the other anadromous salmon, the eggs are deposited in redds for incubation. When the 0+ age fish emerge from the gravel in the spring, they typically migrate to saltwater shortly after emergence. Therefore, Chinook salmon typically enter the estuary as smaller fish compared to coho salmon. Chinook salmon are typically present in the stream-estuary ecotone from early May to early September, with peak abundance in June/July (Wallace and Allen 2007). Similar to coho salmon, prey resources during out-migration is critical to Chinook salmon survival as they grow and move out to the open ocean. A study by MacFarlane (2010) indicated that juvenile Chinook salmon require less prey

in the estuary, equivalent to one northern anchovy (*Engraulis mordax*) per day, compared to a range of one to four anchovies needed per day in the ocean.

NC Steelhead Life History: Steelhead exhibit the most complex suite of life history strategies of any salmonid species. They have both anadromous and resident freshwater life histories that can be expressed by individuals in the same watershed. The anadromous fish generally return to freshwater to spawn as 4 or 5 year old adults. Unlike other Pacific salmon, steelhead can survive spawning and return to the ocean only to return to spawn in a future year. It is rare for steelhead to survive more than two spawning cycles. Steelhead typically spawn between December and May. Like other Pacific salmon, the steelhead female deposits her eggs in a redd for incubation. The 0+ age fish emerge from the gravel to begin their freshwater life stage and can rear in their natal stream for 1 to 4 years before migrating to the ocean.

Steelhead have a similar life history as noted above for coho salmon, in the sense that they rear in freshwater for an extended period before migrating to saltwater. As such, they enter the estuary as larger fish (mean size of about 170 to 180 mm or 6.5 to 7.0 inches) and are, therefore, more oriented to deeper water channels in contrast to Chinook salmon that typically enter the estuary as 0+ fish. The CDFW data indicate that steelhead smolts generally migrate downstream toward the estuary between March 1 and July 1 each year, although they have been observed as late as September (Ricker et al. 2014). The peak of the outmigration timing varies from year to year within this range, and generally falls between early April and mid-May. CDFW estimated 80% to 90% of steelhead trout smolts originated from the stream-estuary ecotone of Freshwater Creek in 2007 and 2008 (Wallace et al. 2015).

Salmonid Use of Humboldt Bay: Salmonids use eelgrass habitats for cover and feeding while they migrate to the marine environment, or while they rear seasonally in Humboldt Bay before returning upstream to overwinter (Wallace et al. 2015). Salmonids occurring in estuaries are highly mobile and in Humboldt Bay, low numbers of fish are spread over a large area, which can complicate scientific observations or captures intended to understand their habitat preferences (Garwood et al. 2013 and Pinnix et al. 2005). Phillips (1984) suggested Chinook salmon were “transient” users of eelgrass for feeding or cover. Murphy et al. (2000) did not observe a significant association of juvenile salmon with eelgrass. Garwood et al. (2013) studied fish assemblages in an eelgrass bed in Humboldt Bay by conducting monthly sampling over a period of several years and only captured one listed salmonid (NC steelhead) during the multi-year study. Pinnix et al. (2005) sampled over a 2-year period using fyke nets, shrimp trawls, beach seines, purse seines, cast nets, and minnow traps. Pinnix et al. (2005) identified a diverse and abundant fish community using the mudflats, oyster culture, and eelgrass meadows in Humboldt Bay, including a total of 49 species from 22 families of fishes. However, over the two years of sampling, no salmonid species were captured in any of the six different types of sampling gear.

A recent study related to 1+ age coho salmon smolts in Humboldt Bay, California, by Pinnix et al. (2013) used acoustic transmitters surgically implanted into the out-migrating smolts. Coho salmon smolts spent more time in the stream- estuary ecotone compared to the intertidal habitat of Humboldt Bay. During their residency in Humboldt Bay, coho smolts primarily used deep channels and channel margins and were present in the estuary an average of 10 to 12 days. They were also detected near floating eelgrass mats adjacent to the channels, but not over eelgrass

beds. The results from this study emphasize the importance of edge habitat and the need for structural heterogeneity during salmonid residency and migration through Humboldt Bay.

Southern DPS Green Sturgeon Life History and Use of Humboldt Bay

Southern DPS green sturgeon inhabit estuaries along the west coast during the summer and fall months (Moser and Lindley 2007) and are known to use the North Humboldt Bay heavily (Goldsworthy et. al. 2016, Pinnix 2008). Juvenile Southern DPS green sturgeon rear in their natal streams in California's Central Valley, so only sub-adult and adult SDPS green sturgeon are present in Humboldt Bay and are the only life stages of SDPS green sturgeon that could be exposed to the effects of the Project. Sub-adults range from 65-150 cm total length from first ocean entry to size at sexual maturity. Sexually mature adults range from 150-250 cm total length.

The action area is largely an intertidal mudflat with a deeper subtidal channel nearby (Eureka Channel). Because the action area is largely intertidal, SDPS green sturgeon are only expected along the deepest margins of the action area where suitable depths exist to accommodate large animals like the SDPS green sturgeon. SDPS green sturgeon can only utilize the action area during high tides, and therefore exposure to the Project is very limited

Consultation History

On May 29, 2018, NMFS received an initiation package from the Corps with an attached Project Description prepared by Pacific Affiliates (Pacific Affiliates 2018). The Corps requested NMFS concurrence that the Project, as proposed, is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, SDPS green sturgeon or their designated critical habitats. The Corps also determined the Project might adversely affect species managed under the Pacific Coast Salmon Fishery Management Plan (FMP), Pacific Coast Groundfish FMP, and Coastal Pelagic Species FMP.

On May 31, 2018, NMFS contacted the Corps via email requesting confirmation that the Project Description prepared by the District (HBHRCO 2018) could be considered as part of the consultation initiation package, as the Corps did not provide a description of the project as part of the initiation package.

On June 5, 2018, the Corps confirmed that the Project Description prepared by the District is part of the initiation package. On June 5, 2018, NMFS determined that there was sufficient information to initiate informal consultation as described above.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the

effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

Effects on Salmon, Steelhead and Green Sturgeon Critical Habitat

The critical habitat designations for SONCC coho salmon, CC Chinook salmon, NC steelhead, and Southern DPS green sturgeon use the term primary constituent element or essential feature. The new critical habitat regulations (81 FR 7414) replace this term with physical or biological features (PBFs). This shift in terminology does not change the approach used in conducting our analysis, whether the original designation identified primary constituent elements, physical or biological features, or essential features. In this consultation, we use the term PBF to mean primary constituent element or essential feature, as appropriate for the specific critical habitat.

Effects on SONCC coho salmon, CC Chinook, and NC Steelhead Critical Habitat

Within the range of the SONCC coho salmon, the life cycle of the species can be separated into five PBFs or essential habitat types: (1) juvenile summer and winter rearing areas, (2) juvenile migration corridors, (3) areas for growth and development to adulthood, (4) adult migration corridors, and (5) spawning areas. Areas 1 and 5 are often located in small headwater streams and side channels, while areas 2 and 4 include these tributaries as well as mainstem reaches and estuarine zones. Growth and development to adulthood (area 3) occurs primarily in near- and off-shore marine waters, although final maturation takes place in freshwater tributaries when the adults return to spawn. Within these areas, essential features of coho salmon critical habitat include adequate: (1) substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food, (8) riparian vegetation, (9) space, and (10) safe passage conditions (NMFS 1999). The PBFs of coho salmon critical habitat associated with this project relate to: areas for growth and development to adulthood. The essential features that may be affected by the proposed action include water quality, food, cover/shelter, and safe passage.

The PBFs of CC Chinook salmon critical habitat and the PBFs of NC steelhead critical habitat within the action area is limited to the estuarine area with: (1) water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; (2) natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and (3) juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation (NMFS 2005). The essential features that may be affected by the proposed action include water quality, natural cover, and forage/food resources.

Water Quality PBF

The proposed action includes activities that could degrade the water quality PBF for salmonids. Degraded water quality is expected to result from increased turbidity from disturbance of sediment and the incidental fallback of sediment from the clamshell dredge during operation. Elevated suspended sediment concentrations (SSCs) in Humboldt Bay are a relatively frequent occurrence. SSC levels can naturally increase due to wave action on shallow mudflats, storm runoff being delivered from local tributaries, and turbid water from the Eel River entering on

incoming tides. It is common for SSCs in Humboldt Bay to range from 40 to 100 milligrams per liter or more during the year (Swanson et al. 2012). Significant increases in turbidity usually begin to occur in September or October with the onset of the wet season, and peak between December and February (Swanson et al. 2012). Implementation of the minimization measures, which are included in the proposed action, will ensure any effects of turbidity are minimized.

The clamshell dredge bucket will minimize the extent and duration of turbid conditions, which are expected to extend no more than 500-feet from work areas. Because work will only occur in one discrete location at any time, the majority of the action area will remain undisturbed during project activities. NMFS expects that the temporary reduction in water quality in Humboldt Bay will not affect the conservation value of critical habitat. Dredge spoils deposited at the offshore HOODS disposal site will also generate short term increases in turbidity in the Pacific Ocean. Disposal events at HOODS will be more episodic than the actual dredging work in Humboldt Bay and is expected to dissipate quickly in the open ocean environment. Therefore, the effects of the Project on the water quality PBF are expected to be insignificant.

Prey/Forage Resources PBF

The proposed action will result in the temporary loss of some benthic food resources within the area of the dredge footprint of the Project. Given the proposed work window, the majority of the disturbance to prey resources in the action area will occur during times when salmonid use of the action area is very low. As salmonid use of the action area increases in the spring months the following year, the dredged areas would have had several months to recover and be recolonized by benthic organisms. The preferred prey resources for juvenile salmonids (Dungeness crab larvae, Pacific herring larvae, harpacticoid copepods, etc) would not be affected by the Project. Because prey resources are not expected to be significantly affected, NMFS does not expect any adverse effects to the Prey Resource PBF.

Migratory Corridor PBF

The proposed action will result in increased turbidity within 500 feet of work sites while the clamshell dredge removes accumulated sediments from the dredge footprint. The proposed work will occur when salmonids are not expected to be migrating, and NMFS expects that salmonid use (rearing) in the action area will be minimal. The short term turbidity is not expected to have a lasting effect on the quality or quantity of the migratory corridor. NMFS expects no adverse effects to the Migratory Corridor PBF.

Conclusion: Effects to SONCC Coho Salmon, CC Chinook, and NC Steelhead Critical Habitat
Based on our analysis above, implementation of the minimization measures will be sufficient to protect all of the PBFs of SONCC coho salmon, CC Chinook salmon, and NC steelhead critical habitat. For these reasons, the potential effects on the aforementioned species' critical habitat are expected to be insignificant.

Effects to SDPS Green Sturgeon Critical Habitat

The PBFs of green sturgeon critical habitat within the action area is limited to the estuarine area with: (1) abundant food items and substrates for juvenile, subadult and adult life stages; (2) water flow necessary for orientation and attraction flows to spawning areas in the Sacramento River; (3) water quality necessary for normal behavior, growth, and viability of all life stages; (4) a

migratory pathway necessary for the safe and timely passage within estuarine habitats and between estuarine and riverine or marine habitats; (5) a diversity of depths necessary for shelter, foraging and migration of juvenile, subadult, and adult life stages; and (6) sediment quality necessary for normal behavior, growth, and viability of all life stages (NMFS 2006).

Prey Resources PBF

The proposed action will result in the temporary reduction of benthic food resources within the area of the dredge footprint of the Project. After the first dredging cycle (likely to occur in 2018), the benthic community is expected to recover and recolonize the dredge footprint. Given the large volumes of sediment to be removed at WIM (130,000 cy), the second dredging episode will likely begin 13 months after the first episode. As SDPS green sturgeon enter Humboldt Bay in April, the dredge footprint will have had nearly six months of recovery time after the first year of dredging. Subsequent dredging efforts will be much smaller in scope and dependent on the volume of sediment accumulated. Green sturgeon use of the dredge footprint is relatively low given its low value location and high levels of disturbance. The temporary reduction in benthic prey resources during the recovery and recolonization of the dredge footprint after dredging episodes is not expected to adversely affect the Prey Resources PBF for SDPS green sturgeon.

Water Flow PBF

The Water Flow PBF is specific to bays and estuaries that are adjacent to the Sacramento River and is intended to provide for sufficient flows so that adult life stages can orient themselves to the incoming flow to accommodate upstream spawning migrations into the Sacramento River. Because Humboldt Bay is not adjacent to the Sacramento River, this PBF does not apply and will not be further considered in this consultation.

Water Quality PBF

The Water Quality PBF establishes criteria for suitable water temperatures, salinity, dissolved oxygen, and contaminants for all life stages of SDPS green sturgeon. The Project is not expected to affect these water quality parameters as the activities will not significantly affect temperature, salinity, or dissolved oxygen. Minimization measures are proposed in the *Proposed Action* section are likely to avoid introducing significant amounts of contaminants (fuel, etc) into the action area. Such toxics would be further diluted by tides and currents. Thus, there are no adverse effects expected to the Water Quality PBF.

Migratory Corridor PBF

The Migratory Corridor for SDPS green sturgeon may be temporarily affected by increases in turbidity. Turbid conditions are expected to extend as far as 500 feet from work sites, leaving ample space and adequate depths for any SDPS sturgeon migratory behaviors to occur. Furthermore, it is not expected that turbidity will affect SDPS green sturgeon migratory behaviors as the species has reduced eyesight and relies on other senses to navigate. Therefore, the effects to the Migratory Corridor PBF are expected to be insignificant.

Water Depth PBF

The Water Depth PBF suggests that a diversity of depths is necessary for shelter, foraging, and migration of all life stages of SDPS green sturgeon. Sub-adult and adult green sturgeon green sturgeon occupy a diversity of depths while in bays or estuaries for feeding and migration. The

Project will increase the depths of areas that are currently shallow, resulting in depths that remain suitable (or possibly enhanced) for SPDS green sturgeon. NMFS does not expect adverse effects to the Water Depth PBF, as a diversity of depths will remain available to all SDPS green sturgeon in the action area.

Sediment Quality PBF

The Sediment Quality PBF identifies the importance of the chemical characteristics of sediments, and suggests that sediments be free of elevated levels of contaminants such as selenium, pesticides, or poly aromatic hydrocarbons. These chemicals are known to cause adverse effects on all life stages of green sturgeon. Due to minimization measures described above, the Project is not expected to contribute chemical contamination to the water in the action area in more than the small amounts that are re-suspended from the bottom during dredging activities. Therefore, NMFS does not expect adverse effects to the Sediment Quality PBF.

Conclusion: Effects to SDPS Green Sturgeon Critical Habitat

Implementation of the minimization measures will be sufficient to protect all PBFs of SDPS green sturgeon critical habitat in the action area. Thus, the potential effects to green sturgeon critical habitat in the action area are expected to be insignificant.

Effects to Salmon and Steelhead Individuals

The Project has the potential to affect all life stages of the listed salmonids occurring in the action area due to entrainment in the clamshell bucket; reduced fitness resulting from temporary increases in turbidity; reduced fitness resulting from temporary reduction in benthic prey; and disturbance from vessel traffic. The effects caused by these project components have been reduced or minimized by incorporating the minimization measures described in the *Proposed Action* section.

Entrainment in Clamshell Bucket

There is a very remote possibility that a juvenile salmonid could be captured in the clamshell bucket and removed along with the dredge spoils. However, the work will occur when listed salmonid use of the action area is very low, thus minimizing exposure of juveniles. Any juveniles present in the action area during the work window would be expected to be present in the deeper North Bay Channel. Pinnix et al. 2013 found that SONCC coho salmon juveniles predominantly occurred in deep channels and NMFS expects that listed salmonids will prefer the deeper Eureka Channel and are expected to avoid the work areas, thus the possible effects of entrainment are discountable.

Turbidity

As previously described in the *Effects to Critical Habitat* section, operation of the clamshell dredge is expected to reduce water quality through the suspension of sediments and the resulting temporary increases in turbidity. Turbid waters are expected to extend no more than 500 feet from work sites, and work is expected to be limited to only one portion of the action area at a time. The work will occur when listed salmonid use of the action area is low, thus minimizing exposure of both juveniles and adults. If any life stages were present, it is expected they would be present in the deeper subtidal channel. Pinnix et al. 2013 found that SONCC coho salmon residency in the Bay was very low and predominantly occurred in deep channels. Listed

salmonids will be able to avoid the work areas as ample suitable habitat is available within the action area. Therefore, NMFS expects no adverse effect to listed salmonids resulting from turbidity.

Benthic Prey Reduction

The proposed action will result in the temporary loss of some benthic food resources within the area of the dredge footprint of the Project. Given the proposed work window, the majority of the disturbance to prey resources in the action area will occur during times when salmonid use of the action area is very low. As salmonid use of the action area increases in the spring months the following year, the dredged areas would have had several months to recover and be recolonized by benthic organisms. Furthermore, the preferred prey resources for juvenile salmonids (Dungeness crab larvae, Pacific herring larvae, harpacticoid copepods, etc) would not be affected by the Project. Because prey resources are not expected to be significantly affected, NMFS does not expect any fitness related consequences to individuals. Therefore, NMFS expects the effects of a temporary reduction in benthic prey to be insignificant.

Disturbance from Vessel Traffic

As described in the *Proposed Action* section, an increase in sound and disturbance related to the dredging work itself, in addition to the barges, scows, or tugs needed to transport dredge spoils is expected. The Fisheries Hydroacoustic Working Group (FHWG) has developed injury threshold criteria for listed fish species (FHWG 2008). The FHWG identified sound pressure levels of 206 dB-peak (peak decibels) at 10 m as being injurious to fish. Accumulated sound exposure levels (SEL) at 10 m of 187 dB for fishes that are greater than 2 grams are considered to cause temporary shifts in hearing, resulting in temporarily decreased fitness (i.e., reduced foraging success, reduced ability to detect and avoid predators) (FHWG 2008). The low level acoustics produced by vessels or from operation of the clamshell dredge are not likely to result in any negative physiological response or injury to any of the life stages of all the listed salmonid species. Vessel traffic may startle individual fish on the rare occasion when vessel traffic comes into close proximity of individuals. This brief startle response is not expected to result in any fitness consequence or increase rates of predation. Therefore, vessel traffic and associated disturbance is not expected to adversely affect listed salmonids.

Conclusion: Individual Salmon and Steelhead

There is little potential for combined effects given the size and location of where most of the activities are proposed to occur. For example, if a listed juvenile salmonid is startled by vessel traffic, it would leave and flee into other suitable habitat nearby before experiencing any sediment-related effects. NMFS concludes that all of the effects caused by the Project, when evaluated as a whole for the potential for combined or synergistic effects, would have an insignificant effect on individual Chinook salmon, coho salmon, and steelhead.

Effects to Green Sturgeon Individuals

The Project has the potential to affect SDPS green sturgeon due to entrainment in the clamshell bucket; reduced fitness resulting from temporary increases in turbidity; reduced fitness resulting from habitat reduction or loss; and disturbance from vessel traffic. The effects caused by these project components have been reduced or minimized by incorporating the minimization measures previously described.

Entrainment in Clamshell Bucket

The only life stages of SDS green sturgeon expected to be present are the larger sub-adult and adult life stages. Both sub-adult and adult life stages are too large to be captured inside of a clamshell bucket. Furthermore, based on Pinnix (2008) and Goldsworthy et al. (2016), SDPS green sturgeon spend most of their time in the northern reaches of the North Bay near Sand Island. NMFS expects exposure of SDPS green sturgeon to be very limited, based on their high use of the North Bay. NMFS expects possible effects of entrainment to be discountable.

Turbidity

As previously described, turbidity is expected to result from dredging activities and extend as far as 500 feet from work sites. Most sturgeon are generally benthic foragers and not visual predators (Moyle 2002). The green sturgeon retina is dominated by rods as the primary photoreceptors, indicating that they are adapted to environments characterized by low light levels (Sillman et al. 2005). This indicates that green sturgeon vision is likely not to be particularly sensitive or acute (Sillman et al. 2005), and therefore resilient to the minor increases in turbidity expected to be caused by the Project. As a benthic foraging species they are adapted to living in estuaries with fine sediment bottoms and inhabit streams with high levels of turbidity (Allen and Cech 2007). The temporary increases in turbidity are not expected to reduce feeding opportunities nor the fitness of SDPS green sturgeon individuals, a species which is known to rely on other senses over eyesight. Furthermore, NMFS expects that few SDPS green sturgeon would be exposed to increased turbidity in the action area, given their high use of the North Bay (Pinnix 2008 and Goldsworthy et al. 2016). Therefore, the effects of turbidity from the proposed action are expected to be insignificant to SDPS green sturgeon.

Benthic Prey Reduction

The proposed action will result in the temporary loss of some benthic food resources within the area of the dredge footprint of the Project. However, the Project represents the third dredging episode since 1988 (dredging occurred at WIM in 1988, 1998, and 2007) in support of existing infrastructure in areas of high recreational and commercial use (marinas and boat ramps). As previously discussed, the majority of SDPS green sturgeon are found in the North Bay and Entrance Bay, and most will not be exposed to any effects of the Project inside of the action area. Because prey resources will only be temporarily affected, and there is ample suitable habitat elsewhere, NMFS does not expect any fitness related consequences to individuals. Therefore, NMFS expects the effects of a temporary reduction in benthic prey to be insignificant.

Disturbance from Vessel Traffic

As described in the *Proposed Action* section, an increase in sound and disturbance related to the dredging work itself, in addition to the barges, scows, or tugs needed to transport dredge spoils is expected. The FHWG has developed injury threshold criteria for listed fish species (FHWG 2008). The FHWG identified sound pressure levels of 206 dB-peak (peak decibels) at 10 m as being injurious to fish. Accumulated sound exposure levels (SEL) at 10 m of 187 dB for fishes that are greater than 2 grams are considered to cause temporary shifts in hearing, resulting in temporarily decreased fitness (i.e., reduced foraging success, reduced ability to detect and avoid predators) (FHWG 2008). The low level acoustics produced by vessels or from operation of the clamshell dredge are not likely to result in any negative physiological response or injury to SDPS

green sturgeon. Vessel traffic may startle individual fish on the rare occasion when vessel traffic comes into close proximity of individuals. This brief startle response is not expected to result in any fitness consequence or increase rates of predation. Furthermore, NMFS expects that few SDPS green sturgeon would be exposed to sound and disturbance in the action area, given their high use of the North Bay (Pinnix 2008 and Goldsworthy et al. 2016). Therefore, vessel traffic and expected sound levels produced is expected to be insignificant to SDPS green sturgeon individuals.

Conclusion: Individual SDPS Green Sturgeon

There is little potential for combined effects to occur. For example, if a SDPS green sturgeon is startled by vessel traffic, it would leave and flee into other suitable habitat nearby before experiencing any sediment-related effects. NMFS concludes that all of the effects caused by the Project, when evaluated as a whole for the potential for combined or synergistic effects, would have an insignificant effect on individual SDPS green sturgeon.

Conclusion

Based on this analysis, NMFS concurs with the Corps that the proposed action may affect, but is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, and Southern DPS green sturgeon or their designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the Corps or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

Under the MSA, this consultation is intended to promote the protection, conservation and enhancement of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10), and "adverse effect" means any impact which reduces either the quality or quantity of EFH (50 CFR 600.910(a))¹. Adverse effects may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

¹ Note, the EFH regulations do not identify "may affect, not likely to adversely affect" as a possible determination for EFH. Instead, the EFH regulations specify that any reduction in the quantity or quality of EFH is an adverse effect.

This analysis is based, in part, on the EFH assessment provided by the Corps (District 2018) and descriptions of EFH for Pacific coast groundfish (PFMC 2005), coastal pelagic species (PFMC 1998), and Pacific coast salmon (PFMC 1999) contained in the FMPs developed by the Pacific Fishery Management Council and approved by the Secretary of Commerce.

Essential Fish Habitat Affected by the Project

The Pacific Fisheries Management Council (PFMC) has delineated EFH for Pacific Coast Salmon (PFMC 2014), Pacific Groundfish (PFMC 2006), and Coastal Pelagics (PFMC 1998) FMPs. EFH is defined in the MSA as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. NMFS regulations further define waters to include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate to include sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary to mean the habitat required to support a sustainable fishery and the managed species contribution to a healthy ecosystem; and spawning, breeding, feeding, or growth to maturity to cover a species' full life cycle (50 CFR § 600.10).

In estuarine and marine areas, Pacific Coast Salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent (200 miles) of the U.S. Exclusive Economic Zone (EEZ) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border (PFMC 2014). The Pacific Groundfish EFH includes all waters from the mean high water line, and the upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon, and California seaward to the boundary of the EEZ (PFMC 2006). The east-west geographic boundary of Coastal Pelagic EFH is defined to be all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington offshore to the limits of the EEZ and above the thermocline where sea surface temperatures range between 10°C and 26°C. The southern extent of EFH for Coastal Pelagics is the United States-Mexico maritime boundary. The northern boundary of the range of Coastal Pelagics is the position of the 10°C isotherm, which varies both seasonally and annually (PFMC 1998). Thus, the proposed project occurs within EFH for various Federally-managed species in the Pacific Coast Salmon, Pacific Groundfish, and Coastal Pelagics FMPs.

Adverse Effects on Essential Fish Habitat

NMFS determined the proposed action would adversely affect EFH for Pacific Coast Salmon, Pacific Coast Groundfish, and Coastal Pelagic Species Fishery Management Plans as follows:

- Temporarily degraded water quality within the action area due to the generation of suspended sediment caused by dredging activities
- Temporary reduction in benthic prey after the dredging is complete and before recovery and recolonization occur
- Potential for loss of eelgrass

Furthermore, the project is located in a Habitat Area of Particular Concern (HAPC) for various federally managed fish species within the Pacific Coast Groundfish FMP and Pacific Coast Salmon FMP. HAPC are described in the regulations as subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an

environmentally stressed area. Designated HAPC are not afforded any additional regulatory protection under MSA; however, federal projects with potential adverse impacts to HAPC are more carefully scrutinized during the consultation process. As defined in the Pacific Groundfish and Pacific Salmon FMP, Humboldt Bay, including the project area, is identified as estuary and seagrass (*i.e.*, eelgrass) HAPC.

Adverse Effects to Water Quality

Elevated SSCs in Humboldt Bay and the Pacific Ocean are a relatively frequent occurrence. SSC levels can naturally increase due to wave action on shallow mudflats, storm runoff being delivered from local tributaries, algae blooms, and turbid water from the Eel River entering on incoming tides. It is common for SSCs in Humboldt Bay to range from 40 to 100 milligrams/liter or more during the year (Swanson et al. 2012). Significant increases in turbidity usually begin to occur in September or October with the onset of the wet season, and peak between December and February (Swanson et al. 2012). There is an expected temporary increase in turbidity during the initial episode of dredging, and less significant increases in subsequent dredging episodes as the dredge volumes will be smaller after the initial episode. Brief episodes of turbidity will also occur at HOODS resulting from the disposal of dredge spoils. The high current and wind environment at HOODS is expected to quickly ameliorate suspended sediments and turbidity. In addition, the duration of exposure will be temporary, which would reduce the duration of any adverse effects.

Effects of Reduction in Benthic Habitat/Prey

The proposed action will result in the temporary loss of some benthic food resources within the area of the dredge footprint of the Project. After dredging, the benthic environment will likely be largely devoid of life and will recover and be recolonized over time by benthic fauna and infauna. Most benthic species will have recovered or recolonized the area by the following season. Although recovery and recolonization may occur in several months, repeated annual dredging may cause adverse effects as the dredge area may not recover in between dredging efforts.

Effects to Eelgrass

The WIM was constructed in 1978 and the District purchased a 22-acre mitigation site located at the end of Park Street in Eureka. The 22-acre Park Street mitigation site continues to serve as mitigation for ongoing impacts from marina infrastructure and maintenance dredging at WIM. NMFS expects eelgrass may exist in very low abundance in some portions of the WIM which may be exposed to dredging or to the effects caused by dredging operations (turbidity). The District (2018) suggests that eelgrass is present episodically along the slope of the WIM. Therefore, there is a high likelihood that eelgrass present in WIM during dredging may be effected, or in some cases lost. However, the 22-acre mitigation site at Park Street continues to compensate for any effects to eelgrass in the WIM.

EFH Conservation Recommendation

NMFS determined that the following conservation recommendation is necessary to avoid the adverse effects of the proposed action on EFH:

1. The District estimates there to be 130,000 cy of sediment currently in need of removal from the WIM. The District has proposed to limit the volume of dredged material to 100,000 cy every 12-months. Therefore, two consecutive work seasons would be required in order to remove the 130,000 cy of material (work would have to be planned and timed to comply with the 12-month limitation on volume). After the initial 130,000 cy of material is removed, the District should implement a two year (24 month) resting period or longer in between dredging cycles. For example, after 130,000 cy is removed during the initial years of the permit and another dredging cycle begins on August 15, 2025, the next dredging cycle should not begin until August 16, 2027, to allow for full recolonization and recovery to provide for benefits to federally managed species. NMFS suggests the 24-month resting period would begin in 2020, presumably after the District is able to remove the current 130,000 cy of sediment accumulation in the WIM over 2018 and 2019.

Within 30 days after receiving EFH recommendations, the Corps must provide NMFS with a detailed written response (50 CFR 600.920(k)(1)). The number of conservation recommendations accepted should be clearly identified in that response. If your response is inconsistent with the EFH conservation recommendations, you must explain why the recommendations will not be followed, including the scientific justification for any disagreements over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects. The Corps must reinstate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600. 920(1)). This concludes the MSA portion of this consultation.

Please direct questions regarding this letter to Mr. Matt Goldsworthy, Northern California Office, at (707) 825-1621 or via e-mail at Matt.Goldsworthy@noaa.gov.

Sincerely,



Barry A. Thom
Regional Administrator

cc: Copy to ARN # 151422WCR2018AR00115

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CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
 1385 EIGHTH STREET, SUITE 130
 ARCATA, CALIFORNIA 95521-5967
 PH (707) 826-8950 FAX (707) 826-8960
WWW.COASTAL.CA.GOV

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JUN 01 2018

H.B.H.R. & C.D.**PERMIT EXEMPTION / NO PERMIT REQUIRED**

May 31, 2018

Commission Reference Number: 1-18-0196-X

Applicant Name: Humboldt Bay Harbor, Recreation, and Conservation District

Project Location: At the Woodley Island Marina within Humboldt Bay (Humboldt County) (APNs: 40503109 and 40503110)

Project Description: The Harbor District proposes to dredge the Woodley Island Marina, including removal of all sediment from within the berths, fairways, slips and from beneath all floating and fixed structures within a total area of approximately 16.15 acres. Dredging shall also be conducted beneath gangway landing areas to maintain utility line clearance at low tide. Dredging will be performed using an excavator and/or crane with a clamshell bucket positioned on a floating work barge. Material will be scooped from the bay floor and deposited in a sealed dump scow situated adjacent to the work barge. Once full, the scow will be transported to the Humboldt Open Ocean Disposal Site (HOODS) located three nautical miles northwest of the Humboldt Bay entrance where the dredged material will be deposited.

Permit coverage is being requested for a total dredged volume of up to 300,000 cubic yards over a ten year period, with dredged volumes not exceeding 100,000 cubic yards in any 12 month period. Dredge depth will be -14.0 feet mean lower low water (MLLW) with a one foot overdredge depth. Dock structures will not be dismantled to complete dredging. The marina will continue to operate during the dredging work to ensure commercial and recreational access to coastal waters. Dredging activities will only be performed between July 1 and October 15 of each calendar year to avoid impacts to salmonids migrating through Humboldt Bay.

This is to certify that this location and/or proposed project has been reviewed by the staff of the Coastal Commission. A Coastal Development Permit is NOT necessary for the reasons checked below:

- The site is not located within the Coastal Zone as established by the California Coastal Act of 1976, as amended.
- The proposed development is included in categorical Exclusion Number ____ adopted by the California Coastal Commission.
- The proposed development is judged to be repair or maintenance activity not resulting in an addition to or enlargement or expansion of the object of such activities and not involving any risk of substantial adverse environmental impact (Coastal Act Section 30610(d)).

PERMIT EXEMPTION / NO PERMIT REQUIRED

- The proposed development is an improvement to an existing single family residence (Coastal Act Section 30610(a)) and not located in the area between the sea and the first public road or within 300 feet of the inland extent of any beach (whichever is greater) (Section 13250(b)(4) of 14 Cal. Admin. Code).
- The proposed development is an improvement to an existing single family residence and is located in the area between the sea and the first public road or within 300 feet of the inland extent of any beach (whichever is greater), but is not (a) an increase of 10% or more of internal floor area; (b) an increase in height over 10%; or (c) a significant non-attached structure (Coastal Act Section 30610(a) and Section 13250(b)(4) of the Administrative Regulations).
- The proposed development is an interior modification to an existing use with no change in the density or intensity of use (Coastal Act Section 30106).
- The proposed development involves the installation, testing, and placement in service of a necessary utility connection between an existing service facility and development approved in accordance with coastal development permit requirements, pursuant to Coastal Act Section 30610(f).
- The proposed development is the rebuilding of a structure, other than a public works facility, destroyed by natural disaster. The replacement conforms to all of the requirements of Coastal Act Section 30610(g).
- Other: _____

Please be advised that only the project described above is exempt from the permit requirements of the Coastal Act. Any change in the project may cause it to lose its exempt status. This certification is based on information provided by the recipient of this letter. If, at a later date, this information is found to be incorrect or incomplete, this letter will become invalid, and any development occurring at that time must cease until a Coastal Development Permit is obtained.

Sincerely,

John Ainsworth
Executive Director


Cristin Kenyon
Coastal Program Analyst



North Coast Regional Water Quality Control Board

July 23, 2018

In the Matter of
Water Quality Certification
for the
Woodley Island Maintenance Dredging Project
WDID No. 1B180035WNHU

APPLICANT:	Humboldt Bay Harbor, Recreation and Conservation District
RECEIVING WATER:	Humboldt Bay
HYDROLOGIC UNIT:	Eureka Plain Hydrologic Unit No. 110.00
COUNTY:	Humboldt
Files:	Woodley Island Maintenance Dredging Project ECM PIN CW- 846146

FINDINGS BY THE EXECUTIVE OFFICER:

1. On April 2, 2018, the Humboldt Bay Harbor, Recreation and Conservation District (Applicant) filed an application for water quality certification (Certification) under section 401 of the Clean Water Act (33 U.S.C. § 1341) with the California Regional Water Quality Control Board, North Coast Region (Regional Water Board) for activities associated with the Woodley Island Maintenance Dredging Project (Project). The application was deemed complete on June 20, 2018. The Regional Water Board previously issued a Certification for maintenance dredging activities at the Woodley Island Marina on August 26, 2005, and dredging was last conducted in 2007. The Project is located at the Marina on Woodley Island at 601 Startare Drive, Eureka, Humboldt County, at latitude 40.8079° N, and longitude 124.162° W.
2. **Public Notice:** The Regional Water Board provided 21-day public notice of the application pursuant to Title 23, California Code of Regulations, Section 3858 on June

26, 2018, and posted information describing the Project on the Regional Water Board's website. No comments were received.

3. **Receiving Waters:** The Project will cause disturbances to waters of the state associated with Humboldt Bay within the Eureka Plain Hydrologic Unit No. 110.00.
4. **Project Description:** The primary purpose of the Project is to conduct maintenance dredging in the marina to the designed channel depth of -14ft. Mean Lower Low Water for boat access. The Project includes dredging approximately 19.3 acres of the Humboldt Bay floor, removing up to 300,000 cubic yards (cy) of sediment over ten years (not to exceed 100,000 cy in any 12-month period). The Applicant shall conduct the maintenance dredging with a closed clamshell bucket to minimize turbidity and will monitor turbidity within 500 feet of dredging to ensure water quality objectives are maintained during dredging. The Applicant conducted a Sampling and Analysis Plan in 2015. The final Analytical Report, dated March 2, 2017, identify that the sediment contains a predominance of silt and clay (~>90% fine sediment) and similar or lower chemical constituent levels previously approved for maintenance dredging and disposal. The Applicant proposes to use a sealed dump scow to transfer and transport the dredged sediment to the Humboldt Open Ocean Disposal Site (HOODS) for permanent disposal and has received U.S. Environmental Protection Agency (EPA) approval for disposal.
5. **Construction Timing:** The Project is planned to take place between July and October, from 2018 through 2028 as necessary.
6. **Authorized Project Impacts:** No permanent impacts to waters of the state are proposed. Temporary impacts to waters of the state include dredging approximately 19.3 acres of Humboldt Bay floor removing up to 300,000 cubic yards (cy) of sediment over ten years, not to exceed 100,000 cy in any 12-month period.
7. **Avoidance, Minimization and Mitigation for Project Impacts:** The Project includes a plan to monitor turbidity within 500 feet of dredging to ensure water quality objectives are maintained during dredging and if necessary take proposed adaptive measures or Best Management Practices (BMPS) to avoid and minimize exceedances greater than 20% above background turbidity levels. The Project proposes to employ BMPs to prevent or reduce any discharges during transfer and transport to HOODS. Compensatory mitigation for the impacts to eel grass (*Zostera marina*) due to the construction of the marina in 1978 included the purchase of 22 acres in Eureka where mitigation included restoring tidal action to the property and fresh water wetland enhancement. No additional compensatory mitigation is required for maintenance dredging within the marina footprint.
8. **Other Agency Actions:** The Applicant has applied for authorization from the United States Army Corps of Engineers for a Clean Water Act, section 404 permit and or

Rivers and Harbors Act section 10. The U.S. EPA has reviewed and approved the placement of sediment at the HOODS site and has determined that it does not exceed regulatory thresholds. The Applicant has obtained a Coastal Development Permit Exemption from the California Coastal Commission.

9. **CEQA Compliance:** The North Coast Regional Water Quality Control Board, as lead California Environmental Quality Act (CEQA) agency, has determined that the project qualifies for a Categorical Exemption, 15304 (g) Minor Alterations to Land - Maintenance Dredging, and will file a Notice of Exemption with the State Clearinghouse concurrent with issuance of the 401 Water Quality Certification, pursuant to CEQA guidelines.
10. **Total Maximum Daily Load (TMDL):** Humboldt Bay within the Eureka Plain Hydrologic Unit 110.00 is identified as impaired for Dioxin Toxic Equivalents (TEQs) and Polychlorinated biphenyls (PCBs) under Clean Water Act Section 303(d). A TMDL has not yet been developed to address these impairments.
11. **Antidegradation Policy:** The federal antidegradation policy requires that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's *Water Quality Control Plan for the North Coast Region* (Basin Plan) implements, and incorporates by reference, both the state and federal antidegradation policies. This Certification is consistent with applicable federal and state antidegradation policies, as it does not authorize the discharge of increased concentrations of pollutants or increased volumes of treated wastewater, and does not otherwise authorize degradation of the waters affected by this Project.
12. This discharge is also regulated under State Water Resources Control Board Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification," which requires compliance with all conditions of this water quality certification. The Order may be accessed at this web address:
https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/generalorders/go_wdr401regulated_projects.pdf

Receiving Water:	Humboldt Bay, Eureka Plain Hydrologic Unit No. 110.00	
Filled and/or Excavated Areas:	Permanent impacts to waters of the state:	None
	Temporary impacts to waters of the state:	19.3 acres of bay substrate
Dredge Volume	300,000 cy over 10 years (100,000 cy max annually)	
Latitude/Longitude:	40.8079° N, 124.162° W	
Certification Expiration:	July 23, 2028	

Accordingly, based on its independent review of the record, the Regional Water Board certifies that the Woodley Island Maintenance Dredging Project (WDID No. 1B180035WNHU) as described in the application will comply with sections 301, 302, 303, 306 and 307 of the Clean Water Act, and with applicable provisions of state law, provided that the Applicant complies with the following terms and conditions:

All conditions of this Certification apply to the Applicant (and their employees) and all contractors (and their employees), sub-contractors (and their employees), and any other entity or agency that performs activities or work on the Project as related to this Water Quality Certification.

Terms and Conditions:

Project-Specific Conditions

1. No dredged material shall be permitted to overflow, leak, or spill from barges, bins, or dump scows during transportation from the dredging site to HOODS. No overflow or decant water shall be discharged from any barge at any time. Dredge material shall be removed only by closed clamshell bucket. Dredged material volume shall not exceed 100,000 cubic yards in any 12-month period.
2. The Applicant shall monitor turbidity within 500 feet of dredging to ensure water quality objectives are maintained during dredging and, if necessary, take proposed adaptive measures or Best Management Practices (BMPS) to avoid and minimize exceedances greater than 20% above background turbidity levels.

Project-Specific Conditions Requiring Reports

3. **Annual Dredge Report:** The Applicant shall provide an electronic copy of the *Annual Dredge Report* to Water Board staff within 60 days of completion of dredging operations or by November 1, annually, if no dredging will occur that year. The report may be submitted via email to northcoast@waterboards.ca.gov. The report shall contain the dates of dredging, maps of the dredging footprint, turbidity results, and the calculated final dredging volume.

Standard Conditions

4. This Certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330 and title 23, California Code of Regulations, section 3867.
5. This Certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Certification application was filed pursuant to title 23, California Code of Regulations, section 3855, subdivision (b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
6. The validity of this Certification is conditioned upon total payment of any fee required under title 23, California Code of Regulations, section 3833, and owed by the Applicant.

An application fee of \$1,500 was received for the Project on April 2, 2018. This Certification will be subject to annual billing while the project certification is active and dredge volume discharge fees will be billed annually following submittal of the *Annual Dredge Report* per the current fee schedule:
https://www.waterboards.ca.gov/resources/fees/water_quality/docs/dredgefillcalculator.xlsx
The annual dredge discharge fee is based on the volume dredged during the previous fiscal years (July 1- June 30), calculated using *Annual Dredge Report* survey results provided to the Regional Water Board per condition 3. Annual fees will be automatically invoiced to the Applicant.

Applicant must notify the Regional Water Board to request to terminate annual billing if project is terminated prior to the expiration date. Regional Water Board staff may request site visit at the end of the Project to confirm status of Project and compliance with this Certification.

7. The Regional Water Board shall be notified at least five working days (working days are Monday – Friday) prior to the commencement of construction.
8. Only wildlife-friendly, 100-percent biodegradable erosion and sediment control products that will not entrap or harm wildlife shall be used. Erosion and sediment control products shall not contain synthetic (e.g., plastic or nylon) netting. Photodegradable synthetic products are not considered biodegradable. The Applicant shall request approval from the Regional Water Board if an exception from this requirement is needed for a specific location.
9. BMPs shall be implemented as proposed in the application materials. BMPs for erosion, sediment and turbidity control shall be implemented and in place at

commencement of, during and after any ground clearing activities or any other Project activities that could result in erosion or sediment discharges to surface water. Severe and unseasonal rain events are becoming more frequent due to the effects of climate change. Therefore, BMPs shall be immediately available for deployment at all times to prevent discharges to waters of the state.

10. The Applicant is prohibited from discharging waste to waters of the state, unless explicitly authorized by this Certification. For example, no debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other organic or earthen material from any construction or associated activity of whatever nature, other than that authorized by this Certification, shall be allowed to enter into or be placed where it may be washed by rainfall into waters of the state. When operations are completed, any excess material or debris shall be removed from the work area.
11. The Applicant shall provide Regional Water Board staff access to the Project site to document compliance with this Certification.
12. If, at any time, an unauthorized discharge to surface water (including wetlands, lakes, rivers or streams) occurs, or any water quality problem arises, the associated Project activities shall cease immediately until adequate BMPs are implemented including stopping work. The Regional Water Board shall be notified promptly and in no case more than 24 hours after the unauthorized discharge or water quality problem arises.
13. Prior to implementing any change to the Project that may be a material change as defined in California Water Code section 13260(c) as a proposed change in character, location, or volume of the discharge, the Applicant shall obtain prior written approval of the Regional Water Board Executive Officer. If the Regional Water Board is not notified of the material change to the discharge, it will be considered a violation of this Certification, and the Applicant may be subject to Regional Water Board enforcement action(s).
14. All Project activities shall be implemented as described in the submitted Certification application package and the findings and conditions of this Certification. Subsequent Project changes that could significantly impact water quality shall first be submitted to Regional Water Board staff for prior review, consideration, and written concurrence. If the Regional Water Board is not notified of a significant alteration to the Project, it will be considered a violation of this Certification, and the Applicant may be subject to Regional Water Board enforcement actions.
15. The Applicant shall provide a copy of this Certification and State Water Resources Control Board (SWRCB) Order No. 2003-0017-DWQ to any contractor(s), subcontractor(s), and utility company(ies) conducting work on the Project, and shall require that copies remain in their possession at the work site. The Applicant shall be

responsible for ensuring that all work conducted by its contractor(s), subcontractor(s), and utility companies is performed in accordance with the information provided by the Applicant to the Regional Water Board.

16. Fueling, lubrication, maintenance, storage, and staging of vehicles and equipment shall not result in a discharge or threatened discharge to any waters of the state including dry portions of the shoreline. At no time shall the Applicant or its contractors allow use of any vehicle or equipment, which leaks any substance that may impact water quality.
17. The Applicant shall not use leaking vehicles or equipment within State waters or riparian areas. Vehicles and equipment used within State waters shall be checked for leaks at the beginning of each work day.
18. In the event of any violation or threatened violation of the conditions of this Certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under applicable state or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this Certification. In response to a suspected violation of any condition of this Certification, the State Water Board may require the holder of any federal permit or license subject to this Certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In response to any violation of the conditions of this Certification, the Regional Water Board may add to or modify the conditions of this Certification as appropriate to ensure compliance.
19. The Regional Water Board may add to or modify the conditions of this Certification, as appropriate, to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.
20. In the event of any change in control of ownership of land presently owned or controlled by the Applicant, the Applicant shall notify the successor-in-interest of the existence of this Certification by letter and shall email a copy of the letter to the following email address: NorthCoast@waterboards.ca.gov.

The successor-in-interest shall email the Regional Water Board Executive Officer at: NorthCoast@waterboards.ca.gov to request authorization to discharge dredged or fill material under this Certification. The request must contain the following:

- i) Effective date of ownership change;

- ii) Requesting entity's full legal name;
 - iii) The state of incorporation, if a corporation;
 - iv) The address and phone number of contact person; and
 - v) A description of any changes to the Project or confirmation that the successor-in-interest intends to implement the project as described in this Certification.
21. Except as may be modified by any preceding conditions, all Certification actions are contingent on:
- i) The discharge being limited to and all proposed mitigation being completed in strict compliance with the Applicant's Project description and CEQA documentation, as approved herein; and
 - ii) Compliance with all applicable water quality requirements and water quality control plans including the requirements of the Water Quality Control Plan for the North Coast Region (Basin Plan), and amendments thereto.
22. The authorization of this Certification for any dredge and fill activities expires on July 23, 2028. Conditions and monitoring requirements outlined in this Certification are not subject to the expiration date outlined above, and remain in full effect and are enforceable.

Conditions 3, 7 and 8 have requirement for information and reports. Any requirement for a report made as a condition to this Certification is a formal requirement pursuant to California Water Code section 13267, and failure or refusal to provide, or falsification of such required report is subject to civil liability as described in California Water Code, section 13268.

If you have any questions or comments, please call Gil Falcone at (707) 576-2830 or Stephen Bargsten at (707) 576-2653.



On Behalf Of

Digitally signed by Jonathan
Warmerdam
Date: 2018.07.23 15:25:58
-07'00'

Matthias St. John
Executive Officer

180723_GBF_dp_WoodleyDredging_401

Original to: Mr. Larry Oetker, Executive Director, Humboldt Bay Harbor, Recreation and Conservation District, 601 Startare Drive, Eureka, CA 95501
loetker@humboldtby.org

cc: State Water Resources Control Board, Stateboard401@waterboards.ca.gov
Ms. Jennifer Siu, EPA Region 9, Siu.Jennifer@epa.gov
Ms. Debra O'Leary, U.S. Army Corps of Engineers,
debra.a.o'leary@usace.army.mil
Ms. Rebecca Garwood, CDFW, Rebecca.garwood@Wildlife.ca.gov
Ms. Vanessa Blodgett, Plan West Partners, vanessab@planwestpartners.com
Mr. George Williamson, districtplanner@humboldtby.org



**PROTOCOLS FOR INADVERTENT ARCHAEOLOGICAL DISCOVERIES
FOR GROUND DISTURBING PROJECT PERMITS, LEASES AND FRANCHISES
ISSUED BY THE HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION
DISTRICT, HUMBOLDT BAY, CALIFORNIA**

**April 22, 2015 (adopted 4/23/15 by Harbor District Commission)
(Contact Information Updated May 7, 2018)**

Background

Humboldt Bay is the ancestral heartland of the Wiyot Indians, whose native language is affiliated with the Algonquian language family and who had occupied the bay area for at least 2000 years by the time the first recorded European maritime explorers entered the Bay in 1806 and the first American towns were established in 1850. There are hundreds of known and undiscovered archaeological sites around Humboldt Bay that evidence Wiyot history and prehistory. Today, citizens of Wiyot ancestry are affiliated with three federally-recognized tribes located in the ancestral homeland: Blue Lake Rancheria; Bear River Band of the Rohnerville Rancheria; and the Wiyot Table at Table Bluff Reservation.

Applicable Laws

A number of State and Federal historic preservation laws, regulations and policies address the need to manage potentially significant and/or sensitive (e.g., human remains) archaeological and Native American resources identified during advance project or permit review or discovered inadvertently.

- California Environmental Quality Act (CEQA) – Requires analysis by the Lead Agency under CEQA, to determine if a proposed project will cause a significant impact to “historical resources” including archaeological and Native American sites. Project approval may be conditional, for example, avoidance or mitigation (data recovery) of known archaeological resources, monitoring of ground disturbing activities in identified sensitive areas by local Tribal Representatives and/or professional archaeologists, and implementation of protocols for inadvertent archaeological discoveries.
- Section 106 of the National Historic Preservation Act (NHPA) – Requires analysis by the Lead Federal Agency and consultation with the California State Historic Preservation Officer (SHPO), Advisory Council on Historic Preservation (ACHP), culturally affiliated Native American Tribes, and others, as appropriate, to “resolve adverse effects” on “historic properties” including archaeological and Native American sites. Section 106 is the key Federal historic preservation law, and final approval of the undertaking may be conditional as specified in a legally binding Agreement among the parties.

Several laws and their implementing regulations spell out evaluation criteria to determine what constitutes a significant ‘site’ or a significant ‘discovery’:

- California Register of Historical Resources criteria (California Code of Regulations, Title 14, Chapter 3, Section 15064.5), for archaeological and Native American resources qualifying for consideration under CEQA;
- National Register of Historic Places criteria (36 CFR 63), qualifying for consideration under Section 106 review and NEPA;

State laws call for specific procedures and timelines to be followed in cases when human remains are discovered on private or non-Federal public land in California. It includes penalties (felony) for violating the rules for reporting discoveries, or for possessing or receiving Native American remains or grave goods:

- Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the Public Resources Code (PRC) outline requirements for handling inadvertent discoveries of human remains, including those determined to be Native American with or without associated grave goods, found on private or non-Federal public lands. PRC 5097.99 (as amended by SB 447) specifies penalties for illegally possessing or obtaining Native American remains or associated grave goods.

Another California law imposes strong civil penalties for maliciously digging, destroying or defacing a California Indian cultural or sacred site:

- California Native American Historic Resource Protection Act of 2002 (SB 1816, adding Chapter 1.76 to Division 5 of the PRC), imposes civil penalties including imprisonment and fines up to \$50,000 per violation, for persons who unlawfully and maliciously excavate upon, remove, destroy, injure, or deface a Native American historic, cultural, or sacred site that is listed or may be listed in the California Register of Historic Resources.

Standard Mitigation Language for CEQA Initial Studies

The following language may be employed by the Humboldt Bay Harbor, Recreation and Conservation District (Harbor District) when cultural resources screening (e.g., comment by Wiyot area Tribal Historic Preservation Officers (THPOs), formal record searches, current cultural resources studies) indicates a particular permit, leasehold or franchise area under its jurisdiction does not have known archaeological sites, however, unknown buried artifacts and archaeological deposits may exist and be impacted by the proposed action.

- CR-1 Should an archaeological resource be inadvertently discovered during ground-disturbing activities, the Tribal Historic Preservation Officers (THPO) appointed by the Blue Lake Rancheria, Bear River Band of Rohnerville Rancheria and Wiyot Tribe shall be immediately notified and a qualified archaeologist with local experience retained to consult with the Harbor District, the three THPOs, the Permittee and other applicable regulatory agencies to employ best practices for assessing the significance of the find, developing and implementing a mitigation plan if avoidance is not feasible, and reporting in accordance with the Harbor District's Standard Operating Procedures (SOP, below).

CR-2 Should human remains be inadvertently discovered during ground-disturbing activities, work at the discovery locale shall be halted immediately, the Harbor District and County Coroner contacted, and the Harbor District's SOP shall be followed, consistent with state law.

Standard Operating Procedures

The following standard operating procedures for addressing inadvertent archaeological discoveries shall apply to all phases and aspects of work carried out under the authority of the Harbor District for those parties that obtain a permit, lease or franchise for projects that involve ground-disturbing activities within its jurisdiction. It shall apply as well to the Harbor District's activities involving ground disturbances. In all cases, these SOPs shall apply to their respective employees, officers and agents, including contractors whose activities may potentially expose and impact significant or sensitive resources.

The intent is to avoid or minimize direct or indirect impacts to significant archaeological or Native American discoveries that may qualify for inclusion in the California Register of Historical Resources and/or the National Register of Historic Places.

These Protocols are intended to serve as standard guidelines to the Harbor District for compliance with CEQA and NHPA Section 106 requirements for considering inadvertent archaeological discoveries.

Responsibility for Retaining Services of As-Needed Professional Archaeologist

If an inadvertent discovery of archeological resources, human remains and/or grave goods occurs, the Harbor District or those parties that obtain a permit, lease or franchise shall be responsible for retaining as-needed services of a qualified Archaeologist, meaning the individual meets the Secretary of the Interior's Professional Standards for an Archaeological Principal Investigator and/or is listed as Registered Professional Archaeologist (see website at www.rpanet.org). The professional will provide as-needed services to conduct rapid assessments of potentially significant archaeological finds discovered during the Project implementation.

Designated Points of Contact (POC) for Notification of Discoveries

The Harbor District, those entities that obtain a permit, lease or franchise from the Harbor District, their construction contractor(s), and other applicable local, state or federal agencies shall each designate a representative who shall act as its official Point of Contact (POC) and who shall be notified immediately upon the inadvertent discovery of an archaeological find or the inadvertent discovery of human remains and /or grave goods during Project implementation.

The federally-recognized Blue Lake Rancheria, Bear River Band of the Rohnerville Rancheria and Wiyot Tribe each has citizens that recognize Wiyot ancestry. Each Tribe's appointed Tribal Historic Preservation Officer (THPO) is designated as the POC (below) and shall be immediately notified by the Harbor District's POC should an archaeological site (with or without human remains) be inadvertently discovered. The Harbor District POC is also listed below.

Designated Tribal and Harbor District Points-of-Contact (*updated 5/7/18)

Tribe	Address	Office Telephone	Cultural Staff*
Blue Lake Rancheria	428 Chartin Road P.O. Box 428 Blue Lake, CA 95525	(707) 668-5101 x1037 Fax (707) 688-4272 Cell (530) 623-0663	Janet Eidsness, THPO
Bear River Band of the Rohnerville Rancheria	266 Keisner Road Loleta, CA 95551	(707) 733-1900 x233 Fax (707) 733-1972 Cell (707) 502-5233	Erika Cooper, THPO
Wiyot Tribe	1000 Wiyot Drive Loleta, CA 95551	(707) 733-5055 Fax (707) 733-5601 Cell (707) 499-3943	Ted Hernandez, THPO
Harbor District	601 Startare Drive, Eureka, CA 95501	(707) 443-0801 Fax (707) 443-0800 Cell (707) 834-1108	Larry Oetker, Executive Director

Interested Tribal Representatives shall be invited to inspect a discovery site and meet with the Harbor District’s and other applicable delegated POCs and Consulting Professional Archaeologist, as appropriate, to make a rapid assessment of the potential significance of a find and participate in the development and implementation of a Treatment Plan, as appropriate.

Note: In the event that Native American skeletal remains are discovered, State law specifies that the “Most Likely Descendent (MLD)” appointed by the NAHC has the authority to make recommendations for the final treatment and disposition of said remains and associated grave goods – see below.

A. SOP for Inadvertent Archaeological Discovery (General)

1. Ground-disturbing activities shall be immediately stopped if potentially significant historic or archaeological materials are discovered. Examples include, but are not limited to, concentrations of historic artifacts (e.g., bottles, ceramics) or prehistoric artifacts (chipped chert or obsidian, arrow points, groundstone mortars and pestles), culturally altered ash-stained midden soils associated with pre-contact Native American habitation sites, concentrations of fire-altered rock and/or burned or charred organic materials, and historic structure remains such as stone-lined building foundations, wells or privy pits. Ground-disturbing project activities may continue in other areas that are outside the discovery locale.
2. An “exclusion zone” where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) around the discovery area plus a reasonable buffer zone by the Contractor Foreman or authorized representative, or party who made the discovery and initiated these SOP.
3. The discovery locale shall be secured (e.g., 24-hour surveillance) as directed by the Harbor District if considered prudent to avoid further disturbances.

4. The Contractor Foreman or authorized representative, or party who made the discovery and initiated these SOP, shall be responsible for immediately contacting by telephone the parties listed below to report the find:
 - (a) the Harbor District's authorized POC and
 - (b) the Applicant's (District's permittee, lease or franchise holder) authorized POC, and it's General Contractor's POC if applicable.

5. Upon learning about a discovery, the Harbor District's POC shall be responsible for immediately contacting by telephone the POCs listed below to initiate the consultation process for its treatment and disposition:
 - (a) THPOs with Blue Lake Rancheria, Bear River Band and Wiyot Tribe; and Other applicable agencies involved in Project permitting (e.g., US Army Corps of Engineers, US Fish & Wildlife Service, California Department of Fish & Wildlife, etc.).

6. Ground-disturbing project work at the find locality shall be suspended temporarily while Harbor District, the three THPOs, consulting archaeologist and other applicable parties consult about appropriate treatment and disposition of the find. Ideally, a Treatment Plan will be developed within three working days of discovery notification. Where the project can be modified to avoid disturbing the find (e.g., through project redesign), this may be the preferred option. Should Native American remains be encountered, the provisions of State laws shall apply (see below). The Treatment Plan shall reference appropriate laws and include provisions for analyses, reporting, and final disposition of data recovery documentation and any collected artifacts or other archaeological constituents. Ideally, the field phase of the Treatment Plan may be accomplished within five (5) days after its approval, however, circumstances may require longer periods for data recovery.

7. The Harbor District's officers, employees and agents, including contractors, permittees, holders of leases or franchises, and applicable property owners shall be obligated to protect significant cultural resource discoveries and may be subject to prosecution if applicable State or Federal laws are violated. In no event shall unauthorized persons collect artifacts.

8. Any and all inadvertent discoveries shall be considered strictly confidential, with information about their location and nature being disclosed only to those with a need to know. The Harbor District's authorized representative shall be responsible for coordinating with any requests by or contacts to the media about a discovery.

9. These SOPs shall be communicated to the field work force (including contractors, employees, officers and agents) of those entities that obtain a permit, lease or franchise from the Harbor District, and such communications may be made and documented at weekly tailgate safety briefings.

10. Ground-disturbing work at a discovery locale may not be resumed until authorized in writing by the Harbor District.

11. In cases where a known or suspected Native American burial or human remains are uncovered:
 - (a) The following contacts shall be notified immediately: Humboldt County Coroner (707-445-7242) and the property owner of the discovery site, and
 - (b) The SOP for Inadvertent Discovery of Native American Remains and Grave Goods (B below) shall be followed.

B. SOP for Inadvertent Discovery of Native American Remains and Grave Goods

In the event that known or suspected Native American remains are encountered, the above procedures of SOP paragraph A for Inadvertent Archaeological Discovery (General) shall be followed, as well as:

1. If human remains are encountered, they shall be treated with dignity and respect. Discovery of Native American remains is a very sensitive issue and serious concern of affiliated Native Americans. Information about such a discovery shall be held in confidence by all project personnel on a need-to-know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld.
2. Violators of Section 7050.5 of the California Health and Safety Code may be subject to prosecution to the full extent of applicable law (felony offense).

In addition, the provisions of California law (Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the California Public Resources Code) will be followed:

1. The Coroner has two working days to examine the remains after being notified of the discovery. If the remains are Native American, the Coroner has 24 hours to notify the Native American Heritage Commission (NAHC) in Sacramento at (916) 653-4082.
2. The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD) of the deceased Native American. (Note: NAHC policy holds that the Native American Monitor will not be designated the MLD.)
3. Within 48 hours of their notification by the NAHC, the MLD will be granted permission by the property owner of the discovery locale to inspect the discovery site if they so choose.
4. Within 48 hours of their notification by the NAHC, the MLD may recommend to the owner of the property (discovery site) the means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials. Only those osteological analyses (if any) recommended by the MLD may be considered and carried out.

5. Whenever the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the property owner rejects the recommendation of the MLD and mediation between the parties by NAHC fails to provide measures acceptable to the property owner, he/she shall cause the re-burial of the human remains and associated grave offerings with appropriate dignity on the property in a location not subject to further subsurface disturbance.

C. SOP for Documenting Inadvertent Archaeological Discoveries

1. The Contractor Foreman or authorized representative, or party who made the discovery and initiated these SOP, shall make written notes available to the Harbor District describing: the circumstances, date, time, location and nature of the discovery; date and time each POC was informed about the discovery; and when and how security measures were implemented.
2. The Harbor District POC shall prepare or authorize the preparation of a summary report which shall include: the time and nature of the discovery; who and when parties were notified; outcome of consultations with appropriate agencies and Native American representatives; how, when and by whom the approved Treatment Plan was carried out; and final disposition of any collected archaeological specimens.
3. The Contractor Foreman or authorized representative shall record how the discovery downtime affected the immediate and near-term contracted work schedule, for purposes of negotiating contract changes where applicable.
4. If applicable, Monitoring Archaeologists and Tribal Representatives shall maintain daily fieldnotes, and upon completion, submit a written report to the Harbor District and the three Wiyot area THPOs.
5. Treatment Plans and corresponding Data Recovery Reports shall be authored by professionals who meet the Federal criteria for Principal Investigator Archaeologist and reference the *Secretary of the Interior's Standards and Guidelines for Archaeological Documentation* (48 FR 44734-44737).
6. Final disposition of all collected archaeological materials shall be documented in the final Data Recovery Report and its disposition decided in consultation with Tribal representatives.
7. Final Data Recovery Reports along with updated confidential, standard California site record forms (DPR 523 series) shall be filed at the Northwest Information Center of the California Historical Resources Information System and the Harbor District, with report copies provided to the three Wiyot area THPOs.
8. Confidential information concerning the discovery location, treatment and final disposition of Native American remains shall be prepared by the THPOs and forwarded to the Sacred Sites Inventory maintained by the NAHC.

COMMISSIONERS

1st Division

Larry Doss

2nd Division

Greg Dale

3rd Division

Stephen Kullmann

4th Division

Richard Marks

5th Division

Patrick Higgins

**Humboldt Bay
Harbor, Recreation and Conservation District**
(707) 443-0801
P.O. Box 1030
Eureka, California 95502-1030



CALIFORNIA ENVIRONMENTAL QUALITY ACT - NOTICE OF EXEMPTION

To: County of Humboldt
County Clerk
825 5th Street
Eureka, CA 95501

From: Humboldt Bay Harbor, Recreation, and
Conservation District
601 Startare Drive
Eureka, CA 95501
districtplanner@humboldtbay.org

Project Title: Fields Landing Boat Yard & Woodley Island Marina Maintenance Dredging and Dredged Material Dewatering

Project Applicant: Humboldt Bay Harbor, Recreation, and Conservation District

Project Location: Fields Landing Boat Yard is located at 1 Yard Road, Fields Landing, CA (APN 307-101-002). Woodley Island Marina is on the north side of the Eureka Inner Channel, along the southwest portion of Woodley Island, within the City of Eureka. Redwood Marine Terminal II (RMT II) is located at 364 Vance Ave., Samoa, CA (APNs 401-112-011, -012, -021 and -024).

Background: In 2018 the Humboldt Bay Harbor, Recreation and Conservation District (District) received regulatory approvals for maintenance dredging at the Field’s Landing Boat Yard and Woodley Island Marina. Approved dredging activities involve using an excavator and/or crane with a closed clamshell bucket and ocean disposal of dredged materials at the Humboldt Open Ocean Disposal Site (HOODS). As an alternative to ocean disposal, the District is now proposing dewatering of dredged materials for potential beneficial use. Dewatering of dredged material from Fields Landing would take place at Fields Landing or Redwood Terminal II (RMT II). Dewatering of dredged material from Woodley Island Marina would occur at Redwood Terminal II.

Project Summary:

Fields Landing Dewatering - A temporary dewatering basin would be constructed at the Field’s Landing site on top of existing asphalt or concrete surfaces. The dewatering basin would be constructed with k-rails or other structures supporting an impermeable liner. The edges of the liner would be held in place with soft weights, such as sandbags. Dredged material would be transferred over land or pumped to the temporary dewatering basin. After settling to achieve enough clarity to be within 20% of the background turbidity of the bay, water would be gently let off the top through a controlled opening. A pipe would route the water to an existing storm drain inlet adjacent to the dredging area.

RMT II Dewatering - A barge containing the dredged material would be towed to the RMT II dock. An existing sea chest and pumps at the terminal would draw-in bay water and pump it directly into the hopper to reslurry the dredge material. Alternatively, a portable screened pump may be used. All bay water pumping will follow required screening standards. Dredge slurry would be pumped from the hopper to existing water clarifiers. After settling to achieve enough clarity to be within 20% of the background turbidity of the bay, water would be gently let off the top through a

controlled opening. A pipe would route the water to an existing storm drain inlet adjacent to the RMT II dock.

Before discharging to the bay at either location, the water would be filtered through baffles, pipe filter socks, and/or drop inlet filters. During discharge to Humboldt Bay, bay water and decant water turbidity would be monitored using a handheld turbidity meter. If discharge water turbidity exceeds bay water turbidity by 20% or more then discharging would cease. Discharge would not restart until solids within the dewatering structures have adequately settled and/or filtering methods have been adjusted in order to meet the turbidity standard.

Pertinent California Environmental Quality Act (CEQA) Exemption: The District has determined that the project is exempt from CEQA pursuant to a Class 4 categorical exemption which exempts minor public or private alterations in the condition of land, water, and/or vegetation which do not remove healthy, mature, scenic trees (Section 15304. Minor Alterations to Land). This includes minor temporary use of land having negligible or no permanent effects on the environment and maintenance dredging (15034(e)&(g)).

Rationale for Exemption: The project involves maintenance dredging and dewatering of dredged materials for potential beneficial use. The proposed activities would use either a temporary dewatering basin and/or existing facilities and would have no permanent effects on the environment. The project would take place within existing developed areas and would not remove trees or other vegetation. Prior to dredging, material within the dredging areas would be sampled using the Incremental Sampling Methodology (ISM). The bay water intake will be screened based on National Marine Fisheries Service (NMFS) criteria. Dredging and dewatering activities would be conducted in accordance with discharge requirements established by the Regional Water Quality Control Board and U.S. Army Corps of Engineers. The decant water would be discharged back to its source of Humboldt Bay.

The District has further determined that the use of the categorical exemption is not barred by any of the exceptions set forth in CEQA Guidelines Section 15300.2. The material supporting the above finding is on file with the District and available for review upon request at the address listed below.

Contact: Larry Oetker, Executive Director
Humboldt Bay Harbor, Recreation and Conservation District
601 Startare Drive, Eureka, CA 95501

Signature: _____

Date: _____

Exhibit B

California Coastal Commission Permit Exemption for Channel Smoothing and Knock-down Dredge Operations at Woodley Island Marina

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
1385 EIGHTH STREET, SUITE 130
ARCATA, CALIFORNIA 95521-5967
PH (707) 826-8950 FAX (707) 826-8960
WWW.COASTAL.CA.GOV

RECEIVED

JUL 12 2021



July 7, 2021

PERMIT EXEMPTION / NO PERMIT REQUIRED**Commission Reference Number:** 1-21-0213-X**Applicant Name:** Humboldt Bay Harbor, Recreation, and Conservation District**Project Location:** At the Woodley Island Marina within Humboldt Bay (Humboldt County) (APNs: 405-031-09 and 405-031-10)**Project Description:**

Channel smoothing and knock-down dredging of the Woodley Island Marina to supplement regular dredging activities covered under exemption 1-18-0196-X. Smoothing activities will be performed by either pushing the dredge bucket or dragging a heavy metal bar attached to two cables over high areas to push sediment into lower areas. Smoothing will be limited to areas that have been dredged within the last three years. Dredging and smoothing activities will only be performed between July 1 and October 15 of each calendar year to avoid impacts to salmonids migrating through Humboldt Bay.

This is to certify that this location and/or proposed project has been reviewed by the staff of the Coastal Commission. A Coastal Development Permit is NOT necessary for the reasons checked below:

- The site is not located within the Coastal Zone as established by the California Coastal Act of 1976, as amended.
- The proposed development is included in categorical Exclusion Number _____ adopted by the California Coastal Commission.
- The proposed development is judged to be repair or maintenance activity not resulting in an addition to or enlargement or expansion of the object of such activities and not involving any risk of substantial adverse environmental impact (Coastal Act Section 30610(d)).
- The proposed development is an improvement to an existing single family residence (Coastal Act Section 30610(a)) and not located in the area between the sea and the first public road or within 300 feet of the inland extent of any beach (whichever is greater) (Section 13250(b)(4) of 14 Cal. Admin. Code).
- The proposed development is an improvement to an existing single family residence and is located in the area between the sea and the first public road or within 300 feet of the inland extent of any beach (whichever is greater), but is not (a) an increase of 10% or more of internal floor area; (b) an increase in height

Permit Exemption – No Permit Required

1-21-0213-X

over 10%; or (c) a significant non-attached structure (Coastal Act Section 30610(a) and Section 13250(b)(4) of the Administrative Regulations).

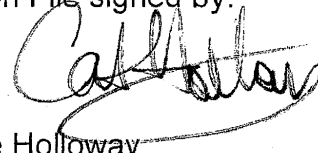
- The proposed development is an interior modification to an existing use with no change in the density or intensity of use (Coastal Act Section 30106).
- The proposed development involves the installation, testing, and placement in service of a necessary utility connection between an existing service facility and development approved in accordance with coastal development permit requirements, pursuant to Coastal Act Section 30610(f).
- The proposed development is the rebuilding of a structure, other than a public works facility, destroyed by natural disaster. The replacement conforms to all of the requirements of Coastal Act Section 30610(g).
- Other:

Please be advised that only the project described above is exempt from the permit requirements of the Coastal Act. Any change in the project may cause it to lose its exempt status. This certification is based on information provided by the recipient of this letter. If, at a later date, this information is found to be incorrect or incomplete, this letter will become invalid, and any development occurring at that time must cease until a Coastal Development Permit is obtained.

Sincerely,

John Ainsworth
Executive Director

Original on File signed by:



Catherine Holloway
Coastal Program Analyst

cc: File

Exhibit C

Approved Permit Amendments for Dredged Material Disposal at Redwood Terminal II using Pumps to Offload Dredged Material and for Dewatering

1. US Army Corps of Engineers
2. California Coastal Commission
3. North Coast Regional Water Quality Control Board



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102-3404

RECEIVED

OCT 18 2019

H.B.H.R. & C.D.

October 11, 2019

Regulatory Division

Subject: File Number: 1996-22216, Woodley Island Marina Maintenance Dredging; Permit Modification 1

LETTER OF MODIFICATION

Mr. Larry Oetker
Executive Director
Humboldt Bay Harbor Recreation and Conservation District
601 Startare Drive
Eureka, California 95501

Dear Mr. Oetker:

This letter is in response to your request to modify Department of the Army permit number 1996-22216 to authorize disposal of sediment dredged from the Woodley Island Marina at the Redwood Marine Terminal Berth II water clarifiers or a temporary dewatering basin. Additionally, Humboldt Bay Harbor, Recreation & Conservation District (HBHRCDC) seeks authorization to return decanted water from the water clarifiers or the temporary dewatering basin to Humboldt Bay (as described in the *Woodley Island Marina Description Amendment*, dated May 14, 2019). Your project was authorized under Permit 1996-22216 Woodley Island Marina Maintenance Dredging pursuant to Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 *et seq.*) and Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. § 1413).

Permit Number 1996-22216 is hereby modified under the provisions of 33 CFR § 325.7(b) as described in the attached "*Woodley Island Marina – Maintenance Dredging Project Description Amendment*" pursuant to Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 *et seq.*) and Section 404 of the Clean Water Act (33 U.S.C. § 1344). Except for the above modification, all terms and conditions of the original permit authorization remain in effect.

Neither permit 1996-22216 nor this permit modification authorizes placement of fill in wetlands. Therefore, any temporary dewatering basin must be constructed on an upland portion of the Redwood Marine Terminal Berth II site. If you have any questions regarding the extent of wetlands on the Redwood Marine Terminal Berth II site or have any other questions regarding this modification, please contact Ms. Debra O'Leary at (415) 503-6807 or by email: debra.a.o'leary@usace.army.mil. Please address all correspondence to the Regulatory Division and refer to the File Number 1996-22216.

The San Francisco District is committed to improving service to our customers. We seek to achieve the goals of the Regulatory Program in an efficient and cooperative manner, while preserving and protecting our nation's aquatic resources. If you would like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website: <http://www.spn.usace.army.mil/Missions/Regulatory.aspx>

Sincerely,

VARGAS.JESSI

CA.MARIE.128

8359675

For:

James C. Mazza

Acting Chief, Regulatory Division

Digitally signed by
VARGAS.JESSICA.MARIE.

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Date: 2019.10.11

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Enclosure

Copy Furnished (w/out enclosure):

US EPA, San Francisco, CA,
CA CCC, Arcata, CA
CA RWQCB, Eureka, CA
CA SLC, Sacramento, CA
US NMFS, Santa Rosa, CA
US FWS, Arcata, CA



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1655 Heindon Road
Arcata, California 95521-4573

July 17, 2019

Refer to NMFS No: WCRO-2019-01797 and
WCRO-2019-01850

Andrea Meier
Acting Chief, Regulatory Division
U.S. Department of the Army
San Francisco District, Corps of Engineers
450 Golden Gate Avenue, 4th Floor, Suite 0134
San Francisco, California 94102-3406

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Humboldt Bay Harbor District Maintenance Dredging 2019 Reinitiation- Woodley Island Marina Project (Corps File Number 1996-22216) and the Humboldt Bay Harbor District Maintenance Dredging 2019 Reinitiation- Fields Landing Boat Lift Project (Corps File Number 1996-22476), located in Eureka and Fields Landing, Humboldt County, California

Dear Ms. Meier:

On June 26, 2019, and on July 16, 2019, NOAA's National Marine Fisheries Service (NMFS) received your requests for written concurrence that the United States Army Corps of Engineers' (Corps) proposed authorizations of the Woodley Island Marina Maintenance Dredging Project and the Fields Landing Boat Lift Maintenance Dredging Project (Projects) pursuant to Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 et seq.) and Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended (33 U.S.C. § 1413 et seq.) is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). A complete record of this consultation is on file at the Northern California Office in Arcata, California.



Proposed Action and Action Area

The Corps proposes to modify and reinitiate consultation on two existing 10-year Department of the Army Permits pursuant to Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 et seq.) and Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended (33 U.S.C. § 1413 et seq.) to permit the Projects. The Projects were permitted in 2018 and no actions have yet to be taken, thus there are 9 years remaining on the permits and the Corps may extend those permits an additional year. The District proposes to dredge both the Woodley Island Marina (WIM) and the Fields Landing Boat Lift haul-out area (FLBL) using a mechanical clamshell dredge. Work would be completed during the July 1 to October 15 work window. The proposed dredging would remove accumulated sediment from the District's haul-out and marina facilities to restore adequate navigational depths. The dredged material may either be placed onshore and dewatered at Redwood Marine Terminal Berth II and repurposed for other beneficial uses or it would be placed in a sealed dump scow and transported to the Humboldt Open Ocean Disposal Site (HOODS), located three miles offshore of Humboldt Bay in the Pacific Ocean.

The current volume of sediment in need of removal from the WIM is estimated to be 130,000 cubic yards (cy) and will require two work seasons to remove. The anticipated volume to be removed throughout the duration of the permit at the WIM site is 300,000 cy, with no more than 100,000 cy removed in any 12 month period. Dredging WIM will include removal of sediment from within vessel mooring berths, fairways in between docks, slips, and from beneath all floating and fixed structures and encompass 19.3 acres. Dock structures may be dismantled as necessary and any broken docks will be repaired or replaced. Side slopes will be cut at a 2:1 angle or the natural angle of repose. The current volume of sediment in need of removal from the FLBL is estimated to be 12,120 cy and will be removed in less than two weeks during the initial episode. The anticipated volume to be removed throughout the duration of the permit at the FLBL site is 25,120 cy. Overdredge depth is one foot below the design depth of (-) 14 feet mean lower low water (MLLW) for the WIM site and (-) 15 feet MLLW for the FLBL site.

The District has not yet selected a dredging contractor and each contractor will have unique means and methods to complete the project based on their experience and equipment. However, the general dredging methodology will consist of heavy equipment removing material from the bay floor with a clamshell bucket and placing it into a scow for transport to either the dewatering area at Redwood Marine Terminal Berth II or the disposal site at HOODS. Prior to dredging, pre-project hydrographic surveys may be completed. A crane outfitted with a closed clamshell bucket will be used. There will be no water or sediment released back into Humboldt Bay, other than the negligible amount of sediment on the exterior of the bucket during loading.

Dredged material will be placed in the water tight dump scow. Once the scow is full, and once conditions are safe, it may be towed out of Humboldt Bay to the HOODS ocean disposal site or to Redwood Marine Terminal Berth II. If taken to Redwood Marine Terminal Berth II, water will be drafted from Humboldt Bay as part of the dewatering operation. Existing pumps within a sea chest at the terminal would draw-in bay water and pump it directly into the hopper to re-suspend the dredge material. Dredge slurry would be pumped from the hopper to existing water clarifiers and/or temporary dewatering basins. Temporary dewatering basins would be constructed with an impermeable liner. The perimeter of the liner would be secured with soft weights, such as sandbags. A controllable opening or weir would be constructed on one side of the basin. Decanted water would

be pumped from the dewatering basins and/or water clarifiers through pipes to a controlled discharge area. At the discharge area, the water would be returned to the bay utilizing a liner and sandbags to direct flow and waddles for filtering out sediments. Water discharged to the bay would be monitored and operations would be adjusted as necessary to ensure allowed turbidity levels are maintained. Upon drying, the dredged spoils will be repurposed and used for other projects where appropriate.

The Corps proposes to authorize the following measures as part of the proposed action:

- Round or square openings in intake screens on water intakes shall not exceed 2.38 millimeters (mm), as measured diagonally across the opening. Slotted openings in the screen shall not exceed 1.75 mm. Approach velocity shall not exceed 0.2 ft per second. Overall screen porosity shall be a minimum of 27%.
- Dredging is limited to July 1 to October 15 to minimize effects to listed species.
- Spoils which may be deposited at HOODS will adhere with the Corps and Environmental Protection Agency criteria.
- Clamshell and excavator dredging is a slow and controlled process allowing marine life time to escape as the equipment approaches. There are no suction or jetting pressures involved.
- Vegetable based or biodegradable hydraulic fluids shall be used, if possible, in equipment operating over water or without secondary containment.
- Equipment will be routinely inspected before, during, and after use.
- Spill and containment kits will be kept on site.
- Dredging will not extend beyond the over-dredging limits identified.
- Dredge volume will be limited to 100,000 cy in any 12 month period of time at WIM.

The action area includes the dredge footprints at WIM and FLBL as well as a 500-foot buffer around the work sites, representing the extent sediment and turbidity is likely to extend. The action area also includes the HOODS offshore disposal site and the area of Humboldt Bay and the Pacific Ocean in which vessels, tugs, barges, and scows will be travelling to deposit dredge spoils at the Redwood Marine Terminal Berth II or at the disposal site at HOODS and return to the work sites.

Action Agency's Effects Determination

Available information indicates the following listed species (Evolutionarily Significant Units (ESU) or Distinct Population Segments [DPS]) under the jurisdiction of NMFS may be affected by the proposed project:

Southern Oregon/Northern California Coast (SONCC) coho salmon ESU

(Oncorhynchus kisutch)

Threatened (70 FR 37160; June 28, 2005)

Critical habitat (64 FR 24049; May 5, 1999);

California Coastal (CC) Chinook salmon ESU

(O. tshawytscha)

Threatened (70 FR 37160; June 28, 2005)

Critical habitat (70 FR 52488; September 2, 2005);

Northern California (NC) steelhead DPS

(O. mykiss)

Threatened (71 FR 834; January 5, 2006)

Critical habitat (70 FR 52488; September 2, 2005);
North American green sturgeon Southern DPS
(*Acipenser medirostris*)
Threatened (71 FR 17757; April 7, 2006)
Critical habitat (74 FR 52300; October 9, 2009).

The Corps determined the Project may affect, but is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, and Southern DPS green sturgeon and their designated critical habitats. The Corps rationale for their determination includes the areas proposed for dredging and disposal have been previously dredged as recently as 2012 and considered to be highly disturbed; the work window minimizes exposure of listed species; availability of suitable habitat elsewhere; and the effects would be short term with rapid recolonization of infaunal species. The Corps also determined the Project may adversely affect EFH for species managed under the Pacific Coast Groundfish, Coastal Pelagics, and Pacific Coast Salmon Fishery Management Plans.

SONCC Coho Salmon, CC Chinook, and NC Steelhead Life History and Use of Humboldt Bay

SONCC Coho Salmon Life History

Coho salmon have a generally simple 3-year life history. The adults typically migrate from the ocean and into Humboldt Bay towards their freshwater spawning grounds in late summer and fall, and spawn by mid-winter. Adults die after spawning. The eggs are buried in nests, called redds, in the rivers and streams where the adults spawn. The eggs incubate in the gravel until fish hatch and emerge from the gravel the following spring as fry. These 0+ age fish typically rear in freshwater for about 15 months before migrating to the ocean. The juveniles go through a physiological change during the transition from fresh to salt water called smoltification. Coho salmon typically rear in the ocean for two growing seasons, returning to their natal streams as 3-year old fish to renew the cycle.

Recent studies have identified the importance of the greater transition zone, or ecotone, between fresh and brackish water to juvenile salmonids (Miller and Sadro 2003). Wallace et al. (2015) defined this stream-estuary ecotone to include the area of low gradient stream extending from stream entrance to the wide valley floor, through the upper limit of tidal influence downstream to the area where the channel becomes bordered by tidal mudflats (including fringing marsh habitats, side channels, and off channel ponds). Sampling by California Department of Fish and Wildlife (CDFW) suggest that 0+ age coho salmon from Freshwater Creek (a tributary to Humboldt Bay) primarily rear in the stream-estuary ecotone during the spring and summer and then migrate back into Freshwater Creek to over-winter before emigrating to the ocean the following year as age 1+ smolts (Wallace and Allen 2007). An estimated 40% of coho salmon smolts originated from the stream-estuary ecotone of Freshwater Creek in 2007 and 2008 (Ricker and Anderson 2011).

CC Chinook Salmon Life History

CC Chinook salmon are typically fall spawners, returning to Humboldt Bay before entering their natal streams in the early fall. The adults tend to spawn in the mainstem or larger tributaries of rivers. As with the other anadromous salmon, the eggs are deposited in redds for incubation. When the 0+ age fish emerge from the gravel in the spring, they typically migrate to saltwater shortly after emergence. Therefore, Chinook salmon typically enter the estuary as smaller fish compared to coho

salmon. Chinook salmon are typically present in the stream-estuary ecotone from early May to early September, with peak abundance in June/July (Wallace and Allen 2007). Similar to coho salmon, prey resources during out-migration is critical to Chinook salmon survival as they grow and move out to the open ocean. A study by MacFarlane (2010) indicated that juvenile Chinook salmon require less prey in the estuary, equivalent to one northern anchovy (*Engraulis mordax*) per day, compared to a range of one to four anchovies needed per day in the ocean.

NC Steelhead Life History

Steelhead exhibit the most complex suite of life history strategies of any salmonid species. They have both anadromous and resident freshwater life histories that can be expressed by individuals in the same watershed. The anadromous fish generally return to freshwater to spawn as 4 or 5 year old adults. Unlike other Pacific salmon, steelhead can survive spawning and return to the ocean only to return to spawn in a future year. It is rare for steelhead to survive more than two spawning cycles. Steelhead typically spawn between December and May. Like other Pacific salmon, the steelhead female deposits her eggs in a redd for incubation. The 0+ age fish emerge from the gravel to begin their freshwater life stage and can rear in their natal stream for 1 to 4 years before migrating to the ocean.

Steelhead have a similar life history as noted above for coho salmon, in the sense that they rear in freshwater for an extended period before migrating to saltwater. As such, they enter the estuary as larger fish (mean size of about 170 to 180 mm or 6.5 to 7.0 inches) and are, therefore, more oriented to deeper water channels in contrast to Chinook salmon that typically enter the estuary as 0+ fish. The CDFW data indicate that steelhead smolts generally migrate downstream toward the estuary between March 1 and July 1 each year, although they have been observed as late as September (Ricker et al. 2014). The peak of the outmigration timing varies from year to year within this range, and generally falls between early April and mid-May. CDFW estimated 80% to 90% of steelhead trout smolts originated from the stream-estuary ecotone of Freshwater Creek in 2007 and 2008 (Wallace et al. 2015).

Salmonid Use of Humboldt Bay

Salmonids use eelgrass habitats for cover and feeding while they migrate to the marine environment, or while they rear seasonally in Humboldt Bay before returning upstream to overwinter (Wallace et al. 2015). Salmonids occurring in estuaries are highly mobile and in Humboldt Bay, low numbers of fish are spread over a large area, which can complicate scientific observations or captures intended to understand their habitat preferences (Garwood et al. 2013 and Pinnix et al. 2005). Phillips (1984) suggested Chinook salmon were “transient” users of eelgrass for feeding or cover. Murphy et al. (2000) did not observe a significant association of juvenile salmon with eelgrass. Garwood et al. (2013) studied fish assemblages in an eelgrass bed in Humboldt Bay by conducting monthly sampling over a period of several years and only captured one listed salmonid (NC steelhead) during the multi-year study. Pinnix et al. (2005) sampled over a 2-year period using fyke nets, shrimp trawls, beach seines, purse seines, cast nets, and minnow traps. Pinnix et al. (2005) identified a diverse and abundant fish community using the mudflats, oyster culture, and eelgrass meadows in Humboldt Bay, including a total of 49 species from 22 families of fishes. However, over the two

years of sampling, no salmonid species were captured in any of the six different types of sampling gear.

A recent study related to 1+ age coho salmon smolts in Humboldt Bay, California, by Pinnix et al. (2013) used acoustic transmitters surgically implanted into the out-migrating smolts. Coho salmon smolts spent more time in the stream- estuary ecotone compared to the intertidal habitat of Humboldt Bay. During their residency in Humboldt Bay, coho smolts primarily used deep channels and channel margins and were present in the estuary an average of 10 to 12 days. They were also detected near floating eelgrass mats adjacent to the channels, but not over eelgrass beds. The results from this study emphasize the importance of edge habitat and the need for structural heterogeneity during salmonid residency and migration through Humboldt Bay.

Southern DPS Green Sturgeon Life History and Use of Humboldt Bay

Southern DPS green sturgeon inhabit estuaries along the west coast during the summer and fall months (Moser and Lindley 2007) and are known to use the North Humboldt Bay heavily (Goldsworthy et. al. 2016, Pinnix 2008). Juvenile Southern DPS green sturgeon rear in their natal streams in California's Central Valley, so only sub-adult and adult SDPS green sturgeon are present in Humboldt Bay and are the only life stages of SDPS green sturgeon that could be exposed to the effects of the Project. Sub-adults range from 65-150 cm total length from first ocean entry to size at sexual maturity. Sexually mature adults range from 150-250 cm total length.

The action area is located along the transition from an intertidal mudflat to a deeper subtidal channel, where larger vessels dock up along the WIM or FLBL. SDPS green sturgeon are only expected along the deepest margins of the action area where suitable depths exist to accommodate large animals like the SDPS green sturgeon. Most SDPS green sturgeon are expected to reside mostly in the high use area of North Bay, as described by Goldsworthy et al. 2016 and Pinnix et al. 2008).

Consultation History

On June 26, 2019, NMFS received an initiation package from the Corps to reinstate the consultation for the Corps permitting of the District's Woodley Island Marina Maintenance Dredging Project and requested NMFS concurrence that the Project, as proposed, is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, SDPS green sturgeon or their designated critical habitats. The Corps also determined the Project would not have a substantial adverse affect on species managed under the Pacific Coast Salmon Fishery Management Plan (FMP), Pacific Coast Groundfish FMP, and Coastal Pelagic Species FMP. On June 26, 2019, NMFS requested clarification from the Corps via email, for agreement on batching the Woodley Island Marina and Fields Landing Boat Launch maintenance dredging projects into one consultation. The Corps responded via email on the same day in agreement of batching consultations for both projects.

On July 16, 2019, NMFS received an initiation package from the Corps to reinstate the consultation for the Corps permitting of the District's Fields Landing Boat Lift Project Fields Landing Boat Lift Maintenance Dredging Project, as proposed, is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, SDPS green sturgeon or their designated critical habitats. The Corps also determined the Project would not have a substantial adverse affect on species managed

under the Pacific Coast Salmon Fishery Management Plan (FMP), Pacific Coast Groundfish FMP, and Coastal Pelagic Species FMP.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, “effects of the action” means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

Effects on Salmon, Steelhead, and Green Sturgeon Critical Habitat

The critical habitat designations for SONCC coho salmon, CC Chinook salmon, NC steelhead, and Southern DPS green sturgeon use the term primary constituent element or essential feature. The new critical habitat regulations (81 FR 7414) replace this term with physical or biological features (PBFs). This shift in terminology does not change the approach used in conducting our analysis, whether the original designation identified primary constituent elements, physical or biological features, or essential features. In this consultation, we use the term PBF to mean primary constituent element or essential feature, as appropriate for the specific critical habitat.

Effects on SONCC coho salmon, CC Chinook, and NC Steelhead Critical Habitat

Within the range of the SONCC coho salmon, the life cycle of the species can be separated into five PBFs or essential habitat types: (1) juvenile summer and winter rearing areas, (2) juvenile migration corridors, (3) areas for growth and development to adulthood, (4) adult migration corridors, and (5) spawning areas. Areas 1 and 5 are often located in small headwater streams and side channels, while areas 2 and 4 include these tributaries as well as mainstem reaches and estuarine zones. Growth and development to adulthood (area 3) occurs primarily in near- and off-shore marine waters, although final maturation takes place in freshwater tributaries when the adults return to spawn. Within these areas, essential features of coho salmon critical habitat include adequate: (1) substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food, (8) riparian vegetation, (9) space, and (10) safe passage conditions (NMFS 1999). The PBFs of coho salmon critical habitat associated with this project relate to: areas for growth and development to adulthood. The essential features that may be affected by the proposed action include water quality, food, cover/shelter, and safe passage.

The PBFs of CC Chinook salmon critical habitat and the PBFs of NC steelhead critical habitat within the action area is limited to the estuarine area with: (1) water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; (2) natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and (3) juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation (NMFS 2005). The essential features that

may be affected by the proposed action include water quality, natural cover, and forage/food resources.

Water Quality PBF

The proposed action includes activities that could degrade the water quality PBF for salmonids. Degraded water quality is expected to result from increased turbidity from disturbance of sediment and the incidental fallback of sediment from the clamshell dredge during operation. Elevated suspended sediment concentrations (SSCs) in Humboldt Bay are a relatively frequent occurrence. SSC levels can naturally increase due to wave action on shallow mudflats, storm runoff being delivered from local tributaries, and turbid water from the Eel River entering the bay on incoming tides. It is common for SSCs in Humboldt Bay to range from 40 to 100 milligrams per liter or more during the year (Swanson et al. 2012). Significant increases in turbidity usually begin to occur in September or October with the onset of the wet season, and peak between December and February (Swanson et al. 2012). Implementation of the minimization measures, which are included in the proposed action, will ensure any effects of turbidity are minimized.

The clamshell dredge bucket will minimize the extent and duration of turbid conditions, which are expected to extend no more than 500-feet from work areas. When spoils are taken to the Redwood Marine Terminal Berth II for dewatering, waters are drained from the dredge slurry and returned to Humboldt Bay. Return water from the dewatering operations may be more turbid than ambient conditions in Humboldt Bay, and create a minor and temporary increase in localized turbidity that would likely not extend beyond 200 feet during the short amount of time required for dewatering. NMFS expects that the temporary reduction in water quality in Humboldt Bay will not affect the conservation value of critical habitat. Therefore, the effects of the Project on the water quality PBF are expected to be insignificant.

Prey/Forage Resources PBF

The proposed action will result in the temporary loss of some benthic food resources within the area of the dredge footprint of the Project. Given the proposed work window, the majority of the disturbance to prey resources in the action area will occur during times when salmonid use of the action area is very low. As salmonid use of the action area increases in the spring months the following year, the dredged areas would have had several months to recover and be recolonized by benthic organisms. The preferred prey resources for juvenile salmonids (Dungeness crab larvae, Pacific herring larvae, harpacticoid copepods, etc) would not be affected by the Project. Because prey resources are not expected to be significantly affected, NMFS does not expect any adverse effects to the Prey Resource PBF.

Migratory Corridor PBF

The proposed action will result in increased turbidity within 500 feet of work sites while the clamshell dredge removes accumulated sediments from the dredge footprints. The proposed work will occur when salmonids are not expected to be migrating, and NMFS expects that salmonid use (rearing) in the action area will be minimal. The short term turbidity is not expected to have a lasting effect on the quality or quantity of the migratory corridor. NMFS expects no adverse effects to the Migratory Corridor PBF.

Conclusion: Salmon and Steelhead Critical Habitat

Based on our analysis above, implementation of the minimization measures will be sufficient to protect all of the PBFs of SONCC coho salmon, CC Chinook salmon, and NC steelhead critical habitat. For these reasons, the potential effects on the aforementioned species' critical habitat are expected to be insignificant.

Effects to SDPS Green Sturgeon Critical Habitat

The PBFs of green sturgeon critical habitat occur both in the estuarine and coastal marine areas of the action area. The PBFs of green sturgeon within the estuarine area include: (1) abundant food items and substrates for juvenile, subadult and adult life stages; (2) water flow necessary for orientation and attraction flows to spawning areas in the Sacramento River; (3) water quality necessary for normal behavior, growth, and viability of all life stages; (4) a migratory pathway necessary for the safe and timely passage within estuarine habitats and between estuarine and riverine or marine habitats; (5) a diversity of depths necessary for shelter, foraging and migration of juvenile, subadult, and adult life stages; and (6) sediment quality necessary for normal behavior, growth, and viability of all life stages (NMFS 2006). The PBFs of green sturgeon within the portion of the action area occurring in coastal marine areas (outside of Humboldt Bay in the Pacific Ocean in waters less than 60-fathoms of depth) also include migratory corridors; appropriate water quality; and ample food resources.

Prey Resources PBF

The proposed action will result in the temporary reduction of benthic food resources within the area of the dredge footprint of the Project. After the first dredging cycles (likely to occur in 2019), the benthic community is expected to recover and recolonize the dredge footprints. As SDPS green sturgeon enter Humboldt Bay in April, the dredge footprint will have had nearly six months of recovery time after the first year of dredging. Subsequent dredging efforts will be much smaller in scope and dependent on the volume of sediment accumulated. Green sturgeon use of the dredge footprint is relatively low given its low value location and high levels of disturbance. Effects to the PBFs of SDPS green sturgeon critical habitat at HOODS may be improved by adding complexity to the seafloor and additional prey items that are collected coincident to dredging. The temporary reduction in benthic prey resources during the recovery and recolonization of the dredge footprint after dredging episodes is not expected to adversely affect the Prey Resources PBF for SDPS green sturgeon.

Water Quality PBF

The Water Quality PBF establishes criteria for suitable water temperatures, salinity, dissolved oxygen, and contaminants for all life stages of SDPS green sturgeon. The Project is not expected to affect these water quality parameters as the activities will not significantly affect temperature, salinity, or dissolved oxygen. Minimization measures are proposed in the Proposed Action section are likely to avoid introducing significant amounts of contaminants (fuel, etc) into the action area. Such toxics would be further diluted by tides and currents. Thus, there are no adverse effects expected to the Water Quality PBF.

Migratory Corridor PBF

The Migratory Corridor for SDPS green sturgeon may be temporarily affected by increases in turbidity. Turbid conditions are expected to extend as far as 500 feet from work sites, leaving ample space and adequate depths for any SDPS sturgeon migratory behaviors to occur. Furthermore, it is not expected that turbidity will affect SDPS green sturgeon migratory behaviors as the species has

reduced eyesight and relies on other senses to navigate. Therefore, the effects to the Migratory Corridor PBF are expected to be insignificant.

Water Depth PBF

The Water Depth PBF suggests that a diversity of depths is necessary for shelter, foraging, and migration of all life stages of SDPS green sturgeon. Sub-adult and adult green sturgeon occupy a diversity of depths while in bays or estuaries for feeding and migration. The Project will increase the depths of areas that are currently shallow, resulting in depths that remain suitable (or possibly enhanced) for SDPS green sturgeon. NMFS does not expect adverse effects to the Water Depth PBF, as a diversity of depths will remain available to all SDPS green sturgeon in the action area.

Sediment Quality PBF

The Sediment Quality PBF identifies the importance of the chemical characteristics of sediments, and suggests that sediments be free of elevated levels of contaminants such as selenium, pesticides, or poly aromatic hydrocarbons. These chemicals are known to cause adverse effects on all life stages of green sturgeon. Due to minimization measures described above, the Project is not expected to contribute chemical contamination to the water in the action area in more than the small amounts that are re-suspended from the bottom during dredging activities. Therefore, NMFS does not expect adverse effects to the Sediment Quality PBF.

Conclusion: SDPS Green Sturgeon Critical Habitat

Implementation of the minimization measures will be sufficient to protect all PBFs of SDPS green sturgeon critical habitat in the action area. Thus, the potential effects to green sturgeon critical habitat in the action area are expected to be insignificant.

Effects to Salmon and Steelhead Individuals

The Projects have the potential to affect all life stages of the listed salmonids occurring in the action area due to entrainment in the clamshell bucket or water intake screen; reduced fitness resulting from temporary increases in turbidity; reduced fitness resulting from temporary reduction in benthic prey; and disturbance from vessel traffic. The effects caused by these project components have been reduced or minimized by incorporating the minimization measures described in the Proposed Action section.

Entrainment in Clamshell Bucket or Water Intake Screen

There is a very remote possibility that a juvenile salmonid could be captured in the clamshell bucket and removed along with the dredge spoils. Water will be drafted from Humboldt Bay at the Redwood Marine Terminal Berth II as part of the dewatering operation, where there is remote possibility of entrainment on the intake screen. However, the work will occur when listed salmonid use of the action area is very low, thus minimizing exposure of juveniles. Any juveniles present in the action area during the work window would be expected to be present in the deeper channels outside the work area. Pinnix et al. 2013 found that SONCC coho salmon juveniles predominantly occurred in deep channels and NMFS expects that listed salmonids will prefer the deeper channels and are expected to avoid the work areas, thus the possible effects of entrainment are discountable.

Turbidity

As previously described in the Effects to Critical Habitat section, operation of the clamshell dredge is expected to reduce water quality through the suspension of sediments and the resulting temporary increases in turbidity. Turbid waters are expected to extend no more than 500 feet from work sites. When spoils are taken to the Redwood Marine Terminal Berth II for dewatering, waters are drained from the dredge slurry and returned to Humboldt Bay. Return water from the dewatering operations may be more turbid than ambient conditions in Humboldt Bay, and create a minor and temporary increase in localized turbidity that would likely not extend beyond 200 feet during the short amount of time required for dewatering. The work will occur when listed salmonid use of the action area is low, thus minimizing exposure of both juveniles and adults. If any life stages were present, it is expected they would be present in the deeper subtidal channel. Pinnix et al. 2013 found that SONCC coho salmon residency in the Bay was very low and predominantly occurred in deep channels. Listed salmonids will be able to avoid the work areas as ample suitable habitat is available within the action area. Therefore, NMFS expects no adverse effect to listed salmonids resulting from turbidity.

Benthic Prey Reduction

The proposed action will result in the temporary loss of some benthic food resources within the area of the dredge footprint of the Project. Given the proposed work window, the majority of the disturbance to prey resources in the action area will occur during times when salmonid use of the action area is very low. As salmonid use of the action area increases in the spring months the following year, the dredged areas would have had several months to recover and be recolonized by benthic organisms. Furthermore, the preferred prey resources for juvenile salmonids (Dungeness crab larvae, Pacific herring larvae, harpacticoid copepods, etc) would not be affected by the Project. Because prey resources are not expected to be significantly affected, NMFS does not expect any fitness related consequences to individuals. Therefore, NMFS expects the effects of a temporary reduction in benthic prey to be insignificant.

Disturbance from Vessel Traffic

As described in the Proposed Action section, an increase in sound and disturbance related to the dredging work itself, in addition to the barges, scows, or tugs needed to transport dredge spoils is expected. The Fisheries Hydroacoustic Working Group (FHWG) has developed injury threshold criteria for listed fish species (FHWG 2008). The FHWG identified sound pressure levels of 206 dB-peak (peak decibels) at 10 m as being injurious to fish. Accumulated sound exposure levels (SEL) at 10 m of 187 dB for fishes that are greater than 2 grams are considered to cause temporary shifts in hearing, resulting in temporarily decreased fitness (i.e., reduced foraging success, reduced ability to detect and avoid predators) (FHWG 2008). The low level acoustics produced by vessels or from operation of the clamshell dredge are not likely to result in any negative physiological response or injury to any of the life stages of all the listed salmonid species. Vessel traffic may startle individual fish on the rare occasion when vessel traffic comes into close proximity of individuals. This brief startle response is not expected to result in any fitness consequence or increase rates of predation. Therefore, vessel traffic and associated disturbance is not expected to adversely affect listed salmonids.

Conclusion: Individual Salmon and Steelhead

There is little potential for combined effects given the size and location of where most of the activities are proposed to occur. For example, if a listed juvenile salmonid is startled by vessel traffic, it would leave and flee into other suitable habitat nearby before experiencing any sediment-related effects. NMFS concludes that all of the effects caused by the Project, when evaluated as a

whole for the potential for combined or synergistic effects, would have an insignificant effect on individual Chinook salmon, coho salmon, and steelhead.

Effects to SDPS Green Sturgeon Individuals

The Projects have the potential to affect SDPS green sturgeon due to entrainment in the clamshell bucket or water intake screen; reduced fitness resulting from temporary increases in turbidity; reduced fitness resulting from habitat reduction or loss; and disturbance from vessel traffic. The effects caused by these project components have been reduced or minimized by incorporating the minimization measures previously described.

Entrainment in Clamshell Bucket or Water Intake Screen

The only life stages of SDS green sturgeon expected to be present are the larger sub-adult and adult life stages. Both sub-adult and adult life stages are too large to be captured inside of a clamshell bucket or to be impinged on water intake screens. Furthermore, based on Pinnix (2008) and Goldsworthy et al. (2016), SDPS green sturgeon spend most of their time in the northern reaches of the North Bay near Sand Island. NMFS expects exposure of SDPS green sturgeon to be very limited, based on their high use of the North Bay. NMFS expects possible effects of entrainment to be discountable.

Turbidity

As previously described, turbidity is expected to result from dredging activities and extend as far as 500 feet from work sites and 200 feet from the water return site when spoils are dewatered onshore at the Redwood Marine Terminal Berth II. Most sturgeon are generally benthic foragers and not visual predators (Moyle 2002). The green sturgeon retina is dominated by rods as the primary photoreceptors, indicating that they are adapted to environments characterized by low light levels (Sillman et al. 2005). This indicates that green sturgeon vision is likely not to be particularly sensitive or acute (Sillman et al. 2005), and therefore resilient to the minor increases in turbidity expected to be caused by the Projects. As a benthic foraging species they are adapted to living in estuaries with fine sediment bottoms and inhabit streams with high levels of turbidity (Allen and Cech 2007). The temporary increases in turbidity are not expected to reduce feeding opportunities nor the fitness of SDPS green sturgeon individuals, a species which is known to rely on other senses over eyesight. Furthermore, NMFS expects that few SDPS green sturgeon would be exposed to increased turbidity in the action area, given their high use of the North Bay (Pinnix 2008 and Goldsworthy et al. 2016). Therefore, the effects of turbidity from the proposed action are expected to be insignificant to SDPS green sturgeon.

Benthic Prey Reduction

The proposed action will result in the temporary loss of some benthic food resources within the area of the dredge footprints of the Projects. As previously discussed, the majority of SDPS green sturgeon are found in the North Bay and Entrance Bay, and most will not be exposed to any effects of the Project inside of the action area. Because prey resources will only be temporarily affected, and there is ample suitable habitat elsewhere, NMFS does not expect any fitness related consequences to individuals. Therefore, NMFS expects the effects of a temporary reduction in benthic prey to be insignificant.

Disturbance from Vessel Traffic

As described in the Proposed Action section, an increase in sound and disturbance related to the dredging work itself, in addition to the barges, scows, or tugs needed to transport dredge spoils is expected. The FHWG has developed injury threshold criteria for listed fish species (FHWG 2008). The FHWG identified sound pressure levels of 206 dB-peak (peak decibels) at 10 m as being injurious to fish. Accumulated sound exposure levels (SEL) at 10 m of 187 dB for fishes that are greater than 2 grams are considered to cause temporary shifts in hearing, resulting in temporarily decreased fitness (i.e., reduced foraging success, reduced ability to detect and avoid predators) (FHWG 2008). The low level acoustics produced by vessels or from operation of the clamshell dredge are not likely to result in any negative physiological response or injury to SDPS green sturgeon. Vessel traffic may startle individual fish on the rare occasion when vessel traffic comes into close proximity of individuals. This brief startle response is not expected to result in any fitness consequence or increase rates of predation. Furthermore, NMFS expects that few SDPS green sturgeon would be exposed to sound and disturbance in the action area, given their high use of the North Bay (Pinnix 2008 and Goldsworthy et al. 2016). Therefore, vessel traffic and expected sound levels produced is expected to be insignificant to SDPS green sturgeon individuals.

Conclusion: Individual SDPS Green Sturgeon

There is little potential for combined effects to occur. For example, if a SDPS green sturgeon is startled by vessel traffic, it would leave and flee into other suitable habitat nearby before experiencing any sediment-related effects. NMFS concludes that all of the effects caused by the Project, when evaluated as a whole for the potential for combined or synergistic effects, would have an insignificant effect on individual SDPS green sturgeon.

Conclusion

Based on this analysis, NMFS concurs with the Corps that the proposed action may affect, but is not likely to adversely affect SONCC coho salmon, CC Chinook salmon, NC steelhead, and Southern DPS green sturgeon or their designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by [*name of action agency*] or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

Under the MSA, this consultation is intended to promote the protection, conservation and enhancement of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10), and "adverse effect" means any impact which reduces either the quality or quantity of EFH (50 CFR

600.910(a)). Adverse effects may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

This analysis is based, in part, on the EFH assessment provided by the Corps and descriptions of EFH for Pacific coast groundfish (PFMC 2014), coastal pelagic species (PFMC 1998), and Pacific coast salmon (PFMC 1999) contained in the FMPs developed by the Pacific Fishery Management Council and approved by the Secretary of Commerce. In estuarine and marine areas, Pacific Coast Salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent (200 miles) of the U.S. Exclusive Economic Zone (EEZ) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border (PFMC 1999). The Pacific Groundfish EFH includes all waters from the mean high water line, and the upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon, and California seaward to the boundary of the EEZ (PFMC 2014). The east-west geographic boundary of Coastal Pelagic EFH is defined to be all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington offshore to the limits of the EEZ and above the thermocline where sea surface temperatures range between 10°C and 26°C. The southern extent of EFH for Coastal Pelagics is the United States-Mexico maritime boundary. The northern boundary of the range of Coastal Pelagics is the position of the 10°C isotherm, which varies both seasonally and annually (PFMC 1998). Thus, the proposed Projects occur within EFH for various Federally-managed species in the Pacific Coast Salmon, Pacific Groundfish, and Coastal Pelagics FMPs.

Adverse Effects on Essential Fish Habitat

NMFS determined the proposed action would adversely affect EFH for Pacific Coast Salmon, Pacific Coast Groundfish, and Coastal Pelagic Species Fishery Management Plans as follows:

- Temporarily degraded water quality within the action area due to the generation of suspended sediment caused by dredging activities
- Temporary reduction in benthic prey after the dredging is complete and before recovery and recolonization occur
- Potential loss of eelgrass

Furthermore, the project is located in a Habitat Area of Particular Concern (HAPC) for various federally managed fish species within the Pacific Coast Groundfish FMP and Pacific Coast Salmon FMP. HAPC are described in the regulations as subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Designated HAPC are not afforded any additional regulatory protection under MSA; however, federal projects with potential adverse impacts to HAPC are more carefully scrutinized during the consultation process. As defined in the Pacific Groundfish and Pacific Salmon FMP, Humboldt Bay, including the project area, is identified as estuary and seagrass (i.e., eelgrass) HAPC.

Adverse Effects to Water Quality

Elevated SSCs in Humboldt Bay and the Pacific Ocean are a relatively frequent occurrence. SSC levels can naturally increase due to wave action on shallow mudflats, storm runoff being delivered from local tributaries, algae blooms, and turbid water from the Eel River entering on incoming tides. It is common for SSCs in Humboldt Bay to range from 40 to 100 milligrams per liter or more during the year (Swanson et al. 2012). Significant increases in turbidity usually begin to occur in September or October with the onset of the wet season, and peak between December and February (Swanson et

al. 2012). There is an expected temporary increase in turbidity during the initial episode of dredging, and less significant increases in subsequent dredging episodes as the dredge volumes will be smaller after the initial episode. When spoils are taken to the Redwood Marine Terminal Berth II for dewatering, return water may be more turbid than ambient conditions in Humboldt Bay, and create a minor and temporary increase in localized turbidity that would likely not extend beyond 200 feet during the short amount of time required for dewatering. Brief episodes of turbidity will also occur at HOODS resulting from the disposal of dredge spoils. The high current and wind environment at HOODS is expected to quickly ameliorate suspended sediments and turbidity. In addition, the duration of exposure will be temporary, which would reduce the duration of any adverse effects.

Effects of Reduction in Benthic Habitat/Prey

The proposed action will result in the temporary loss of some benthic food resources within the area of the dredge footprint of the Projects. After dredging, the benthic environment will likely be largely devoid of life and will recover and be recolonized over time by benthic fauna and infauna. Most benthic species will have recovered or recolonized the area by the following season. Although recovery and recolonization may occur in several months, repeated annual dredging may cause adverse effects as the dredge area may not recover in between dredging efforts.

Effects to Eelgrass

The WIM was constructed in 1978 and the District purchased a 22-acre mitigation site located at the end of Park Street in Eureka. The 22-acre Park Street mitigation site continues to serve as mitigation for ongoing impacts from marina infrastructure and maintenance dredging at WIM. NMFS expects eelgrass may exist in very low abundance in some portions of the WIM which may be exposed to dredging or to the effects caused by dredging operations (turbidity). The District (2018a) suggests that eelgrass is present episodically along the slope of the WIM. Therefore, there is a high likelihood that eelgrass present in WIM during dredging may be effected, or in some cases lost. However, the 22-acre mitigation site at Park Street continues to compensate for any effects to eelgrass in the WIM.

The FLBL was constructed in 1981, and during construction it was recognized that the continued operation of the travel lift would require periodic maintenance dredging. The California Coastal Commission had required mitigation to ensure that the creation and subsequent maintenance dredging of the travel lift facility would not result in a net loss of habitat. The District (2018b) had mitigated for the creation and continued operation of the Fields Landing Boat Yard and travel lift by mitigating one acre of tidal mudflat and eelgrass as part of the Broadway-Wetlands Restoration Project. Therefore, all of the eelgrass that will be impacted during dredging of the travel lift area has been previously mitigated for as the Broadway-Wetlands Restoration Project continues to compensate for all future effects related to the facility.

Despite the previously completed mitigation work, the maintenance dredging that is planned to occur at the WIM and FLBL will remove and disrupt the future colonization of eelgrass in the dredge footprints. After dredging is complete, depths within the dredge footprints will be temporarily unsuitable for the re-colonization of eelgrass. The continued suppression of suitable growing depths will result in a reduction of eelgrass habitat in the action area, although additional compensatory habitat has been created elsewhere.

Eelgrass within 500-feet of the work sites or within 200 feet of the water return at Redwood Marine Terminal Berth II may be affected by brief periods of turbidity. As the tides change, the turbid

waters will likely extend in different directions from the work site and affect eelgrass to the north and south of the work site. The tides will help minimize exposure of individual plants and work is expected to be completed in less than two weeks. The District also proposes to monitor turbidity and discontinue work if turbidity exceeds 20% over ambient conditions. Therefore, NMFS does not expect any sediment or turbidity-related effects to eelgrass outside of the dredge footprint.

The Corps must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH determinations (50 CFR 600. 920(l)). This concludes the MSA portion of this consultation. NMFS has no EFH conservation recommendations to suggest.

Please direct questions regarding this letter to Matt Goldsworthy at (707) 825-1621 or via email at Matt.Goldsworthy@noaa.gov.

Sincerely,



Jeffrey Jahn
South Coast Branch Chief

cc: Copy to ARN File # 151422WCR2019AR00146

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CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
1385 EIGHTH STREET, SUITE 130
ARCATA, CA 95521
VOICE (707) 826-8950
FAX (707) 826-8960
WWW.COASTAL.CA.GOV

Mailed original
8/14/2019



August 9, 2019

Adam Wagschal
Director of Harbor Operations
Humboldt Bay Harbor, Recreation & Conservation District
P.O. Box 1030
Eureka, CA 95502-1030

RE: **Issuance of CDP 1-19-00407** to (1) construct two temporary dewatering basins (one at each location) to dewater dredged material from planned routine maintenance dredging operations at Fields Landing and Woodley Island Marina for the potential beneficial reuse of suitable dredged sediment at an approved location; (2) extract seawater from Humboldt Bay for re-slurrying of dredged material within the hopper barge to facilitate its transport to the temporary dewatering basins at each site; and (3) temporarily place piping infrastructure at each site between the dredge vessel(s) and the dewatering sites and between the dewatering sites and existing storm drain inlets to transport slurry material and ultimately discharge the dewatering effluent back into Humboldt Bay.

Dear Adam:

As you know, after a public hearing held on August 7, 2019 in Eureka, the California Coastal Commission unanimously approved the above-referenced coastal development permit (CDP). The CDP was approved subject to five special conditions, two of which (Special Conditions 1 and 4) require information to be submitted prior to commencement of development. Therefore, we are issuing the permit.

Enclosed please find two copies of the CDP. **Please sign the original and return it to this office at the letterhead address.** Retain the copy for your files. After we receive the signed original, the permit will be fully effective.

As always, we appreciate your cooperation and patience throughout the Commission's review of your project. If you have any questions about CDP condition compliance during or after project implementation, please don't hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Clancy DeSmet".

Clancy DeSmet
Coastal Program Analyst II

Encl: CDP 1-19-0407 (two copies)

Cc: Humboldt County Planning

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
1385 8TH STREET • SUITE 130
ARCATA, CA 95521
VOICE (707) 826-8950
FAX (707) 826-8960



W11b

Filed: 7/17/19
180th day: 1/13/20
Staff: C. DeSmet-A
Staff Report: 7/26/19
Hearing Date: 8/7/19

STAFF REPORT: REGULAR CALENDAR

Application No.: 1-19-0407

Applicant: Humboldt Bay Harbor, Recreation & Conservation District

Location: At two locations on Humboldt Bay: (1) Fields Landing Boat Yard on the east side of the bay off of Depot Road in Fields Landing, and (2) Redwood Marine Terminal II on the west side of the bay south of Samoa off of Vance Avenue, Humboldt County

Project Description: (1) Construct two temporary dewatering basins (one at each location) to dewater dredged material from planned routine maintenance dredging operations at Fields Landing and Woodley Island Marina for the potential beneficial reuse of suitable dredged sediment at an approved location; (2) extract seawater from Humboldt Bay for re-slurrying of dredged material within the hopper barge to facilitate its transport to the temporary dewatering basins at each site; and (3) temporarily place piping infrastructure at each site between the dredge vessel(s) and the dewatering sites and between the dewatering sites and existing storm drain inlets to transport slurry material and ultimately discharge the dewatering effluent back into Humboldt Bay.

Staff Recommendation: Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

The scope of this CDP application concerns activities related to the reuse of dredged material from planned routine maintenance dredging activities that are exempt from the need for CDP authorization pursuant to Coastal Act section 30610(d) and the Commission's regulations (Title 14 CCR § 13252). The Humboldt Bay Harbor, Recreation & Conservation District (Harbor District) plans to dredge Woodley Island Marina and the Fields Landing Boat Yard Travel Lift (haul out ramp) on Humboldt Bay. Rather than dispose of the dredged material (which is not suitable for beach nourishment due to its fine grain size and texture) at the approved ocean disposal site located three miles offshore from Humboldt Bay, the Harbor District proposes to dewater the materials at two paved upland sites on the bay for the potential beneficial reuse of the dewatered sediments in an approved restoration project area in Humboldt Bay called White Slough Tidal Marsh Restoration. The Commission's federal consistency unit reviewed and approved the White Slough project in 2015, including the placement of dredged materials and other sediments at the restoration site.

To facilitate the beneficial reuse of dredged material, after dredging, when the material is in the hopper barge, it must be reslurried before it can be transported to upland sites adjacent to the bay for dewatering. Therefore, this CDP application considers the Harbor District's proposed extraction of seawater from the bay for the reslurrying process, the transport of slurry material through temporary pipelines to two dewatering sites on the bay, and the proposed dewatering and discharge activities. Temporary dewatering basins would be constructed using k-rails or similar structures supporting an impermeable liner. The edges of the liner would be held in place with soft weights such as sandbags. A controllable opening or weir would be constructed on one side of the basin. A temporary piping system would be installed extending from dewatering basins to existing storm drains that drain to Humboldt Bay. The maximum area of the temporary dewatering basins would be approximately 60,000 square feet at Redwood Marine Terminal II and 40,000 square feet at the Fields Landing Boat Yard.

The primary issues raised by this application include the project's consistency with the Coastal Act's policies requiring protection of coastal waters and marine resources and the priority of coastal-dependent development. The Harbor District has proposed various measures to minimize the potential for fish impingement and entrainment impacts related to proposed reslurrying activities. These include (1) restricting the work window to the period of July 1 to October 15 to minimize effects to listed species; (2) designing the intake device to meet certain flow rate and screening standards for fish protection, and (3) implementing various operational best management practices (BMPs) that will further protect listed fish species and water quality. Staff recommends Special Conditions 2 and 3 to require that the Harbor District undertake the project in accordance with all proposed protective measures and BMPs described in the project description to protect marine resources, biological productivity, and the quality of coastal waters consistent with Coastal Act sections 30230 and 30231. In addition, staff recommends Special Condition 4 to require the applicant to submit a dredged material disposal plan for the Executive Director's review and approval. This condition will ensure that the handling and disposal of dredged material is carried out in a manner that will avoid significant disruption to marine habitats, consistent with Section 30233(b) of the Coastal Act.

Staff believes that with the recommended conditions, the proposed dewatering of dredged material project is consistent with all applicable Chapter 3 policies of the Coastal Act.

The motion to adopt the staff recommendation of approval with special conditions is found on Page 5.

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APPENDIX

Appendix A – Substantive File Documents

EXHIBITS

Exhibit 1 – Regional Location Map

Exhibit 2 – Vicinity Map

Exhibit 3 – Figures and Plans

Exhibit 4 – Water Intake Design and Details

I. MOTION AND RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve coastal development permit 1-19-0407 pursuant to the staff recommendation.

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Ac. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment:** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration:** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable amount of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation:** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
4. **Assignment:** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land:** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Corps of Engineers Approval.** PRIOR TO COMMENCEMENT OF DEVELOPMENT AUTHORIZED UNDER CDP No. 1-19-0407, the Permittee shall provide to the Executive Director a copy of a permit issued by U.S. Army Corps of Engineers for the intake and discharge facilities, or evidence that no permit is required. The Permittee shall inform the Executive Director of any changes to the project required by the Corps. Such changes shall not be incorporated into the project until the Permittee obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.
2. **Operational Best Management Practices.** The Harbor District shall implement the following proposed protection measures and operational BMPs to protect the water quality and aquatic habitat of Humboldt Bay:
 - (i) Reslurrying, dewatering, and associated decant discharge activities shall only be performed between July 1 and October 15 unless the Executive Director approves minor extensions to the work window for good cause;
 - (ii) Vegetable-based or biodegradable hydraulic fluids shall be used, if possible, in equipment operating over water or without secondary containment;
 - (iii) Equipment shall be inspected and serviced prior to mobilization. Routine inspections shall occur throughout the project and leaks shall be repaired immediately when discovered;
 - (iv) Spill kits equipped with enough material to provide preliminary containment for a volume of material that can reasonably be expected to spill shall be maintained on the barge and the dock. Spill containment trays shall be placed around all equipment on the barge deck;
 - (v) Temporary dewatering basins shall be constructed with an impermeable liner, and the perimeter of the liner shall be secured to minimize the potential for uncontrolled discharge of polluted dredge slurry;
 - (vi) Trash racks shall be placed at the outlet of pipes delivering dredge slurry from the hopper to dewatering basins to be captured, removed, and disposed of at an appropriate facility based on the type of recovered debris;
 - (vii) All temporary pipes used to transport dredge slurry material between the hopper barge and dewatering basins and between basins and discharge points for decant effluent shall be welded together to avoid any risk of leaks;
 - (viii) At the discharge sites, a liner and sandbags shall be used to direct flow to the bay and waddles shall be used for filtering out sediments;

- (ix) Turbidity shall be monitored as proposed within 500 feet of discharge points to ensure that discharge water turbidity does not exceed bay water turbidity by more than 20%. Operations shall be adjusted as necessary to ensure allowed turbidity levels are maintained. At a minimum, turbidity shall be monitored (a) immediately before discharge begins; (b) every two hours during discharge; and (c) after any potential change to the discharge (e.g., addition of new dredged material to a dewatering unit or changed configuration of baffling); and
- (x) If the dredged material is determined from test results to be incompatible with placement at White Slough as determined by the Regional Water Board, the material shall be disposed of at an approved location outside of the coastal zone or at a permitted site within the coastal zone authorized to receive the material.

3. Screened Intake System Design Standards and Procedures. The authorized seawater intake system shall be used in accordance with the design and specifications proposed under CDP Application No. 1-19-0407, which have been reviewed and approved by both the National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW), including use of the following proposed standards and procedures to ensure the device is adequately designed for the protection of listed fish species in Humboldt Bay:

- (i) Prior to use of the new screened intake device for pumping dredged material, the Harbor District shall conduct a water approach velocity test to confirm the calculated values are met. The test shall be conducted during work windows required by Special Condition 2 and will be conducted by taking water velocity measurements at multiple points on each side of the screen using a handheld water flow meter. Test results shall be submitted to the Executive Director for review and approval;
- (ii) Round or square (measured diagonally) openings in intake screens shall not exceed 2.38 millimeters (mm) (3/32");
- (iii) Slotted openings in the screen shall not exceed 1.75mm (0.0689");
- (iv) Approach velocity shall not exceed 0.2 feet per second (fps) for self-cleaning screens or 0.05 fps for non-self-cleaning screens;
- (v) Overall screen porosity shall be a minimum of 27%;
- (vi) The pump that would be used would draw a maximum of 1,500 gallons per minute (gpm).
- (vii) For a non-self-cleaning screen, the screened intake device shall be removed from the bay water and manually cleaned with brushes and/or water after every time that water is pumped to the hopper to ensure that the screen is operating as designed; and
- (viii) The Harbor District shall provide monthly monitoring reports to the Executive Director that will include photos of the screen before and after cleaning and a description of any material on the screen after use. This information will confirm the screen is being cleaned and maintained as required to meet the required and verified approach velocities.

The Permittee shall maintain the required screen in operable condition throughout the life of the project.

4. Dredge Material Disposal Plan

- (i) PRIOR TO COMMENCEMENT OF DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT NO. 1-19-0407, the Permittee shall submit, for the review and written approval of the Executive Director, a plan for the disposal of dredge material in the event that said material will not be disposed of for beneficial reuse in an approved restoration project restoration area in Humboldt Bay called "White Slough Tidal Marsh Restoration." The plan shall identify a disposal site that is in an upland area where dredge materials may be lawfully disposed and describe the manner by which the material will be removed from the construction site.
- (ii) The Permittee shall undertake development in accordance with the approved final Debris Removal Plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

- 5. Future Uses and Improvements.** This approval is limited to the uses and development specifically permitted by Coastal Development Permit 1-19-0407. All development must occur in strict compliance with the proposal as set forth in the application, subject to any special conditions. Any deviation from the approved plans must be submitted for review by the Executive Director to determine whether an amendment to this coastal development permit is required. Any additional development, including, but not limited to maintaining temporary dewatering basins on site for longer than proposed under this application, additional episodes of reslurrying and dewatering operations beyond the initial pilot study authorized by this CDP, or repair or replacement of seawater intake and discharge facilities, will require an amendment to the permit or a new coastal development permit unless the Executive Director determines that no amendment or new coastal development permit is legally required.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares as follows:

A. PROJECT DESCRIPTION

The Humboldt Bay Harbor, Recreation & Conservation District (Harbor District) requests authorization to: (1) construct two temporary dewatering basins, one at Fields Landing Boat Yard and one at Redwood Marine Terminal II (RMT II), to dewater dredged material from planned maintenance dredging operations at Fields Landing and the Woodley Island Marina for the potential beneficial reuse of suitable dredged sediment at an approved location; (2) extract seawater from Humboldt Bay for re-slurrying of dredged material within the hopper barge to facilitate its transport to the temporary dewatering basins at each site; and (3) temporarily place piping infrastructure at each site between the dredge vessel(s) and the dewatering sites and between the dewatering sites and existing storm drain inlets to transport slurry material and ultimately discharge the dewatering effluent back into Humboldt Bay.

Purpose and Need/Background

In 2018, the Executive Director determined the routine maintenance dredging activities at Woodley Island Marina and the Fields Landing Boat Yard Travel Lift (haul out ramp) to be exempt from CDP requirements pursuant to Coastal Act section 30610(d) and the Commission's regulations (Title 14 CCR § 13252).¹ The exempt activities involve routine maintenance dredging of less than 100,000 cubic yards of material using an excavator and/or crane with a closed clamshell bucket. The disposal of dredged material in federal waters, which is not suitable for beach nourishment due to its grain size and texture (mostly fine sediment), at the federally designated Humboldt Open Ocean Disposal Site (HOODS) was reviewed by the Commission's federal consistency division, which determined that the proposed disposal at HOODS would not affect coastal resources.² The exempt maintenance activities are planned to be undertaken between mid-August and mid-October of this year. Therefore, the exempt routine maintenance dredging activities are not under review within the scope of this CDP application. However, rather than dispose of the dredged material at HOODS, the Harbor District now proposes to dewater the materials for potential beneficial reuse in an approved restoration project area in Humboldt Bay called White Slough Tidal Marsh Restoration.³ The dewatering and discharge activities associated with the exempt maintenance dredging operations are described below.

Reslurrying of Dredged Material and Dewatering Activities

Dredging and dewatering is anticipated to take approximately a month to complete and the same equipment and vessels will be used for dredging operations at both locations (Woodley Island Marina and Fields Landing). Upon dredging the material at each site, material would be deposited into the hopper on a barge. Once full, the barge and hopper would be towed to and moored adjacent to the RMT II and/or Fields Landing dewatering sites. Dewatering may occur at only one or the other of the sites, but temporary dewatering basins (described below), up to 60,000 square feet in size (volume capacity up to 129,600 cubic feet), are proposed at each site to provide flexibility for the dredging contractor.

Once the barge is moored, the dredged material would be reslurried and pumped to the temporary dewatering basin. Pumps would be used to draw-in bay water to a submerged screened intake structure (described further below) and pump it directly into the hopper to reslurry the dredged material. The barge hopper would be water-tight to contain dredged material and water during use. Reslurried material then would be pumped from the hopper to the dewatering basin through a system of 12-inch HDPE pipes. At Terminal II, the piping would run along the dock and existing paved and concrete surfaces. At Fields Landing, the piping would span from the barge to a paved area before reaching the dewatering basin. Pipe sections would be welded together to avoid any risk of leaks. The pumping process would require approximately 60-80% water by volume. The amount of water estimated to be required for pumping a 500 cubic

¹ See Commission File No. 1-18-0272-X for Fields Landing maintenance dredging and 1-18-0196-X for Woodley Island maintenance dredging.

² See Commission File No. NE-0002-18 for disposal of the dredged material from Woodley Island Marina at HOODS and NE-0006-18 for disposal of the dredge material from Fields Landing at HOODS.

³ This project, on the Humboldt Bay National Wildlife Refuge (South Bay unit), began implementation in 2015. On May 1, 2015, the Commission's federal consistency unit reviewed the project proposal from the U.S. Fish and Wildlife Service under ND-0011-15 and concurred with the Service's negative determination. The Commission's review and approval includes the placement of dredge materials and other sediments at the restoration site.

yard load of dredged material from the hopper to the dewatering basin at 70% water is approximately 169,000 gallons. All bay water pumping would follow the intake screening standards described below.

In general, some debris captured in the dredged material is expected to be left in the hopper after the slurry has been pumped out. The Harbor District proposes to manually remove the debris and disposed of it at an appropriate facility based on the type of debris recovered in the process. In addition, the slurry will be run through a trash rack immediately before it enters the dewatering basins (i.e. trash racks will be placed at the outlet of the pipes delivering the dredge slurry from the hopper to the dewatering basins). Debris would be captured by trash racks, removed, and disposed of at an appropriate facility based on the type of recovered debris.

RMT II Site

At the RMT II site (Exhibits 1-2), the Harbor District is authorized under an existing CDP from Humboldt County⁴ to use existing clarifiers⁵ (settling tanks) on the property for the purpose of dewatering dredged material. Under this existing County CDP, dewatering effluent is authorized for disposal to “manhole #5,” an existing drainage system that drains to the ocean through an existing outfall line. Under the subject proposed CDP application, the Harbor District proposes to discharge dewatering effluent from the clarifiers at RMT II to Humboldt Bay instead of to the ocean as currently permitted. Within 24 hours after placement of the dredged materials in the clarifiers, effluent in the clarifiers is expected to achieve enough clarity to be within 20% of the background turbidity of Humboldt Bay, at which point the water would be slowly discharged from the top through a controlled opening. A temporary pipeline (6- to 12-inch HDPE) would be placed to route the water to an existing stormwater drain inlet near Humboldt Bay, with pumping as needed. Before discharging to Humboldt Bay, the water would be filtered through baffles, pipe filter socks, and/or drop inlet filters. During discharge, bay water and decant water turbidity would be monitored using a handheld turbidity meter. If discharge water turbidity exceeds bay water turbidity by 20% or more then discharging would cease. Discharge would not restart until solids within the dewatering structures have adequately settled and/or filtering methods have been adjusted in order to meet the turbidity standard. Once the water is pumped off the top of the settled dredged material, the remaining material would be allowed to further dry for a period of 5-10 days which would allow the material to firm up enough for equipment handling.

Additionally, the Harbor District proposes to construct a temporary dewatering basin at RMT II adjacent to the bay shoreline and north of the existing dock (Exhibit 3). The temporary basin would remain on site for up to one year, after which point it would be dismantled. The temporary dewatering basin would be used in addition to or in lieu of the water clarifiers described above. The temporary dewatering basin would be constructed with K-rails or similar structures supporting an impermeable liner. The edges of the liner would be held in place with soft weights such as sandbags. A controllable opening or weir would be constructed on one side of the basin. The same piping methods described above would be used to deliver dredge slurry to the basin and to pump decant water back to Humboldt Bay through an existing storm drain system. The maximum area of the temporary dewatering basin would be 60,000 square feet (volume capacity

⁴ Humboldt County CDP No. 16-049 was approved by the County on December 13, 2018.

⁵ The clarifiers historically were used for pulp mill operations on the site, which operated from approximately 1960 to 2008.

= 129,600 cubic feet) (Exhibit 3). Discharge of dewatering effluent would be through an existing storm drainpipe (discharge process described below).

Fields Landing Site

At the Fields Landing site (Exhibits 1-2), dredging of the travel lift (haul out ramp) will take place from the paved upland boat yard area. Dredged material would be directly transferred to the temporary dewatering basin or transferred to a watertight container, which would relocate the material to the temporary dewatering basin. The temporary dewatering basin would be constructed as described above but would be smaller (approximately 40,000 square feet in size). The basin would be constructed on top of existing asphalt or concrete surfaces near the west side of the property [Exhibit]. Boats at Fields Landing would be relocated to other paved areas on site. The temporary basin would remain on site for up to six months, after which point it would be dismantled.

Discharge to Humboldt Bay

To estimate sediment settling times for dredged sediments, a laboratory test was conducted using Woodley Island Marina sediments suspended in 1 foot of bay water. Based on the settling test, after 24 hours particles of solid dredged material settle out and displace the majority of the water to the surface. Within 24 hours after the placement of dredged materials in temporary dewatering basins at each site, water in the dewatering basins is expected to achieve enough clarity to be within 20% of the background turbidity of Humboldt Bay (which is the standard required by the Regional Water Board), and at this point the water would be gently let off the top through a controlled opening. A temporary pipeline system, described above, would route the water to existing stormwater drains at each site.

Before discharging to Humboldt Bay at each site, the water would be filtered through baffles, pipe filter socks, and/or drop inlet filters. During discharge to Humboldt Bay, bay water and decant water turbidity would be monitored using a handheld turbidity meter and compared at the following times: (a) immediately after discharge has commenced; (b) every two hours during discharge; and (c) after any potential change to the discharge (e.g. addition of new dredged material to a dewatering basin or changed configuration of baffling). If discharge water exceeds bay water turbidity by 20% or more, then discharging would cease operation. Discharge would only recommence when the solids within the dewatering structures have adequately settled and/or filtering methods have been adjusted in order to meet the turbidity standards.

The anticipated rate of discharge at each site is 20 gallons per minute (gpm) with a velocity of 0.01 feet per second (fps), which is substantially lower than discharge volume and rate during average winter rain events. After initial dewatering, the solids in the dewatering basin would continue to settle and displace water as it compacts under its own weight. In total, approximately 135,000 gallons of water is expected to be removed per 1,000 cubic yards of sediment removal. After 5-7 days of additional settling, the material is expected to be within the moisture range low enough to handle with equipment to transport to the beneficial reuse site.

Pumping and Intake Screening Standards

All bay water pumping for dredged material reslurrying would include use of a screened intake device consisting of a 6-foot by 6-foot by 10-foot stainless steel perforated "basket" (Exhibit 4). The device would be designed to extract seawater through a tubing system connected to the

hopper in a manner that avoids impingement and entrainment of fish. The structure would be suspended in the water from the side of the barge or from the side of the existing dock at the RMT II site. There would be at least 3 feet to 6 feet of water depth both above and below the submerged device when in operation (i.e., the device would be at least 3 to 6 feet below the surface of the water and at least 3 to 6 feet above the bay bottom when in operation). In addition, the proposed device would meet the following criteria, which are recommended by NMFS and CDFW for protection of listed fish species in the bay:

1. Round or square (measured diagonally) openings shall not exceed 2.38 millimeters (mm) (3/32 inches);
2. Slotted openings in the screen shall not exceed 1.75mm (0.0689”);
3. Approach velocity shall not exceed 0.2 feet per second (fps) for self-cleaning screens or 0.05fps for non-self-cleaning screens; and
4. Overall screen porosity shall be a minimum of 27%.

The pump that would be used would draw a maximum of 1,500 gallons per minute (gpm). The device would be removed from the bay water and manually cleaned with brushes and/or water after every time that water is pumped to the hopper, which may be multiple times per day.

Removal of Dewatered Dredged Material from Sites

Pursuant to Regional Water Board Requirements, prior to dredging, material within the dredging area will be sampled using incremental sampling methodology (ISM). Sampling results will be compared to existing sampling results for the White Slough Restoration Project, which is located within the Humboldt Bay National Wildlife Refuge. The Commission approved this project through its federal consistency division in May of 2015 (Commission File No. ND-0011-15). The primary purpose of the White Slough Tidal Restoration Project, implemented by the U.S. Fish and Wildlife Service, is to restore and enhance salt marsh habitat on diked former tidelands, and to enhance existing degraded brackish and freshwater wetlands to create additional native wildlife habitat. The restoration work, which has been ongoing over the past few years and is expected to continue for several additional years, involves the placement of thousands of cubic yards of sediment material within the marsh restoration area.

If the dewatered dredged material from the temporary dewatering basins is found to be compatible with placement in the White Slough Restoration area, it would be trucked from temporary dewatering basins to the approved site. If the material is determined to be incompatible with placement at White Slough, the Harbor District proposes to dispose of the material only at an approved location capable of receiving the material. The Commission approval of the White Slough Restoration Project through its federal consistency division in May of 2015 included the approval of placement of soils and dredged material in the restoration area from a variety of sources. Therefore, the dredged material disposal at White Slough is not being reviewed under the scope of this CDP application. However, if the dewatered material were to be targeted for disposal or beneficial reuse at a site in the coastal zone other than White Slough, additional CDP authorization from the Commission may be required.

B. ENVIRONMENTAL SETTING

The Fields Landing Boat Yard is approximately 33 acres and is located on the east side of Humboldt Bay in the unincorporated community of Fields Landing approximately 6.6 miles south of Eureka (APN 307-101-002). The subject site is a secured boat yard that is owned and operated by the Harbor District. The property is locally planned and zoned for coastal dependent industrial uses under the Humboldt County LCP. The facility site consists of boat storage areas; a boat cleaning and maintenance work yard; boat launch; rest rooms; a covered boat repair shop; office, and store; storage area for the boat lift; and a dock. Vessels may be hauled out of the water and moved via the mobile boat lifting hoist (150-ton capacity). This secure facility is fenced and has 24-hour surveillance. A floating dock is secured to the outside (east) of the three existing pilings that extend towards the federal channel off the end of the eastern dock finger. The dock is used when multiple vessels are launched to perform vessel checks post-launching, and prior to heading out to sea. The floating concrete dock is approximately 5 feet wide and 24 feet long (in 8' sections). A gangway is installed to provide access from the pier to the floating dock.

The facility operates under an approved stormwater pollution prevention plan from the North Coast Regional Water Quality Control Board. The facility has one industrial drainage area, which is almost entirely paved. The industrial area at the site flows to a drainage inlet in the eastern portion of the site.

Redwood Marine Terminal II (RMT II) is approximately 68.49 acres and is located in Humboldt County on the Samoa Peninsula approximately 5 miles east of Eureka (APN 401-112-021). The Harbor District acquired the former pulp mill site in 2013. The site, RMT II, is designated and zoned for coastal-dependent industrial use and had significant historic usage from the time it was constructed in the 1960s until approximately 2008 when the pulp mill closed permanently. Existing site infrastructure including industrial equipment, laboratories, warehouses, offices, site roadways, and water/wastewater infrastructure was originally developed during this time to support site activities and employees.

This industrial site has been in operation on the Samoa Peninsula for over 50 years. In December 2015, the County approved a CDP⁶ for site infrastructure improvements, which allowed for necessary maintenance of existing infrastructure. The Harbor District received new market tax credits to make existing renovations including: new roofing, building siding and access doors, water and fire suppression upgrades, electrical upgrades including substation and energy efficiency retrofits, and upgraded security fencing. Additionally, recently implemented upgrades include: installation of fiber optic cables, electrical repairs/upgrades to site buildings, installation of a 730 Kwh rooftop solar array, and site drainage improvements. In sum, the Harbor District has also made significant investment in the adjacent dock facilities. Existing operations on RMT II include aquaculture, sea salt production, and various interim uses.

C. STANDARD OF REVIEW

The proposed project is located in the Commission's retained jurisdiction. The County of Humboldt has a certified local coastal program (LCP), but the site is within an area shown on State Lands Commission maps over which the state retains a public trust interest. Therefore, the

⁶ Humboldt County CDP No. 15-043

standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

D. OTHER AGENCY APPROVALS

Humboldt Bay Harbor, Recreation, and Conservation District. The Harbor District was created by the State Legislature in 1970 to oversee development of the harbors and ports of Humboldt County for the benefit of the people. The Harbor District has permit jurisdiction over all tidelands and submerged lands within Humboldt Bay and administers sovereign tidelands and submerged lands over most of Humboldt Bay pursuant to a legislative grant. The Harbor District approved Administrative Permit Amendments for maintenance dredging at Woodley Island (No. A-2018-02 Amendment #1) and Fields Landing (No. A-2018-03 Amendment #1) on July 10, 2019.

North Coast Regional Water Quality Control Board. The Regional Board requires a water quality certification (WQC) for projects involving dredging and/or filling activities under Section 401 of the Clean Water Act. The Harbor District has coordinated with the Regional Board and obtained permit(s) for the proposed project (Water Quality Permit No. 1B180035WNHU issued July 11, 2019).

U.S. Army Corps of Engineers. The Corps may have regulatory authority over the proposed project under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 1344) and/or Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act regulates structures or work in navigable waters of the United States. Section 404 of the Clean Water Act regulates fill or discharge of materials into waters and ocean waters. **Special Condition 1** is attached to require that the Harbor District obtain any necessary approvals from the Corps for the proposed project.

National Marine Fisheries Service. Through its consultation with the Corps, NMFS published a letter of concurrence for the proposed project on July 17, 2019. NMFS concludes that the project as proposed (with proposed implementation and minimization measures) will not result in significant adverse effects to listed species, including salmon, steelhead, green sturgeon, or eelgrass (which is classified as essential fish habitat).

California Department of Fish & Wildlife. CDFW, in its administration of the California Endangered Species Act (CESA), requires an Incidental Take Permit (ITP) for “take” of listed species incidental to otherwise lawful development projects. If the seawater diversion proposed under this CDP application is implemented as proposed consistent with CDFW guidelines for intake screening, CDFW staff has informed Commission staff that CDFW will not require an ITP for the project, because the project is expected to avoid incidental take of CESA-listed coho salmon and longfin smelt, as discussed in the following section.

E. PROTECTION OF COASTAL WATERS

Section 30230 of the Coastal Act states the following:

*Marine resources shall be maintained, enhanced, and where feasible, restored.
Special protection shall be given to areas and species of special biological or*

economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 of the Coastal Act states the following:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30233(b) of the Coastal Act states the following:

Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.

The project has the potential to impact marine resources and the biological productivity and quality of coastal waters in several ways. First, the proposed diversion of seawater for the reslurrying operations could impact various species of sensitive fish that have the potential to inhabit the project area waters. Second, the proposed discharge of decant water back into Humboldt Bay following dewatering of dredged material potentially could impact water quality as well as offshore eelgrass, which is classified by the National Marine Fisheries Service as “essential fish habitat” and considered a species of special biological significance due to its importance as foraging and spawning habitat for numerous marine organisms and seabirds. Third, the improper handling and disposal of dredged material could result in water quality impacts. Each of these potential impacts and appropriate mitigation measures to protect and maintain marine resources and water quality is discussed below

Potential diversion impacts and mitigation measures

The proposed diversion of seawater for the reslurrying operations has the potential to adversely affect marine resources and the biological productivity of coastal waters in Humboldt Bay by potentially causing adverse impacts to various species of sensitive fish that have the potential to inhabit the project area waters. Three species of salmonids, including the Southern Oregon/Northern California Coasts Evolutionarily Significant Unit (ESU) of coho salmon (*Oncorhynchus kisutch*), California Coastal ESU Chinook salmon (*O. tshawytscha*), and Northern California ESU steelhead (*O. mykiss*), are present in Humboldt Bay both as adults during their migration from the sea into spawning rivers in the fall and winter and as juveniles as they move downstream into the ocean in the spring and early summer. All three salmon species are listed as threatened under the federal ESA (coho also is listed as threatened under the California ESA). Longfin smelt (*Spirinchus thaleichthys*), listed as a threatened species under the California ESA, and generally spawns in freshwater and moves downstream to estuarine

conditions to grow, including within Humboldt Bay waters. Once among the most abundant fish species in Humboldt Bay, present in larval, juvenile, and adult life stages, longfin smelt were considered to be possibly extinct there by 1996⁷. In recent years, however, longfin smelt have again been observed in Humboldt Bay and are thought to be present year-round.⁸

The removal of seawater through intake structures is known to result in the impingement and entrainment of marine life. The type and quantity of marine life that may be adversely affected in this way is related to the size and velocity of the intake structures. Larger, high-velocity structures can cause the impingement and entrainment of larger organisms that can include adult fish, while smaller low-velocity structures can typically only impinge and entrain smaller larval and juvenile organisms. While impingement (capture of fish and marine organisms against an intake screen due to suction) can often result in the injury or mortality of the affected organism, adverse effects of entrainment (capture of fish and marine organisms in the intake stream) vary based on the type of intake system (configuration of pipes, pressure changes, temperatures) and ultimate use of the entrained water.

As discussed above, the Harbor District has proposed various measures to minimize the potential for fish impingement and entrainment impacts. These include: (1) restricting the work window to the period of July 1 to October 15 to minimize effects to listed species; (2) designing the intake device to meet certain flow rate and screening standards for fish protection, including (a) ensuring that the device will be suspended in the water from the side of the barge or from the side of the existing dock at the RMT II site with at least 3 feet to 6 feet of water depth both above and below the submerged device when in operation; (b) using screening with round or square (measured diagonally) openings that do not exceed 2.38 millimeters (mm) (3/32 inches), and slotted openings shall not exceed 1.75mm (0.0689"); (c) ensuring that approach velocity at the intake ports shall not exceed 0.2 feet per second (fps) for self-cleaning screens or 0.05fps for non-self-cleaning screens; (d) maintaining a minimum overall screen porosity of 27%; and (e) if using a non-self-cleaning screen, ensuring that the device will be removed from the bay water and manually cleaned with brushes and/or water after every time that water is pumped to the hopper, which may be multiple times per day.

CDF&W staff has reviewed the proposed measures to minimize fish impingement and entrainment, and has informed Commission staff that the project is expected to avoid incidental take of coho salmon and longfin smelt.

In addition, the Harbor District has proposed to implement the project in accordance with various operational best management practices (BMPs) that will further protect listed fish species and water quality. These include, various water quality BMPs and also restricting the work window to the period of July 1st to October 15th when listed salmonids are not typically migrating through the area.

The Commission attaches **Special Conditions 2 and 3** to require that the Harbor District undertake the project in accordance with all proposed protective measures and BMPs described

⁷ Eldridge and Bryan 1972; U.S. Fish and Wildlife Service 1996.

⁸ Pinnix et al. 2005.

in the project description and summarized above to protect marine resources, biological productivity, and the quality of coastal waters consistent with Sections 30230 and 30231.

Potential water quality discharge impacts and mitigation measures

The proposed discharge of decant water back into Humboldt Bay following dewatering of dredged material potentially could impact water quality as well as offshore eelgrass, which is classified by the National Marine Fisheries Service as “essential fish habitat” and considered a species of special biological significance due to its importance as foraging and spawning habitat for numerous marine organisms and seabirds. Eelgrass beds occur directly offshore from both RMT II and Fields Landing. Eelgrass impacts could occur either as a result of elevated turbidity levels around the discharge points during discharge of the decant water or as a result of scour from high-velocity discharge. The project also could result in water quality impacts through uncontrolled spills of equipment fluids or uncontained dredge slurry during transport of slurry material along temporary pipelines.

As discussed, the proposed dewatering operations will result in decant water being piped through temporary pipelines to existing stormwater discharge points – one in Fields Landing and one at RMT II. During typical rain events, stormwater discharge flows through these stormwater drains into Humboldt Bay. During normal heavy rains each winter, the volume of stormwater discharge and rate at which it flows through the stormwater drains into Humboldt Bay is much higher than the proposed maximum volume and rate of discharge under this CDP application (approximately 20 gallons per minute at a velocity of 0.01 feet per second). To ensure that the volume and rate of discharge do not result in unacceptable turbidity levels or scour, the Harbor District has proposed to monitor turbidity at discharge points to ensure that turbidity levels are not elevated by more than 20 percent relative to ambient levels (20% is the standard required by the North Coast Regional Water Quality Control Board). Turbidity is proposed to be monitored (a) immediately before discharge begins; (b) every two hours during discharge; and (c) after any potential change to the discharge (e.g., addition of new dredged material to a dewatering unit or changed configuration of baffling). The Commission attaches **Special Condition 2-ix** to require the turbidity monitoring as proposed.

In addition, the Harbor District has proposed several additional operational measures to further protect water quality throughout the course of the proposed work. These include, but are not limited to, the following: (1) vegetable-based or biodegradable hydraulic fluids shall be used, if possible, in equipment operating over water or without secondary containment; (2) equipment shall be inspected and serviced prior to mobilization and throughout the project operations, and leaks shall be repaired immediately when discovered; (3) spill kits shall be maintained on the barge and dock; (4) temporary dewatering basins shall be constructed with an impermeable liner, and the perimeter of the liner shall be secured to minimize the potential for uncontrolled discharge of polluted dredge slurry; (5) trash racks shall be placed at the outlet of pipes delivering dredge slurry from the hopper to dewatering basins to be captured, removed, and disposed of at an appropriate facility based on the type of recovered debris; (6) all temporary pipes used to transport dredge slurry material between the hopper barge and dewatering basins and between basins and discharge points for decant effluent shall be welded together to avoid any risk of leaks; and (7) the discharge sites, a liner and sandbags shall be used to direct flow to the bay and waddles shall be used for filtering out sediments. These proposed measures are required by **Special Conditions 2** to ensure that the Harbor District undertakes the project in a

manner that will protect marine resources and the water quality consistent with Sections 30230 and 30231.

Potential spoils handling and disposal impacts and mitigation measures

As previously discussed, the scope of this CDP application does not include the dredging aspects of the project, since the planned routine maintenance dredging was determined to be exempt from CDP requirements under Coastal Act section 30610(d) and the Commission's regulations (Title 14 CCR § 13252). However, this application includes the upland dewatering of the dredged material for its potential beneficial reuse in an existing permitted restoration project on the Humboldt Bay National Wildlife Refuge. As discussed above, the Harbor District will sample the dredged material pursuant to the Regional Water Board-approved incremental sampling methodology (ISM) and compare the results with previous sediment sampling results taken at the White Slough Restoration Project site. If the material constituent levels are determined to be equivalent to or lower than the levels at the receiving restoration site, the dewatered dredged material will be transported from RMT II and Fields Landing to the restoration site by truck for beneficial reuse. In the past, sediment material sampled from Woodley Island Marina and from Fisherman's Channel in King Salmon have been approved by the Regional Water Board for beneficial reuse at White Slough. The Commission's federal consistency division approved the placement of suitable dredged material and other sediments at the White Slough Restoration Project site in 2015 (Commission File No. ND-0011-15). Thus, while the Harbor District plans to beneficially reuse the sediment in this manner, the scope of this CDP application does not include the placement of the material at White Slough as planned by the Harbor District.

Nevertheless, Section 30233(b) of the Coastal Act requires that dredging and spoils disposal be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. The section also requires that dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems. Therefore, the Commission must ensure that the handling and disposal of dredged material that are being reviewed under the scope of this CDP application are carried out to avoid significant disruption to habitats.

While some of the material that is dredged from Humboldt Bay during routine maintenance dredging operations is suitable for beach nourishment purposes, such as the material that is annually dredged by the Army Corps of Engineers from the bay entrance area, the materials that are dredged during routine maintenance dredging from the docks and marinas in the interior portions of the bay, such as Woodley Island Marina and Fields Landing, are not suitable for beach replenishment (incompatible grain size and texture). The material has, however, been found in the past to be compatible with the planned receiving site (White Slough).

As previously discussed, the Harbor District has proposed various measures to protect water quality during operational handling of the dredged material including constructing temporary dewatering basins with a secured impermeable liner; welding pipes together in temporary pipelines used to transport dredge slurry material between the hopper barge and dewatering basins and between basins and discharge points for decant effluent; and using trash racks to recover any dredged debris prior to transport to dewatering basins and properly disposing

recovered debris. These proposed measures, among other water quality protection measures, are required to be implemented by **Special Condition 2**.

Finally, the project application states that if the material is determined from test results to be incompatible with placement at White Slough as determined by the Regional Water Board, the Harbor District proposes to dispose of the material only at an approved location capable of receiving the material. This requirement is included in Special Condition 2. However, if the dredged material ultimately is not to be disposed of at White Slough, the Commission must ensure that the handling and disposal of dredged material is appropriately carried out to avoid significant disruption to habitats. Therefore, the Commission attaches **Special Condition 4**. This condition requires the applicant to submit a dredged material disposal plan for review and approval.

Therefore, the project, as proposed and conditioned, will be carried out in a manner in which marine resources are maintained, species of special biological significance are given special protection, the biological productivity of coastal waters is sustained, and healthy populations of all species of marine organisms will be maintained. Additionally, the project, as conditioned, will maintain the biological productivity of coastal waters and estuarine habitats appropriate to maintain optimum populations of marine organisms.

F. PRIORITY OF COMMERCIAL FISHING AND CDI USES

Section 30234 of the Coastal Act states, in applicable part:

Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided...

Section 30234.5 of the Coastal Act states:

The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.

Section 30255 of the Coastal Act states, in applicable part:

Coastal-dependent uses shall have priority over other developments on or near the shoreline... When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.

Section 30701(b) of the Coastal Acts states:

Existing ports, including the Humboldt Bay Harbor, Recreation, and Conservation District, shall be encouraged to modernize and construct necessary facilities within their boundaries in order to minimize or eliminate the necessity for future dredging and filling to create new ports in areas of the state.

The Coastal Act prioritizes protection of certain priority uses over other competing uses without priority. The Coastal Act provides that coastal-dependent developments, including coastal-related developments and coastal recreation uses, shall have priority over other developments on or near the shoreline. Generally, these priority land uses include uses that by their nature must be located on the coast to function, such as ports and commercial fishing facilities, and uses that encourage the public's use of the coast, such as various kinds of visitor-serving recreational facilities. Coastal-dependent industrial facilities are encouraged to locate or expand within existing sites, and CDI is given priority over visitor-serving commercial recreational facilities that enhance public opportunities for coastal recreation. When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support. Coastal-related developments may include facilities that support commercial fishing and aquaculture (e.g., storage and work areas, berthing and fish receiving, areas for fish processing for human consumption, and aquaculture support facilities).

The Coastal Act, as cited above, recognizes the Port of Humboldt Bay as one of the state's primary economic and coastal resources and an essential element of the national maritime industry. The dredging and beneficial reuse of dredge spoils will only serve to further the CDI potential and priority of Humboldt Bay and the Harbor District.

Existing operations at RMT II include aquaculture, sea salt production, and various interim uses. It is undisputed that the aquaculture and sea salt production are uses that require a site on, or adjacent to, the sea to be able to function at all. The various interim uses are not coastal-dependent and are not analyzed as such.

Existing operations at Fields Landing Boat Yard consists of boat storage areas; a boat cleaning and maintenance work yard; boat launch; covered boat repair shop; storage area for the boat lift; and a dock. The existing uses at Fields Landing are coastal-dependent, and it is important that any disruption of existing CDI uses be minimized.

The proposed project will avoid significant disruption of existing uses. For example, existing uses at RMT II will not be disrupted, because there is ample vacant land for the existing and new coastal-dependent uses. Aside from the proposed temporary dewatering basin, the infrastructure and facilities are on hand. Additionally, any conceivable impacts would be short-term due to the proposed duration of the project. The temporary dewatering basin at RMT II is proposed to remain for only one year. Similarly, the duration of the use of the temporary dewatering basin at Fields Landing is proposed to be only 6 months. Fields Landing also can accommodate the temporary dewatering basin because the Harbor District can move the boats on site and the repair work can continue uninterrupted. Finally, **Special Condition 5** requires the permittee to obtain a permit amendment if the temporary dewatering basins will be retained longer than currently proposed.

Therefore, the Commission finds that the project as proposed does not diminish the prioritization of coastal-dependent uses, consistent with Coastal Act section 30255.

G. PUBLIC ACCESS AND RECREATION

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or adequate access exists nearby. Section 30211 requires that development not interfere with the public's right to access gained by use or legislative authorization. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner that takes into account the capacity of the site and the fragility of natural resources in the area. In applying Sections 30210, 30211, 30212, and 30214, the Commission also is limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential access.

As noted previously, the project sites are located on industrial sites on Humboldt Bay. The project sites do not currently support public access. The proposed project will not block access along the shoreline and will not increase the demand for public access. Therefore, the Executive Director finds that the proposed project will not adversely affect public access and the project as proposed without new public access is consistent with the requirements of Coastal Act Sections 30210, 30211, 30212, and 30214.

H. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The Harbor District is the lead agency for the project under CEQA and determined that the project is exempt from CEQA pursuant to a Class 4 categorical exemption, which exempts minor public or private alterations in the condition of land, water, and/or vegetation which do not remove healthy, mature, scenic trees (See §15304. Minor Alterations to Land). This includes minor temporary use of land having negligible or no permanent effects on the environment and maintenance dredging (§15034(e) and (g)).

Section 13096 of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The Executive Director incorporates his findings on conformity with the Chapter 3 policies of the Coastal Act at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed above, the development has been conditioned to be found consistent with the policies of the Coastal Act. Mitigation measures, which will minimize all adverse environmental impacts, have been required as permit special conditions. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse

1-19-0407 (Humboldt Bay Harbor District)

impact that the activity may have on the environment. Therefore, the Executive Director finds that the development as conditioned to mitigate the identified impacts can be found to be consistent with the requirements of the Coastal Act to conform to CEQA.

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
1385 EIGHTH STREET, SUITE 130
ARCATA, CA 95521
VOICE (707) 826-8950
FAX (707) 826-8960
WWW.COASTAL.CA.GOV



W11b

CDP NO. 1-19-0407

(HUMBOLDT BAY HARBOR DISTRICT)

AUGUST 7, 2019

APPENDIX

APPENDIX

Appendix A – Substantive File Documents

Appendix A

- Commission File No. 80-P-21
- Commission File Nos. 1-18-0272-X and 1-18-0196-X
- Commission File Nos. NE-0002-18 and NE-0006-18
- Commission File No. ND-0011-15
- Humboldt County Files – CUP 16-062; CDP 18-048; and CDP 18-041
- Harbor District File Nos. – A-2018-02 Amendment #1 and A-2018-3 Amendment #1
- NMFS File Nos. WCRO-2019-01797 and WCRO-2019-01850
- NCRWQB File Nos. 1B180038WNHU and 1B180101WNHU
- Correspondence – CDF&W emails dated 7/3/19; 7/5/19; 7/16/19; and 7/22/19

W11b

CDP NO. 1-19-0407

(HUMBOLDT BAY HARBOR DISTRICT)

AUGUST 7, 2019

CORRESPONDENCE

DeSmet, Clancy@Coastal

From: NorthCoast@Coastal
Sent: Wednesday, July 24, 2019 1:31 PM
To: DeSmet, Clancy@Coastal
Cc: Robinson, Aurora@Coastal
Subject: FW: Public Comment on August 2019 Agenda Item Wednesday 11b - Application No. 1-19-0407 (Humboldt Bay Harbor, Recreation)

From: Larry Doss [<mailto:larryo@mingtree.com>]
Sent: Wednesday, July 24, 2019 1:24 PM
To: NorthCoast@Coastal
Subject: Public Comment on August 2019 Agenda Item Wednesday 11b - Application No. 1-19-0407 (Humboldt Bay Harbor, Recreation)

My name is Larry Doss, I am currently one of five commissioners for the Humboldt Bay Harbor, Recreation and Conservation District.

Thank you to the Coastal Commission for allowing this item be placed on the agenda while the Commission meets in Humboldt County.

In Regards to the request for amending the dredging plan for the Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD) is important to all residents of Humboldt County, the amendment is to simply dewater the dredged material on District Land and to reuse the soil in a variety of beneficial ways, verses shipping the dredge spoils to an off shore dump site. There is a long history of beneficial reuse for dredge sediment in Humboldt Bay the HBHRCD is looking at this proposed method as one option for now. Some side benefits to the proposed amendment is less cost to the District for dredging, no dredging spoils being delivered to the off shore Hoods disposal location, and the necessary abatement of navigation hazards in a timely manner. The Coastal Commission approval of this amendment would complete the long list of government agencies that have approved of the HBHRCD dewatering option. Simply by approving the proposed amendment allows the District to manage and execute a long term dredging maintenance program.

Thank you for your consideration.

Larry O. Doss
HBHRCD, District 1 Commissioner

Larry O. Doss BRE # 01196417 * Broker / President * **Ming Tree, Realtors**
509 J Street Eureka, CA 95501 * Desk 707-269-4341 Mobile 707-599-3332 * larryo@mingtree.com
www.mingtree.com

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
1385 EIGHTH STREET, SUITE 130
ARCATA, CA 95521
VOICE (707) 826-8950
FAX (707) 826-8960
WWW.COASTAL.CA.GOV



W11b

CDP NO. 1-19-0407

(HUMBOLDT BAY HARBOR DISTRICT)

AUGUST 7, 2019

EXHIBITS

EXHIBITS

Exhibit 1 – Regional Location Map

Exhibit 2 – Project Location Map

Exhibit 3 – Figures & Plans

Exhibit 4 – Water Intake Design and Details

Dredge Intake Screen Sizing
 Humboldt Bay Harbor District
 Mike Foget, PE
 7/9/2019

1. Screen Box Size -Actual

Length	10 ft
Width	6 ft
Height	6 ft
Long Sides	120 sf
Short Sides	72 sf
Top	36
Bottom	36 sf
Total Box Area	264.0 sf

2. Screen Area -Design

Flow Rate	1,500 gpm
	3.34 cfs
Max Approach Velocity	0.05 ft/s
Min Void Area	66.82 sf
Max Void Ratio	0.27
Min Screen Surface Area	247.5 sf

3. Max Flow Rate

Void Diameter	0.09375 in
	0.0078125 ft
Void Area (each)	4.79E-05 sf
Void Ratio	0.27
Total Void Area	71.3 sf
Max Approach Velocity	0.05 ft/s
	3.56 cfs
Max Flow Rate	1,600 gpm

Clancy De Smet
Coastal Program Analyst
California Coastal Commission
1385 Eight Street
Arcata, CA 95521

July 17, 2019

Re: Coastal Development Permit Application No. 1-19-0407: Screening Methods and Requirements

Dear Mr. De Smet,

I am writing on behalf of Humboldt Bay Harbor District (District) in response to the Coastal Commission's email to the District dated July 17, 2019. Coastal Commission's email requests information regarding CDP Application No. 1-19-0407. Summaries of the requests and responses are provided below.

Coastal Commission Request	District Response
Confirm that the screen will be at least 6 feet below the surface and 6 feet above the bottom when in operation.	At Redwood Marine Terminal II, there is adequate depth at all tides to allow for this and we will meet this requirement. At Fields Landing, water depth is shallower. We will attempt to locate the screen in deep enough water to accommodate this. However, at a minimum, we will ensure that the screen is 3 feet below the surface and 3 feet above the bottom when in operation.
Conduct a water approach velocity test of the screen prior to using it for dredging operations to confirm the calculated values are met.	The District will conduct the requested test to ensure the calculated values are met. The test will be conducted by taking water velocity measurements at multiple points on each side of the screen using a handheld water flow meter.
Submit monthly monitoring report(s) to the Commission to confirm the screen is being cleaned and maintained as required.	The District will provide monthly monitoring reports that will include photos of the screen before and after cleaning and a description of any material on the screen after use.

Thank you for your consideration of the permit application.

Sincerely,



Adam Wagschal
Director of Harbor Operations

North Coast Regional Water Quality Control Board

July 11, 2019

Humboldt Bay Harbor, Recreation, and Conservation District
Attn: Larry Oetker
601 Startare Drive
Eureka, CA 95501
loetker@humboldtбай.org

Dear Mr. Oetker:

SUBJECT: AMENDMENT TO THE FEDERAL CLEAN WATER ACT, SECTION 401, WATER QUALITY CERTIFICATION FOR THE WOODLEY ISLAND MAINTENANCE DREDGING PROJECT

File: Woodley Island Maintenance Dredging Project; WDID 1B180035WNHU; ECM PIN CW-846146

On May 14, 2019, The North Coast Regional Water Board (Regional Water Board) received a request to amend the Federal Clean Water Act, section 401, Water Quality Certification (certification) for the Woodley Island Maintenance Dredging Project (project). We have determined that the July 23, 2018 certification may be amended to allow for an alternative to disposal. The applicant is proposing adding an option for the dewatering and reuse of resulting dredged materials if the sediment is deemed suitable. The Regional Water Board and the Applicant have worked together to develop beneficial reuse sediment testing and analysis to determine suitability criteria. This Project is an opportunity to use these criteria while maintaining disposal as an option if criteria are not met for reuse. The following language will replace the language in the original certification, respectively:

Finding 4: Project Description: The primary purpose of the Project is to conduct maintenance dredging in the marina to the designed channel depth of - 14ft. Mean Lower Low Water for boat access. The Project includes dredging approximately 19.3 acres of the Humboldt Bay floor, removing up to 300,000 cubic yards (cy) of sediment over ten years (not to exceed 100,000 cy in any 12-month period). The Applicant shall conduct the maintenance dredging with a closed clamshell bucket to minimize turbidity and will monitor turbidity within 500 feet of dredging to ensure water quality objectives are maintained during dredging. The Applicant conducted a Sampling and Analysis Plan in 2015. The final Analytical Report, dated March 2, 2017, identify that the sediment contains a

predominance of silt and clay (~>90% fine sediment) and similar or lower chemical constituent levels previously approved for maintenance dredging and disposal. The Applicant proposes to use a sealed dump scow to transfer and transport the dredged sediment to the Humboldt Open Ocean Disposal Site (HOODS) for permanent disposal and has received U.S. Environmental Protection Agency (EPA) approval for disposal.

As an alternative to disposal, the Applicant proposes to sample and analyze the dredge sediment for possible beneficial reuse at an approved location. If the dredge sediment is deemed suitable for reuse at an approved location the Applicant will dewater the dredge sediment and reuse as described in the amendment. If the dredge sediment is not suitable for reuse the material will be disposed of at HOODS or an approved disposal facility. The Applicant proposes to follow the guidelines in the *Woodley Island Marina – Maintenance Dredging Project Description Amendment*, dated May 14, 2019.

Finding 7: Avoidance, Minimization and Mitigation for Project Impacts: The Project includes a plan to monitor turbidity within 500 feet of dredging and / or dewatering to ensure water quality objectives are maintained. during dredging and If necessary, adaptive measures or Best Management Practices (BMPs) will be taken to avoid and minimize exceedances greater than 20% above background turbidity levels. The Project proposes to employ BMPs to prevent or reduce any discharges during transfer and transport to HOODS or the proposed dewatering and approved reuse site. Compensatory mitigation for the impacts to eel grass (*Zostera marina*) due to the construction of the marina in 1978 included the purchase of 22 acres in Eureka where mitigation included restoring tidal action to the property and fresh water wetland enhancement. No additional compensatory mitigation is required for maintenance dredging within the marina footprint.

Condition 1: No dredged material shall be permitted to overflow, leak, or spill from barges, bins, or dump scows during transportation from the dredging site to HOODS. No overflow or decant water shall be discharged from any barge at any time. Dredge material shall be removed only by closed clamshell bucket. Dredged material volume shall not exceed 100,000 cubic yards in any 12-month period. The Applicant proposes to follow the guidelines in the *Woodley Island Marina – Maintenance Dredging Project Description Amendment*, dated May 14, 2019. Dewatering shall be conducted as described in the amendment including adaptive measures to ensure turbidity water quality objectives are met. Any dredged material stored onsite while being processed to be taken to an approved beneficial reuse site or to HOODS shall be moved as soon as possible, not exceeding more than one year of temporary residence.

The Applicant shall apply appropriate stormwater BMPs for dredge spoils that remain onsite during rain events. If material is stored onsite during the rainy season the Applicant shall submit a water quality control plan or SWPPP that describes management of stored sediment in a manner that prevents storm water discharge.

I hereby issue an amendment to Finding 4, Finding 7, and Condition 1 of the Certification for the Woodley Island Maintenance Dredging Project (WDID 1B180035WNHU; ECM PIN CW-846146) certifying that the remainder of the Water Quality Certification sections of the July 23, 2018, Order are still valid.

If you have any questions or comments, please contact Brandon Stevens at (707) 576-2377 or Brandon.Stevens@waterboards.ca.gov.

Sincerely,

For: Matthias St. John
Executive Officer

190711_Woodley_Island Amendment

cc: State Water Resources Control Board, Stateboard401@waterboards.ca.gov
Jennifer Siu, EPA Region 9, siu.jennifer@epa.gov
Debra O'Leary, U.S. Army Corps of Engineers, debra.a.o'leary@usace.army.mil
Rebecca Garwood, CDFW, rebecca.garwood@wildlife.ca.gov
Vanessa Blodgett, Plan West Partners, vanessab@planwestpartners.com
George Williamson, districtplanner@humboldtby.org

Exhibit D

Coastal Development Permit Amendment Application Package and Approvals for use of a Clamshell Bucket to Offload Dredged Material at Redwood Terminal II and for an Expanded Dewatering Area

1. A copy of the permit amendment application package, and follow up letter with additional information, submitted to the California Coastal Commission to allow for (1) a larger approved area for construction and use of temporary dewatering basins; and (2) use of a clamshell bucket to offload the dredged material.
2. Email notice from the North Coast Regional Water Quality Control Board indicating that a permit amendment is not required for the larger dewatering basin or clamshell bucket offloading method.
3. Email notice from the US Army Corps of Engineers indicating that a permit amendment is not required for the larger dewatering basin or clamshell bucket offloading method.

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
1385 8TH STREET, SUITE 130
ARCATA, CA 95521-5967
PH (707) 826-8950 FAX (707) 826-8960

MEMORANDUM

TO: Coastal Development Permit Applicants

FROM: Coastal Commission

SUBJECT: Notice Concerning Important New Disclosure Requirements

Starting on January 1, 1993, a California law has required that all persons who apply to the Commission for a coastal development permit must provide to the Commission “the names and addresses of all persons who, for compensation, will be communicating with the Commission or Commission staff on their behalf.” (Public Resources Code section 30319.) As of January 1, 1994, the law also requires that applicants also provide the same information with respect to persons who communicate with the commission or the staff on behalf of his or her business partners. The law provides that failure to comply with the disclosure requirement prior to the time that a communication occurs is a misdemeanor that is punishable by a fine or imprisonment. Additionally, a violation may lead to denial of the permit.

In order to implement this requirement, you are required to do three things. The first thing concerns question 2 on page 1 of the application, which requires that an applicant provide the “[n]ame, mailing address and telephone number of applicant’s representative if any ...” When answering this question, an applicant should list all representatives who will communicate on his or her behalf or on behalf of his or her business partners, for compensation, with the Commission or the staff. This could include a wide variety of people such as lawyers, architects, biologists, engineers, etc.

Second, when submitting a completed application, an applicant should include a signed and dated copy of this notice.

Third, if an applicant determines after an application has been submitted that one or more people will be communicating on his or her behalf or on behalf of his or her business partners for compensation who were not listed on the completed application form, the applicant must provide a list in writing of those people and their addresses to the staff. The list must be received before the communication occurs.

By signing below, I indicate that I have read and understood this information.

May 13, 2020

DATE



SIGNATURE

APPLICATION FOR AMENDMENT TO COASTAL DEVELOPMENT PERMIT

Application for an amendment to a previously issued coastal development permit may be made by submitting this form, completed and signed, together with the materials described below and the application fee.

Pursuant to 14 Cal. Admin. Code Sections 13164 and 13168, materials to be submitted are:

1. Revised plans showing the proposed amendment; these must have been approved by the local planning agency. Please submit evidence of approval.
2. Stamped, addressed envelopes for re-notification of all property owners and residents within 100 feet of the development and list of same.
3. An application fee of \$1,249.00. (as of July 1, 2019) (If the amendment is determined by the Commission to be a major, rather than minor, change, the fee is 50% of the new permit application fee.)

Upon receipt of the above information, the Executive Director will determine whether the amendment request should be rejected on the basis that the proposed amendment would lessen or avoid the intent of a previously approved permit condition. 14 Cal. Admin. Code Section 13168. If the amendment request is filed, the Executive Director will then determine whether the amendment request is immaterial or material. If the Executive Director finds that the proposed amendment is immaterial, notification is sent to surrounding property owners and the site must be posted with a form which will be sent to you. If no objections are received, the amendment is approved, and you will be sent an amended permit. If material, the request will be set for a public hearing. You have the right to request that the Commission make a determination of materiality independent of that previously made by the Executive Director. 14 Cal. Admin. Code Section 13166.

Please provide the information below and on the reverse. If you have any questions, contact this office.

APPLICANT

NAME: Humboldt Bay Harbor District

ADDRESS: 601 Startare Drive, Eureka, CA 95501

PHONE: 707 496 2088

COASTAL PERMIT NUMBER: 1-19-0407

DATE OF ISSUANCE: 8/7/2019

APPLICANT'S REPRESENTATIVE (if any)

FOR OFFICE USE ONLY:

Date Received: _____

Date Filed: _____

Application Fee Received: _____

DESCRIPTION OF PROPOSED AMENDMENT: _____

The proposed amendment involves (1) increasing the allowed area and volume capacity of
_____ temporary dredged material dewatering basins and (2) allowing for an alternative method
_____ of dredged material offloading. (Also see Attachment 1)

CERTIFICATION

I hereby certify that I or my authorized representative will complete and post the "Notice of Proposed Permit Amendment" form furnished me by the Commission in a conspicuous place on the development property upon receipt of said notice.

I hereby certify that to the best of my knowledge the information in this application and all attached exhibits is full, complete, and correct, and I understand that any misstatement or omission of the requested information or any information subsequently requested may be grounds for denying the application, for suspending or revoking a permit issued on the basis of these or subsequent representations, or for the seeking of such other and further relief as may seem proper to the Commission.



Signature of Applicant(s) or Agent

NOTE: If signed by agent, applicant must sign below.

I hereby authorize _____ to act as my representative and bind me in all matters concerning this application.

Signature of Applicant(s)

APPLICATION FOR COASTAL DEVELOPMENT PERMIT

APPENDIX A

DECLARATION OF CAMPAIGN CONTRIBUTIONS

Government Code Section 84308 prohibits any Commissioner from voting on a project if he or she has received campaign contributions in excess of \$250 within the past year from project proponents or opponents, their agents, employees or family, or any person with a financial interest in the project.

In the event of such contributions, a Commissioner must disqualify himself or herself from voting on the project.

Each applicant must declare below whether any such contributions have been made to any of the listed **Commissioners** or **Alternates** (see last page).

CHECK ONE

The applicants, their agents, employees, family and/or any person with a financial interest in the project **have not contributed** over \$250 to any Commissioner(s) or Alternate(s) within the past year.

The applicants, their agents, employees, family, and/or any person with a financial interest in the project **have contributed** over \$250 to the Commissioner(s) or Alternate(s) listed below within the past year.

Commissioner or Alternate _____

Commissioner or Alternate _____

Commissioner or Alternate _____



May 13, 2020

Signature of Applicant or Authorized Agent

Date

Please type or print your name _____

Adam Wagschal

APPENDIX B

LOCAL AGENCY REVIEW FORM

SECTION A (TO BE COMPLETED BY APPLICANT)

Applicant Humboldt Bay Harbor, Recreation and Conservation District

Project Description The proposed project modification would (1) increase the allowable surface area and volume capacity for dewatering dredged material; and (2) allow for alternative dredged material offloading methods.

Location 364 Vance Ave, Samoa, CA 95564

Assessor's Parcel Number 401-112-012, 401-112-011, 401-112-021, 401-112-024

SECTION B (TO BE COMPLETED BY LOCAL PLANNING OR BUILDING INSPECTION DEPARTMENT)

Zoning Designation Industrial / Coastal Dependent _____ du/ac

General or Community Plan Designation Industrial / Coastal Dependent, Industrial / General _____ du/ac

Local Discretionary Approvals

Proposed development meets all zoning requirements and needs no local permits other than building permits.

Proposed development needs local discretionary approvals noted below.

Needed *Received*

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Design/Architectural review |
| <input type="checkbox"/> | <input type="checkbox"/> | Variance for _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | Rezone from _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | Tentative Subdivision/Parcel Map No. _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | Grading/Land Development Permit No. _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | Planned Residential/Commercial Development Approval |
| <input type="checkbox"/> | <input type="checkbox"/> | Site Plan Review |
| <input type="checkbox"/> | <input type="checkbox"/> | Condominium Conversion Permit |
| <input type="checkbox"/> | <input type="checkbox"/> | Conditional, Special, or Major Use Permit No. _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | Other _____ |

CEQA Status

Categorically Exempt Class 4 Item _____

Negative Declaration Granted (Date) _____

Environmental Impact Report Required, Final Report Certified (Date) _____

Other _____

Prepared for the City/County of Humboldt Bay Harbor District by Adam Wagschal

Date May 13, 2020 Title Deputy Director

APPENDIX D
(Amendment Application)

DECLARATION OF POSTING

At the time the application is submitted for filing, the applicant must post, at a conspicuous place, easily read by the public and as close as possible to the site of the proposed development, notice that an application for the proposed development has been submitted to the Commission. Such notice shall contain a general description of the nature of the proposed development. The Commission furnishes the applicant with a standardized form to be used for such posting. If the applicant fails to post the completed notice form and sign the Declaration of Posting, the Executive Director of the Commission shall refuse to file the application. 14 Cal. Code Regs. Section 13054(d).

Please sign and date this Declaration of Posting form when the site is posted; it serves as proof of posting. It should be returned to our office with the application.

Pursuant to the requirements of California Code of Regs. Section 13054(d), I hereby certify that on May 14, 2020, I or my authorized representative posted the **Notice of Pending Permit** for application to obtain a coastal development permit for the development of Dredged material offloading and dewatering.

(date of posting)


(description of development)

Located at 364 Vance Avenue, Samoa, CA 95564

(address of development or assessor's parcel number)

The public notice was posted at 364 Vance Avenue, Samoa, CA and 601 Startare Drive, Eureka, CA

(a conspicuous place, easily seen by the public and as close as possible to the site of the proposed development)


(signature)

May 14, 2020
(date)

NOTE: Your application cannot be processed until this **Declaration of Posting** is signed and returned to this office.

FOR OFFICE USE ONLY

PERMIT NUMBER _____

RECEIVED _____

DECLARATION COMPLETE _____

APPENDIX E

STANDARD CONDITIONS FOR APPROVED PERMITS

Below are standard conditions of approved permits that have been routinely applied by the Coastal Commission pursuant to its regulations. These conditions are required on all administrative, consent calendar, and regular hearing approved permits.

STANDARD CONDITIONS

1. Notice of Receipt and Acknowledgment. The permit is not valid and construction shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If construction has not commenced, the permit will expire two years from the date on which the Commission voted on the application, or in the case of administrative permits, the date on which the permit is reported to the Commission. Construction shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. Compliance. All construction must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. Interpretation. Any question of intent or interpretation of any condition will be resolved by the Executive Director of the Commission.
5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.
6. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
7. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

NOTICE OF PENDING PERMIT

A PERMIT APPLICATION FOR DEVELOPMENT ON THIS SITE IS
PENDING BEFORE THE CALIFORNIA COASTAL COMMISSION.

PROPOSED DEVELOPMENT: _____

Dredged material offloading and dewatering.

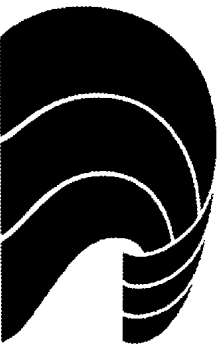
LOCATION: 364 Vance Avenue, Samoa, CA 95564

APPLICANT: Humboldt Bay Harbor District

APPLICATION NUMBER: (Pending)

DATE NOTICE POSTED: May 14, 2020

FOR FURTHER INFORMATION, PLEASE PHONE OR WRITE THE
OFFICE LISTED BELOW BETWEEN 8 A.M. AND 5 P.M., WEEKDAYS.



CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
1385 8th Street
Arcata, CA 95521
(707) 826-8950

Attachment 1
Description of Proposed Amendment

Redwood Marine Terminal II Dredged Material Offloading and Dewatering Project Proposed Amendment

The proposed amendment would (1) allow for an alternative method to transfer dredged material from a barge to temporary dewatering basins; and (2) increase the allowable surface area and volume capacity for dredged material dewatering within temporary dewatering basins. Details are provided below.

1. Alternative Method to Transfer Dredged Material from a Barge to Temporary Dewatering Basins

Existing permits allow for offloading of dredged material from a barge and transfer to dewatering basins with the following steps: (1) pump bay water into the barge to reslurry the dredged material; (2) pump the dredge slurry from the barge to the dewatering basins. The proposed amendment would allow for an alternative method to move the material from the barge to the dewatering basins with the following steps: (1) moor a barge containing dredged material near the dock and use an excavator on a barge to transfer the dredged material to trucks on the dock; (2) offload the dredged material from the trucks into the dewatering basins. Figures 1 and 2 show details regarding the currently permitted process and proposed amendment.

2. Increase the Allowable Surface Area and Volume Capacity for Dredged Material Dewatering within Temporary Dewatering Basins

The project's existing Coastal Development Permit allows for the construction and use of temporary dredged material dewatering basins in the area shown in Figure 1. The Coastal Development Permit allows the dewatering basins to be a maximum of 60,000 square feet (sf) with a volume capacity up to 129,000 cubic feet (cf). The District has determined that this area and volume may not be adequate to dewater 10,000 cubic yards (cy) of material that may be offloaded and dewatered at the site in 2020. With the proposed amendment, the dewatering process would be the same but the allowed dewatering basin area would be 200,000 sf with a capacity of 430,000 cf. Figure 2 shows the area within which the basins would be developed. This area is over 560,000 sf, only a portion of it would be used.



Figure 1. Configuration of currently permitted dredged material offloading and dewatering.

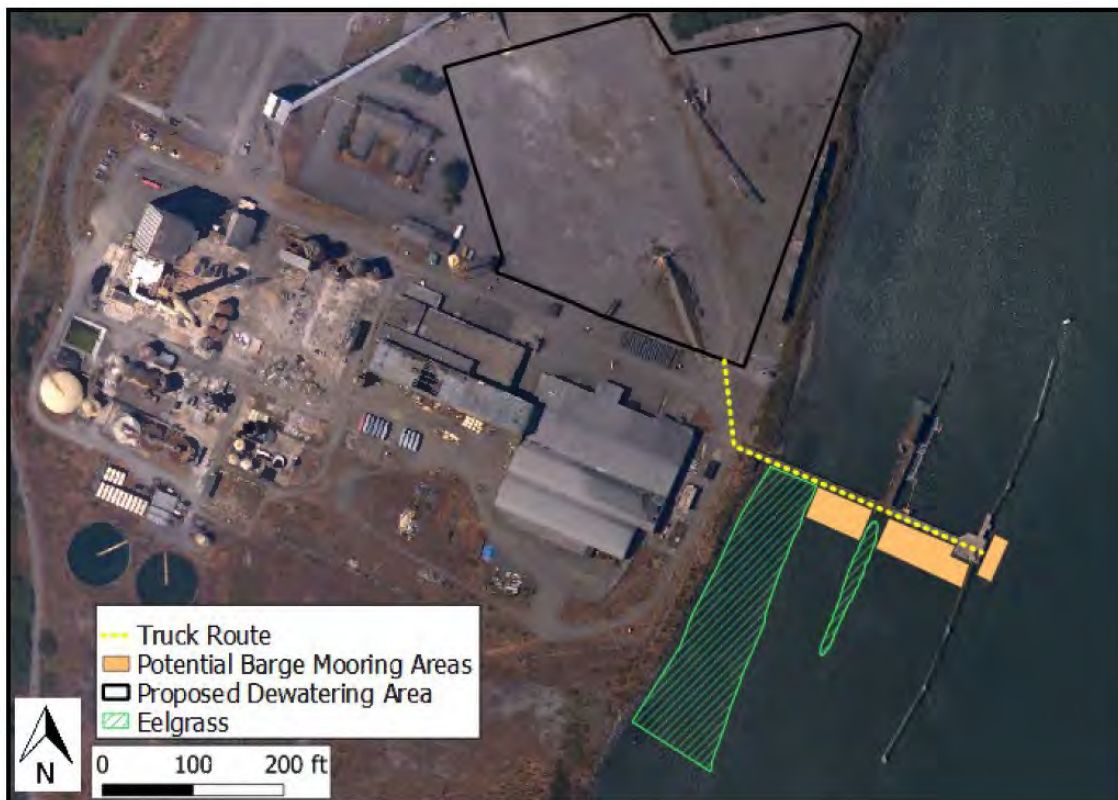


Figure 2. Proposed dredged material offloading components, dewatering area and eelgrass (*Zostera marina*). Eelgrass at the site was mapped in June, 2017.

Potential Impacts to Dock Access

There are two existing tenants that use the dock: Pacific Flake and Taylor Shellfish. Pacific Flake has a water intake on the dock that is used periodically and Taylor Shellfish has an oyster nursery that is accessed regularly. The proposed offloading process (item 1 above) would have temporary impacts to dock access by the tenants. The District has proposed the following criteria which would minimize access impacts. District staff is currently discussing this with the tenants to ensure that their operations are not significantly impacted.

1. During times in which existing dock tenants may require access to the dock, off-loading will be limited as follows.
 - a. Within any 24 hour period, there will be a maximum of four dredge material off-loading events.
 - b. Each off-loading event will be a maximum of one-hour.
 - c. During each off-loading event, the contractor will work with existing dock tenants to minimize impacts to access. For example, pedestrians, bikes and forklifts will be allowed to pass after individual trucks are loaded.
 - d. The contractor will notify existing tenants regarding the estimated schedule of off-loading events.

Eelgrass Impact Avoidance

Eelgrass (*Zostera marina*) is a sensitive plant species that occurs within shallower waters on site. Specifically, there is a shallow shelf extending from shore approximately 130-200 feet and there is shallow “band” directly opposite a finger dock. This shallow area likely formed as a result of shoaling due to the finger dock. Eelgrass at the site was mapped in 2017 and is shown in Figure 2. The eelgrass is often visible in aerial photographs and from boats. Barges and related mooring equipment would avoid mapped and visible eelgrass.

Summary

Other than the two items described above, the project would remain the same. Previously permitted methods would still be allowable in addition to the methods currently proposed. The purpose of the proposed amendment is to allow flexibility in methods to allow dredging contractors design creativity to minimize costs and to succeed. The proposed project may be viewed as a pilot project to determine ideal methods to efficiently dewater dredged material in preparation for applying it at beneficial use projects rather than disposing of it outside of the Eureka Littoral Cell (e.g., at the Humboldt Open Ocean Disposal Site).

Thank you for considering the proposed amendment.

Adam Wagschal
707 496 2088
awagschal@humboltdbay.org

COMMISSIONERS

1st Division

Larry Doss

2nd Division

Greg Dale

3rd Division

Stephen Kullmann

4th Division

Richard Marks

5th Division

Patrick Higgins

**Humboldt Bay
Harbor, Recreation and Conservation District**

(707) 443-0801

P.O. Box 1030

Eureka, California 95502-1030



May 25, 2020

California Coastal Commission

Attn: Cat Holloway

1385 8th Street, Suite 130

Arcata, CA 95521

RE: Follow up information for proposed amendment to Permit 1-19-0407

Dear Ms. Holloway,

On May 13, 2020, the Humboldt Bay Harbor District (District) submitted an amendment application for Permit 1-19-0407. On May 22, 2020, Coastal Commission and District staff conducted a site visit to assess the proposed amendment. This letter provides project information that was requested during the site visit.

1. Copies of project approvals from other agencies.
 - a. Attachment A is an email from North Coast Regional Water Quality Control Board staff approving the proposed amendment.
 - b. On May 12, 2020 I submitted proposed amendment information to Debra O'Leary at the US Army Corps of Engineers and discussed the amendment with Ms. O'Leary. Ms. O'Leary indicated that she will likely be able to approve the amendment administratively with an email letter.
 - c. The District Board will consider approving the amendment during their June 11, 2020 Board Meeting.
2. Below is an updated site map. Barges would avoid eelgrass by a minimum of 20 feet and the shellfish nursery by a minimum of 50 feet.



3. The following measures would be implemented to protect eelgrass and the shellfish nursery from potential impacts.
 - a. Truck beds would be sealed to prevent spillage during transportation.
 - b. Excavator / crane operators would be directed to minimize the potential for spillage by allowing bucket loads to drip into the barge hopper prior to swinging the material to the trucks.
 - c. District staff would inspect operations at the beginning of off-loading and periodically to ensure spillage is avoided. District staff and the contractor would take pro-active measures to reduce spillage if any is observed. For example, measures could include reducing the amount of material in each bucket load or moving the barge to a different location.
 - d. Clear markings (flags and/or paint) would be made on the dock that delineate eelgrass buffer boundaries. Operations would not be allowed within the 20 foot eelgrass buffer or eelgrass areas.
4. The following measures would be implemented to prevent dock damage from truck use.
 - a. The dock would be inspected prior to the project and any minor repairs necessary would be implemented.
 - b. Crane mats or similar equipment would be used to distribute truck weights more evenly across the dock.
 - c. Contract requirements will ensure that the contractor leaves the dock in the same or better condition as prior to the project.

Please contact me at (707) 496-2088 or awagschal@humboldtby.org with any questions.

Thank you,

A handwritten signature in black ink, appearing to be 'AW', with a long horizontal stroke extending to the right.

Adam Wagschal, Deputy Director

From: [Stevens, Brandon D.@Waterboards](mailto:Stevens.Brandon.D.@Waterboards)
To: [Adam Wagschal](mailto:Adam.Wagschal)
Subject: RE: Dredging
Date: Thursday, May 14, 2020 12:34:16 PM
Attachments: [CC Permit Amendment PD - 2020 0513.pdf](#)

Hi Adam,

Without digging through the application materials, was the dewatering basin size proposed that early? If not, I don't think the certification would have necessarily specified the dewatering basin size as long as the various proposed sizes didn't have differing amounts of jurisdictional impacts.

Since there isn't a material change with the amount of material dredged, the location of the outfall, or the method manner of dredging, the attached request is acceptable by the North Coast Regional Water Quality Control Board.

This email does not authorize any additional dredge or fill impacts to jurisdictional features. Please contact me if you have any questions.

Thanks,

Brandon Stevens

Environmental Scientist
Nonpoint Source/401 Certification Unit
North Coast Regional Water Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403
brandon.stevens@waterboards.ca.gov
Office: 707-576-2377

The governor of California has issued a statewide shelter in place order due to the COVID-19 emergency. The Water Boards are continuing day-to-day work protecting public health, safety, and the environment. However, most staff are working remotely and we continue to check email regularly. Thank you and stay healthy and safe.

From: Adam Wagschal <awagschal@humboldtby.org>
Sent: Wednesday, May 13, 2020 4:36 PM
To: Stevens, Brandon D.@Waterboards <Brandon.Stevens@Waterboards.ca.gov>
Subject: RE: Dredging

EXTERNAL:

Hi Brandon,

It is the same site as considered in the existing certification. The CDP has a maximum size, but I don't see a similar requirement in the certification. The methods for draining back to the bay, containment, length of residence, etc. would all be the same.

I attached the PD that I developed for the Coastal Commission. This describes the proposed changes, but as I previously mentioned, I don't think the Certification has the same requirements as the CDP and I do not know if an amendment to the Certification is needed.

Please let me know your thoughts on this after reviewing the attachment. Call anytime to discuss, my schedule is pretty open.

Thanks! Adam
707 496 2088

From: Stevens, Brandon D.@Waterboards <Brandon.Stevens@Waterboards.ca.gov>
Sent: Wednesday, May 13, 2020 1:18 PM
To: Adam Wagschal <awagschal@humboldtбай.org>
Subject: RE: Dredging

Hey Adam,

Hmm interesting...

I would think we might need a little more detailed information. If the place of dewatering is a new spot, RMT II? And the whole setup including water draining back to the bay, containment, length of residence time etc is all new it would be good to get a site / project description including photos and it might be something to add to the cert as an amendment?

Sort of sounds like a "material change" and would be good to review and issue an amendment if you feel necessary. If it is at the same spot as the clarifiers and very similar outfall, may not be necessary.

Thanks,

Brandon Stevens

Environmental Scientist
Nonpoint Source/401 Certification Unit
North Coast Regional Water Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403
brandon.stevens@waterboards.ca.gov

Office: 707-576-2377

The governor of California has issued a statewide shelter in place order due to the COVID-19 emergency. The Water Boards are continuing day-to-day work protecting public health, safety, and the environment. However, most staff are working remotely and we continue to check email regularly. Thank you and stay healthy and safe.

From: Adam Wagschal <awagschal@humboldtбай.org>

Sent: Monday, May 11, 2020 4:15 PM

To: Falcone, Gil@Waterboards <Gil.Falcone@waterboards.ca.gov>; Stevens, Brandon D.@Waterboards <Brandon.Stevens@Waterboards.ca.gov>

Subject: Dredging

EXTERNAL:

Hi Brandon and Gil,

I hope you are well.

We are working towards dredging at Woodley Island Marina this year with dewatering at RMT II and future beneficial use. We are having challenges associated with use of the existing clarifiers that we previously proposed. We are working on a better solution which would involve:

1. Larger temporary dewatering basins (i.e., basins built with k-rails and liners) than previously envisioned.
2. Rather than reslurrying and pumping the dredge material from the barge to the dewatering units, using an excavator to transfer the material from the dredge barge to trucks and from the trucks to the nearby (e.g., a few hundred feet) dewatering basins.

This process would eliminate the need to pump bay water for reslurrying and thus completely avoid any associated potential bio impacts. It would also reduce the amount of water that needs to be managed for dewatering.

The Certification and Amendment did not establish a maximum size of dewatering basins or specifically describe the reslurrying process. Do you know if some type of amendment would be required for the two items listed above?

I'm currently working through this topic with Melissa Kraemer and will start coordinating with Debra O'Leary.

Thanks, Adam

Adam Wagschal
Humboldt Bay Harbor, Recreation and Conservation District
Office: 707-443-0801
Cell: 707-496-2088
humboltdbay.org

From: [O'Leary, Debra A CIV USARMY CESP \(USA\)](#)
To: [Adam Wagschal](#)
Subject: RE: Project Alternative
Date: Thursday, May 28, 2020 1:13:11 PM

Hi Adam,

The Corps permit will not require a modification because the change of method of unloading the dredged sediment is a such a minor change provided that care is taken to prevent sediment from being dropped in the bay during offloading. If you have any questions please let me know.

-Debra

-----Original Message-----

From: Adam Wagschal [<mailto:awagschal@humboldtby.org>]
Sent: Tuesday, May 26, 2020 2:19 PM
To: O'Leary, Debra A CIV USARMY CESP (USA) <Debra.A.O'Leary@usace.army.mil>
Subject: [Non-DoD Source] RE: Project Alternative

Hi Debra,

I'm just checking in about the proposed modification to the dredged material off-loading method. I attached correspondence with NC Regional Water Quality Control Board staff indicating that the Water Board will not require a permit amendment.

Please let me know if you require any further information and if you have determined whether some type of amendment will be required for the Army Corps permit.

Thank you, Adam

707 496 2088

From: Adam Wagschal
Sent: Thursday, May 14, 2020 4:16 PM
To: O'Leary, Debra A CIV USARMY CESP (USA) <Debra.A.O'Leary@usace.army.mil>
Subject: Project Alternative

Hi Debra,

Thank you for your time discussing the proposed Woodley Island Marina dredging project alternative. Permit File # 1996-22216 as modified by Permit Modification 1 allows for (1) dredging at Woodley Island Marina; (2) dredged material offloading at Redwood Marine Terminal II; and (3) dredge material dewatering at Redwood Marine Terminal II. The offloading method described in the existing permit involves reslurrying the dredged material and

pumping it from a barge to temporary dewatering basins. The Humboldt Bay Harbor District is pursuing approvals to allow for an alternative dredged material offloading method. Specifically, rather than the material being offloaded with pumps, an excavator would transfer the material from the barge to trucks on the dock. The trucks would deliver the dredged material to the temporary dewatering basins approximately 250 feet away from the dock, in the same area that is already permitted. Other than this proposed change to the offloading method, all permit conditions and considerations would remain the same. The proposed offloading configuration is shown in the figure below.

Please let me know if you need further information to consider this request or if the District can proceed with this alternative offloading method.

Thank you, Adam

Adam Wagschal

Humboldt Bay Harbor, Recreation and Conservation District

Office: 707-443-0801

Cell: 707-496-2088

humboldtbay.org