2024 ANNUAL MANAGEMENT PLAN

SOLOMON GULCH HATCHERY

Valdez Fisheries Development Association, Inc.

This Annual Management Plan (AMP) is prepared to fulfill the requirements of 5 AAC 40.840. This plan must organize and guide the hatchery's operations regarding production goals, broodstock management, and harvest management of hatchery returns. The plan must be developed with consideration of the hatchery's production cycle. The production cycle begins with adult returns, that lead to egg takes and end with fish releases. Action may be taken outside of the management plan if allowed under the hatchery permit or modified by emergency order. In season assessments and project alterations by Valdez Fisheries Development Association (VFDA) or Alaska Department of Fish and Game (ADF&G) may result in changes to this AMP in order to reach or maintain program objectives. VFDA will notify the ADF&G private nonprofit (PNP) hatchery program coordinator in a timely manner of any departure from the AMP. The ADF&G PNP coordinator will advise as to whether an amendment, exception report, or other action is warranted. No variation or deviation will be implemented until an AMP amendment has been approved or waived by both the department and VFDA. This policy applies to all hatchery operations covered under the AMP.

I. OPERATIONAL PLAN

1.1 Egg-take Limits

Pink Salmon: The target number of pink salmon eggs is 270.0 million. Broodstock requirement is 408,702 fish, assuming:

a. 1,700 eggs/female
b. 50/50 female to male sex ratio
c. 10% holding mortality
d. 5% overripe/green fish
e. 35,000 creek spawners (above and below weir)
f. Adequate brood fish return to the brood exclusion zone (BEZ) and volitionally enter the hatchery. The escapement to the hatchery should be adequate to satisfy all broodstock needs and donors from other sources will not be required.

Coho Salmon: The target number of coho salmon eggs is 2.0 million. Broodstock minimum requirement is 1,058 fish, assuming:

a. 4,367 eggs/female
b. 50/50 female to male sex ratio
c. 10% holding mortality
d. 5% overripe/green fish

All eggs will be taken at SGH.

1.2 Broodstock Acquisition Schedule

Pink salmon

A minimum of 408,702 pink salmon are needed for entry into the fish ladder. VFDA will be guided in its broodstock collection as follows:

1) To ensure that the run timing is proportionally represented in broodstock, a collection schedule will be implemented based on the run-timing percentages by date, to establish a broodstock collection goal by week. The collection schedule is based on historical run-entry data (Table 1).

2) Broodstock collection will be prioritized above cost recovery.

3) A BEZ will be established between SGH and Allison Point. This zone will be used to regulate the cost-recovery fleet to ensure broodstock and quality of sales fish. The BEZ is the area adjacent to the hatchery and inside Allison Point where brood fish traditionally stage.

Coho salmon

Broodstock collection will begin as fish return to the hatchery facility in late August through the end of September (Table 3). A formalin fungal treatment may be administered to these brood fish according to Investigational New Animal Drug (INAD) regulations to reduce broodstock losses while being held.

In the event that coho salmon broodstock needs cannot be met due to inadequate adult returns to SGH, coho salmon eggs may be collected from Corbin Creek for use at SGH in order to satisfy egg-take goals.

The following conditions apply:

1) Regional ADF&G Division of Sport Fish staff Prince William Sound (PWS) area management biologist (AMB) and Division of Commercial Fisheries staff (PWS purse seine AMB) shall be notified far enough in advance to schedule a survey of Corbin Creek prior to any egg takes;

2) No egg takes will be allowed without escapement surveys conducted by representatives of VFDA; and

3) The following removal schedule will be adhered to:
   Stream Name: Corbin Creek
   AWC Code: 221-60-1138-2095
   Minimum Escapement Goal: 1,600 coho salmon
   Desired Escapement Goal (DEG): 2,500 coho salmon

If total escapement enumeration is:	Left in stream:	Removed for hatchery[1]
Less than 1,600 fish	1,600 + (60% over 1,600)	None
More than 1,600 fish	1,735 + (50% over 1,825)	90 + (50% over 1,825)
More than 1,825 fish	1,848 + (40% over 2,050)	203 + (60% over 2,050)
More than 2,275 fish	1,938 + (30% over 2,275)	338 + (70% over 2,275)
More than 4,149 fish	2,500	1,649

[1] No more than half may be female and total take shall not exceed the specified egg-take goal. All pre egg-take mortalities count as part of the hatchery's allocation. Such mortalities can only be replaced after the stream's DEG is obtained and shall not exceed 25% of the hatchery's adult take goal.

1.3 Egg-take Schedule

The pink salmon egg-take schedule for 2024 is detailed in Table 2 and is based on recent trends.

The coho salmon egg-take schedule is detailed in Table 3 and will occur as fish ripen at the hatchery facility, from mid-September through the end of October. It is the intent of VFDA to keep the early coho salmon run on its historical schedule to optimize the sport fishery and processing markets.

1.4 Egg Transport and Broodstock Carcass Disposal Plans

Fertilized eggs or gametes intended for incubation will not be transported off-station. The carcass of a salmon from which the milt or eggs are extracted for lawful use as broodstock and not used for fertilization may be disposed of in accordance with 5 AAC 93.350(d). If carcasses are disposed of, eggs not used for fertilization will not be removed from more than 10% of the female broodstock. If the carcasses disposed of, in which eggs are removed and sold, exceeds 10% of the female broodstock, the department will be notified immediately and proceeds from the sale of the eggs will be surrendered to the state. Broodstock carcasses will be processed in accordance with Alaska Department of Environmental Conservation (DEC) requirements and discarded into deep water as stated below. However, VFDA may sell broodstock carcasses if a market is available. Roe in excess of 10% of broodstock requirements may be removed, if a lawful use of those carcasses is available, and revenue from the roe is considered part of cost recovery.

Pink Salmon: Eggs taken at SGH will be fertilized and delivered (approximately 50 yards) to the incubation building for seeding and water hardening in deep matrix incubators. In 2024, VFDA will continue to establish nonhuman consumption markets for hatchery broodstock carcasses. Those broodstock carcasses that cannot be sold will be given away, ground, or transported to deep water in Port Valdez. VFDA has received general hatchery permit AKG130029 to discharge ground fish waste into a ZOD as defined under the NOI, if necessary. Whole fish may be disposed of in deep water, according to the Carcass Disposal Plan portion of the AKG130029 permit. Grinding equipment was installed in 1995 to allow for efficient carcass disposal in the event there is no market for salmon broodstock carcasses. Nontraditional markets for utilization of this byproduct may also be sought. A complete utilization of pink salmon carcasses associated with the egg take and roe

recovery was realized in 2010. Final sales and distribution agreements and procedures for 2024 have not been prepared at this time.

Coho Salmon: Eggs taken at SGH will be treated the same as the pink salmon eggs, with the exception that an iodophor egg disinfection treatment will also be given immediately after all eggs are loaded into the incubators. Coho salmon broodstock carcasses will be offered to the public for dog food or other nonhuman consumption uses. Those broodstock carcasses that cannot be sold will be ground or transported to deep water in Port Valdez in accordance with AKG130029 permit, as stated above

1.5 Incubation Plans

Standard incubation plans for eggs spawned at SGH are summarized below:

Species	Incubator Type	Number of Units	Eyed Egg Loading (per unit)	Total Eyed Eggs	Total Green Eggs Required	Estimated Fry to Release
Pink salmon	NOPAD S48	672 56	283,196 1,423,077	190,307,700 79,692,300	270,000,000	254,000,000
Coho salmon	NOPAD	16	~125,000	2,000,000	2,000,000	1,780,000

The above table was generated with the following assumptions:

1. 94% survival from green egg to fry release for pink salmon.
2. 89% survival from green egg to smolt release for coho salmon.

All eggs will be incubated at the SGH during 2024.

1.6 Rearing and Release Plans

Pink Salmon: All pink salmon fry surviving from the 270 million eggs taken in 2023 will be reared and released at the SGH site in the spring of 2024. Fry will be pumped via a six-inch plastic pipe to the net pens. Outmigration from the incubators is non-volitional with enumeration by book inventory. Fish will be fed either by hand or with mechanical feeders using commercial rations. Pink salmon will be released by lowering a portion of the net pen's side. Staggered releases will occur based on previous growth and the measured plankton population growth curve. It has been the experience at SGH, through extensive research, that the best runs occur from an early release on the zooplankton bloom rise and a very late release of large 0.75 to 1.0 gram fry. Approximately 65% of the fry will be released at the plankton bloom and approximately 35% of the fry held for late release. This schedule avoids the possible interference and hazards occurring near shore to the whole year class. Release timing may vary due to environmental conditions, work schedules, and abundance of predators.

Coho Salmon: Rearing will occur in indoor raceways until May 2024 when they will be transferred to saltwater net pens for grow-out to 18 to 20 grams. Feeding is done by a mechanical feeder using commercial rations. They will be held in net pens for approximately 2-6 weeks for imprinting and growth while being fed commercial rations and released in mid-June. In October 2023,

approximately 2.0 million coho salmon eggs were taken at SGH. They will be held in NOPAD incubators until swim-up in May 2024. The resultant fry will be reared in freshwater raceways until May 2025, when they will be transferred to saltwater net pens for grow-out to 18 to 20 grams. They will be released as yearling smolts in mid-June of 2025.

King Salmon: VFDA does not intend to egg take, incubate, or rear any King salmon under its permitted capacity for 2024.

1.7 Fry Transport Methods

Twenty-thousand coho salmon smolts may be transported in tanks, by boat, to a saltwater net pen near Tatitlek in Boulder Bay. The transport will be done in fresh water, with salt added for stress reduction. Standard fish transport equipment, using recirculation and bottled oxygen, will be used and carried on board a transport vessel provided by the Village of Tatitlek.

1.8 Planned Releases This Calendar Year

Program Name	Brood Year	Estimated Release Date	Estimated Number	Release Life Stage	Type & % Mark	Hatch Code
Early Release Pink Salmon	2023	4/25-5/14/24	163,672,766	Fry	TM, 100%	6H
Late Release Pink Salmon	2023	4/29-5/23/24	88,131,489	Fry	TM, 100%	6H
SGH Coho Salmon	2022	6/7-6/20/24	1,904,274	Smolt	TM, 100%	6,2H
Boulder Bay Coho Salmon	2022	5/25-6/5/24	19,661	Smolt	TM, 100%	6,2H

1.9 Previous Brood Years Remaining in Culture During Entire Calendar Year

Program Name	Brood Year	Estimated Number (Jan. 1)[1]	Estimated Release Number[1]	Estimated Release Date	Life Stage
SGH Coho Salmon	2023	1,822,385	1,804,161	6/1-6/20/24	Eyed eggs
Boulder Bay Coho Salmon	2023	n/a[2]	19,661	5/15-6/5/24	Eyed eggs

[1]Estimated numbers based on preliminary sampling and raceway survival.
[2]Approximately 20,000 smolt of planned SGH released coho will be moved to Boulder Bay.

2.0 Permitted Capacity

In 1981, VFDA was issued Private Nonprofit (PNP) hatchery permit #15. SGH is presently permitted for 270.0 million green pink salmon eggs, 2.0 million green coho salmon eggs, and 300,000 green king salmon eggs. All permitted releases are from the SGH, except for a 20,000 coho salmon smolt release at Boulder Bay. In 2012, SGH experienced a poor run of coho salmon and as a result of minimal brood fish escapement to the hatchery, received FTP 12A-0123. If the coho salmon run to SGH is inadequate to meet egg-take goals, broodstock may be taken from the original donor stock of Corbin Creek as conditioned by the local AMB. The following table

summarizes the current fish transport permits (FTPs) issued to VFDA.

Fish Transport Permit (FTP)	Expiration Date	Species	Stock	Purpose
16A-0018	12/31/2028	pink salmon	Vlassof/ Gregorieff	Allows the egg take, incubation, and release of resultant release of progeny from 270.0 million Vlassof/Gregorieff perpetual stock pink salmon eggs at SGH.
16A-0017	12/31/2028	pink salmon	Siwash	Allows the egg take, incubation, and release of resultant release of progeny from 270.0 million Siwash stock pink salmon eggs at SGH.
21A-0002	1/1/2031	coho salmon	Corbin Cr	Allows the take of 2.0 million eggs, incubation, and release of resultant progeny from coho salmon at SGH.
21A-0001	4/1/2031	coho salmon	Corbin Cr	Allows transport of 20,000 coho salmon smolt from SGH to Boulder Bay for release at Tatitlek.
12A-0123	12/31/2028	coho salmon	Corbin Cr	Allows for the backup egg take of 2.0 million eggs from Corbin Creek to supplement egg-take goals if inadequate returns and transfer to SGH.

II. DONOR STOCK MANAGEMENT

Hatchery runs of pink and coho salmon are anticipated to be sufficient to meet broodstock goals in 2024 and no other donor stock management is anticipated.

III. HATCHERY RETURN MANAGEMENT

3.1 Probable Hatchery Fish Migration Routes and Timing

Data from tagging and commercial harvest indicates that returning hatchery fish normally follow the east and west shoreline of Valdez Arm and Narrows when entering Port Valdez. Hatchery fish often school inside Jack Bay on the north shore, and along both the northern and southern shores of Port Valdez.

Pink salmon broodstock selection for SGH has emphasized the earliest feasible timing to minimize intermixing of hatchery and wild stocks. Most of the hatchery pink salmon run should be present in the approach and terminal areas of Port Valdez between mid-June and mid-July. Run entry into Port Valdez to support cost recovery efforts historically begins in late June and the majority of commercial harvest targeting SGH pink salmon is expected to conclude by end of July.

3.2 Special Harvest Area

A 1,000-yard special harvest area (SHA) adjacent to the hatchery is described in the *SGH Management Plan* (5 AAC 24.366). This area is designated for the cost-recovery harvest of pink

salmon in excess of broodstock needs. The SHA boundary prior to July 5 has been extended westward to include the terminal harvest area (THA), as shown in Figure 1. The hatchery operator will be permitted to harvest sales fish inside the THA until July 5. Beginning July 5, the SHA is redefined as all waters within a 1,000 yard radius of the terminus of Solomon Gulch Creek. In consultation with ADF&G, boundaries may be adjusted by emergency order (EO) in season for various run timing and run-size criteria.

Coho salmon taken for cost-recovery will be removed from the hatchery raceways. After September 2, 2024 (Labor Day), common property openings may occur in the THA and/or SHA to harvest surplus coho salmon. Based upon in-season assessment of wild stock escapement and other in-season considerations, the THA and SHA boundaries may be changed by EO to include portions, or all, of the Valdez Narrows subdistrict.

In the event the SHA is opened to the common property fisheries (CPF), the boundaries will be designated by a combination of shore markers and anchored buoys, or GPS lines. Shore markers may also be installed to designate boundaries of the THA. It will be the responsibility of VFDA to ensure the SHA markers and buoys are in place and meet the requirements of Alaska Wildlife Troopers (AWT). It is the responsibility of AWT to enforce the boundaries.

3.3 Hatchery Run to the Special Harvest Area (SHA)

Pink Salmon: VFDA's 2024 anticipated pink salmon run to SGH is 15,530,878 million fish, assuming a 5.94% marine survival from the 2023 fry release of 261,462,601 million fish. A total of 408,702 salmon will be needed to meet egg-take objectives at the hatchery. The 2024 harvest revenue goal is approximately $4,040,880. The 2024 VFDA pink salmon run will be managed on meeting the revenue goal.

The number of pink salmon available to the CPF will depend on a combination of marine survival, average adult fish weight, and the price per pound received by VFDA for cost-recovery fish. Average adult weight and price per pound assumptions are the same for each case. The even-year brood marine survival rate varies from 1.69% at the low range to 11.64% at the high range.

VFDA's standard business plan is based on the average run of 6.27% over its 41-year history. VFDA's projected run for 2024 is 5.94%, based on the average of the last ten, even-year runs. The ranges are based on the average of SGH's last ten even-year runs, with a 50% reduction for the low and a 50% increase for the high. The forecast range assumptions are generic predictions showing possible revenue scenarios for VFDA and CPF harvests. At the midrange, VFDA would achieve the revenue goal and the CPF harvest will approach 71.3% of the run. At the high range, VFDA would achieve the revenue goal and the common property harvest will approach 80.9% of the run. At the low range, VFDA will achieve its revenue goal and the CPF harvest will approach 42.6% of the run. If run strength falls below the low-range projection, VFDA may suffer a revenue shortfall. If there is a run failure, and revenue shortfall, VFDA would reduce the operating budget to an existence basis, pursue emergency loan relief, and use a portion of its run failure fund. The CPF would be reduced as much as possible.

VFDA will place all revenue from pink salmon roe sales into the operating budget to reduce any deficits from pink salmon fish sales. Any revenue generated from pink salmon roe or flesh sales in

excess of the operating budget will be applied to debt retirement, CIPs, emergency funds, or carried to next year's revenue.

VFDA Pink Salmon Return Assumptions for 2024

	Return Range		
	Low	**Mid**	**High**
% Survival	2.970%	5.940%	8.910%
Adult Return Estimate	7,765,439	15,530,878	23,296,318
Adult Average Weight	3.33	3.33	3.33
Price/lb	$0.30	$0.30	$0.30
Revenue Goal	$4,040,880	$4,040,880	$4,040,880
Brood stock	408,702	408,702	408,702
Sales Fish Needed (Cost Recovery)	4,044,925	4,044,925	4,044,925
Total Fish Required by VFDA	4,453,627	4,453,627	4,453,627
Fish Surplus to Hatchery Needs (CPF Harvest)	3,311,812	11,077,252	18,842,691
% Contribution to CPF	42.6%	71.3%	80.9%

Note: Price/lb, fish required by VFDA, and adult average weights are only estimates at this time.

Coho Salmon: The 2024 adult run of coho salmon to the hatchery is anticipated to be 54,375 fish, assuming a 2.99% (last 10-year avg.) marine survival for brood year 2021 smolt release of 1,818,560. A total of 1,058 coho salmon will be needed to meet egg-take objectives. The harvest of coho salmon includes carcasses for human and animal consumption, and the harvest of roe for human consumption. The sales harvest goal of $30,000 is based on an average weight of one pound of roe per coho salmon and an average price of $3.00 per pound, 50% female. Due to unpredictable interception rates, surplus into the hatchery (cost-recovery sales), is highly variable and unpredictable, so VFDA will place all revenue from coho salmon sales into the operating budget to reduce any deficits from pink salmon sales. Any revenue generated from coho salmon roe or flesh sales, in excess of the operating budget, will either be used for debt retirement, CIPs, emergency funds, or the balance carried to next year's revenue.

VFDA's Coho Salmon Return Assumptions:

The 2024 VFDA coho salmon forecast is 54,375 fish, based on the last ten-year average. Estimated harvest by hatchery and CPF groups vary greatly due to abundance, effort, and management goals.

Hatchery escapement		
Broodstock	1,058	Sales harvest goal = $30,000
Surplus in hatchery	10,715	
Total hatchery use (21.7%)	11,773	
Common property harvest		
Commercial (23.9%)	13,004	
Sport (54.4%)	29,598	
Total return	54,375	

Note:

1) VFDA average broodstock/surplus over previous 10-year period from BY 2011-2020.
2) Commercial harvest (calculated from removing known hatchery/broodstock and sportfish components).
3) Sport harvest 10-year average (2010-2019) taken from ADF&G data from FMR No. 21-31 (http://www.adfg.alaska.gov/FedAidPDFs/FMR21-31.pdf).

3.4 Other Cost-recovery Harvests and Carcass Disposal

VFDA has pursued the option of selling surplus salmon roe for corporate revenue. A surplus results from fish rejected at the rack due to ripeness or eggs in excess of incubation needs. Since 2003, VFDA has processed surplus eggs into caviar with positive results. The results are intended to reduce round fish sales for cost recovery in the future.

Carcasses from broodstock with eggs rejected at the egg-take rack will be utilized and disposed in a manner consistent with appropriate salmon regulations and permitting requirements (5 AAC 93.350). Carcasses resulting from on-water egg recovery may be frozen and shipped to human and nonhuman consumption markets depending on quality.

3.5 Separation of Brood and Sales Fish

In 1993, VFDA designated a BEZ within and adjacent to the SHA (Figure 1). The purpose for minimizing commercial harvest in this exclusion zone is to protect broodstock fish that have staged along the tide flats inside of Allison Point and adjacent to SGH. This method of protection has proven to be very effective at giving sanctuary to broodstock fish, while still allowing cost-recovery harvest to proceed elsewhere in the SHA. Both cost recovery and common property harvest may occur within the BEZ should circumstances favor a commercial opening.

Broodstock will be collected by volitional entry through the fish ladder leading into the concrete raceways located just above tidal influence at the hatchery.

3.6 Probable CPF Exploitation Rates of Hatchery Fish

It is the intent of ADF&G to provide an escapement for the stated corporate revenue goal. Effective management of mixed stock fisheries is difficult. Achievement of this goal depends upon precise in-season assessment of both wild stock and hatchery run strengths. Depending upon the precision of in-season run assessment, the actual percentage provided for hatchery escapement may fall above or below the stated goal. Hatchery escapement includes: (a) the number of broodstock or spawners required to perpetuate and achieve production objectives; and (b) the number of hatchery-produced fish taken for the hatchery harvest requirement, to be used to pay for the hatchery's reasonable operating and capital costs (5 AAC 40.990(6)).

Pink Salmon: The exploitation rate of hatchery fish (the percent contribution to the CPF) ultimately depends on the strength of the hatchery run, the average weight, fish price, and management actions taken by the ADF&G in the Valdez Arm area to assist the hatchery in meeting its escapement goals. VFDA's goal is to provide as much of its hatchery production as possible to the CPF.

Coho Salmon: If the anticipated hatchery run of 54,375 is realized, a CPF exploitation rate of 78.3%

would allow sufficient fish into the hatchery to meet sales and broodstock objectives. It is possible that the combined exploitation rates of the commercial and sport fleets will be substantially below this level, thereby allowing significant numbers of surplus fish to move into the hatchery. In this case, these fish will be harvested and sold by the hatchery operator.

3.7 Management Strategies

This will be the 41st year of pink salmon returns to SGH. Management of the SGH pink salmon run is governed by a regulatory management plan adopted by the Alaska Board of Fisheries in December 1986 (5 AAC 24.366). This plan directs ADF&G to manage the Valdez Narrows subdistrict and waters of Valdez Arm north of the latitude of Rocky Point to assist in achievement of SGH pink salmon cost-recovery and broodstock escapement goals.

Pink Salmon Returns: The SGH SHA will be expanded to include the THA and be opened by EO for the hatchery operator to harvest fish for sale beginning in middle to late June. VFDA hatchery staff will conduct a daily sampling program that will provide sex ratio and daily cost-recovery harvest data for the hatchery run. Hatchery staff will provide this information to ADF&G Cordova Division of Commercial Fisheries area management biologists on a daily basis to facilitate a regulated harvest of surplus fish. Daily data collection will be evaluated against the anticipated run entry and revenue table built from historical timing data of the Solomon Gulch stock (Table 1). As the run progresses, cost-recovery information and run strength estimates will be updated each day.

The season opening in the Eastern and Northern districts is based on the strength of the early natural pink and chum salmon stocks returning to these districts. Because these districts have the earliest wild stock systems in Prince William Sound, the Eastern and Northern districts are generally the first seine districts to open. Openers are not likely to occur until wild stock escapements can be evaluated.

The cost-recovery fleet will fish aggressively to keep the cumulative cost-recovery revenue on or ahead of the cost-recovery goal (Table 1). ADF&G will manage the commercial CPF in the Valdez Narrows subdistrict according to the cost-recovery revenue goal. If sex ratio trends and harvest rates indicate that the broodstock and sales goals cannot be met, then more extensive closures expanding into Valdez Arm may be implemented on subsequent Eastern District openings.

Closed waters at the head of Port Valdez described in 5 AAC 24.350(3)(O) create a boundary near the hatchery that is difficult for seiners to legally fish during openings inside Port Valdez. This important boundary protects hatchery broodstock and sales fish during Port Valdez openings, and as a result, often commands attention by enforcement personnel. After wild stock and hatchery escapement needs have been adequately addressed, VFDA recommends that ADF&G adjust the closed water boundaries, as necessary inside Port Valdez, to efficiently harvest available surpluses near the hatchery. Should boundaries near the hatchery be adjusted for openings inside Port Valdez, VFDA will ensure that closed waters protecting its hatchery escapement are clearly marked by buoys prior to a fishery. Changes to boundaries will be described in ADF&G fishery announcements.

When in-season timing data indicates that broodstock and sales goals will likely be achieved, the Valdez Narrows subdistrict may be opened for a common property commercial seine harvest. The preferred strategy for openings inside Port Valdez will be to provide a minimum of a 200-yard closure to seining off Allison Point. This closure will protect broodstock in the BEZ, provide fish for

cost-recovery harvesting and reduce conflict between sport and commercial fisheries.

Aggressive cost-recovery harvesting and timely commercial openings will be used to prevent a large buildup of pink salmon inside Port Valdez. VFDA will provide daily estimates to ADF&G of the quantity and quality of fish being harvested near the hatchery. If surplus fish build up in front of the hatchery, a common property commercial opening may occur in waters of the THA, SHA, and/or BEZ to harvest fish surplus to hatchery needs.

If early wild stock returns of pink and chum salmon to the Eastern District are too weak to warrant regular openings in early July, surplus SGH pink salmon will be harvested in the Valdez Narrows subdistrict and the Solomon Gulch THA. The duration and frequency of openings of the Valdez Narrows subdistrict will depend upon the magnitude of the run. Recognizing the limitations of the hatchery run assessment in Port Valdez, efforts will be taken to harvest the surplus hatchery production expeditiously to preserve the highest possible quality.

Due to the early run timing of the SGH stock, broodstock and cost-recovery goals must be met by late July. After this time, the Valdez Narrows and Arm will be managed for wild stocks.

Sport fisheries will be managed in accordance with regulations as provided in 5 AAC 47–5AAC 75. Emergency orders may be issued to liberalize or restrict sport fisheries based on achievement of broodstock goals.

3.7.1 Wild Stock vs. Hatchery Stock

Some interception of naturally occurring wild pink salmon occurs, both in the commercial common property fisheries targeting SGH fish and in the hatchery cost-recovery harvest.

The waters at the head of Port Valdez east of 146° 30'37" W. longitude (THA) normally remain closed during August and September for protection of wild stock pink and chum salmon. This closure should allow sufficient protection for returning hatchery coho salmon and no further management action is anticipated. However, if a harvestable surplus of pink salmon exists, commercial common property fishery openings may occur.

3.7.2 Coho Salmon Hatchery Stock

VFDA requests that ADF&G manage the coho salmon run to ensure adequate broodstock at the hatchery (Table 3). Hatchery runs of coho salmon should be sufficient to meet desired egg-take goals.

3.8 Sport Fish Harvest

The Port of Valdez and Valdez Arm supports the largest component of the sport fishery in PWS. The pink salmon sport fishery is one of the largest in the state. The stocking of large numbers of pink and coho salmon was initiated by VFDA in the early 1980s. The contribution of these runs became noticeable in the sport fishery in 1985, with sharp increases in angler effort and pink salmon harvests. Coho salmon harvests also began increasing, but at a slower rate. This recreational activity provides a valuable economic resource for the community of Valdez.

The pink salmon sport fishery is primarily a shore-based fishery and is generally more active during weekends and usually peaks during the first week of July. Peak angler and commercial fishing activity typically coincides with the peak of the pink salmon run. Potential for conflict between the two user groups exists, especially at Allison Point.

The coho salmon sport fishery of Valdez area (Arm and Port) begins in late July and continues through Labor Day weekend. ADF&G manages the Port of Valdez to reduce conflicts between the commercial and sport user groups by excluding commercial fishing within the Port of Valdez and the Valdez Narrows from August 15 through Labor Day. However, the department may designate open areas for commercial harvest within Port Valdez if a buildup of surplus salmon occurs during the August 15 to Labor Day closure. In 2024, the commercial fishery in Port Valdez will reopen on September 3 to target SGH produced coho salmon.

3.9 Personal Use and Subsistence Harvests

SGH contributes some fish to the sport and subsistence salmon harvest by Tatitlek residents. An agreement has been completed between VFDA and the Tatitlek Corporation to resume stocking 20,000 coho salmon since June 2011. This remote stocking program had been temporarily on hold from 2004 through 2010 due to transfer and rearing problems. Currently, approximately 20,000 smolt are delivered to a pen in Boulder Bay near Tatitlek to be imprinted and released to create opportunity for the Tatitlek community.

3.10 Avoidance of Nontarget Species

The potential for interception of non-target fish in the SHA is not fully known; however, no significant harvest has been recorded. All non-target species found will be released when practical. Deliveries will be monitored for species composition and harvest by species will be recorded on fish tickets.

IV. EVALUATION STUDIES

4.1 Otolith Thermal Marking/Coded-Wire-Tagging

In 1997, otolith thermal marking replaced coded-wire-tagging as the preferred method for stock identification. All pink salmon have been otolith thermal marked since brood year 1997. Coho began receiving a thermal mark with brood year 2000. Thermal marking the otolith provides the ADF&G divisions of Commercial Fisheries and Sport Fish AMBs with more timely and accurate run information. Intended marks for SGH Pink salmon and Coho salmon are both 6H. Actual thermal mark designations will be determined with coordination by the North Pacific Anadromous Fish Commission Mark Coordinator. The designated marks are emailed to the hatchery in the summer for the upcoming thermal marking project.

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V. APPROVAL

Recommendation for Approval: Solomon Gulch Hatchery Annual Management Plan, 2024

Thane Miller, Board President, Valdez Fisheries Development Assoc. 5/6/2024

Brittany Blain-Roth, Area Management Biologist, Div. of Sport Fish 4/29/2024

Heather Scannell, Area Management Biologist, Div. of Commercial Fisheries 4/27/2024

Jason Dye, Regional Supervisor, Div. of Sport Fish 4/27/2024

Bert Lewis, Regional Supervisor, Div. of Commercial Fisheries 4/29/2024

Ethan Ford, Regional Resource Development Biologist, Div. of Commercial Fisheries 4/29/2024

Lorraine Vercessi, PNP Hatchery Program Coordinator, Div. of Commercial Fisheries 5/7/2024

Approval: The 2024 Solomon Gulch Hatchery Annual Management Plan is hereby approved.

Tom Taube, Deputy Director, Div. of Sport Fish 5/13/2024

Forrest Bowers, Operations Manager, Div. of Commercial Fisheries 5/22/2024

Table 1: Pink salmon run entry for Solomon Gulch Hatchery, 2024

:First day brood collection based on anticipated % female at approximately 15%.
:Marine Survival % and Expected Weight is based on last 10 even-year return average.
: Run entry % based on the historic odd and even returns using cost recovery and CPF harvests.
: Price per pound may not be current with actual in season sales.

Marine Survival	5.940%	**Green Egg Requirements**	270,000,000
CPF Contribution	71.3%	**Minimum Brood Req.**	408,702
Fry Released	261,462,601	**Fish Sales Required ($)**	$4,040,880
Expected Return	15,530,878	**Fish Sales Required (#)**	4,044,925
Expected Catch CPF	11,077,252	**Expected Weight (lbs)**	3.33
Expected Return SHA	4,453,627	**Expected Average Price**	$0.300
Revised:	12-Feb-24		

Date	Total Run Entry				C. P. F. Catch		Cost Recovery Fish Sales				Brood			
	% Entry	Cum % Entry	Fish/ Day	Cum. Fish	Fish/ Day	Cum. Fish	Fish/ Day	Cum. Fish	Revenue	Cum $	Brood Collection*	Cum. Brood	Anticipated % Female	Date
11-Jun														11-Jun
12-Jun														12-Jun
13-Jun														13-Jun
14-Jun														14-Jun
15-Jun														15-Jun
16-Jun														16-Jun
17-Jun	0.0%	0.0%	0	0	0	0	0	0	$0	$0				17-Jun
18-Jun	0.0%	0.0%	155	155	115	115	40	40	$40	$40				18-Jun
19-Jun	0.0%	0.0%	155	311	115	230	40	81	$40	$81				19-Jun
20-Jun	0.1%	0.1%	8,231	8,542	6,088	6,317	2,144	2,225	$2,142	$2,222			12.2	20-Jun
21-Jun	0.1%	0.1%	8,697	17,239	6,432	12,749	2,265	4,490	$2,263	$4,485			14.2	21-Jun
22-Jun	0.1%	0.2%	12,114	29,353	8,959	21,708	3,155	7,645	$3,152	$7,637			9.9	22-Jun
23-Jun	0.2%	0.4%	28,111	57,464	20,790	42,498	7,321	14,966	$7,314	$14,951			10.6	23-Jun
24-Jun	0.2%	0.6%	36,653	94,117	22,107	64,605	9,546	24,512	$9,536	$24,488	5,000	5,000	16.3	24-Jun
25-Jun	0.8%	1.4%	127,043	221,160	83,955	148,560	33,087	57,600	$33,054	$57,542	10,000	15,000	13.8	25-Jun
26-Jun	0.8%	2.2%	124,713	345,873	77,232	225,792	32,481	90,080	$32,448	$89,990	15,000	30,000	16.3	26-Jun
27-Jun	1.2%	3.4%	182,177	528,050	119,730	345,522	47,447	137,527	$47,400	$137,390	15,000	45,000	14.4	27-Jun
28-Jun	2.4%	5.8%	371,188	899,238	259,514	605,037	96,674	234,201	$96,577	$233,967	15,000	60,000	17.1	28-Jun
29-Jun	2.0%	7.7%	303,318	1,202,556	209,321	814,357	78,997	313,199	$78,918	$312,885	15,000	75,000	17.9	29-Jun
30-Jun	2.2%	10.0%	346,649	1,549,205	236,366	1,050,724	90,283	403,481	$90,192	$403,078	20,000	95,000	15.2	30-Jun
1-Jul	2.4%	12.3%	368,392	1,917,598	252,447	1,303,171	95,946	499,427	$95,850	$498,927	20,000	115,000	19.5	1-Jul
2-Jul	6.0%	18.4%	937,289	2,854,886	673,177	1,976,348	244,111	743,538	$243,867	$742,795	20,000	135,000	19.6	2-Jul
3-Jul	3.3%	21.6%	506,307	3,361,193	354,442	2,330,790	131,865	875,403	$131,733	$874,527	20,000	155,000	23.8	3-Jul
4-Jul	4.7%	26.3%	723,428	4,084,621	515,016	2,845,806	188,413	1,063,815	$188,224	$1,062,751	20,000	175,000	27.0	4-Jul
5-Jul	6.7%	33.0%	1,044,607	5,129,228	752,545	3,598,351	272,062	1,335,877	$271,790	$1,334,541	20,000	195,000	30.9	5-Jul

Date	Total Run Entry				C. P. F. Catch		Cost Recovery Fish Sales					Brood	Antici-	
	% Entry	Cum % Entry	Fish/ Day	Cum. Fish	Fish/ Day	Cum. Fish	Fish/ Day	Cum. Fish	Revenue	Cum $	Brood Collection*	Cum. Brood	pated % Female	Date
6-Jul	6.5%	39.6%	1,016,185	6,145,413	731,526	4,329,877	264,659	1,600,536	$264,395	$1,598,936	20,000	215,000	26.8	6-Jul
7-Jul	2.8%	42.4%	440,611	6,586,024	305,857	4,635,733	114,755	1,715,291	$114,640	$1,713,576	20,000	235,000	32.4	7-Jul
8-Jul	6.2%	48.6%	957,634	7,543,658	683,224	5,318,957	249,410	1,964,701	$249,161	$1,962,736	25,000	260,000	33.4	8-Jul
9-Jul	5.3%	53.9%	825,777	8,369,435	585,708	5,904,666	215,069	2,179,770	$214,854	$2,177,590	25,000	285,000	37.4	9-Jul
10-Jul	5.7%	59.5%	879,048	9,248,483	625,105	6,529,770	228,943	2,408,712	$228,714	$2,406,304	25,000	310,000	30.7	10-Jul
11-Jul	3.9%	63.5%	612,538	9,861,021	428,006	6,957,777	159,532	2,568,244	$159,372	$2,565,676	25,000	335,000	42.0	11-Jul
12-Jul	4.1%	67.6%	634,436	10,495,457	444,201	7,401,978	165,235	2,733,479	$165,070	$2,730,746	25,000	360,000	44.1	12-Jul
13-Jul	3.5%	71.1%	548,706	11,044,163	380,799	7,782,776	142,907	2,876,387	$142,764	$2,873,510	25,000	385,000	48.8	13-Jul
14-Jul	3.4%	74.5%	527,273	11,571,436	364,948	8,147,725	137,325	3,013,712	$137,188	$3,010,698	25,000	410,000	47.0	14-Jul
15-Jul	2.4%	76.9%	374,139	11,945,575	251,697	8,399,421	97,442	3,111,154	$97,345	$3,108,043	25,000	435,000	53.6	15-Jul
16-Jul	4.4%	81.3%	685,222	12,630,798	481,760	8,881,181	178,462	3,289,616	$178,284	$3,286,326	25,000	460,000	48.5	16-Jul
17-Jul	6.4%	87.7%	992,578	13,623,376	714,067	9,595,249	258,511	3,548,127	$258,253	$3,544,579	20,000	480,000	54.9	17-Jul
18-Jul	0.7%	88.5%	115,550	13,738,926	70,455	9,665,704	30,094	3,578,221	$30,064	$3,574,643	15,000	495,000		18-Jul
19-Jul	2.5%	91.0%	392,931	14,131,857	275,595	9,941,299	102,337	3,680,558	$102,234	$3,676,878	15,000	510,000	63.2	19-Jul
20-Jul	2.9%	93.9%	448,221	14,580,078	321,485	10,262,783	116,737	3,797,295	$116,620	$3,793,497	10,000	520,000		20-Jul
21-Jul	0.7%	94.6%	115,239	14,695,317	75,226	10,338,009	30,013	3,827,308	$29,983	$3,823,481	10,000	530,000	58.0	21-Jul
22-Jul	1.4%	96.0%	220,694	14,916,011	158,215	10,496,225	57,478	3,884,786	$57,421	$3,880,902	5,000	535,000	36.0	22-Jul
23-Jul	1.1%	97.1%	166,025	15,082,036	122,785	10,619,010	43,240	3,928,027	$43,197	$3,924,099		535,000	50.5	23-Jul
24-Jul	0.8%	97.9%	125,489	15,207,526	92,807	10,711,816	32,683	3,960,710	$32,650	$3,956,749		535,000	58.5	24-Jul
25-Jul	0.6%	98.5%	86,818	15,294,343	64,206	10,776,023	22,611	3,983,321	$22,589	$3,979,337		535,000	49.0	25-Jul
26-Jul	0.2%	98.6%	23,296	15,317,640	17,229	10,793,251	6,067	3,989,388	$6,061	$3,985,399		535,000	45.0	26-Jul
27-Jul	0.9%	99.5%	139,467	15,457,107	103,144	10,896,395	36,323	4,025,712	$36,287	$4,021,686		535,000	49.0	27-Jul
28-Jul	0.0%	99.5%	0	15,457,107	0	10,896,395	0	4,025,712	$0	$4,021,686			55.5	28-Jul
29-Jul	0.3%	99.8%	42,710	15,499,817	31,586	10,927,982	11,124	4,036,835	$11,112	$4,032,798			54.0	29-Jul
30-Jul	0.0%	99.8%	0	15,499,817	0	10,927,982	0	4,036,835	$0	$4,032,798			57.0	30-Jul
31-Jul	0.2%	100.0%	23,918	15,523,734	17,688	10,945,670	6,229	4,043,064	$6,223	$4,039,021			61.0	31-Jul
1-Aug	0.0%	100.0%	0	15,523,734	0	10,945,670	0	4,043,064	$0	$4,039,021			53.0	1-Aug
2-Aug	0.0%	100.0%	7,144	15,530,878	5,284	10,950,954	1,861	4,044,925	$1,859	$4,040,880			59.5	2-Aug
3-Aug	0.0%	100.0%	0	15,530,878	0	10,950,954	0	4,044,925	$0	$4,040,880			61.5	3-Aug

*Total brood collection includes volitional entrants

Table 2
VFDA 2024 Pink Salmon Egg Take projection schedule

Date	Daily %	Daily # Eggs	Cummulative # Eggs
7/28/24	0.00%	-	-
7/29/24	1.79%	4,821,429	4,821,429
7/30/24	3.57%	9,642,858	14,464,287
7/31/24	3.57%	9,642,858	24,107,145
8/1/24	3.57%	9,642,858	33,750,003
8/2/24	3.57%	9,642,858	43,392,861
8/3/24	0.00%	-	43,392,861
8/4/24	0.00%	-	43,392,861
8/5/24	7.14%	19,285,716	62,678,577
8/6/24	5.36%	14,464,287	77,142,864
8/7/24	5.36%	14,464,287	91,607,151
8/8/24	5.36%	14,464,287	106,071,438
8/9/24	5.36%	14,464,287	120,535,725
8/10/24	0.00%	-	120,535,725
8/11/24	0.00%	-	120,535,725
8/12/24	8.93%	24,107,145	144,642,870
8/13/24	7.14%	19,285,716	163,928,586
8/14/24	7.14%	19,285,716	183,214,302
8/15/24	7.14%	19,285,716	202,500,018
8/16/24	5.36%	14,464,287	216,964,305
8/17/24	0.00%	-	216,964,305
8/18/24	0.00%	-	216,964,305
8/19/24	7.14%	19,285,716	236,250,021
8/20/24	7.14%	19,285,716	255,535,737
8/21/24	5.36%	14,464,263	270,000,000
8/22/24	0.00%	-	270,000,000
8/23/24	0.00%	-	270,000,000
	100.00%	**270,000,000**	

Table 3
2024 Adult Coho Salmon Return Projection for VFDA

DATE	% ENTRY	# Daily	# Cum.	BROOD DAILY	BROOD CUM.
8/18/24	1.05%	569	569		
8/19/24	1.26%	684	1,252		
8/20/24	1.25%	682	1,934		
8/21/24	1.26%	684	2,618		
8/22/24	1.90%	1,031	3,649		
8/23/24	0.64%	351	4,000		
8/24/24	2.09%	1,137	5,137		
8/25/24	2.09%	1,137	6,275		
8/26/24	2.98%	1,618	7,892		
8/27/24	2.34%	1,270	9,162		
8/28/24	2.34%	1,270	10,432		
8/29/24	2.22%	1,205	11,638		
8/30/24	3.63%	1,973	13,610		
8/31/24	4.92%	2,673	16,283		
9/1/24	6.03%	3,280	19,562	50	50
9/2/24	6.64%	3,610	23,172	50	100
9/3/24	5.76%	3,134	26,306	50	150
9/4/24	4.35%	2,368	28,673	100	250
9/5/24	2.18%	1,187	29,861	100	350
9/6/24	3.84%	2,089	31,950	100	450
9/7/24	3.73%	2,030	33,980	158	608
9/8/24	3.87%	2,104	36,084	250	858
9/9/24	4.30%	2,340	38,424	200	1,058
9/10/24	4.75%	2,581	41,005		
9/11/24	1.98%	1,074	42,079		
9/12/24	2.93%	1,593	43,671		
9/13/24	2.11%	1,149	44,821		
9/14/24	1.86%	1,014	45,834		
9/15/24	1.60%	872	46,706		
9/16/24	1.69%	916	47,623		
9/17/24	0.73%	396	48,019		
9/18/24	0.46%	252	48,271		
9/19/24	0.45%	243	48,514		
9/20/24	0.26%	141	48,656		
9/21/24	0.25%	136	48,791		
9/22/24	0.28%	153	48,944		
9/23/24	0.27%	147	49,092		
9/24/24	0.11%	59	49,151		
9/25/24	0.11%	59	49,210		
9/26/24	0.21%	116	49,326		
9/27/24	0.18%	99	49,425		
9/28/24	0.18%	99	49,523		
9/29/24	0.18%	100	49,624		
9/30/24	0.18%	100	49,724		

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Table 3. Page 2 of 2.

DATE	% ENTRY	# Daily	# Cum.	BROOD DAILY	BROOD CUM.
10/10/24	0.39%	211	52,809		
10/11/24	0.38%	205	53,014		
10/12/24	0.48%	259	53,273		
10/13/24	0.12%	65	53,338		
10/14/24	0.12%	63	53,401		
10/15/24	0.42%	230	53,631		
10/16/24	0.42%	230	53,861		
10/17/24	0.32%	172	54,033		
10/18/24	0.32%	172	54,206		
10/19/24	0.31%	169	54,375		
		54,375			

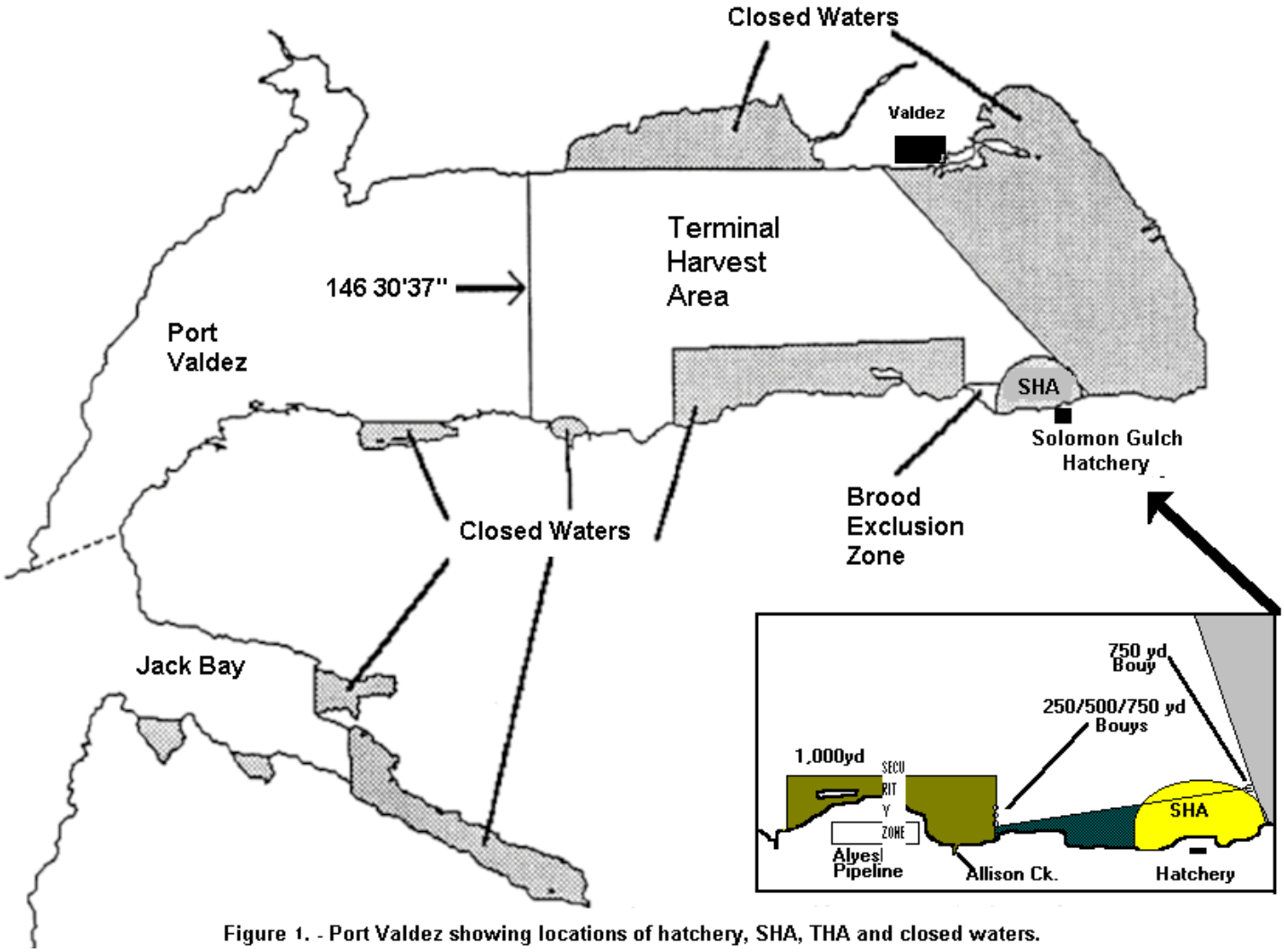

Figure 1. - Port Valdez showing locations of hatchery, SHA, THA and closed waters.