

APPENDIX A

STANDARD CONDITIONS

APDES PERMIT

NONDOMESTIC DISCHARGES

September 2011

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Appendix A of the permit contains standard regulatory language that must be included in all APDES permits. These requirements are based on the regulations and cannot be challenged in the context of an individual APDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements. Appendix A, Standard Conditions is an integral and enforceable part of the permit. Failure to comply with a Standard Condition in this Appendix constitutes a violation of the permit and is subject to enforcement.

1.0 Standard Conditions Applicable to All Permits

1.1 Contact Information and Addresses

1.1.1 Permitting Program

Documents, reports, and plans required under the permit and Appendix A are to be sent to the following address:

State of Alaska
Department of Environmental Conservation
Division of Water
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, Alaska 99501
Telephone (907) 269-6285
Fax (907) 269-3487
Email: DEC.WQPermit@alaska.gov

1.1.2 Compliance and Enforcement Program

Documents and reports required under the permit and Appendix A relating to compliance are to be sent to the following address:

State of Alaska
Department of Environmental Conservation
Division of Water
Compliance and Enforcement Program
555 Cordova Street
Anchorage, Alaska 99501
Telephone Nationwide (877) 569-4114
Anchorage Area / International (907) 269-4114
Fax (907) 269-4604
Email: dec-wqreporting@alaska.gov

1.2 Duty to Comply

A permittee shall comply with all conditions of the permittee's APDES permit. Any permit noncompliance constitutes a violation of 33 U.S.C 1251-1387 (Clean Water Act) and state law and is grounds for enforcement action including termination, revocation and reissuance, or modification of a permit, or denial of a permit renewal application. A permittee shall comply with effluent standards or prohibitions established under 33 U.S.C. 1317(a) for toxic pollutants within the time provided in the regulations that establish those effluent standards or prohibitions even if the permit has not yet been modified to incorporate the requirement.

1.3 Duty to Reapply

If a permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. In accordance with 18 AAC 83.105(b), a permittee with a currently effective permit shall reapply by submitting a new application at least 180 days before the existing permit expires, unless the Department has granted the permittee permission to submit an application on a later date. However, the Department will not grant permission for an application to be submitted after the expiration date of the existing permit.

1.4 Need to Halt or Reduce Activity Not a Defense

In an enforcement action, a permittee may not assert as a defense that compliance with the conditions of the permit would have made it necessary for the permittee to halt or reduce the permitted activity.

1.5 Duty to Mitigate

A permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

1.6 Proper Operation and Maintenance

1.6.1 A permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances that the permittee installs or uses to achieve compliance with the conditions of the permit. The permittee's duty to operate and maintain properly includes using adequate laboratory controls and appropriate quality assurance procedures. However, a permittee is not required to operate back-up or auxiliary facilities or similar systems that a permittee installs unless operation of those facilities is necessary to achieve compliance with the conditions of the permit.

1.6.2 Operation and maintenance records shall be retained and made available at the site.

1.7 Permit Actions

A permit may be modified, revoked and reissued, or terminated for cause as provided in 18 AAC 83.130. If a permittee files a request to modify, revoke and reissue, or terminate a permit, or gives notice of planned changes or anticipated noncompliance, the filing or notice does not stay any permit condition.

1.8 Property Rights

A permit does not convey any property rights or exclusive privilege.

1.9 Duty to Provide Information

A permittee shall, within a reasonable time, provide to the Department any information that the Department requests to determine whether a permittee is in compliance with the permit, or whether cause exists to modify, revoke and reissue, or terminate the permit. A permittee shall also provide to the Department, upon request, copies of any records the permittee is required to keep under the permit.

1.10 Inspection and Entry

A permittee shall allow the Department, or an authorized representative, including a contractor acting as a representative of the Department, at reasonable times and on presentation of credentials establishing authority and any other documents required by law, to:

- 1.10.1 Enter the premises where a permittee's regulated facility or activity is located or conducted, or where permit conditions require records to be kept;
- 1.10.2 Have access to and copy any records that permit conditions require the permittee to keep;
- 1.10.3 Inspect any facilities, equipment, including monitoring and control equipment, practices, or operations regulated or required under a permit; and
- 1.10.4 Sample or monitor any substances or parameters at any location for the purpose of assuring permit compliance or as otherwise authorized by 33 U.S.C. 1251-1387 (Clean Water Act).

1.11 Monitoring and Records

A permittee must comply with the following monitoring and recordkeeping conditions:

- 1.11.1 Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.
- 1.11.2 The permittee shall retain records in Alaska of all monitoring information for at least three years, or longer at the Department's request at any time, from the date of the sample, measurement, report, or application. Monitoring records required to be kept include:
 - 1.11.2.1 All calibration and maintenance records,
 - 1.11.2.2 All original strip chart recordings or other forms of data approved by the Department for continuous monitoring instrumentation,
 - 1.11.2.3 All reports required by a permit,
 - 1.11.2.4 Records of all data used to complete the application for a permit,
 - 1.11.2.5 Field logbooks or visual monitoring logbooks,
 - 1.11.2.6 Quality assurance chain of custody forms,
 - 1.11.2.7 Copies of discharge monitoring reports, and
 - 1.11.2.8 A copy of this APDES permit.
- 1.11.3 Records of monitoring information must include:
 - 1.11.3.1 The date, exact place, and time of any sampling or measurement;
 - 1.11.3.2 The name(s) of any individual(s) who performed the sampling or measurement(s);
 - 1.11.3.3 The date(s) and time any analysis was performed;
 - 1.11.3.4 The name(s) of any individual(s) who performed any analysis;
 - 1.11.3.5 Any analytical technique or method used; and
 - 1.11.3.6 The results of the analysis.

1.11.4 Monitoring Procedures

Analyses of pollutants must be conducted using test procedures approved under 40 CFR Part 136, adopted by reference at 18 AAC 83.010, for pollutants with approved test procedures, and using test procedures specified in the permit for pollutants without approved methods.

1.12 Signature Requirement and Penalties

- 1.12.1 Any application, report, or information submitted to the Department in compliance with a permit requirement must be signed and certified in accordance with 18 AAC 83.385. Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, or other document filed or required to be maintained under a permit, or who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be subject to penalties under 33 U.S.C. 1319(c)(4), AS 12.55.035(c)(1)(B), (c)(2) and (c)(3), and AS 46.03.790(g).
- 1.12.2 In accordance with 18 AAC 83.385, an APDES permit application must be signed as follows:
- 1.12.2.1 For a corporation, a responsible corporate officer shall sign the application; in this subsection, a responsible corporate officer means:
 - 1.12.2.1.1 A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or
 - 1.12.2.1.2 The manager of one of more manufacturing, production, or operating facilities, if
 - 1.12.2.1.2.1 The manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental statutes and regulations;
 - 1.12.2.1.2.2 The manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and
 - 1.12.2.1.2.3 Authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - 1.12.2.2 For a partnership or sole proprietorship, by the general partner or the proprietor, respectively, shall sign the application
 - 1.12.2.3 For a municipality, state, federal, or other public agency, either a principal executive officer or ranking elected official shall sign the application; in this subsection, a principal executive officer of an agency means:
 - 1.12.2.3.1 The chief executive officer of the agency; or
 - 1.12.2.3.2 A senior executive officer having responsibility for the overall operations of a principal geographic unit or division of the agency.
- 1.12.3 Any report required by an APDES permit, and a submittal with any other information requested by the Department, must be signed by a person described in Appendix A, Part 1.12.2, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- 1.12.3.1 The authorization is made in writing by a person described in Appendix A, Part 1.12.2;

- 1.12.3.2 The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, including the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility; or an individual or position having overall responsibility for environmental matters for the company; and
- 1.12.3.3 The written authorization is submitted to the Department to the Permitting Program address in Appendix A, Part 1.1.1.
- 1.12.4 If an authorization under Appendix A, Part 1.12.3 is no longer effective because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Appendix A, Part 1.12.3 must be submitted to the Department before or together with any report, information, or application to be signed by an authorized representative.
- 1.12.5 Any person signing a document under Appendix A, Part 1.12.2 or Part 1.12.3 shall certify as follows:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

1.13 Proprietary or Confidential Information

- 1.13.1 A permit applicant or permittee may assert a claim of confidentiality for proprietary or confidential business information by stamping the words "confidential business information" on each page of a submission containing proprietary or confidential business information. The Department will treat the stamped submissions as confidential if the information satisfies the test in 40 CFR §2.208, adopted by reference at 18 AAC 83.010, and is not otherwise required to be made public by state law.
- 1.13.2 A claim of confidentiality under Appendix A, Part 1.13.1 may not be asserted for the name and address of any permit applicant or permittee, a permit application, a permit, effluent data, sewage sludge data, and information required by APDES or NPDES application forms provided by the Department, whether submitted on the forms themselves or in any attachments used to supply information required by the forms.
- 1.13.3 A permittee's claim of confidentiality authorized under Appendix A, Part 1.13.1 is not waived if the Department provides the proprietary or confidential business information to the EPA or to other agencies participating in the permitting process. The Department will supply any information obtained or used in the administration of the state APDES program to the EPA upon request under 40 CFR §123.41, as revised as of July 1, 2005. When providing information submitted to the Department with a claim of confidentiality to the EPA, the Department will notify the EPA of the confidentiality claim. If the Department provides the EPA information that is not claimed to be confidential, the EPA may make the information available to the public without further notice.

1.14 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any action or relieve a permittee

from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under state laws addressing oil and hazardous substances.

1.15 Cultural and Paleontological Resources

If cultural or paleontological resources are discovered because of this disposal activity, work that would disturb such resources is to be stopped, and the Office of History and Archaeology, a Division of Parks and Outdoor Recreation of the Alaska Department of Natural Resources (<http://www.dnr.state.ak.us/parks/oha/>), is to be notified immediately at (907) 269-8721.

1.16 Fee

A permittee must pay the appropriate permit fee described in 18 AAC 72.

1.17 Other Legal Obligations

This permit does not relieve the permittee from the duty to obtain any other necessary permits from the Department or from other local, state, or federal agencies and to comply with the requirements contained in any such permits. All activities conducted and all plan approvals implemented by the permittee pursuant to the terms of this permit shall comply with all applicable local, state, and federal laws and regulations.

2.0 Special Reporting Obligations

2.1 Planned Changes

- 2.1.1 The permittee shall give notice to the Department as soon as possible of any planned physical alteration or addition to the permitted facility if:
 - 2.1.1.1 The alteration or addition may make the facility a “new source” under one or more of the criteria in 18 AAC 83.990(44); or
 - 2.1.1.2 The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged if those pollutants are not subject to effluent limitations in the permit or to notification requirements under 18 AAC 83.610.
- 2.1.2 If the proposed changes are subject to plan review, then the plans must be submitted at least 30 days before implementation of changes (see 18 AAC 15.020 and 18 AAC 72 for plan review requirements). Written approval is not required for an emergency repair or routine maintenance.
- 2.1.3 Written notice must be sent to the Permitting Program address in Appendix A, Part 1.1.1.

2.2 Anticipated Noncompliance

- 2.2.1 A permittee shall give seven days’ notice to the Department before commencing any planned change in the permitted facility or activity that may result in noncompliance with permit requirements.
- 2.2.2 Written notice must be sent to the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.

2.3 Transfers

- 2.3.1 A permittee may not transfer a permit for a facility or activity to any person except after notice to the Department in accordance with 18 AAC 83.150. The Department may modify or revoke and reissue the permit to change the name of the permittee and incorporate such other requirements under 33 U.S.C. 1251-1387 (Clean Water Act) or state law.
- 2.3.2 Written notice must be sent to the Permitting Program address in Appendix A, Part 1.1.1.

2.4 Compliance Schedules

- 2.4.1 A permittee must submit progress or compliance reports on interim and final requirements in any compliance schedule of a permit no later than 14 days following the scheduled date of each requirement.
- 2.4.2 Written notice must be sent to the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.

2.5 Corrective Information

- 2.5.1 If a permittee becomes aware that it failed to submit a relevant fact in a permit application or submitted incorrect information in a permit application or in any report to the Department, the permittee shall promptly submit the relevant fact or the correct information.
- 2.5.2 Information must be sent to the Permitting Program address in Appendix A, Part 1.1.1.

2.6 Bypass of Treatment Facilities

2.6.1 Prohibition of Bypass

Bypass is prohibited. The Department may take enforcement action against a permittee for any bypass, unless:

- 2.6.1.1 The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- 2.6.1.2 There were no feasible alternatives to the bypass, including use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. However, this condition is not satisfied if the permittee, in the exercise of reasonable engineering judgment, should have installed adequate back-up equipment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and
- 2.6.1.3 The permittee provides notice to the Department of a bypass event in the manner, as appropriate, under Appendix A, Part 2.6.2.

2.6.2 Notice of bypass

- 2.6.2.1 For an anticipated bypass, the permittee submits notice at least 10 days before the date of the bypass. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the conditions of Appendix A, Parts 2.6.1.1 and 2.6.1.2.
- 2.6.2.2 For an unanticipated bypass, the permittee submits 24-hour notice, as required in 18 AAC 83.410(f) and Appendix A, Part 3.4, Twenty-four Hour Reporting.
- 2.6.2.3 Written notice must be sent to the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.

2.6.3 Notwithstanding Appendix A, Part 2.6.1, a permittee may allow a bypass that:

- 2.6.3.1 Does not cause an effluent limitation to be exceeded, and
- 2.6.3.2 Is for essential maintenance to assure efficient operation.

2.7 Upset Conditions

- 2.7.1 In any enforcement action for noncompliance with technology-based permit effluent limitations, a permittee may claim upset as an affirmative defense. A permittee seeking to establish the occurrence of an upset has the burden of proof to show that the requirements of Appendix A, Part 2.7.2 are met.
- 2.7.2 To establish the affirmative defense of upset, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:
 - 2.7.2.1 An upset occurred and the permittee can identify the cause or causes of the upset;
 - 2.7.2.2 The permitted facility was at the time being properly operated;
 - 2.7.2.3 The permittee submitted 24-hour notice of the upset, as required in 18 AAC 83.410(f) and Appendix A, Part 3.4, Twenty-four Hour Reporting; and
 - 2.7.2.4 The permittee complied with any mitigation measures required under 18 AAC 83.405(e) and Appendix A, Part 1.5, Duty to Mitigate.
- 2.7.3 Any determination made in administrative review of a claim that noncompliance was caused by upset, before an action for noncompliance is commenced, is not final administrative action subject to judicial review.

2.8 Existing Manufacturing, Commercial, Mining, and Silvicultural Discharges

- 2.8.1 In addition to the reporting requirements under 18 AAC 83.410, an existing manufacturing, commercial, mining, and silvicultural discharger shall notify the Department as soon as that discharger knows or has reason to believe that any activity has occurred or will occur that would result in:
 - 2.8.1.1 The discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - 2.8.1.1.1 One hundred micrograms per liter (100 µg/L);
 - 2.8.1.1.2 Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile, 500 micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol, and one milligram per liter (1 mg/L) for antimony;
 - 2.8.1.1.3 Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 18 AAC 83.310(c)-(g); or
 - 2.8.1.1.4 The level established by the Department in accordance with 18 AAC 83.445.
 - 2.8.1.2 Any discharge, on a non-routine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - 2.8.1.2.1 Five hundred micrograms per liter (500 µg/L);
 - 2.8.1.2.2 One milligram per liter (1 mg/L) for antimony;

- 2.8.1.2.3 Ten times the maximum concentration value reported for that pollutant in the permit application in accordance with 18 AAC 83.310(c)-(g); or
- 2.8.1.2.4 The level established by the Department in accordance with 18 AAC 83.445.

3.0 Monitoring, Recording, and Reporting Requirements

3.1 Representative Sampling

A permittee must collect effluent samples from the effluent stream after the last treatment unit before discharge into the receiving waters. Samples and measurements must be representative of the volume and nature of the monitored activity or discharge.

3.2 Reporting of Monitoring Results

At intervals specified in the permit, monitoring results must be reported on the EPA discharge monitoring report (DMR) form, as revised as of March 1999, adopted by reference.

- 3.2.1 Monitoring results shall be summarized each month on the DMR or an approved equivalent report. The permittee must submit reports monthly postmarked by the 15th day of the following month.
- 3.2.2 The permittee must sign and certify all DMRs and all other reports in accordance with the requirements of Appendix A, Part 1.12, Signatory Requirements and Penalties. All signed and certified legible original DMRs and all other documents and reports must be submitted to the Department at the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.
- 3.2.3 If, during the period when this permit is effective, the Department makes available electronic reporting, the permittee may, as an alternative to the requirements of Appendix A, Part 3.2.2, submit monthly DMRs electronically by the 15th day of the following month in accordance with guidance provided by the Department. The permittee must certify all DMRs and other reports, in accordance with the requirements of Appendix A, Part 1.12, Signatory Requirements and Penalties. The permittee must retain the legible originals of these documents and make them available to the Department upon request.

3.3 Additional Monitoring by Permittee

If the permittee monitors any pollutant more frequently than the permit requires using test procedures approved in 40 CFR Part 136, adopted by reference at 18 AAC 83.010, or as specified in this permit, the results of that additional monitoring must be included in the calculation and reporting of the data submitted in the DMR required by Appendix A, Part 3.2. All limitations that require averaging of measurements must be calculated using an arithmetic means unless the Department specifies another method in the permit. Upon request by the Department, the permittee must submit the results of any other sampling and monitoring regardless of the test method used.

3.4 Twenty-four Hour Reporting

A permittee shall report any noncompliance event that may endanger health or the environment as follows:

- 3.4.1 A report must be made:
 - 3.4.1.1 Orally within 24 hours after the permittee becomes aware of the circumstances, and
 - 3.4.1.2 In writing within five days after the permittee becomes aware of the circumstances.

- 3.4.2 A report must include the following information:
 - 3.4.2.1 A description of the noncompliance and its causes, including the estimated volume or weight and specific details of the noncompliance;
 - 3.4.2.2 The period of noncompliance, including exact dates and times;
 - 3.4.2.3 If the noncompliance has not been corrected, a statement regarding the anticipated time the noncompliance is expected to continue; and
 - 3.4.2.4 Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
- 3.4.3 An event that must be reported within 24 hours includes:
 - 3.4.3.1 An unanticipated bypass that exceeds any effluent limitation in the permit (see Appendix A, Part 2.6, Bypass of Treatment Facilities).
 - 3.4.3.2 An upset that exceeds any effluent limitation in the permit (see Appendix A, Part 2.7, Upset Conditions).
 - 3.4.3.3 A violation of a maximum daily discharge limitation for any of the pollutants listed in the permit as requiring 24-hour reporting.
- 3.4.4 The Department may waive the written report on a case-by-case basis for reports under Appendix A, Part 3.4 if the oral report has been received within 24 hours of the permittee becoming aware of the noncompliance event.
- 3.4.5 The permittee may satisfy the written reporting submission requirements of Appendix A, Part 3.4 by submitting the written report via e-mail, if the following conditions are met:
 - 3.4.5.1 The Noncompliance Notification Form or equivalent form is used to report the noncompliance;
 - 3.4.5.2 The written report includes all the information required under Appendix A, Part 3.4.2;
 - 3.4.5.3 The written report is properly certified and signed in accordance with Appendix A, Parts 1.12.3 and 1.12.5.;
 - 3.4.5.4 The written report is scanned as a PDF (portable document format) document and transmitted to the Department as an attachment to the e-mail; and
 - 3.4.5.5 The permittee retains in the facility file the original signed and certified written report and a printed copy of the conveying email.
- 3.4.6 The e-mail and PDF written report will satisfy the written report submission requirements of this permit provided the e-mail is received by the Department within five days after the time the permittee becomes aware of the noncompliance event and the e-mail and written report satisfy the criteria of Part 3.4.5. The e-mail address to report noncompliance is:
dec-wqreporting@alaska.gov

3.5 Other Noncompliance Reporting

A permittee shall report all instances of noncompliance not required to be reported under Appendix A, Parts 2.4 (Compliance Schedules), 3.3 (Additional Monitoring by Permittee), and 3.4 (Twenty-four Hour Reporting) at the time the permittee submits monitoring reports under Appendix A, Part 3.2 (Reporting of Monitoring Results). A report of noncompliance under this part must contain the information listed in Appendix A, Part 3.4.2 and be sent to the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.

4.0 Penalties for Violations of Permit Conditions

Alaska laws allow the State to pursue both civil and criminal actions concurrently. The following is a summary of Alaska law. Permittees should read the applicable statutes for further substantive and procedural details.

4.1 Civil Action

Under AS 46.03.760(e), a person who violates or causes or permits to be violated a regulation, a lawful order of the Department, or a permit, approval, or acceptance, or term or condition of a permit, approval or acceptance issued under the program authorized by AS 46.03.020 (12) is liable, in a civil action, to the State for a sum to be assessed by the court of not less than \$500 nor more than \$100,000 for the initial violation, nor more than \$10,000 for each day after that on which the violation continues, and that shall reflect, when applicable:

- 4.1.1 Reasonable compensation in the nature of liquated damages for any adverse environmental effects caused by the violation, that shall be determined by the court according to the toxicity, degradability, and dispersal characteristics of the substance discharged, the sensitivity of the receiving environment, and the degree to which the discharge degrades existing environmental quality;
- 4.1.2 Reasonable costs incurred by the State in detection, investigation, and attempted correction of the violation;
- 4.1.3 The economic savings realized by the person in not complying with the requirements for which a violation is charged; and
- 4.1.4 The need for an enhanced civil penalty to deter future noncompliance.

4.2 Injunctive Relief

- 4.2.1 Under AS 46.03.820, the Department can order an activity presenting an imminent or present danger to public health or that would be likely to result in irreversible damage to the environment be discontinued. Upon receipt of such an order, the activity must be immediately discontinued.
- 4.2.2 Under AS 46.03.765, the Department can bring an action in Alaska Superior Court seeking to enjoin ongoing or threatened violations for Department-issued permits and Department statutes and regulations.

4.3 Criminal Action

Under AS 46.03.790(h), a person is guilty of a Class A misdemeanor if the person negligently:

- 4.3.1 Violates a regulation adopted by the Department under AS 46.03.020(12);
- 4.3.2 Violates a permit issued under the program authorized by AS 46.03.020(12);
- 4.3.3 Fails to provide information or provides false information required by a regulation adopted under AS 46.03.020(12);
- 4.3.4 Makes a false statement, representation, or certification in an application, notice, record, report, permit, or other document filed, maintained, or used for purposes of compliance with a permit issued under or a regulation adopted under AS 46.03.020(12); or
- 4.3.5 Renders inaccurate a monitoring device or method required to be maintained by a permit issued or under a regulation adopted under AS 46.03.020(12).

4.4 Other Fines

Upon conviction of a violation of a regulation adopted under AS 46.03.020(12), a defendant who is not an organization may be sentenced to pay a fine of not more than \$10,000 for each separate violation (AS 46.03.790(g)). A defendant that is an organization may be sentenced to pay a fine not exceeding the greater of: (1) \$200,00; (2) three times the pecuniary gain realized by the defendant as a result of the offense; or (3) three times the pecuniary damage or loss caused by the defendant to another, or the property of another, as a result of the offense (AS 12.55.035(c)(B), (c)(2), and (c)(3)).

Appendix B

Abbreviations and Acronyms

Abbreviations and Acronyms

18 AAC 70	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 70: Water Quality Standards. Available at: http://dec.alaska.gov/media/1046/18-aac-70.pdf
18 AAC 72	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 72: Wastewater Disposal. Available at: http://dec.alaska.gov/media/1047/18-aac-72.pdf
18 AAC 83	Alaska Administrative Code Title 18 Environmental Conservation, Chapter 83: Alaska Pollutant Discharge Elimination System. Available at: http://dec.alaska.gov/media/1052/18-aac-83.pdf
33 CFR Part 159	Code of Federal Regulations Title 33: Navigation and Navigable Waters. Available at: http://www.ecfr.gov/cgi-bin/ECFR?page=browse
40 CFR	Code of Federal Regulations Title 40: Protection of Environment. Available at: http://www.ecfr.gov/cgi-bin/ECFR?page=browse
401 Certification	State of Alaska’s CWA Section 401 Certificate of Reasonable Assurance
ADF&G	Alaska Department of Fish and Game
APDES	Alaska Pollutant Discharge Elimination System
AS 46.03	Alaska Statutes Title 46, Chapter 03: Environmental Conservation. Available at http://www.legis.state.ak.us/default.htm
BAT	Best Available Technology Economically Achievable
BMP	Best Management Practices
BOD	Biochemical Oxygen Demand
BOD ₅	Biochemical Oxygen Demand 5-Day Test
BPJ	Best Professional Judgment
CFR	Code of Federal Regulations. Available at: http://www.ecfr.gov/cgi-bin/ECFR?page=browse
CHA	Critical Habitat Area
COD	Chemical Oxygen Demand
CWA	Clean Water Act
DAF	Dissolved Air Flotation
DEC	Alaska Department of Environmental Conservation or The Department. Available at http://dec.alaska.gov/
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
DPS	Distinct Population Segment
ECHO	EPA’s Enforcement & Compliance History Online
EFH	Essential Fish Habitat
e.g.	Latin, “ <i>Exempli gratia</i> ”, Latin for ‘for the sake of example’
ELG	Effluent Limitation Guideline
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
FDA	U.S. Food and Drug Administration

Abbreviations and Acronyms

GIS	Geographic Information System
gpd	Gallons per day
GPS	Global Positioning System
i.e.	Latin “ <i>id est.</i> ” for ‘in other words’ or ‘that is’
MBR	Membrane Bioreactors
MDL	Method Detection Limits
mgd	Million gallons per day
mg/L	Milligram per liter
µg/L	Micrograms per liter
ML	Minimum Level
ml	Milliliter
MLLW	Mean Lower Low Water
MSGP	Multi-Sector General Permit
N/A	Not Applicable
NH ₃	Ammonia
NH ₄ ⁺	Ammonium
nm	Nautical mile
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&G	Oil and Grease
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
ROVs	Remotely Operated Vehicles
RTC	Response to Comments
SPI	Sediment Profile Imaging
SU	Standard Units
T/E spp	Threatened or Endangered Species
TBEL	Technology-Based Effluent Limitations
TMDL	Total Maximum Daily Load
TRC	Total Residual Chlorine
TSS	Total Suspended Solids
USFWS	United States Fish and Wildlife Service
U.S.	United States
U.S.C.	United States Code
VGP	Vessel General Permit
WQBEL	Water Quality-Based Effluent Limitations
WQS	Water Quality Standards

Appendix C

Definitions

Alaska Pollutant Discharge Elimination System (APDES)	Means the state’s program, approved by EPA under 33 U.S.C. 1342(b), for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits and imposing and enforcing pretreatment requirements under 33 U.S.C. 1317, 1328, 1342, and 1345
Annual	Means once per calendar year
Average	Means an arithmetic mean obtained by adding quantities and dividing the sum by the number of quantities
Average Monthly Discharge Limitation	Means the highest allowable average of “daily discharges” over a calendar month calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month
Baseline	Generally speaking, the baseline consists of the mainland low-water line and any offshore island and additional features that are applicable to the U.S. coast, such as straight lines or closing lines of river mouths, bays and enclosed harbors from which the breadth of the territorial sea is measured. See U.S. Maritime Zones and the Determination at http://ushydro.thsoa.org/hy07/11_01.pdf of the National Baseline at for more information on baseline
Best Management Practices (BMPs)	Means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage
Biochemical Oxygen Demand (BOD ₅)	Means the amount, in milligrams per liter, of oxygen used in the biochemical oxidation of organic matter in five days at 20° C
Bone Meal	Means a by-product made from the bones recovered from seafood processing
Boundary	Means a line or landmark that serves to clarify, outline, or mark a limit, border, or interface
Bypass	Means the intentional diversion of waste streams from any portion of a treatment facility
Catch Transfer Water	Means waste or wastewaters conveyed to an onshore seafood processing facility from a vessel as part of the seafood offloading process. Includes fish hold waste and wastewater, live tank water, refrigerated seawater, and brine.
Clean Water Act (CWA)	Means the federal law codified at 33 U.S.C. 1251-1387, also referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972
Color	Means the condition that results in the visual sensations of hue and intensity as measured after turbidity is removed
Commissioner	Means the commissioner of the Alaska Department of Environmental Conservation or the commissioner’s designee

Commodity (Line)	May refer to: Crab meat, whole crab/crab sections, shrimp, salmon conventional/hand butchered, salmon mechanized processing, bottom fish conventional/hand butchered, bottom fish mechanized processing, scallops, herring – frozen whole, herring fillet processing, washed mince, washed paste, by-product recovery, or sea macroalgae
Composite Samples	Composite samples shall consist of at least one equal volume grab sample aliquot per every full three hours in the compositing period. The sample aliquots shall be collected, stored and analyzed within applicable hold times in accordance with procedures prescribed in the most recent edition of <i>Standard Methods for the Examination of Water and Wastewater</i>
Construction	Means any placement, assembly, or installation of facilities or equipment (including contractual obligations to purchase such facilities or equipment) at the premises where such equipment will be used, including preparation work at such premises” (see Section 306(a) of the CWA), a number of activities may give rise to new source status
Contact Recreation	Means activities in which there is direct and intimate contact with water. Contact recreation includes swimming, diving, and water skiing. Contact recreation does not include wading
Continuous Coverage	Seafood waste deposits that are found to be 95% or greater areal coverage within a 3-foot by 3-foot sample plot as measured along a transect of the seafloor. At DEC’s discretion, will include boulders, rock outcrops, ridges, and other protrusions within an area of continuous coverage that are not covered by seafood waste
Cooling Water	Means once-through, non-contact cooling water
Criterion	Means a set concentration or limit of a water quality parameter that, when not exceeded, will protect an organism, a population of organisms, a community of organisms, or a prescribed water use with a reasonable degree of safety. A criterion might be a narrative statement instead of a numerical concentration or limit
Daily Discharge	Means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with a limitation expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day
Datum	A datum defines the position of the spheroid, a mathematical representation of the earth, relative to the center of the earth. It provides a frame of reference for measuring locations on the surface of the earth by defining the origin and orientation of latitude and longitude lines
Department	Means the Alaska Department of Environmental Conservation
Design Flow	Means the wastewater flow rate that the plant was designed to handle

Detectable	Means any amount of observable seafood waste deposits. In general, seafloor surveyors have reported that seafood deposits must be greater than 2% coverage in the 3-foot by 3-foot sample plot to be evident
Director	Means the commissioner or the commissioner's designee assigned to administer the APDES program or a portion of it, unless the context identifies an EPA director
Discharge	Means, when used without qualification, the discharge of a pollutant
Discharge of a Pollutant	Means any addition of any pollutant or combination of pollutants to waters of the United States from any point source or to waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft that is being used as a means of transportation. Discharge includes any addition of pollutants into waters of the United States from surface runoff that is collected or channeled by humans, discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person that do not lead to a treatment works, discharges through pipes, sewers, or other conveyances leading into privately owned treatment works, and does not include an addition of pollutants by any indirect discharger
Discontinuous coverage	Means areas of seafood waste deposits that are estimated to cover 10% or more of the seafloor, but less than 95%, within the 3-foot by 3-foot sample plot
Dissolved Oxygen (DO)	Means the concentration of oxygen in water as determined either by the Winkler (iodometric) method and its modifications or by the membrane electrode method The oxygen dissolved in water or wastewater and usually expressed in milligrams per liter or percent saturation
Domestic Wastewater	Means waterborne human wastes or graywater derived from dwellings, commercial buildings, institutions, or similar structures. "Domestic wastewater" includes the contents of individual removable containers used to collect and temporarily store human wastes or sewage
Ecosystem	Means a system made up of a community of animals, plants, and bacteria and the system's interrelated physical and chemical environment
Effluent	Means the segment of a wastewater stream that follows the final step in a treatment process and precedes discharge of the wastewater stream to the receiving environment
Estimated	Means a way to determine the discharge volume and flow rates. Approvable estimations include, but are not limited to, the lift station run time combined with pump speeds, averaging the direct volume measurements over several time-periods correlated to commodity line production amounts, etc.
Existing Use of the Waterbody	The protected use classes and subclasses of state waters. For marine waters these uses include water supply, water recreation, growth and

	propagation of fish, shellfish, other aquatic life, and wildlife, and harvesting for consumption of raw mollusks or other aquatic life. An existing use includes all of these protected uses. See 18 AAC 70.020 for the protected subclasses
Existing Source	Existing source means any source which is not a new source or a new discharger those constructed, or the use of equipment that was installed, prior to December 1, 1975. See definition for Construction, 'New Source', and Source
Facility (ies)	Means those seafood processing plants located onshore (land); those plants or systems located on pilings; and/or support barges and vessels anchored next to a seafood processing facility at a location. Throughout the permit or fact sheet the words "facilities or equipment" can be used interchangeably with the term "source", and "building, structure, facility, or installation"
Fecal Coliform Bacteria (FC)	Bacteria that can ferment lactose at $44.5^{\circ} + 0.2^{\circ}\text{C}$ to produce gas in a multiple tube procedure. Fecal coliform bacteria also means all bacteria that produce blue colonies in a membrane filtration procedure within 24 ± 2 hours of incubation at $44.5^{\circ} + 0.2^{\circ}\text{C}$ in an M-FC broth
Fish Hydrolysate	Means a seafood by-product where solid fish is transformed into a liquid or dry product obtained through various biological processes, sometimes including the addition of enzyme and acid reducers to speed up the hydrolysis process and possible dehydration
Fish Meal/Powder	Means a solid product obtained by removing most of the water and some or all of the oil from fish or fish waste
Fish Oil	Means the oil recovered from the tissue of oily fish such as salmon through a by-product recovery process to be sold as a usable product
Fish Protein	Means a minced, paste or ground seafood product that may be made up of multi-species. In example, 'fish protein' (contains one or more of the following: pollock, cod, and/or Pacific whiting, salmon, etc)
Fishery Resource	Means finfish, mollusks, crustaceans, and any other form of marine animal or plant life, other than marine mammals and birds. Referred to as 'seafood'
Fishing vessel / barge	Means a vessel/barge that commercially engages in the catching, taking, or harvesting of a fishery resource or an activity that can reasonably be expected to results in the catching, taking, or harvesting of a fishery resource. Or a vessel/barge that operates on behalf of the operator to dispose of seafood waste in Inland waters
Food Ingredients, Additives & Colors	As defined by the FDA 21 CFR
Garbage	Means all kinds of victual, domestic and operational waste, excluding fresh fish and part thereof, generated during normal operation and liable to be disposed of continuously or periodically except dishwater, graywater and those substances that are defined in other Annexes to MARPOL 73/78

Geometric Mean	The geometric mean is the N th root of the product of N. All sample results of zero will use a value of 1 for calculation of the geometric mean. Example geometric mean calculation: $\sqrt[4]{12 \times 23 \times 34 \times 990} = 55$
Grab Sample	Means a single instantaneous sample collected at a particular place and time that represents the composition of wastewater only at that time and place
Graywater	Means wastewater from a laundry, kitchen, sink, shower, bath, or other domestic source that does not contain excrement, urine, or combined storm water
Hydrodynamically energetic waters	Means waters that will disperse the seafood processing waste before settling, re-suspend and disperse wastes during high current events, or facilitate the decay and decomposition of the seafood waste
Hydrolysate	Means the liquid or solid product generated by enzymatically digesting seafood waste
Influent	Means untreated wastewater before it enters the first treatment process of a wastewater treatment works
Internal Outfall	Means those discharge lines (outfalls) used to monitor a specified wastewater stream before it mixes with another wastewater stream
Living substrate	Means intertidal and seafloor communities of benthic plants (e.g., macroalgae and kelp) and animals (e.g., mussels, tube-building polychaete worms, and erect bryozoans) in dense aggregations. The Habitat Conservation Division of NMFS may be contacted at 907-271-5006 (Anchorage) or 907-586-7235 (Juneau) for further guidance on and the known locations of living substrates and other Habitat Areas of Particular Concern listed under the Essential Fish Habitat section of the Magnuson Fishery Conservation and Management Act
Macroalgae and Microalgae Processing	Means processing activities associated with those marine plants
Marine sanitation device	Means any equipment for installation on board a vessel that is designed to receive, retain, treat or discharge sewage or any process to treat such sewage
Maximum Daily Discharge Limitation	Means the highest allowable “daily discharge”
Mean	Means the average of values obtained over a specified period and, for fecal coliform analysis, is computed as a geometric mean
Mean Lower Low Water (MLLW)	Means the tidal datum plane of the average of the lower of the two low waters of each day, as would be established by the National Geodetic Survey, at any place subject to tidal influence
Measured	Means the actual volume of wastewater discharged using appropriate mechanical or electronic equipment to provide a totalized reading. Measure does not provide a recorded measurement of instantaneous rates

Method Detection Limit (MDL)	Means the minimum concentration of a substance (analyte) that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte
Micrograms per Liter ($\mu\text{g/L}$)	Means the concentration at which one millionth of a gram (10^{-6} g) is found in a volume of one liter
Mid-Depth	Means the depth of the sample location proportional to the water depth at the time of monitoring. Mid-depth is approximately half of the distance from the water surface to the seafloor at the monitoring location
Milligrams per Liter (mg/L)	Means the concentration at which one thousandth of a gram (10^{-3} g) is found in a volume of one liter. It is approximately equal to the unit "parts per million (ppm)," formerly of common use
Mince	Means finely chopped seafood, particularly fish
Minimum Level (ML)	Means the concentration at which the entire analytical system shall give a recognizable signal and an acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed. This level is used as the compliance level if the effluent limit is below it
Mixed Commodity	Means when more than one type of seafood processing commodity line is being processed
Mixing Zone	An area in a waterbody surrounding or downstream of, a discharge where the effluent plume is diluted by the receiving water within which specified water quality criteria may be exceeded
Month	Means the time period from the 1 st of a calendar month to the last day in the month
Monthly Average	Means the average of daily discharges over a monitoring month calculated as the sum of all daily discharges measured during a monitoring month divided by the number of daily discharges measured during that month
Moored/Docked Support Vessels	Means those vessels that moor or dock next to a seafood processing facility, performing or providing seafood processing support services such as additional processing capabilities or freezing services
New Source	Under the CWA, any source, the construction of which is commenced after promulgation. Means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced: <ul style="list-style-type: none"> a.) After promulgation of standards of performance under Section 306 of the CWA which are applicable to such source, or b.) After proposal of standards of performance in accordance with Section 306 of the CWA which are applicable to such source,

	<p>but only if the standards are promulgated in accordance with Section 306 of the CWA within 120 days of their proposal.</p> <p>When reviewing 40 CFR 122.29 for Criteria for new source determination for Seafood Processing’s “new source” this is the placement, assembly or installation of facilities or equipment which commenced after December 1, 1975. EPA has previously determined that a newly constructed facility is a new source even if its discharge is conveyed through an existing waste treatment system. 49 Fed. Reg. 38044 (Sept. 26, 1984). Note, in EPA’s interpretive memo, where an owner or operator makes changes <i>only</i> to its wastewater treatment systems, and no changes occur in the production or wastewater generating processes of the plant, the source should not be reclassified as a new source</p>
Non-Process wastewaters	Means any water which, during manufacturing or processing, does not come into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Including, but not limited to: non-contact cooling water, boiler water, freshwater pressure relief water, refrigeration/freezer condensate, continuous exchange live tank water, scrubber water, etc.
Non-Remote Processor	Mean a seafood processing facility or by-product recovery facility located in a designated “processing center” or “population center” as described in 40 CFR Part 408
Nuisance discharge	Means, a substantial and unreasonable interference with the use or enjoyment of real property, including water. Including seafood processing effluent discharges that are discharged or stored where animals are attracted to the waste in a manner that creates a threat to animal or human health and safety
Oil and Grease	Mean those components of a waste water amenable to measurement by the method described in Methods for Chemical Analysis of Water and Wastes, 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 217, and utilizing approved methods, per Title 40 Code of Federal Regulations (CFR) Part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants), adopted by reference at 18 AAC 83.010(f)
Operator / Permittee	Means a company, organization, association, entity, or person who is issued a wastewater permit and is responsible for ensuring compliance, monitoring, and reporting as required by this permit
Ordinary High Water Mark	Means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas
pH	Means a measure of the hydrogen ion concentration of water or wastewater, expressed as the negative logarithm of the hydrogen ion

	concentration, expressed as moles/L ($\text{pH} = -\log_{10}(\text{H}^+)$). A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic
Point Source	Means any discernible, confined, and discrete conveyance, including but not limited to: any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft form which pollutants are or may be discharged
Pollutant	Means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under 42 U.S.C. 2011), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, or agricultural waste discharged into water
Poor Flushing	Means average water currents of less than one third (0.33) of a knot within 300 feet of an outfall
Principal Executive Officer	Means the chief executive officer of the agency or a senior executive officer having responsibility for the overall operations of a principal geographic unit of division of the agency
Process wastewater	Means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Including, but not limited to: contact wastewater (e.g. contact cooking or cooling waters, such as retort water, or water used to boil or cool seafood directly), wastewater from floor drains, drains where water or process water has come in contact with seafood loading and unloading areas, water from seafood processing areas and by-product lines; or those waters that has been in contact seafood, seafood waste and wastewaters and offal
Processor	Operator of a facility who prepares raw fish or shellfish into a marketable form
Quality Assurance Project Plan (QAPP)	Means a system of procedures, checks, audits, and corrective actions to ensure that all research design and performance, environmental monitoring and sampling, and other technical and reporting activities are of the highest achievable quality
Quarter or Quarterly	Means the time period of three months based on the calendar year beginning with January
Readily Visible	Readily visible area is defined as the receiving water and shoreline area(s) that a shore-based observer can see when standing at a location (on or off the permittee's parcel) where the field of view is unobstructed by buildings or ships. Visible areas may vary with weather (e.g., fog) and sea conditions (waves). As a result, the extent of the readily visible area should be noted as part of each daily monitoring event
Receiving Water Body	Means waters of the U.S. including: lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, straits, passages, canals, the Pacific Ocean, Gulf of Alaska, Bering Sea, and Arctic Ocean, in the territorial limits of the

	state, and all other bodies of surface water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially in or bordering the state or under the jurisdiction of the state. (See “Waters of the U.S.” at 18 AAC 83.990(66) & AS 46.03.900(37))
Recorded	Means a permanent record using mechanical or electronic equipment to provide a totalized reading, as well as a record of instantaneous readings
Report	Report results of analysis
Residual Chlorine	Means chlorine remaining in water or wastewater at the end of a specified contact period as combined or free chlorine
Responsible Corporate Officer	Means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function or any other person who performs similar policy or decision making functions for the corporation. The Responsible Corporate Officer can also be the manager of one or more manufacturing, production, or operating facilities if the requirements of 18 AAC 83.385(a)(1)(B)(i)-(iii) are met
Sample Plot	Means a sampling area, 3-foot by 3-foot square, used in the Seafloor Survey Protocol (Appendix E), used in measuring percentages of seafood waste coverage
Sampling Day	Means any consecutive 24-hour sampling period
Scupper	Means an opening for draining off water, as from a floor or the roof of a building
Seafloor Survey Area	To include the entire marine floor operating area where seafood waste deposits may be found. Seafloor areas surrounding a permittee’s seafood processing facility, seafloor areas surrounding: seafood transfer devices; vessel and/or barge loading and unloading areas; seafloor areas under bulkheads, ramps, floating walkways, docks, pilings, dolphins, anchors, buoys and other marine appurtenances; outfall terminus location(s) and the length of the outfall line connecting the facility to the point of discharge. Additionally, the survey shall include any seafood waste found at previous outfall terminus locations for those outfalls that have no record of historical seafloor survey; and the marine water and seafloor underlying and connecting these features
Seafood	Means the raw material, including freshwater and saltwater fish and shellfish, to be processed from the form in which it is received as a seafood processing plant
Seafood by-product	Means the process wastewater effluent and seafood waste fluids, organs, flesh, bones, and chitinous shells produced in the conversion of seafood from a raw form to a marketable form that is utilized as source of material in a by-product recovery process line or facility. See also fish meal, bone meal, fish oils, hydrolysate
Seafood Processing	The conversion of aquatic animals from a raw to marketable form which involves more than evisceration of fish or other seafood at-sea

Seafood Processing Waste	Means the waste fluids, organs, flesh, bones, woody fiber and chitinous shells produced in the conversion of aquatic animals and plants from a raw form to a marketable form
Seafood Processing Waste and Wastewaters	Means based on definition of ‘process wastewater’ found in 18 AAC 83.990(54), any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Including, but not limited to: contact wastewater (e.g. contact cooking or cooling waters, such as retort water, or water used to boil or cool seafood directly), wastewater from floor drains, drains where water or process water has come in contact with water from seafood processing areas and by-product lines; or those waters that has been in contact seafood, seafood waste and wastewaters and offal; ice and water used to transfer seafood (i.e., catch transfer water) into the facility and live tank water transferred into the facility
Seasons A, B, C, D	Generally means the area Pollock fishing openings: Generally, the seasons run as follows - Season A: January – April/May; Season B June-October, Season C and D begin in August and October, respectively
Seasonal Facility	Means a facility that only processes seafood for a limited amount of time each calendar year and then the facility shuts down for three or more months before beginning processing again
Secondary Recreation	Means activities in which incidental water use can occur. Secondary recreation includes boating, camping, hunting, hiking, wading, and recreational fishing. Secondary contact recreation does not include fish consumption
Settleable Solids	Means solid material of organic or mineral origin that is transported by and deposited from water, as measured by the volumetric Imhoff cone method and at the method detection limits specified in method 2540(F), <i>Standard Methods for the Examination of Water and Wastewater</i> , 18 th edition (1992), adopted by reference in 18 AAC 70.020(c)(1)
Sewage	Means human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes
Shall	Used in laws, regulations, or directives (including the use in this permit) to express what is mandatory <it <i>shall</i> be unlawful to carry firearms>
Sheen	Means an iridescent appearance on the water surface
Shellfish	Means a species of crustacean, mollusk, or other aquatic invertebrate with a shell or shell-like exoskeleton in any stage of its life cycle
Single Discharge Location	Means the outfall(s) or port discharge locations (past and present) of an onshore facility
Source	Mean any building, structure, facility or installation from which there is or may be a discharge of pollutants

Spoiled Seafood	Means putrid, raw (non-processed) seafood, or contaminated or unsold interim or finished seafood by-products (e.g., hydrolysate, fish meal, fish oil)
Stickwater	Means the wastewater collected produced from a fish meal, fish oil or fish hydrolysate processes production. Occurs when where fish processing byproducts are cooked, pressed and non-soluble protein solids and oils are usually removed by centrifuges, decanters, tricanter, etc. The leftover solids and solubles after by-product recovery and oil recovery
Support Facility, Vessel(s) or Barge(s)	Means vessels and/or barges anchored next to a seafood processing dock or shoreline location where seafood processing (including freezing activities) is occurring on the vessel / barge on behalf of the onshore facility. This does not include tender vessels who are only transporting fish from the fishing vessels to fish processing facility/vessel
Suspended Solids	Means insoluble solids that either float on the surface of, or are in suspension in, water, wastewater, or other liquids. The quantity of material removed from wastewater in a laboratory test, as prescribed in <i>Standard Methods for the Examination of Water and Wastewater</i> and referred to as non-filterable
Totalizer	Means a piece of equipment used with flow meters that displays the total flow on a real time basis, measuring the total flow of a media over a given time period. Also referred to as a flow totalizer.
Total Maximum Daily Load (TMDL)	The sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure
Total Residual Chlorine	Means chlorine remaining in water or wastewater at the end of a specified contact period as combined or free chlorine
Total Suspended Solids (TSS)	Means a measure of the filterable solids present in a sample, as determined by the method specified in 40 CFR Part 136 (most current version)
Trace coverage	Means areas of seafood waste that are estimated to cover detectable to less than 10% of areal coverage within a 3-foot by 3-foot sample plot
Twice per year (2 per year)	Means the two time periods: October through April and May through September
Unwashed Mince / Unwashed Paste	Means minced seafood or seafood flesh that is paste consistency that is neither washed, nor dewatered and is processed fresh or frozen into blocks
Upset	Means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the operator. An

	upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation
Washed Mince / Washed Paste	Means a washed mince or washed paste seafood or seafood flesh that is washed, dewatered, and is processed fresh or frozen into blocks. In example, key ingredients in surimi, kamaboko, fish sausage, washed seafood carcasses as by-product, and cured surimi products are included in this classification
Water Depth	Means the depth of the water between the surface and the seafloor as measured at MLLW, or from the water surface to the bed lands
Wastewater Treatment	Means any process to which wastewater is subjected in order to remove or alter its objectionable constituents and make it suitable for subsequent use or acceptable for discharge to the environment
Waters of the United States or Waters of the U.S.	Has the meaning given in 18 AAC 83.990(77)
Water Recreation	See contact recreation or secondary recreation
Water Supply	Means any of the waters of the state that are designated in 18 AAC 70 to be protected for fresh water or marine water uses; water supply includes waters used for drinking, culinary, food processing, agricultural, aquacultural, seafood processing, and industrial purposes; "water supply" does not necessarily mean that water in a waterbody that is protected as a supply for the uses listed in this paragraph is safe to drink in its natural state
Week	Means the time period of Sunday through Saturday

Appendix D

Calculations to Determine Compliance with Mass-Based Effluent Limitations

Calculations to Determine Compliance with Mass-Based Effluent Limitations

The permit incorporates effluent limitations established by the Effluent Limitations Guidelines (ELGs) for the Canned and Preserved Seafood Processing Point Source Category at 40 CFR Part 408. The limitations are expressed as pounds of total suspended solids (TSS), oil and grease (O&G), and Biochemical Oxygen Demand (5-day test, BOD₅) per 1,000 pounds of seafood processed and are applicable on a per commodity line processed basis. Several types of seafood processing activities and commodity line-specific effluent limitations (Permit Table 3 and Table 6) are covered by the permit. If an authorized facility processes only one commodity line and samples the discharged wastewater, the calculations to determine compliance are shown in Part 1 below (Step 1-1 through 1-4).

If an authorized facility has several commodity lines processing seafood, thus producing mixed-commodity effluent while sampling is performed, the multi-commodity line calculations are provided in Part 2 (Step 2-1 through 2-6). When pollutant sampling is from mixed commodity line seafood processing effluent (more than one commodity line is processed that day), the ELGs must be weighted dependent on the percentage of each commodity processed that day. Mixed commodity line effluent limitations may vary day to day and month to month, and an operator is required to determine accurate effluent limitations calculated based upon the facility-specific commodity mix processed during each reporting period.

Acronyms:

lbs/day = Pounds per day

mg/L = Milligrams per liter

mgd = Million gallons per day

TSS: Total suspended solids

O&G: Oil and grease

BOD₅: Biochemical oxygen demand

TBEL: Technology-based Effluent
Limitation

Part 1: Single Commodity Line Compliance Calculations

Step	Instruction	Equation
1-1	Calculate the Production-Normalized Daily Mass Load of the pollutant.	$\left[(\text{sample concentration, mg/L}) \times (\text{sample day daily flow, mgd}) \times (8.34 \text{ lbs/gal}) \right]^{a,b}$ $(\text{raw product processed on sample date, lbs})^c / (1,000 \text{ lbs})$ $= \text{Production-Normalized Daily Mass Load of the pollutant, in lbs/1,000 lbs}$
1-2	Compare the Production-Normalized Daily Mass Load to the daily TBEL limitation.	<p>IF Production-Normalized Daily Mass Load < Daily TBEL,</p> <p style="text-align: center;">THEN daily value is in compliance</p>
1-3	Calculate the Production-Normalized Monthly Average Mass Load of the pollutant.	$\left[(\text{Production-Normalized Daily Mass Load on sample day 1}) + (\text{Production-Normalized Daily Mass Load on sample day 2}) + (\text{ETC}) \right]$ $(\text{Number of Sample Days during the Month})$ $= \text{Production-Normalized Monthly Average Mass Load of the pollutant, in lbs/1,000 lbs}$
1-4	Compare the Production-Normalized Monthly Average Mass Load to the monthly TBEL limitation.	<p>IF Production-Normalized Monthly Average Mass Load < Monthly TBEL,</p> <p style="text-align: center;">THEN monthly value is in compliance</p>

Notes:

a. If washed mince / paste is produced, subtract out this discharge's pollutant load before dividing by the raw product processed.

$$\text{Washed mince / paste pollutant load} = (\text{internal outfall's screened wastewater sample concentration, mg/L}) \times (\text{sample day daily flow from internal outfall, mgd}) \times (8.34 \text{ lbs/gal})$$

b. If this subtraction results in a negative number, the permittee should ensure that end-of-pipe monitoring is occurring on the same day and while washed mince / paste effluent is being discharged. QAPP sampling procedures should be adjusted so that sampling timing ensures that all wastewater streams are represented.

c. This value must not include raw product sent to a washed mince / paste commodity line.

Example: Bottom fish is processed by mechanized processes for 28 days in September at a facility. One time per week, wastewater is analyzed for TSS. The operator is required to record the pounds (lbs) of raw seafood processed each day and the amount of wastewater discharged each day in million gallons per day (mgd). The pounds of seafood processed and flow volume must be recorded on the day the pollutant sampling is performed. Monitoring logs show the following data:

Table D1: Single Commodity Line Processing Example Data

Date	TSS (mg/L)	Bottom Fish Processed, Raw Weight (lbs/day)	Flow (mgd)
Sept 8	244	35,660	0.043
Sept 14	183	47,200	0.050
Sept 20	175	48,910	0.041
Sept 28	110	28,750	0.035

**Table D2 - From General Permit Table 3:
New Source/Facility Butchering Effluent Limitations for TSS
for Bottom Fish – Mechanized Processing**

Commodity Line	TSS (lbs/1,000 lbs seafood)	
	Monthly Average	Daily Maximum
Bottom Fish - Mechanized Processing	12	22

Step	Example – For operations that process one commodity at a time and sample wastewater representative of that processing event.
1-1	<p>Sept 8: $[(244 \text{ mg/L}) \times (0.043 \text{ mgd}) \times (8.34 \text{ lbs/gal})] \div [(35,660 \text{ lbs}) / (1,000 \text{ lbs})] = 2.45 \text{ lbs TSS} / 1,000 \text{ lbs}$</p> <p>Sept 14: $[(183 \text{ mg/L}) \times (0.050 \text{ mgd}) \times (8.34 \text{ lbs/gal})] \div [(47,200 \text{ lbs}) / (1,000 \text{ lbs})] = 1.62 \text{ lbs TSS} / 1,000 \text{ lbs}$</p> <p>Sept 20: $[(175 \text{ mg/L}) \times (0.041 \text{ mgd}) \times (8.34 \text{ lbs/gal})] \div [(48,910 \text{ lbs}) / (1,000 \text{ lbs})] = 1.22 \text{ lbs TSS} / 1,000 \text{ lbs}$</p> <p>Sept 28: $[(110 \text{ mg/L}) \times (0.035 \text{ mgd}) \times (8.34 \text{ lbs/gal})] \div [(28,750 \text{ lbs}) / (1,000 \text{ lbs})] = 1.12 \text{ lbs TSS} / 1,000 \text{ lbs}$</p>
1-2	<p>Sept 8: 2.45 < 22 lbs TSS/ 1,000 lbs [In Compliance]</p> <p>Sept 14: 1.62 < 22 lbs TSS/ 1,000 lbs [In Compliance]</p> <p>Sept 20: 1.22 < 22 lbs TSS/ 1,000 lbs [In Compliance]</p> <p>Sept 28: 1.12 < 22 lbs TSS/ 1,000 lbs [In Compliance]</p>
1-3	$\frac{(2.45 \text{ lbs} / 1,000 \text{ lbs on Sept 8}) + (1.62 \text{ lbs} / 1,000 \text{ lbs on Sept 14}) + (1.22 \text{ lbs} / 1,000 \text{ lbs on Sept 20}) + (1.12 \text{ lbs} / 1,000 \text{ lbs on Sept 28})}{(4 \text{ sampling days})}$ $= 1.60 \text{ lbs TSS} / 1,000 \text{ lbs}$
1-4	<p>September: 1.60 < 12 lbs TSS/ 1,000 lbs [In Compliance]</p>

The same calculations are necessary to determine compliance with effluent limitations for O&G and BOD₅ (if sampling was required).

Part 2: Multiple Commodity Line Compliance Calculations

Step	Instruction	Equation
2-1	Calculate the Production-Normalized Daily Mass Load of the pollutant.	$\frac{[(\text{sample concentration, mg/L}) \times (\text{sample day daily flow, mgd}) \times (8.34 \text{ lbs/gal})]^{a,b}}{(\text{raw product processed on sample date, lbs})^c / (1,000 \text{ lbs})}$ <p style="text-align: center;">= Production-Normalized Daily Mass Load of the pollutant, in lbs/1,000 lbs</p>
2-2	Calculate the Multi-Commodity Line Daily Maximum Permit Limitation	$\frac{[(\text{daily maximum TBEL of Commodity Line A}) \times (\text{daily raw product processed on Commodity Line A, lbs})^c] + [(\text{daily maximum TBEL of Commodity Line B}) \times (\text{daily raw product processed on Commodity Line B, lbs})^c] + [\text{ETC}]}{(\text{Total raw product processed on sample date, lbs})^c}$ <p style="text-align: center;">= Multi-Commodity Line Daily Maximum Permit Limitation, in lbs/1,000 lbs</p>
2-3	Compare the Production-Normalized Daily Mass Load to the Multi-Commodity Line Daily Maximum Permit Limitation	<p>IF Production-Normalized Daily Mass Load</p> <p style="text-align: center;">< Multi-Commodity Line Daily Maximum Permit Limitation,</p> <p style="text-align: center;">THEN daily value is in compliance</p>
2-4	Calculate the Production-Normalized Monthly Average Mass Load of the pollutant.	$\frac{[(\text{Production-Normalized Daily Mass Load on sample day 1}) + (\text{Production-Normalized Daily Mass Load on sample day 2}) + (\text{ETC})]}{(\text{Number of Sample Days during the Month})}$ <p style="text-align: center;">= Production-Normalized Monthly Average Mass Load of the pollutant, in lbs/1,000 lbs</p>

2-5	Calculate the Multi-Commodity Line Monthly Average Permit Limitation	$[(\text{monthly TBEL of Commodity Line A}) \times (\text{monthly raw product processed on Commodity Line A, lbs})^c] + [(\text{monthly TBEL of Commodity Line B}) \times (\text{monthly raw product processed on Commodity Line B, lbs})^c] + [\text{ETC}]$ <hr/> $(\text{Sampling days sum total raw product processed during the month, lbs})^c$ $= \text{Multi-Commodity Line Monthly Average Permit Limitation, in lbs/1,000 lbs}$
2-6	Compare the Production-Normalized Monthly Average Mass Load to the Multi-Commodity Line Monthly Average Permit Limitation	<p style="text-align: center;">IF Production-Normalized Monthly Average Mass Load < Multi-Commodity Line Monthly Average Permit Limitation, THEN monthly value is in compliance</p>

Notes:

a. If washed mince / paste is produced, subtract out this discharge's pollutant load before dividing by the raw product processed.

$$\text{Washed mince / paste pollutant load} = (\text{internal outfall's screened wastewater sample concentration, mg/L}) \times (\text{sample day daily flow from internal outfall, mgd}) \times (8.34 \text{ lbs/gal})$$

b. If this subtraction results in a negative number, the permittee should ensure that end-of-pipe monitoring is occurring on the same day and while washed mince / paste effluent is being discharged. QAPP sampling procedures should be adjusted so that sampling timing ensures that all wastewater streams are represented.

c. This value must not include raw product sent to a washed mince / paste commodity line.

Example: A facility operates for 22 days in October and processes crab meat, salmon by mechanized processes, and bottom fish by mechanized processes. The seafood processing combined effluent is analyzed for TSS once per week. The amount of raw seafood processed each day by commodity line in pounds, and the amount of wastewater discharged each day in mgd, is recorded. Monitoring logs show the following data:

Table D3: Mixed Commodity Processing Example Data

Date	Seafood Processed, Raw Weight (lbs)				Flow (mgd)	TSS (mg/L)
	Crab Meat	Bottom Fish (Mechanized)	Salmon (Mechanized)	Total		
October 8	25,640	44,570	0	70,210	0.176	261
October 14	18,220	42,830	0	61,050	0.237	148
October 20	30,910	34,990	25,500	91,400	0.250	350
Sum Total	74,770	122,390	25,500	222,660	--	--

**Table D4 - From General Permit Table 3:
New Source/Facility Butchering Effluent Limitations for TSS**

Commodity Line	TSS (lbs/1,000 lbs seafood)	
	Monthly Average	Daily Maximum
Crab Meat	5.3	16
Bottom Fish (Mechanized)	12	22
Salmon (Mechanized)	25	42

Step	Example – For operations that process multiple commodity lines and commingle the wastewater.
2-1	<p>Oct 8: $[(261 \text{ mg/L}) \times (0.176 \text{ mgd}) \times (8.34 \text{ lbs/gal})] \div [(70,210 \text{ lbs}) / (1,000 \text{ lbs})] = \mathbf{5.46 \text{ lbs TSS / 1,000 lbs}}$</p> <p>Oct 14: $[(148 \text{ mg/L}) \times (0.237 \text{ mgd}) \times (8.34 \text{ lbs/gal})] \div [(61,050 \text{ lbs}) / (1,000 \text{ lbs})] = \mathbf{4.79 \text{ lbs TSS / 1,000 lbs}}$</p> <p>Oct 20: $[(350 \text{ mg/L}) \times (0.250 \text{ mgd}) \times (8.34 \text{ lbs/gal})] \div [(91,400 \text{ lbs}) / (1,000 \text{ lbs})] = \mathbf{7.98 \text{ lbs TSS / 1,000 lbs}}$</p>
2-2	<p>Oct 8:</p> <p>$[(16 \text{ lbs/1,000 lbs}) \times (25,640 \text{ lbs crab})] + [(22 \text{ lbs/1,000 lbs}) \times (44,570 \text{ lbs bottom fish mechanized})] + [(42 \text{ lbs/1,000 lbs}) \times (0 \text{ lbs salmon mechanized})]$</p> <hr/> <p>(70,210 lbs total raw product butchered)</p> <p>= 19.81 lbs/1,000 lbs</p> <p>Oct 14:</p> <p>$[(16 \text{ lbs/1,000 lbs}) \times (18,220 \text{ lbs crab})] + [(22 \text{ lbs/1,000 lbs}) \times (42,830 \text{ lbs bottom fish mechanized})] + [(42 \text{ lbs/1,000 lbs}) \times (0 \text{ lbs salmon mechanized})]$</p> <hr/> <p>(61,050 lbs total raw product butchered)</p> <p>= 20.21 lbs/1,000 lbs</p> <p>Oct 20:</p> <p>$[(16 \text{ lbs/1,000 lbs}) \times (30,910 \text{ lbs crab})] + [(22 \text{ lbs/1,000 lbs}) \times (34,990 \text{ lbs bottom fish mechanized})] + [(42 \text{ lbs/1,000 lbs}) \times (25,500 \text{ lbs salmon mechanized})]$</p> <hr/> <p>(91,400 lbs total raw product butchered)</p> <p>= 25.55 lbs/1,000 lbs</p>

2-3	<p>Oct 8: 5.46 < 19.81 lbs TSS/ 1,000 lbs [In Compliance]</p> <p>Oct 14: 4.79 < 20.21 lbs TSS/ 1,000 lbs [In Compliance]</p> <p>Oct 20: 7.98 < 25.55 lbs TSS/ 1,000 lbs [In Compliance]</p>
2-4	<p>(5.46 lbs / 1,000 lbs on Oct 8) + (4.79 lbs / 1,000 lbs on Oct 14) + (7.98 lbs / 1,000 lbs on Oct 20)</p> <hr/> <p>(3 sampling days)</p> <p>= 6.08 lbs TSS / 1,000 lbs</p>
2-5	<p>[(5.3 lbs/1,000 lbs) x (74,770 lbs crab)] + [(12 lbs/1,000 lbs) x (122,390 lbs bottom fish mechanized)] + [(25 lbs/1,000 lbs) x (25,500 lbs salmon mechanized)]</p> <hr/> <p>(222,660 lbs)</p> <p>= 11.2 lbs/1,000 lbs Multi-Commodity Line Monthly Average Permit Limitation</p>
2-6	<p>October: 6.08 < 11.2 lbs TSS/ 1,000 lbs [In Compliance]</p>

The same calculations are necessary to determine compliance with effluent limitations for O&G and BOD₅ (if sampling was required).

Appendix E

Seafloor Survey and Outfall Inspection Protocol

SEAFLOOR SURVEY PROTOCOL OVERVIEW

Seafloor Survey Applicability. The Seafloor Survey Protocol shall be used by the permittee to investigate, in compliance with Permit Part 2.7.2, potential seafood waste deposits accumulating on the seafloor. Seafloor surveying must be performed within one year of obtaining permit coverage and subsequently as required in Permit Table 9.

Purpose. The purpose of a seafloor survey is to 1) determine compliance with marine water quality criteria for residues (seafood processing waste deposits) on the seafloor; 2) evaluate the potential impacts on aquatic life, including the potential for bioaccumulation and persistence; 3) evaluate the expected duration of the deposit and any adverse effects; and 4) evaluate the potential transport of pollutants by biological, physical, and chemical processes. The permittee's historic and current discharge location(s) may have accumulated or be currently accumulating seafood waste deposits. Thus, the seafloor surrounding the current and all previous outfall terminus locations must be evaluated.

Seafloor Survey Protocol. The Seafloor Survey Protocol must be reviewed by the permittee and the permittee's surveyor. An equivalent method may be acceptable if it meets the survey purpose, as well as the data gathering and reporting objectives, contained herein. Alternate survey methods selected must be approved by DEC prior to implementation.

The seafloor surveys shall include subtidal fixtures, structures, and their location(s) and shall determine the thickness, total cumulative area(s), location, and outer boundaries of continuous and discontinuous coverage areas(s) of seafood waste on the seafloor. Continued surveying will document existing and ongoing seafood waste deposition, if any, as well as natural ambient dispersion and biological decay processes.

1.0 Seafloor Survey and Outfall Inspection Protocols

The permittee shall provide the surveyor a copy of the permit, any identified location(s) of seafood waste deposits as documented through the previously conducted Seafloor Survey(s), and this Seafloor Survey Protocol. The surveyor should request from the permittee information on any maintenance completed that could affect seafloor deposits. Additionally, the permittee shall inform the surveyor of any change in discharge locations since the last seafloor survey.

The seafloor survey shall be completed on a 30 foot by 30 foot grid pattern (30 feet between transect lines and 30 feet between sample plots along each transect). A minimum of nine sample plots must be surveyed. The sample plots must be centered around the outfall and must be adequate to encompass all seafood processing waste coverage areas. The survey must continue beyond the boundaries of seafood processing waste found as 'Trace' so that all deposits can be mapped as continuous, discontinuous, or 'Trace' coverage.

If feasible, at least five permanent markers (e.g., large rock outcrops, boulders, etc.) must be established at suitable locations, provided there are sufficient land/facility and/or underwater locations. If markers/monuments are not established, the seafloor survey shall report why markers were not established (e.g., current technologies were used that would allow the seafloor surveys to be repeated without permanent markers, or permittee does not own the bedlands the survey was performed at). If unable to establish permanent markers, the surveyor must document in the seafloor survey report the methods used to establish repeatable transects. Global Positioning System (GPS) coordinates derived using Wide Area Augmentation System (WAAS) technologies, or another technology with equivalent or better position accuracy, must be recorded for each underwater marker.

The surveyor must establish transect lines with a surveyor's tape or other precise methodology. Parallel transects shall be established no more than 30 feet apart and extend in a perpendicular direction from the permanent markers. If seafood processing waste deposit coverage extends beyond where neighboring seafood facilities' piles may intersect, then transect lengths must be extended to identify the full extent of seafood processing waste deposits.

The permittee is required to collect continuous WAAS enhanced GPS location information (reported in decimal degrees, to the fifth decimal place, if available, using the North American Datum (NAD) 1983 or World Geodetic System (WGS) 1984 datum). The accuracy of coordinates shall be at least within ± 50 feet (17 meters) while conducting the survey so that any vessel drift can be mapped. The permittee is also required to collect continuous depth information for each sample plot location, corrected to Mean Lower Low Water (MLLW).

Photographs are required on the designated grid spacing and, along with sample plot results, will establish the location(s) of the seafood waste deposits. Seafood processing waste mapping shall continue until seafood processing waste is no longer visible. Current technologies exist that allow the Seafloor Survey to extend into water depths greater than -120 feet Mean Lower Low Water (MLLW).

Seafloor Survey Protocol

Seafloor Survey Report. The permittee shall submit a Seafloor Survey Report to DEC containing the following information (due with the survey year's Annual Report):

1. Facility Information

- a. Permittee Name, APDES permit number, address, and contact information.
- b. Type of waste treatment, product, and by-product processes.

2. Surveyor and Survey Information

- a. Surveyor's name, signature, and contact information.
- b. Brief background of surveyor's previous work history performing seafloor surveys and mapping.
- c. Date and time the survey was completed.
- d. Name and USCG number of vessel assisting in the survey.
- e. Name of the receiving water where the survey is completed.
- f. Continuous GPS location information (reported in decimal degrees, to the fifth decimal place, if available, using the North American Datum (NAD) 1983 or World Geodetic System (WGS) 1984 datum). The accuracy of coordinates shall be at least within ± 50 feet (17 meters) while the survey is completed.
- g. Whether there are other seafood waste discharges occurring within 0.25 mile of the permittee's discharge locations.
- h. Whether seafood waste discharge was occurring at the time of the survey.
- i. QAPP that describes the methods used to:
 - Establish linear transects,
 - Locate sample plot locations along the transects,
 - Estimate percent coverage at each sample plot (photograph location), and
 - Calculate the continuous and discontinuous coverage area(s) of seafood waste deposits.

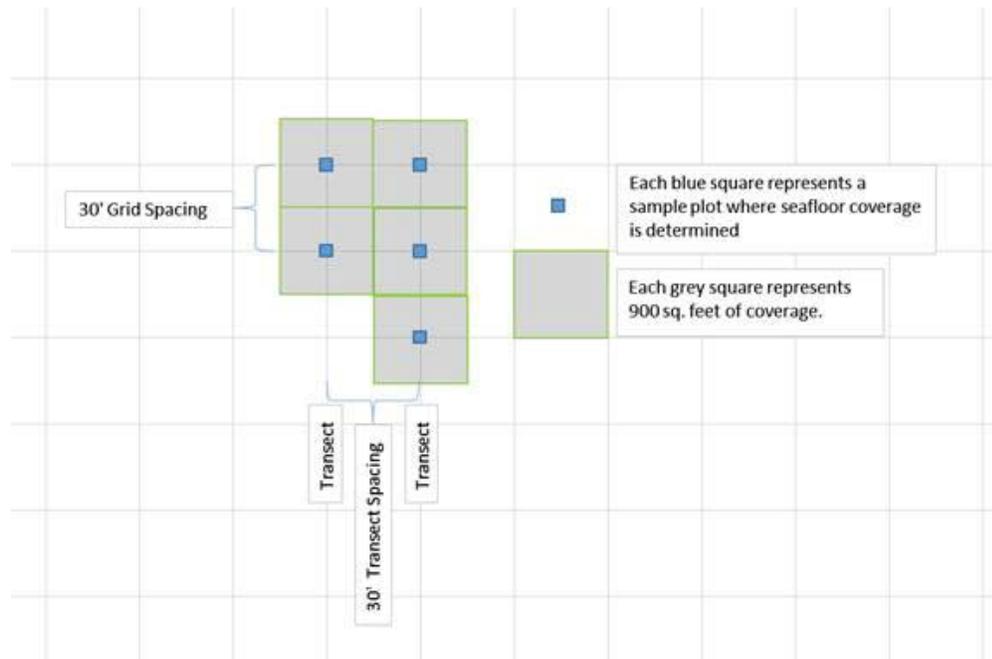
3. Previous Survey Information (if applicable)

- a. Name of surveyor(s) who completed the previous survey(s).
- b. Name of receiving water.
- c. Date, time, and place of previous seafloor survey(s).
- d. Date of completion of any previous seafloor survey report(s) and first and last name(s) of individual(s) who performed the analysis and report writing.
- e. A narrative of the seafloor survey(s) results that describes the methods and results of previous survey(s), including:
 - Total cumulative area(s) of seafood waste deposits
 - Any available electronic or hard copy mapping of seafood waste deposits found
- f. Whether mechanical raking or other pile reduction strategies have been implemented by the permittee at any time.

4. **Sample Plot Observations** - The seafloor survey shall be completed on a 30 foot by 30 foot grid pattern (30 feet between transect lines and 30 feet between sample plots (photographic image locations) along each transect. If the outfall is found to be broken or floating, the seafloor survey must encompass the authorized outfall location as well as the areas below the discharge location(s) where the break/floating outfall was found. The Seafloor Survey is required to occur into water depths greater than -120 feet Mean Lower Low Water (MLLW) if necessary, until seafood processing waste is no longer visible. At each sample plot, the surveyor shall use a three-

foot by three-foot square to determine required items in the Seafloor Survey Report, which include the following:

- a. **Digital photographs.** Digital photographs representative of the sample plots must depict the nature and coverage of seafood processing waste deposit(s), if any, on the seafloor at the sample plot locations along parallel transects. Digital photographs shall capture images of natural sediment, natural sediment covering seafood processing waste, if observable, and seafood waste and/or bacterial mats covering the seafloor. The surveyor must document whether they are able to differentiate between natural sediments or evidence of seafood waste residues based on observations and photographs¹. Photographs shall be of sufficient definition, clarity, and detail to clearly document the seafloor conditions and observations. Photographs shall include a digital date and time stamp. The photograph log shall include the name of the seafood processor, survey date, and photographic sample plot location identifier.
- b. **Deposit Type.** Types of seafood waste deposits observed (e.g., bones, ground seafood waste, natural sediments (sediment sloughs, tidal sands), and/or sediments covering seafood waste).
 1. **Amount and Type of Seafood Waste Coverage.** The surveyor must estimate and record the percentage (Detectable to 100%, rounding to the nearest 10%) of seafloor area(s) covered by recent seafood processing deposits and any historic deposits (decaying bones, beaggiatoa mats, etc.) at each sample plot location along the transects (see Permit Attachment C - Transect Data Form). The observation at the sample plot must also include a description of the types of observed seafood waste deposits (e.g., fine screened seafood waste particles meeting permit requirements, processed crab or bivalve shell waste including average size (1.0-inch, 0.5-inch), whole heads, fins & tails, etc.).
 2. Each three-foot by three-foot (3 ft by 3 ft) ‘sample plot’ centered every 30 feet along a transect represents 900 square feet (ft²) of seafloor.



¹ Seafloor surveyors may be unable to differentiate between natural sediments and fine particle size seafood processing waste. If this is the case, during the Seafloor Survey the surveyor will be required to obtain sediment grab samples and determine organic enrichment.

3. The seafloor survey shall report each 3 ft by 3 ft sample plot's seafood waste coverage to the nearest 10%, as follows:

a. **Trace - Report**

Result	Report
Detectable ² -9%	Trace

- b. **Discontinuous Coverage** – All discontinuous coverage will be calculated and reported as follows:

Result	Report
10-14%	10%
15-24%	20%
25-34%	30%
35-44%	40%
45-54%	50%
55-64%	60%
65-74%	70%
75-84%	80%
85-94%	90%

Calculate the areal extent of the seafood processing waste deposits with 10 – 94% coverage as a percentage of 900 sq. feet.

Example Calculations:

- Discontinuous Areas “A” - Six sample plots that are reported as 60% coverage

$$6 * 900 \text{ ft}^2 * 0.6 = 3,240 \text{ ft}^2$$

- Discontinuous Areas “B” - Eight sample plots that are reported as 80% coverage

$$8 * 900 \text{ ft}^2 * 0.8 = 5,760 \text{ ft}^2$$

- Discontinuous Areas “C” – Twelve sample plots that are reported as 30% coverage

$$12 * 900 \text{ ft}^2 * 0.3 = 3,240 \text{ ft}^2$$

Total 10-94% discontinuous coverage = 3240 + 5760 + 3240 = 12,240 ft²

Report Acres: 12,240/43,560 = 0.28 acres

- c. **Continuous Coverage.** Transect Squares with 95% - 100% coverage will be considered Continuous Coverage. All continuous coverage will be calculated and reported as follows:

Result	Report
95-100%	100%

Example Calculations:

- 15 transect squares times 900 ft² each (15 * 900) = **13,500 ft²** of continuous coverage.

- **Report Acres: 13,500/43,560 = 0.31 acres**

- c. **Beggiatoa or other types of Bacterial Mats.** Document the absence or presence, as well as size and location, of Beggiatoa or other microbial mats observed on or near any seafood

² Detectable seafood waste has typically been reported to be 2% coverage

waste deposits or on the seafloor (if waste deposits are not evident). All Beggiatoa or other bacterial mat areas shall be counted as continuous coverage.

- d. **Sea Flora and Fauna.** Type and number of macro sea fauna (sea life) and type of aquatic vegetation observed on the seafloor during the photographic survey. Types and quantities of sea life observed adjacent to, on, or feeding on any seafood processing waste deposits during videotaping, along with representative photos with time and date stamp. Mention should be made of any indication of change in sea life behavior from any previous observation or seafloor survey reports, and any other observations relevant to the condition of the benthic community or seafloor.
- e. **Hydrology.** Report ambient tidal current velocity and direction and water chemistry (both seasonal and in-situ on the day of the survey, including salinity, water temperature, density, turbidity, DO, and pH). These parameters should be taken as a grab sample or using a probe.
- f. **Substrate.** Composition of substrate (soft sediments, cobble, gravels, solid rock and/or glacial silts, or ground/screened seafood waste, etc.). If previous benthic assessments, dive surveys, or remediation actions have documented the presence of buried seafood waste, this waste must be included in continuous coverage calculations if those buried areas are located directly adjacent to outfalls discharging seafood processing waste and wastewaters, or to other continuous coverage areas. The surveyor has the option to obtain new core samples to document whether seafood waste is or is not present at the previously identified locations.
- g. **Water depth.** (adjusted to MLLW, reported in feet) must be reported at the seafloor and at the top of any waste pile observed.
- h. **Plume Size.** An indication of an active or inactive discharge occurring during the time(s) of the survey.
 1. Approximate width and length of each outfall's effluent plume when discharge is occurring.
 2. Evidence and photographs documenting floating residues surrounding or extending outside the visible plume.
 3. Observations and photographs of waste residue particle size in any deposit within 30 ft of the outfall, and a minimum observation and one photograph of the particle size (if any) with an accompanying measuring device.
- i. **Water Clarity.** A description of water clarity and changes in water clarity as a result of the discharge, if occurring.
- j. **Tides.** Ambient tidal current velocity and direction.
- k. **Seafood Waste Deposit Thickness.** Measure and record seafood processing waste deposit thickness (from the seafloor to the highest point of the pile) using a marked stick or pipe to the nearest 0.5-inch (1/2") at each sample plot. Coring may be required to determine the actual thickness of seafood processing waste deposits measured greater than three feet deep or if deposits are of such a fine particle size that the surveyor is unsure whether the seafloor substance is seafood waste or natural sediment.
 1. **Report of Anoxic Conditions.** Anoxic conditions often form in the seafood processing waste deposits as the material decomposes. The surveyor should identify and document whether gas is being released from undisturbed seafood processing waste deposits or is released when measuring seafood waste pile thickness.
- m. **Dissolved Oxygen and other Gases.** When gas is observed escaping from the seafloor in the vicinity of the outfall or from the seafood waste pile, the surveyor is required to collect

water samples or measure directly for dissolved oxygen, methane, and hydrogen sulfide. Samples shall be collected at six inches or less above the seafloor/seafood waste deposit where the greatest amounts of gas release are observed.

5. **Sample Plot Observations Map** - A map or representative drawing (with an identified scale, including a north arrow) shall be developed that depicts the facility and the seafloor area surveyed, including the 30 foot by 30 foot transect grid. Each sample plot location must be identified on the map and correlated³ to the information required in 4.a - m (above). The total cumulative area(s) of both the continuous and discontinuous coverage shall be reported in square feet and in acres to the nearest tenth of an acre. The map must include:
- a. The locations of any seafood processing waste deposits, including the outer boundaries of any continuous and/or discontinuous coverage areas, in relation to the discharge location(s), mapped seafloor area boundaries, survey grid, and outfalls, including:
 - i. **Continuous Coverage:** The relative location and estimated size (ft² and acre) of any continuous coverage areas (95% - 100% coverage) of seafood waste.
 - ii. **Discontinuous Coverage:** The relative location and estimated size (ft² and acre) of any discontinuous coverage areas (10% - 94% coverage) of seafood waste.
 - iii. **Beggiatoa (or other) Mats:** The relative location and estimated size (ft² and acre) of any Beggiatoa or other bacterial mats discovered during the photographic survey.
 - iv. **Outfalls and Water Intakes:** Coordinates of beginning and end points for all outfalls/intakes (including pipes that do not belong to the permittee, and the permittee's inoperative pipes), description and condition of the outfall(s) (Outfall System Inspection Protocol, Part 2.0) (corrosion, condition of cathodic protection for metal outfalls, bends or breaks), depth of outfall(s) at MLLW, and outfall diffuser description(s), if any.
 - v. **Permanent Markers (if any):** The location of surface or subsurface permanent survey marker monuments, if any.
6. A change sheet at the end of the seafloor survey report attached by the permittee, documenting any changes to the seafloor survey report as required by the permittee. Or, the two documents may be submitted in red-line track changes. Seafloor Survey Reports shall be signed by both the surveyor and by a principal officer or a duly authorized representative of the permittee, documenting review of any changes to the surveyor's original seafloor survey report.
7. If select information required was not obtained, the Seafloor Survey Report must include an explanation as to why the information could not be obtained and submit alternate methods as to how the data should be obtained.

If seafloor surveys or other available evidence submitted by the operator are not sufficient to determine the amount of seafood processing waste deposit coverage and/or whether coverages exceed residues standards, DEC will, in its discretion, require the operator to conduct additional surveys or other monitoring for that purpose.

8. **Electronic file submittal requirements.**

Electronic Copies of Seafloor Survey Reports.

³ Correlating data - Portions of the information required by #4 may be identified by numbers or letters on the map. The numbers are then used to correspond to the data gathered for each sample plot location and presented in a table format or Excel spreadsheet.

A copy of the Seafloor Survey Report must be submitted in Adobe Acrobat or Microsoft Word to DEC with the survey year's Annual Report. If GIS files are developed, shape files with supporting metadata shall also be submitted to DEC.

9. Source Control and Remediation Options Evaluation

An evaluation of source control and remediation options is required if a permittee's seafloor survey report documents seafood processing waste coverage(s) regardless of when the waste was deposited.

Table 1: Definitions

Continuous coverage	Seafood waste deposits that are found to be 95% or greater areal coverage within a 3-foot by 3-foot sample plot as measured along a transect of the seafloor. At DEC's discretion, will include boulders, rock outcrops, ridges, and other protrusions within an area of continuous coverage that are not covered by seafood waste.
Discontinuous coverage	Means areas of seafood waste deposits that are estimated to cover 10% or more of the seafloor, but less than 95%, within the 3-foot by 3-foot sample plot.
Seafloor Survey Area	To include the entire marine floor operating area where seafood waste deposits may be found. Seafloor areas surrounding a permittee's seafood processing facility, seafloor areas surrounding: seafood transfer devices; vessel and/or barge loading and unloading areas; seafloor areas under bulkheads, ramps, floating walkways, docks, pilings, dolphins, anchors, buoys and other marine appurtenances; outfall terminus location(s) and the length of the outfall line connecting the facility to the point of discharge. Additionally, the survey shall include any seafood waste found at previous outfall terminus locations for those outfalls that have no record of historical seafloor survey; and the marine water and seafloor underlying and connecting these features.
Trace coverage	Means areas of seafood waste that are estimated to cover detectable to less than 10% areal coverage within a 3-foot by 3-foot sample plot.
Detectable	Means any amount of observable seafood waste deposits. In general, seafloor surveyors have reported that seafood deposits must be greater than 2% coverage in the 3-foot by 3-foot sample plot to be evident

Other Approved Sampling Methods

A combination of sampling methods may be used to gather the information identified in this Seafloor Survey Protocol as long as all data gathering and reporting objectives are met.

Sediment Grab Samples to Perform a Survey

A sediment grab sample is often used to supplement a dive survey, video by Remotely Operated Vehicle (ROV), or benthic analysis by sediment profile imaging to assist in organic enrichment analysis and understanding residues settling characteristics and benthic impacts. Grab sampling surveys may be performed instead of a dive survey in areas where a dive survey is not practical due to limiting ambient conditions, very low visibility, or dangerous diving conditions. Grab sampling should not be used when bottom substrate is composed of large boulder type material or bedrock. Various types of sample collection devices and techniques are available. Usually, surveyors are able to push a tube to obtain core samples of the waste pile. In other circumstances where a surveyor is not used, core samples are obtained from a bottom grab sampler, also known as a Van Veen sampler. Obtaining core samples of the top foot of the seafloor has a number of advantages. The benthic life successional stage may be determined if background samples are also obtained, including infaunal and epifaunal species, density, and level of invasive species. Additionally, the true thickness of seafood or other solids deposited on the bottom can be measured depending on the type of the bottom grab sampler. *Beggiatoa* bacteria may be positively identified through coring/grab sampling if present. Subsurface grain size and type of substrate can be identified. Grab sampling must be augmented by a photographic method, such as a video seafloor survey, to document the presence or absence of macro flora and fauna and to map the contours of the seafood waste pile deposit. Alternatively, the grab sampler would need attached depth and location instrumentation in order to provide a contour map of the seafood waste deposit area(s).

Benthic Analysis by Sediment Profile Imaging

The benthic analysis by sediment profile imaging (SPI) method has been used in areas of large seafood processing waste coverage or areas of fine material (screened seafood waste) coverage or to assess the health of the benthic community in the area of a deposit. The sediment profile camera works by burying a knife-edged probe that houses a digital camera in the seafloor area being examined, including into the seafood waste deposit area(s). The probe is normally fitted with water depth and location instruments to provide seafloor contour information. The probe has a Plexiglas faceplate cover to collect images of the sediment profile. An internal strobe light is mounted inside to provide illumination. The probe housing the camera descends into the sediment at a slow, controlled rate to prevent the disturbance of the sediment-water interface. After an appropriate time delay, the strobe and camera are activated to obtain a cross sectional image of the upper 20 cm of the sediment column. Depth of penetration by the probe depends on the consistency (i.e., density and hardness of the sediment, thickness) and type of seafood waste deposits and the limit of the probe width. The probe is fitted with lights, a plan view camera, and a laser generated scale to allow determination of the size of objects in the picture that is taken.

This survey method provides information that meets some data objectives, including: benthic life evaluation, estimations of anoxic condition and depth of anoxic conditions, presence or absence of *Beggiatoa* bacteria, thickness of waste to the limit of the probe, water depth, visual appearance of the bottom, the total area of the seafood waste deposits, and estimates of continuous and discontinuous seafood waste deposit areal extent. However, the method does have its limitations. The method is only suitable for sediments that can be penetrated by the knife probe, requires vessels large enough to handle the probe, and is susceptible to currents moving the vessel. The method is not suitable for characterizing deep deposits of waste, and the costs to complete the survey are usually higher than for other survey methods.

2.0 Outfall System Inspection Protocol

Purpose: The purpose of the outfall system inspection is to verify outfall functionality, ensuring compliance with authorized discharge locations.

The permittee shall perform an operational inspection of the outfall system(s), using such techniques as pressure testing, visual, ROV, dye testing, or diver inspection during each Seafloor Survey to ensure that the outfall system is operable and functioning as designed. The permittee shall record the inspection methods and results and keep the records at the facility and available upon request. Verification of the inspection shall be included in the submittal of the inspection year's Annual Report (See Part 2.8).

The permittee shall cease discharging from a severed, failed, or leaking outfall system as soon as possible, but no more than ten days past discovery of the severance, failure, or damage, with the allowance of enough time to process seafood already offloaded to the facility. Discharging shall be discontinued if the system is unable to be repaired within ten days. Any failure of the outfall system shall be verbally reported to DEC within 24 hours of discovery, and written notification is required within five days of discovery in accordance with Appendix A, Part 3.4 (Twenty-four Hour Reporting).

Permittees shall record:

- Evidence of breaking or dragging, outfall condition and remaining life
- Evidence of leaks by use of fluorescent dye, in-line leak detector monitoring , hydrostatic testing, or pneumatic testing
- System operability
- Cathodic protection
- Log of outfall system repairs
- Photographs of breaks, leaks, damage, floating, etc.
- Pressure tests (both hydrostatic and pneumatic) must always be performed under controlled conditions, following an approved test plan, and documented in a test record. A single approved test plan could be used for several similar tests, but for each test a separate test record is required.

FLUORESCENCE DETECTORS

- Fluorescence forms the basis of one of the most widely used and effective approaches to seafloor outfall leak detection. The use of this approach requires the medium's natural ability to fluoresce or the addition of fluorescent tracers to the medium being detected. Large leak sources have often been located by visual observations from divers or cameras within the water. However, subsea fluorescence technology can provide a more effective detection system and is less restricted by depth while offering the potential to reduce the quantity of dye required. These detectors can be point sensors and have been used successfully with ROVs, and they can provide an indication of leak size from the relative signal intensity. Turbidity within the water column, however, can impede recognition of the desired medium.

Evaluation of Source Control and Remediation Options

The permittee is required to conduct a seafloor survey annually at discharge locations when seafood waste deposit coverage areas greater than detectable are found. An evaluation of options for source control and remediation is required if the permittee's seafloor survey report documents seafood processing waste coverage greater than detectable, regardless of when the wastes were deposited. The permittee must submit the evaluation to DEC within 120 days of discovery of such conditions, unless additional time is requested and granted by DEC.

In considering action on the source control and remediation options evaluation, DEC will consider the total cumulative areas of exceedance of seafood waste deposits; environmental impacts of seafood processing waste; environmental impacts of methods to reduce coverage; the feasibility, reasonableness, effectiveness, and cost of proposed and alternative measures; the timing of recovery under various alternatives; and other pertinent factors. Submittal of source control and remediation options in no way removes DEC's ability to require further studies nor affects DEC's ability to seek future compliance or enforcement actions.

Appendix F

Eiders Monitoring Protocol

The United States Fish and Wildlife Service (USFWS) needs to document mortality of threatened species whenever possible. Fish and Wildlife Service programs that use this information include Endangered Species, Environmental Contaminants, Conservation Planning Assistance (to aid in recovery plans and implementation), and Law Enforcement (for enforcing the Endangered Species Act and other wildlife-related laws), in addition to numerous related research programs. Every dead spectacled and Steller's eider can aid in its species recovery by providing information on eiders found dead.

In the past, this protocol covered handling and transport of injured or sick eiders. Because of avian flu concerns, we cannot currently transport injured or ill eiders for rehabilitation, so we can no longer provide instructions or a protocol for handling them. To minimize your risk, we recommend that you do not contact or handle wild birds that appear to be ill or injured.

Due to concerns about contracting avian influenza from handling bird carcasses, please make sure that you have proper personal protective equipment (PPE) and training prior to observing carcasses. Do not collect or handle carcasses. Protect yourself from fluids and feces by using impermeable gloves, safety glasses, and a mask if necessary when going near (not touching) a bird to assist in determining sex and making observations of the bird(s).

Reporting

Report all dead spectacled and Steller's eiders as soon as possible. If there is no reason to suspect that the bird(s) died as the result of any illegal activity, you should attempt to contact the following people, in the order listed, until you reach someone.

1. Angela Matz, USFWS, Fairbanks: (907) 456-0442 work
2. Ted Swem, USFWS, Fairbanks: (907) 456-0441 work
3. Anchorage Fish and Wildlife Field Office, USFWS, Anchorage: (800) 272-4174 toll free, (907) 271-2888 work
4. Robert Suydam, North Slope Borough Department of Wildlife Management, Barrow: (907) 852-0350

If you encounter any dead spectacled or Steller's eiders that you suspect may have died as a result of an illegal act such as shooting, a Service Law Enforcement Officer should be notified immediately. Ensure that one of the individuals in the above list is also contacted in these instances.

You should be prepared to report any observations and/or knowledge you might have regarding the incident, and you may be provided with additional instructions regarding proper custodial handling techniques, which will allow a Special Agent to follow-up with an investigation into the incident.

USFWS, Office of Law Enforcement:

Fairbanks: (877) 535-1795 toll-free, (907) 456-2335, (907) 456-2356 fax

Nome: (907) 443-2479, (907) 443-2938 fax

Anchorage: (800) 858-7621 toll-free, (907) 271-2828, (907) 271-2827 fax

Regional Office, Anchorage: (907) 786-3311, (907) 786-3313 fax

Juneau Office: (907) 586-7545, (907) 586-7574 Fax

Your report should include:

1. Species, age, sex, and number of birds, date, time and location (latitude and longitude and area name).
2. Suspected cause of death.
3. Circumstances under which found.
4. If known, the names of witnesses or suspects, and a description of any vehicles or boats involved (but, non-law enforcement individuals are not expected to conduct investigations or obtain information that is not readily available).

If a camera is available, photograph birds and other evidence such as shotgun shells or casings, and persons and vehicles involved. Note photo date, time, and location. You should put all this information, plus any additional details you think important (such as location of nearest power line), in a short written narrative.

Appendix G

Pre Installation / Pre-Discharge Biological Survey

Pre-Installation / Pre-Discharge Biological Survey

Survey Purpose

The pre-discharge survey shall provide adequate site-specific information to indicate whether the proposed discharge will meet the requirements of an APDES seafood processing permit and to document the coastal marine or estuarine biological resources (including habitat) which may be affected by the discharge, installation of any outfalls and any existing solids and or residues, such as seafood processing waste and wastewaters, in the discharge area.

Submittal of Information

The results of the pre-discharge survey shall be submitted with the submittal of new NOI, with an updated NOI at an existing facility's re-startup (after 12 months of no discharge), or with a modified NOI, when moving the location of a broken outfall line in installation of a new outfall line. The survey shall have been performed within the last 6 months, but prior to new outfall placement, or prior to re-startup of a facility which has not discharged for a period of greater than 12 months. The report shall provide transect sample plot data, a summary of the survey, and whether the discharge area is appropriate for the proposed discharge, with careful consideration of critical habitat or sensitive resource areas. The pre-discharge survey may be performed using a photographic survey method, but if any existing deposits are found within the survey area, a dive survey will be required. The dive survey performed will follow the Seafloor Survey Protocol found in this permit Appendix E. The pre-biological survey data for biological resources shall be submitted in writing, and may include the submittal of a narrated underwater video to the Department.

Quality Assurance Project Plan Information

The operator shall, prior to commencing survey operations, prepare a written, facility specific Quality Assurance Project Plan- Monitoring Plan (QAPP-Monitoring Plan) addressing the following:

1. Objectives for measurement data
2. Sampling procedures
3. Analytical procedures
4. Data reduction, validation, and reporting
5. Internal quality control checks
6. Specific routine procedures used to assess data precision, accuracy, completeness, representativeness, and comparability.

Survey requirements

The pre-discharge survey shall include a representative description of the numbers and species of marine organisms, types of aquatic vegetation/benthic fauna, and depths and substrate types where organisms/vegetation/benthic fauna are found within a 300 foot radius of the center of the proposed discharge location (proposed outfall terminus).

If seafood waste discharge has not occurred at the proposed plot, a photographic survey (performed by Remotely Operated Vehicle (ROV) may suffice and the Department may not require a dive survey, establishment of hard transect lines or a central permanent marker. However, a rigorous, repeatable method shall be set out in a QAPP-Monitoring Plan. For example, the center of the proposed discharge area shall be located by triangulation from three land points and by Wide Area Augmentation System (WAAS)/ Global Positioning System (GPS) (reported in decimal degrees, to the fifth decimal place, if available, using the North American Datum (NAD) 1983 or World Geodetic System (WGS) 1984 datum). The accuracy of coordinates shall be at least within ± 50 feet (17 meters)) and the depth of the (proposed) outfall location, reported depth at

MLLW. If there are any significant benthic features that would help with re-locating the exact position of the (proposed) outfall, (e.g. a unique rock feature) then this information is to be marked on the location map. The survey may be performed at the surface at low tide stage, without performing a dive survey if the representative habitat and water clarity is such that the pre-biological survey data is collected and data objectives can be met.

Establish Markers. A surveyor's QAPP-Monitoring Plan is required to include the establishment of at least five permanent shore-based or facility-based markers (monuments) at suitable locations, provided there is sufficient land/facility property to place five monuments. Some facilities are located over water, or the operator does not own the land the seafood processing facility is located on, thus making installation of permanent markers infeasible. The survey is required to document useable permanent underwater markers (large rock outcrops, boulders, etc.), or identify why markers/monuments were not established. If permanent markers are not established the operator shall work with the surveyor to establish repeatable methods for future surveyors to make observations and establish consistent transects. The operator's QAPP-Monitoring Plan is required to be updated to include the surveyor's established underwater markers for use in the next required seafloor survey. GPS coordinates derived using WAAS technologies, or other equivalent technology, are required to be recorded for each permanent shore or underwater marker.

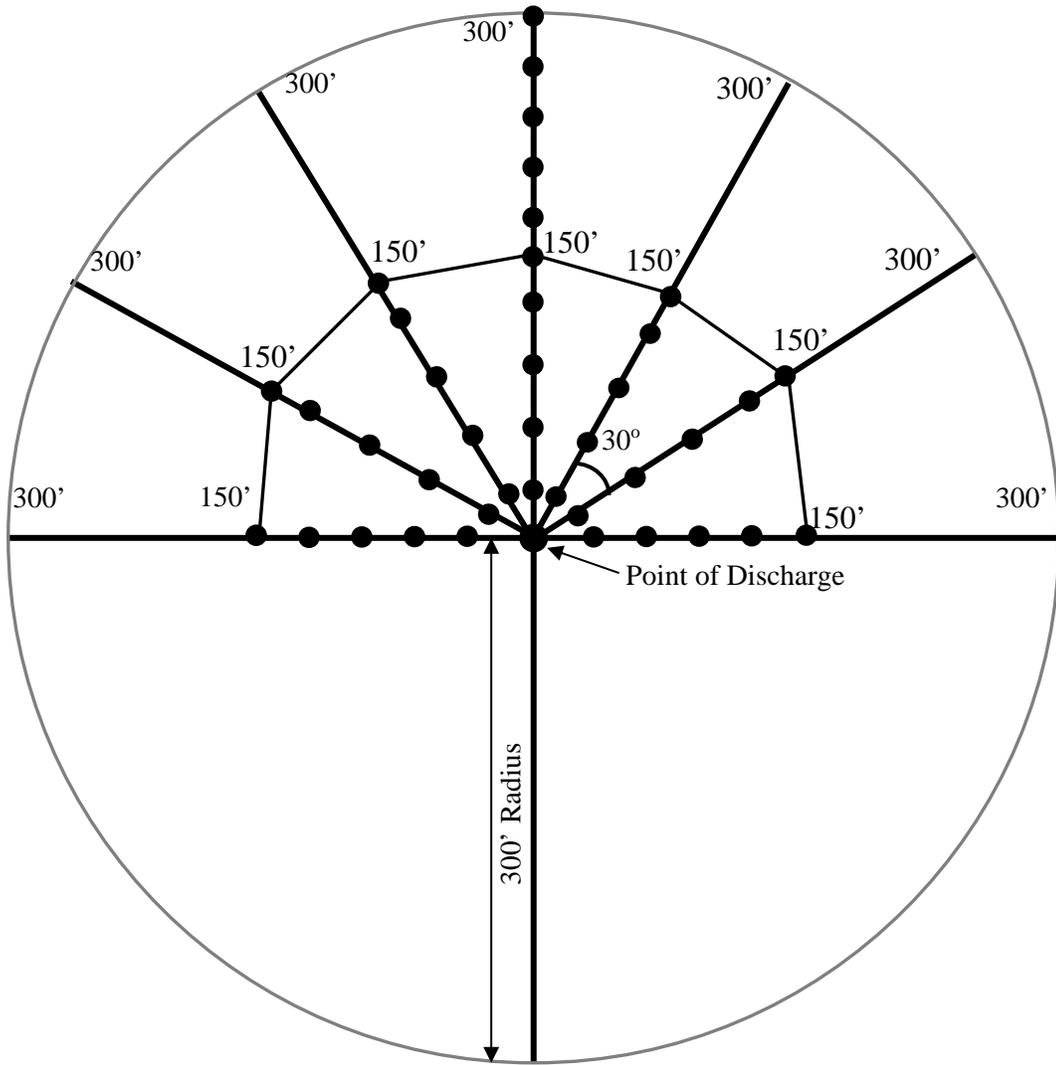
Establish Transect Lines. The surveyor must establish transect lines for the entire Pre-installation / Pre-Discharge Survey Area. The operator's QAPP-Monitoring Plan must develop and document the methods used to establish the transect lines. Parallel transects are required to be established no more than 30 feet apart and extend in a perpendicular direction from the permanent markers.

The survey shall use radial or parallel transects located surrounding the outfall terminus with a 300 foot radius at the proposed outfall terminus depth. Determine the number of transects (shall meet a minimum of at least nine) which will most accurately delineate the area surrounding the center of the discharge location and the area of any seafood waste accumulation, if present.

Surveys using **Radial Transects:** Use the discharge point as the central marker of the survey. GPS coordinates derived using WAAS technologies shall be recorded at the location of the proposed or established discharge point and the center of the survey (reported in decimal degrees to the fifth decimal place if available). Establish a minimum of at least five transects radially from the location of the proposed outfall terminus. The number of transects should be adequate to cover the entire estimated area of discharge (at least a 300 foot radius around the point of discharge) and any historic seafood waste accumulation. If historic seafood waste accumulations are found, the operator is required to have the surveyor complete a seafloor dive survey following the Appendix E, Protocol for a minimum of 300 feet from the proposed outfall terminus (or as determined by DEC).

The following diagram (Figure 1) shows "typical" radial transects set 30 degrees apart. Points of measurement are at 30-foot intervals spaced on the survey transects, which extend along a 300 foot radius from the point of discharge.

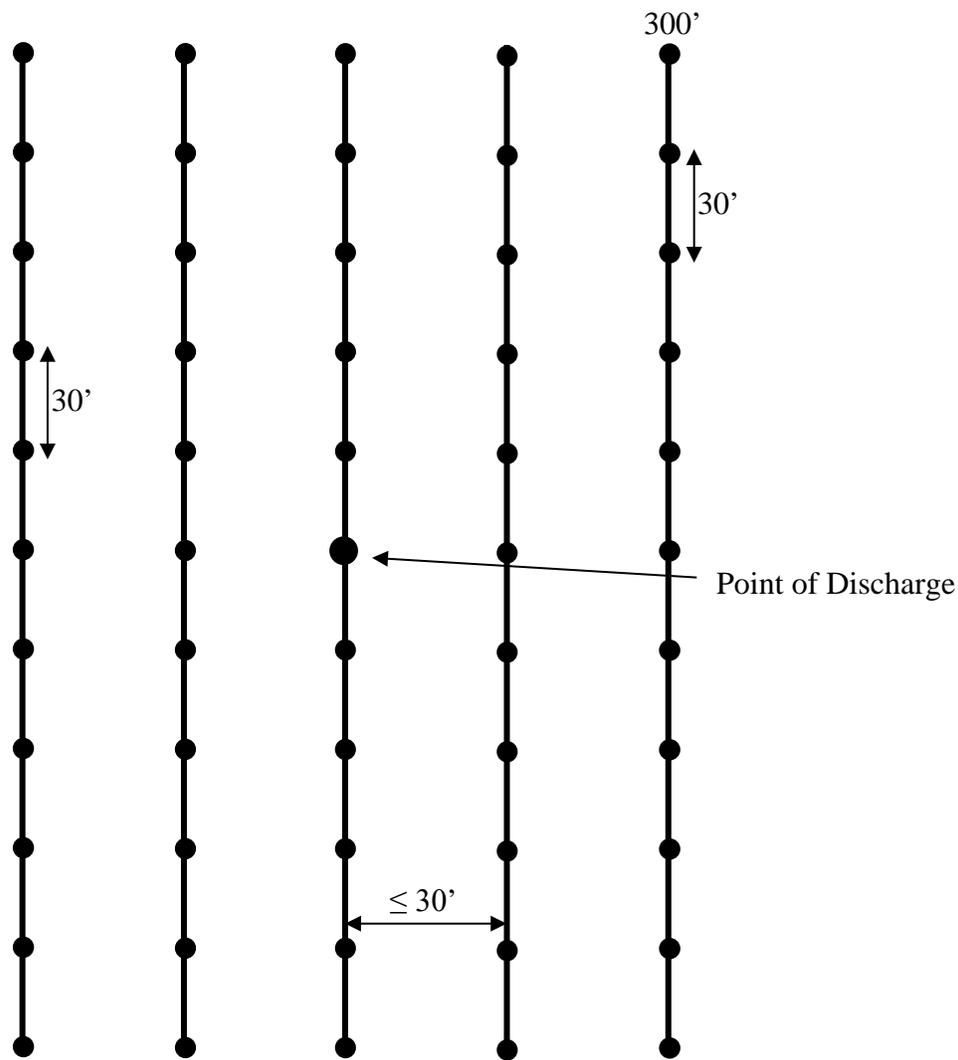
Figure 1 – Example of Radial Transect



Surveys using **Parallel Transects**: Use the discharge point as the central marker of the survey. GPS coordinates derived using WAAS technologies shall be recorded at the location of the discharge point (reported in decimal degrees to the fifth decimal place if available). A minimum of three (3) parallel transects should be established, with the center transect passing through or near the discharge point required. Transects should be no more than 30 feet apart and the number and length of transects should be adequate to cover the entire estimated area of discharge (at least a 300 foot radius around the point of discharge) and any historic seafood waste accumulations. Sample plots shall be identified at 30-foot increments along the transect lines. The sample plot's area shall be 3-foot square.

The following diagram (Figure 2) shows “typical” parallel transects set no more than 30 feet apart. Points of measurement are at 30-foot intervals along the transect lines.

Figure 2 – Example of Parallel Transects



Reporting

Pre-biological Survey Report. Within 30 days of completing the pre-biological survey, a facility operator shall submit a report to DEC that contains the following information:

I. Facility Information

- A. Permittee Name, APDES permit number, address, and contact information.
- B. Type of waste treatment processes, product and by-product production processes.

II. Surveyor and Survey Information

- A. Name and contact information of the surveyor.
- B. Brief background of surveyor's previous work history performing photographic seafloor surveys and mapping.
- C. Date and time the survey was completed.
- D. Vessel Name, USCG number of vessel assisting in survey.
- E. Name of the receiving water where the survey was completed.
- F. Whether there are other seafood waste discharges within 0.25-mile of the discharge.
- G. Information on whether a seafood processing discharge was occurring during the time(s) of the survey.
- H. Method used to:
 - 1. Establish markers (if placed)
 - 2. Establish transects
 - 3. Located sample plot's grid locations along the transects,
 - 4. Record the required sample plot data.
- I. Table or narrative with a summary of findings from video transects and sample plot surveys.
- J. A photographic log with photo number, transect number/ sample plot and photograph description, including GPS data collected from sample plots, shall be recorded and submitted electronically. Color photographs shall minimally be 3 inch x 5 inch and no more than four to a page.
- K. For pre-installation surveys in the vicinity of a proposed outfall or discharge, recommendations for the location of the discharge at the proposed location or at an alternative location that would have less adverse impact to the sea floor community.

III. Sample Plot Location. Each sample plot location shall include the following:

- A. **Digital photographs.** Digital photographs are required to:
 - a. Depict the nature and coverage of seafood waste deposit(s), if any, on the seafloor at sample plot locations along radial or parallel transects.
 - b. Capture images of natural sediment, natural sediment covering seafood processing waste, if observable, and/or seafood waste covering sediment.

- c. Be of sufficient definition, clarity, and detail to clearly document the conditions present on the seafloor.
 - d. Include a digital date and time stamp.
 - e. Be compiled into a photographic log to include the photographic sample plot location identifier.
 - f. Video recordings and photographs are required to be submitted electronically. If feasible, the electronic copy of the report, GIS/GPS map layers, video recordings and photographs are required to be submitted at the same time.
- B. **Beggiatoa or other types of Bacterial Mats.** Document the absence or presence, as well as size and location of Beggiatoa, or other microbial mats observed on or near any seafood waste deposits, or the seafloor if waste deposits are not evident. All Beggiatoa, or other bacterial mat areas shall be counted as continuous coverage.
 - C. **Sea Flora and Fauna.** Type and number of macro sea fauna (sea life) and type of aquatic vegetation observed on the seafloor during the photographic survey. Types and quantities of sea life observed adjacent to, on, in, or feeding on any seafood processing waste deposits during videotaping, along with representative photos, that include time and date stamps. Mention should be made of any indication of change in sea life behavior from any previous observation or seafloor survey reports, and any other observations relevant to the condition of the benthic community or seafloor.
 - D. **Hydrology.** Report ambient tidal current velocity and direction, and water chemistry (both seasonal and in-situ on the day of the survey, including salinity, water temperature, density, turbidity, DO and pH). These parameters should be taken as a grab sample or using a probe at the proposed outfall terminus location and proposed depth of outfall.
 - E. **Substrate.** Composition of substrate (soft sediments, cobble, gravels, solid rock and/or glacial silts, or ground/screened seafood processing waste solids, etc.).
 - F. **Water depth.** (adjusted to MLLW, reported in feet) The depth shall be reported with the bottom reading measured at the seafloor, or at the top of any sample plot.
 - G. **Plume Size.** If actively discharging at time of survey, the estimated height (rise) and length of any observed discharge plume during the photographic survey. The surveyor shall note any changes in benthic habitat or sea flora/fauna use near the outfall terminus and at 100' from the outfall terminus in the plume, or under the influence of the plume.
 - H. **Water Clarity.** A description of water clarity and changes of water clarity as a result of the discharge, if occurring.

If select information required in the Pre-biological Survey Report is not obtainable using the video/camera methods described above, the Report shall include an explanation as to why the information could not be obtained.

Other Approved Sampling Methods

A combination of the sampling methods may be used to gather the information identified in this Pre-Installation Protocol as long as all data gathering and reporting objectives are met.

Sediment Grab Samples to Perform a Survey

A sediment grab sample is often used to supplement a dive survey, video by ROV, or benthic analysis with sediment profile imaging. Grab sampling surveys may be performed instead of a dive survey in areas where a dive survey is not practical due to limiting ambient conditions, very low visibility, or dangerous diving conditions. Grab sampling should not be used when bottom substrate is composed of large boulder type material or bedrock. Various types of sample collection devices and techniques are available. Often sediment and seafood waste identification is possible using push tube, core samples that are collected by the surveyor. In other circumstances where a diver is not used, core samples are obtained from a bottom grab sampler, also known as a Van Veen sampler. Obtaining core samples of the top foot of the seafloor has a number of advantages. The benthic life successional stage may be determined, if background samples are also obtained, including infaunal and epifaunal species, density, and level of invasive species. Additionally, the true thickness of seafood or other solids deposited on the bottom can be measured depending on the type of the bottom grab sampler. Beggiatoa bacteria maybe positively identified through coring/grab sampling, if present. Subsurface grain size and type of substrate can be identified. Grab sampling is required to be augmented by a photographic method, such as a video seafloor survey, to document the presence or absence of macro flora and fauna, and/or beggiatoa mats. Alternatively, the grab sampler would need an attached depth and location instrumentation in order to provide a contour map of seafloor.

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The benthic analysis by sediment profile imaging (SPI) method has been used in areas of large seafood waste coverage or areas of fine material (screened seafood waste) coverage or to assess the health of the benthic community in the area of a deposit. The sediment profile camera works by burying a knife edged probe that houses a digital camera into the waste pile. The probe is normally fitted with water depth and location instruments to provide seafloor contour information. The probe has a Plexiglas faceplate cover to collect images of the sediment profile. An internal strobe light is mounted inside to provide illumination. The probe housing the camera descends into the sediment at a slow, controlled rate to prevent the disturbance of the sediment-water interface. After an appropriate time delay, the strobe and camera are activated to obtain a cross sectional image of the upper 20 cm of the sediment column. Depth of penetration by the probe depends on the consistency (i.e., density and hardness of the sediment, thickness and type of seafood waste deposits, and the limit of the probe width). The probe is fitted with lights, a plan view camera and a laser generated scale to allow determination of the size of objects in the picture that is taken.

This survey method provides information that meets some data objectives, including: benthic life evaluation, estimations of anoxic condition and depth of anoxic conditions, presence or absence of Beggiatoa bacteria, thickness of waste to the limit of the probe, seafloor contours and water depth, visual appearance of the bottom, the total area of the seafood waste deposits, and estimates of continuous seafood waste deposit volume and discontinuous waste deposits areal extent. However, the method does have its limitations. The method is only suitable for sediments that can be penetrated by the knife probe, requires vessels large enough to handle the probe, and is susceptible to currents moving the vessel. The method is not suitable for characterizing deep deposits of waste, and the costs to complete the survey are usually higher than other survey methods.