

Statement of Account

Date From: 19-Aug-2008 Date To: 19-Nov-2008

Account No: 43653 MARK DAN MCDERMID
FIN: 35669 1525 WEST 29TH AVE
VANCOUVER BC V6J 2Z1

Current Balance \$ 0.00
Credit Limit 0.00
Available Balance \$ 0.00
As of Date 19-Nov-2008

Journal Entries

Date	Amount	Type	Payment Form	Transaction Type	Trans SEQ
19-Nov-2008	100.00	Sale	Account	Change Licence Status	188732
04-Nov-2008	100.00	Deposit	Cheque		

Printed from the Fisheries and Oceans Canada (Pacific Region) intranet on November 19, 2008 at 0955

Receipt for licence fees
X MCFR 1/15/2008
WJ - J.



2008 CONTAMINATED INVERTEBRATE SURVEY LICENCE

This Scientific Licence is issued under the authority of the Fisheries Act Section 4 (1) of the Management of Contaminated Fisheries Regulations, 1990.

Licence Number: XMCFR 15 2008

Commence Date: 10 Nov 2008

Expiry Date: 31 Dec 2008

Purpose: Geoduck Broodstock Collection

Licensee:

MARK DAN MCDERMID
1525 WEST 29TH AVE
VANCOUVER BC V6J 2Z1

Phone: 604-732-4622

Assisted by: Sean Wayne Williams, using the unlicensed vessel "Abrupt One" registered as 14K22095

This licence is subject to the terms and conditions that are included herein and/ or attached hereto. These conditions are part of the licence and may not be removed. This licence is not valid until read and signed by the licensee.

Licensee:

Signature Date
[Signature] NOV 18 2008
Don Radford, Area Director Date
Fisheries and Oceans Canada, Pacific Region

Species and Catch Limits:

Species Catch Limit / Comment
Geoduck Clam 200 Pieces

Collection Methods / Gears:

DIVE Standard Geoduck Harvest Equipment

Areas:

Management Area 17 Subareas 17-5 and 17-6 other than closed areas indicated on attached map of the harvest area.

Reporting Requirements:

By Date Specified, due 31 Jan 2009

This licence was prepared by: Juanita Rogers

Dated: 18 Nov 2008



Terms and Conditions

A DFO- approved Observer, Sean Williams of 3453 FALCON DRIVE NANAIMO BC V9T 4G7, shall be on board when harvesting is taking place, to document the location of harvest by completion of dive data logsheets. Logsheets are to be completed on-board the harvest vessel prior to landing geoduck. A sample logsheet is attached as Appendix 1.

The Observer shall collect and document morphometric data including shell length, wet weight and quality assessment, and photograph all animals collected. This information is to be forwarded to R. Harbo, Fisheries and Oceans Canada, 3225 Stephenson Point Road, Nanaimo BC V9T 1K3 within 30 days of the collection. Data collection information is included in Appendices 2 and 3.

Genetic samples are required from at least 25 animals from the authorized harvest area. The samples from each harvest site should be grouped and labelled separately. Samples are to be sent to DFO by January 31, 2009. Sample protocol and contacts are provided in Appendix 4.

Geoducks collected under authority of this licence may continue to be held at the Island Scallops Ltd. hatchery (5552 West Island Highway, Qualicum Beach BC). A second hatchery, Evening Cove Oysters Ltd. (1360 Stewart Avenue, Nanaimo BC) may also be used.

Specimens caught and retained under authority of this licence may not be shipped or provided to any party not named on this licence.

A Section 56 Fishery (General) Regulations Permit is required for the transfer of hatchery-raised geoduck juveniles from the hatchery to marine waters.

See attached documents, including Collectors List Appendix 5.

Only those persons listed on the attached schedule of harvesters are permitted to harvest and hold catch collected under the authority of this licence.

The DFO Office responsible for the area in which fishing takes place shall be notified on each occasion prior to the collection of samples. Notification shall occur by telephone during normal business hours. If you are unable to notify the local office on evenings or weekends, advise the DFO Radio Room at 1-800-465-4336 prior to sampling.

Copies of this licence must accompany the collecting personnel, be on board any collecting vessel and be carried with the transport vehicle at all times during collection and transport of samples. The licence must be produced upon the request of a Fishery Officer or Guardian.

This licence authorizes collections to be made by the licensee and employees, volunteers and students of the licensee provided that all persons, other than



minors who are engaged in activities under the authority of this licence, are carrying suitable photo identification to be produced upon request of a Fishery Officer or Guardian.

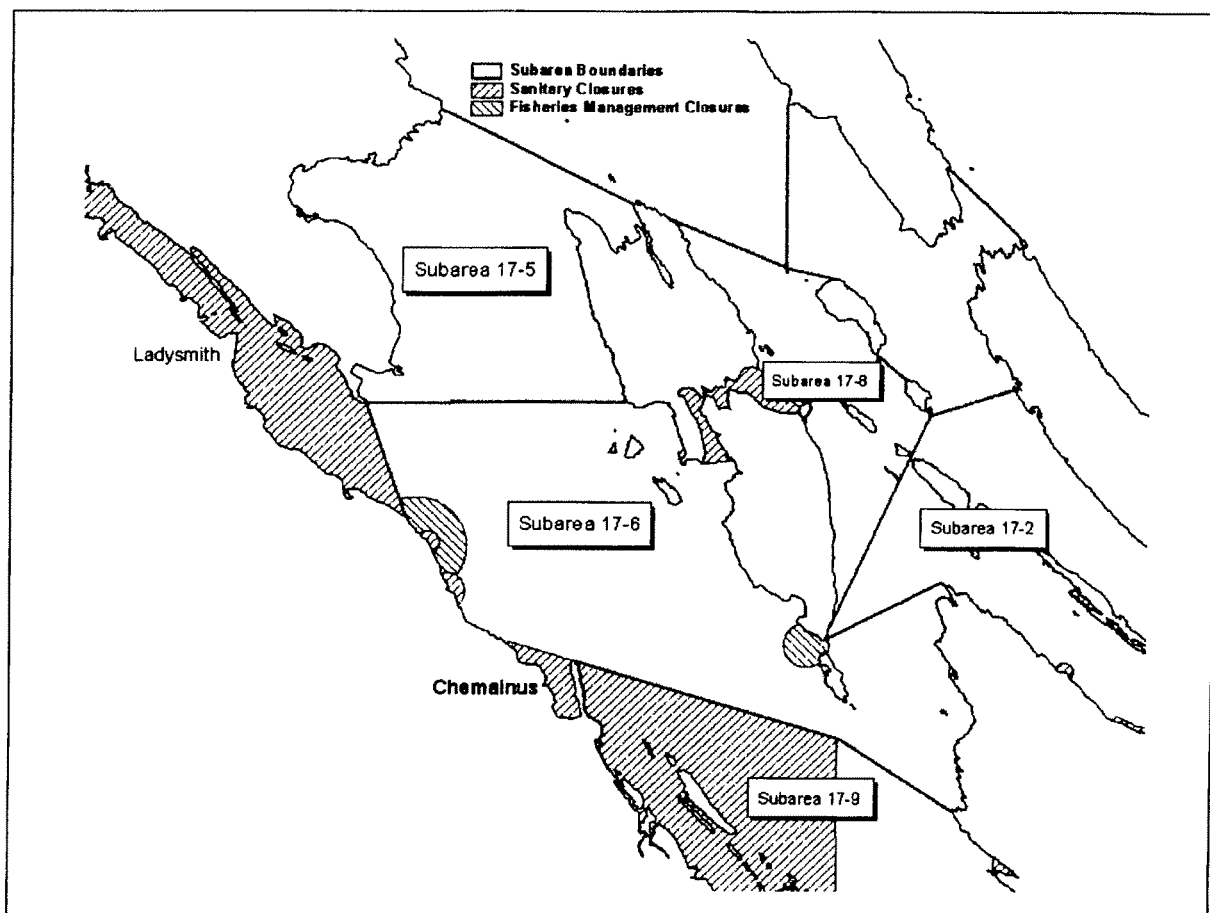
Specimens retained under the authority of this licence may not be utilized, sold or processed for food or bait.

A Section 56 Fishery (General) Regulations Permit is required for the transfer of live specimens between marine areas, or to holding tanks which discharge to marine waters. The licence holder is required to make application to the Federal/ Provincial Introductions and Transfers Committee. Contact numbers and application forms are available from their website:

http://www-heb.pac.dfo-mpo.gc.ca/intro_trans/transfers_e.htm

This licence may be revoked or amended by the Department prior to the expiry date as may be considered necessary by the Department.

Map 1. Harvest area includes portions of Subareas 17-5 and 17-6 not covered by sanitary or management closures.



APPENDIX 1. GEODUCK AND HORSE CLAM HARVEST LOG

For brood stock collections reporting please complete the relevant portions of Sections A and C of the logsheet. Use a separate copy for each collection day.

LANDING DATE IN PORT:		GEODUCK <input type="checkbox"/> HORSE CLAM <input type="checkbox"/> VALIDATION & HARVEST LOGBOOK		VALIDATION ID No.					
Section A									
G-TAB		VESSEL NAME		VESSEL OPERATOR					
DATE ONTO PACKER		TIME (24 hr clock)		# CAGES					
MGMT AREA		SUB - AREA		QUOTA AREA					
OFFLOAD TIME		VAL. METH.		PACKER GROSS WT.					
TOTAL CAGES		GROSS DOCK WEIGHT		PACKER NAME					
TOTAL LINERS		TOTAL CAGE WT + LINER WT		BUYER					
CAGE TAGS ?		TRANSFER TO / FROM G-TAB #		SPLIT LOAD? YES NO					
HOLD CHECK? Y N		G-TAB #		HOW MANY PARTS? →					
Observer's Comments:									
Section C									
DIVE HARVEST INFO - USE A NEW PAGE FOR EACH NEW QUOTA AREA FISHED. - ENTER THE DIVE INFO FOR EACH DIVE. ALSO RECORD GPS LAT. & LONG. IF POSSIBLE. - USE NEXT DIVE LINE TO RECORD GPS COORDINATES WHEN NECESSARY, AS SHOWN BELOW.									
DIVE No.	DIVE SITE	HARVEST DATE (m/d)	SUB-AREA	HARVEST LOCATION <small>(bay, pass, island; N.S.E.W.; LAT & LONG)</small>	DIVER NAME <small>(last name, first name)</small>	DIVER MINUTES	DEPTH (ft)		# CAGES
1	B	10 / 25	9	Otter Pass E., Trap Islands	Clarke, Jim (example)	87	min. 24	max. 34	15
2	B	10 / 25	9	" 52° 08.311' 129° 42.693'	Brodie, Al (example)	130	30	35	17
3									
4									
5									
6									
7									
8									
9									
10									
TRUE PIECE COUNTS ?				YES	NO	TOTALS			
IS YOUR HARVEST CHART MARKED?				YES	NO	PIECES	MINUTES	CAGES	

prepared by ARCHIPELAGO MARINE RESEARCH LTD. Please Print, Use Pen
 WHITE COPY --- Observer YELLOW COPY --- Truck and Plant PINK COPY --- Vessel

APPENDIX 2. METHOD TO MEASURE GEODUCK SHELL LENGTH.

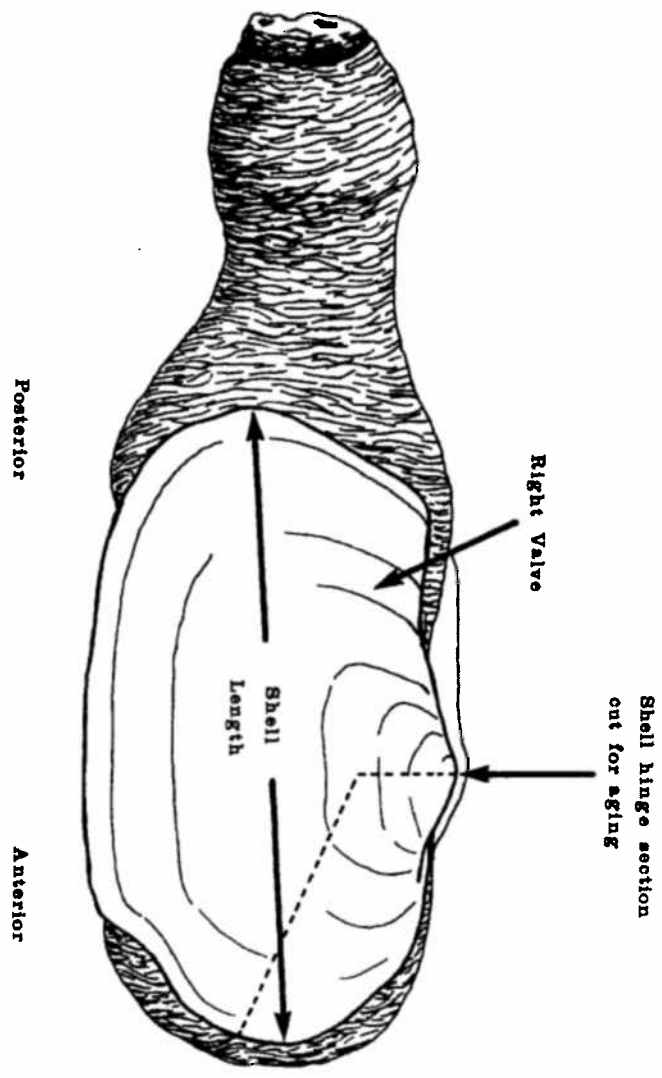


Fig. 2. Geoduck clam (Panope generosa).

From Thibault et al. 1985.

Appendix 4. GEODUCK SAMPLING PROTOCOLS FOR DNA ANALYSIS

Sample 100 adult individuals per site for DNA analysis. The sampling process is a very small flesh clip, is non-destructive and product can continue to market, or into brood stock use. The potential effects of the sampling procedure on the live holding of brood stock has however not been tested at this time and may require further investigation by industry.

For DNA analyses to be conducted in the Molecular Genetics Lab (MGL) at the Pacific Biological Station, the sampling vials, boxes and ethanol mentioned below can be obtained from the MGL. Contact Liane Stenhouse (250 756-7316; liane.stenhouse@dfo-mpo.gc.ca) or Janine Supernault (250 756-7213; janine.supernault@dfo-mpo.gc.ca) for sampling supplies and to arrange sample delivery.

Each box containing sample vials should be clearly labeled with:

- the harvest location information (DFO subarea, location name and aquaculture tenure Canadian Land File number if applicable).
- harvest date
- harvest vessel
- sampler name and contact information

Collect tissue samples from a random selection of live or freshly dead animals. If necessary, frozen animals may also be used – care should be taken to thaw the tissue as little as possible during sampling. It is best to place the frozen tissue directly into the ethanol.

Very small (~20 mg) pieces of tissue are required. Rinse sampling gear (scissors, clippers or tissue punchers) well between samples in water or ethanol.

Remove a sample of tissue from the membrane between the siphons at the top of the neck. This sample can be obtained using either a small hole punch or small scissors.

Place the tissue sample from each individual (or the entire individual if sampling larvae) into a separate 2 ml vial with a screw cap lid. The vials should contain 95% undenatured alcohol and can be filled prior to or immediately after the tissue sample is added. The vial should be no more than 25% full of tissue sample with the remainder filled with ethanol.

Ensure that the vials are labeled with individual identifiers if required and placed in boxes designed to hold 100 vials. Labeling can be done with a Sharpie permanent marker. Label the box with information on the species, date of sampling, location or origin of samples, sample collectors, etc.

Once the samples are in 95% ethanol they can be stored at room temperature until transported to the lab for analysis.

The most important things are to rinse the sampling tool between individuals, ensure the ethanol does not get diluted with water during the process of sampling, and to ensure the caps are tight on the vials once sampling is completed.

Plan to deliver the sample boxes directly to the Pacific Biological Station. Please be sure to make prior arrangements during regular business hours to ensure staff are on hand to receive the samples. Contact Liane Stenhouse (250 756-7316; liane.stenhouse@dfo-mpo.gc.ca) or Janine Supernault (250 756-7213; janine.supernault@dfo-mpo.gc.ca) for sampling supplies and to arrange sample delivery.

APPENDIX 5. COLLECTORS' LIST

Only those persons listed on the attached schedule of harvesters are permitted to harvest and hold catch collected under the authority of this licence.

Date: November 14, 2008

Last Name	First Name(s)	Affiliation
McDermid	Dan Mark	BC Pacific Oysters Ltd.
Williams	Sean Wayne	BC Pacific Oysters Ltd.