STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAWN R. GALLAGHER
COMMISSIONER

December 21, 2005

Mr. Chris Pray
Dead River Fish Hatchery
HCR, Box 510
North New Portland, Maine 04961

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0110477
Maine Waste Discharge License (WDL) Application # W-000905-5Q-C-R/D-T
Final Permit/License

Dear Mr. Pray:

Enclosed please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read the permit/license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State Law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision.*"

The Department would like to make you aware that your monthly Discharge Monitoring Report (DMR) forms may not reflect the revisions in this permitting action for several months after permit issuance, however, you are required to report applicable test results for parameters required by this permitting action that do not appear on the DMR. Please see the attached April 2003 O&M Newsletter article regarding this matter.

If you have any questions regarding the matter, please feel free to call me at (207) 287-6114 or contact me via email at Robert.D.Stratton@maine.gov.

Sincerely,

Robert D. Stratton

Robert D. Stratton
Division of Water Resource Regulation
Bureau of Land and Water Quality

Enc./cc: Mark LaPlante, Mark Dubois (Nestle Waters North America); Beth DeHaas (MEDEP); Dave Webster (USEPA)

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: 764-1507

web site: www.maine.gov/dep

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DMR Lag

(reprinted from April 2003 O&M Newsletter)

When the Department renews discharge permits, the parameter limits may change or parameters may be added or deleted. In some cases, it is merely the replacement of the federally issued NPDES permit with a state-issued MEPDES permit that results in different limits. When the new permit is finalized, a copy of the permit is passed to our data entry staff for coding into EPA's Permits Compliance System (PCS) database. PCS was developed in the 1970's and is not user-friendly. Entering or changing parameters can take weeks or even months. This can create a lag between the time your new permit becomes effective and the new permit limits appearing on your DMRs. If you are faced with this, it can create three different situations that have to be dealt with in different ways.

1. If the parameter was included on previous DMRs, but only the limit was changed, there will be a space for the data. Please go ahead and enter it. When the changes are made to PCS, the program will have the data and compare it to the new limit.

2. When a parameter is eliminated from monitoring in your new permit, but there is a delay in changing the DMR, you will have a space on the DMR that needs to be filled. For a parameter that has been eliminated, please enter the space on the DMR for that parameter only with "NODI-9" (No Discharge Indicator Code #9). This code means monitoring is conditional or not required this monitoring period.

3. When your new permit includes parameters for which monitoring was not previously required, and coding has not caught up on the DMRs, there will not be any space on the DMR identified for those parameters. In that case, please fill out an extra sheet of paper with the facility name and permit number, along with all of the information normally required for each parameter (parameter code, data, frequency of analysis, sample type, and number of exceedances). Each data point should be identified as monthly average, weekly average, daily max, etc. and the units of measurement such as mg/L or lb/day. Staple the extra sheet to the DMR so that the extra data stays with the DMR form. Our data entry staff cannot enter the data for the new parameters until the PCS coding catches up. When the PCS coding does catch up, our data entry staff will have the data right at hand to do the entry without having to take the extra time to seek it from your inspector or from you.

   EPA is planning significant improvements for the PCS system that will be implemented in the next few years. These improvements should allow us to issue modified permits and DMRs concurrently. Until then we appreciate your assistance and patience in this effort.

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

DEAD RIVER FISH HATCHERY	)	MAINE POLLUTANT DISCHARGE
PIERCE POND TWP, SOMERSET COUNTY, ME)		ELIMINATION SYSTEM PERMIT
FISH HATCHERY	)	AND
#ME0110477	)	
#W-000905-5Q-C-R	)	WASTE DISCHARGE LICENSE
#W-000905-5Q-D-T **APPROVAL**	)	**RENEWAL AND TRANSFER**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, et. seq and Maine Law 38 M.R.S.A., Section 414-A et seq., and applicable regulations the Department of Environmental Protection (Department) has considered the application of DEAD RIVER FISH HATCHERY (hereinafter Dead River Hatchery), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The applicant has applied for a renewal and transfer of Waste Discharge License (WDL) #W-000905-41-A-R, which was issued on April 19, 1985 for a five-year term. The WDL approved the discharge of a daily average of 1.5 million gallons per day (MGD) of fish hatchery wastewater to Black Brook, Class B-1 (since revised to Class B) from a commercial rainbow trout hatchery and rearing facility in Pierce Pond Township, Maine.

PERMIT SUMMARY

January 12, 2001 – The Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. On October 30, 2003, after consultation with the U.S. Department of Justice, USEPA extended Maine's NPDES program delegation to all but tribally owned lands. In those areas, the Department maintains the authority to issue WDLs pursuant to Maine law. The extent of Maine's delegated authority is under appeal at the time of this permitting action. From this point forward, the program will be referred to as the Maine Pollutant Discharge Elimination System (MEPDES) program and permit # ME0110477 will be utilized as the primary reference number for the Pierce Pond Township facility instead of the previously assigned Permit Compliance System tracking number of #MEU500905.

This permitting action is different from the April 19, 1985 WDL in that it is:

1. revising the 1.5 MGD daily average discharge flow limit to a monthly average flow limit;
2. establishing BOD and TSS monthly average and daily maximum mass and concentration limits with a provision for the Department to establish new limits in the future based on technology performance analyses of the industry as a whole;
3. establishing seasonal total phosphorus monthly average and daily maximum mass and concentration monitoring and reporting requirements with implementation of monthly average water quality based mass and concentration limits in three years;
4. establishing seasonal monthly average and daily maximum orthophosphate mass and concentration monitoring requirements during 2006;
5. converting previous mass limits and reporting requirements from kilograms of pollutant per 100 kilograms of fish on hand to pounds of pollutant per unit of time;
6. establishing monthly average and daily maximum reporting requirements for mass of fish on hand;
7. establishing a daily minimum effluent limit and monthly average and daily maximum monitoring requirements for effluent dissolved oxygen;
8. revising the previously established pH limit range to 6.0-8.5 standard units.
9. establishing minimum monitoring frequency and sample type requirements based on Department best professional judgement (BPJ);
10. eliminating settleable solids effluent limits and reporting requirements;
11. eliminating ammonia nitrogen effluent limits and reporting requirements;
12. requiring a current facility Operation and Maintenance Plan;
13. establishing requirements for settling basin cleaning;
14. requiring compliance with existing state salmonid fish health rules;
15. establishing requirements related to proper use and record keeping of therapeutic agents;
16. establishing record keeping requirements for disinfecting/sanitizing agents;
17. establishing BPJ derived minimum treatment technology requirements for the Dead River facility and;
18. establishing requirements for annual ambient macroinvertebrate biomonitoring.

CONCLUSIONS

BASED on the findings in the attached Proposed Draft Fact Sheet dated September 29, 2005 and revised December 7 and December 16, 2005, and subject to the Conditions listed below, the Department makes the following conclusions:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.

3. The provisions of the State's antidegradation policy, 38 MRSA Section 464(4)(F), will be met, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;

   (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

   (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and

   (e) Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The discharge will be subject to effluent limitations that require application of best practicable treatment.

ACTION

THEREFORE, the Department APPROVES the above noted application of DEAD RIVER HATCHERY to discharge fish hatchery wastewater consisting of a monthly average flow of 1.5 MGD to Black Brook, Class B, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. This permit expires five (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 19TH DAY OF December, 2005.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
Dawn R. Gallagher, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: July 1, 1999
Date of application acceptance: July 2, 1999

FILED
DEC 29 2005
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE

Date filed with Board of Environmental Protection _____.

This Order prepared by Robert D. Stratton, BUREAU OF LAND & WATER QUALITY

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge **fish hatchery wastewater from Outfall #001A** to Black Brook. Such discharges shall be limited and monitored by the permittee as specified below[1]:

Monitoring Parameter	Discharge Limitations and Reporting Requirements				Minimum Monitoring Requirements		
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified	Daily Maximum as specified	Daily Minimum as specified	Measurement Frequency as specified	Sample Type as specified
Flow *[50050]*	1.5 MGD *[03]*	---	---	---	---	Daily *[01/01]*	Measured *[MS]*
BOD[2] *[00310]*	75 lbs/day *[26]*	125 lbs/day *[26]*	6 mg/L *[19]*	10 mg/L *[19]*	---	Once/2 weeks *[01/14]*	Composite[3] *[CP]*
TSS[2] *[00530]*	75 lbs/day *[26]*	125 lbs/day *[26]*	6 mg/L *[19]*	10 mg/L *[19]*	---	Once/2 weeks *[01/14]*	Composite[3] *[CP]*
Total Phosphorus[4] **From June 1 – Sept 30, 2006-2008** *[00665]*	report lbs/day *[26]*	report lbs/day *[26]*	report mg/L *[19]*	report mg/L *[19]*	---	Once/2 weeks *[01/14]*	Composite[3] *[CP]*
Total Phosphorus[4] **From June 1 – Sept 30, beginning 2009** *[00665]*	0.61 lbs/day *[26]*	report lbs/day *[26]*	0.05 mg/L *[19]*	report mg/L *[19]*	---	Once/2 weeks *[01/14]*	Composite[3] *[CP]*
Orthophosphate (as P)[4] **June 1 - Sept 30, 2006** *[04175]*	report lbs/day *[26]*	report lbs/day *[26]*	report mg/L *[19]*	report mg/L *[19]*	---	Once/2 weeks *[01/14]*	Composite[3] *[CP]*
Fish on Hand *[45604]*	report lbs/day *[26]*	report lbs/day *[26]*	---	---	---	Once/2 weeks *[01/14]*	Calculated *[CA]*
Dissolved Oxygen[5] **From June 1 – Sept 30 each year** *[00300]*	---	---	report mg/L *[19]*	report mg/L *[19]*	7.5 mg/L *[19]*	1/week *[01/07]*	Measured *[MS]*
pH *[00400]*	---	---	---	6.0-8.5 S.U. *[12]*	---	Once/2 weeks *[01/14]*	Grab *[GR]*

The italicized numeric values bracketed in the table above and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports (DMRs). Footnotes are found on Page 6.

SPECIAL CONDITIONS
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

FOOTNOTES:
All sampling and analysis must be conducted in accordance with: (a) methods approved by 40 Code of Federal Regulations (CFR) Part 136, (b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or (c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services unless otherwise approved by the Department. **All effluent limits are gross, end of pipe limits, unless otherwise specified.**

1. Effluent Monitoring: Effluent values shall be determined through sampling at Outfall #001A following all means of wastewater treatment. Outfall #001A shall be located at the outfall of the settling pond and shall entail the only discharge from the facility. All monitoring shall be conducted so as to capture conditions representative of wastewater generating processes at the facility, such as flow-through and cleaning discharge flows, use of therapeutic and disinfecting/sanitizing agents, etc. and in consideration of settling pond detention times. Any change in sampling location must be approved by the Department in writing.

2. BOD and TSS: BOD and TSS effluent concentration limits are based on results of secondary level fish hatchery wastewater treatment, developed by EPA. It is the Department's intent to re-evaluate and potentially revise concentration limits in the future based on statistical evaluations of demonstrated performance of consistently and properly utilized treatment technology for the industry.

3. Composite Samples: Composite sample means a sample consisting of a minimum of four grab samples collected at two-hour intervals during the working day at the facility. Alternatively, upon Department approval, the permittee may elect to use an automatic compositer for sampling.

4. Total Phosphorus and Orthophosphate: The concentration and mass effluent limits and monitoring requirements shall consist of gross, end-of-pipe values. Phosphorus limits and monitoring requirements are seasonal and are only in effect from June 1 through September 30 each year. Orthophosphate monitoring requirements are only in effect from June 1 through September 30, 2006. Laboratory analysis shall be conducted on the same sample and shall consist of a low-level phosphorus analysis with a minimum detection limit of 1 part per billion (1 ug/L).

5. Supplemental Data Forms: In addition to specified DMR reporting requirements, the permittee shall submit all data from effluent dissolved oxygen monitoring to the Department in a supplemental report accompanying the appropriate monthly discharge monitoring report pursuant to Permit Special Condition E.

SPECIAL CONDITIONS
B. NARRATIVE EFFLUENT LIMITATIONS:

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.

2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.

3. The discharges shall not cause visible discoloration or turbidity in the receiving waters which would impair the usages designated by the classification of the receiving waters.

4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

C. UNAUTHORIZED DISCHARGES:

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall #001A, located at the outfall of the settling pond. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5)(*Bypass*) of this permit.

D. NOTIFICATION REQUIREMENT:

In accordance with Standard Condition D, the permittee shall notify the Department of the following:

1. Any substantial change in the volume or character of pollutants being introduced into the wastewater collection and treatment system.

2. For the purposes of this section, adequate notice shall include information on:

   a. The quality or quantity of wastewater introduced to the waste water collection and treatment system; and

   b. Any anticipated impact of the change in the quantity or quality of the wastewater to be discharged from the treatment system.

SPECIAL CONDITIONS
E. MONITORING AND REPORTING:

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and postmarked on or before the thirteenth (13th) day of the month or hand-delivered to a Department regional office such that the DMR's are received by the Department on or before the fifteenth (15th) day of the month following the completed reporting period. A signed copy of the DMR and all other reports required herein including reports required pursuant to Permit Special Conditions A (footnote 5) and M shall be submitted to the following address:

Department of Environmental Protection
Bureau of Land and Water Quality
Division of Water Quality Management
17 State House Station
Augusta, Maine 04333-0017

F. OPERATION & MAINTENANCE (O&M) PLAN:

On or before June 1, 2006, the permittee shall submit to the Department a current written comprehensive Operation & Maintenance (O&M) Plan *[09699]*. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

The O&M Plan shall establish Best Management Practices (BMP) to be followed in operating the facility, cleaning the raceways/culture tanks, screens, and other equipment and disposing of any solid waste. The purpose of the BMP portion of the plan is to identify and to describe the practices which minimize the amounts of pollutants (biological, chemical, and medicinal) discharged to surface waters. Among other items, the plan shall describe in detail efficient feed management and feeding strategies to minimize discharges of uneaten feed and waste products, how and when the accumulated solids are to be removed, dewatered, and methods of disposal. The plan shall also describe where the removed material is to be placed and the techniques used to prevent it from re-entering the surface waters from any onsite storage. The plan shall document the recipients and methods of any offsite waste disposal.

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and EPA personnel upon request.

Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility, the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

SPECIAL CONDITIONS
G. SCHEDULE OF COMPLIANCE

The Department is establishing a Schedule of Compliance for implementation of the following effluent limits and requirements established in this permitting action to provide for infrastructure, operation and maintenance upgrades as appropriate to insure compliance. The permittee shall adhere to the specific required tasks and deadlines detailed below:

1. **Technology and Water Quality Based Effluent Limitations:** The permittee shall ensure that the facility provides wastewater treatment equal to or better than the minimum treatment technology for all wastewater discharges and complies with all technology based effluent limitations, monitoring requirements, and operational requirements established in this permitting action **upon its effective date** and shall ensure that the facility complies with all new water quality based limits (total phosphorus) **on or before June 1, 2009**.

A. **On or before June 1, 2006, 2007, and 2008**, the permittee shall submit to the Department for review, facility wide plans (reports) to address operational and physical modifications necessary to ensure compliance with the total phosphorus limits established in this permit ***[90199,90299,90399]***. The plans shall encompass methods, technologies, and implementation schedules for attainment of the total phosphorus limits. For any alternatives involving design and construction, see Fact Sheet Attachment C for Department guidance on developing an Engineer's Facilities Planning Report.

H. SETTLING BASIN CLEANING:

All settling structures shall be cleaned when accumulated materials occupy 20% of a basin's capacity, when material deposition in any area of the basins exceeds 50% of the operational depth, or at any time that solids from the basins are contributing to a violation of permit effluent limits. The permittee is responsible for reporting effluent violations pursuant to Standard Conditions D.1 (f) and (g).

I. DISEASE AND PATHOGEN CONTROL AND REPORTING:

Dead River Hatchery must comply with Maine Department of Inland Fisheries and Wildlife and Maine Department of Marine Resources salmonid fish health rules (12 MRSA, §6071; 12 MRSA, §§7011, 7035, 7201, and 7202, or revised rules). The cited rules include requirements for notification to the appropriate agency within 24-hours of pathogen detection. In the event of a catastrophic pathogen occurrence, the permittee shall submit to the Department for review, information on the proposed treatment including materials/chemicals to be used, material/chemical toxicity to aquatic life, the mass and concentrations of materials/chemicals as administered, and the concentrations to be expected in the effluent. The Department will address such occurrences through administrative modifications of the permit.

SPECIAL CONDITIONS
J. THERAPEUTIC AGENTS:

All medicated fish feeds, drugs, and other fish health therapeutants shall be registered with USEPA as appropriate, approved by the US Food and Drug Administration (USFDA), and applied according to USFDA accepted guidelines and manufacturer's label instructions. Records of all such materials used are to be maintained at the facility for a period of five years. This permitting action does not authorize routine off-label or extra-label drug use. Such uses shall only be permitted in emergency situations when they are the only feasible treatments available and only under the authority of a veterinarian. **The permittee shall notify the Department in writing within 24-hours of such use.** This notification must be provided by the veterinarian involved and must include the agent(s) used, the concentration and mass applied, a description of how the use constitutes off-label or extra-label use, the necessity for the use in terms of the condition to be treated and the inability to utilize accepted drugs or approved methods, the duration of the use, the likely need of repeat treatments, and information on aquatic toxicity. If, upon review of information regarding the use of a drug pursuant to this section, the Department determines that significant adverse effects are likely to occur, it may restrict or limit such use.

K. DISINFECTING/SANITIZING AGENTS:

Records of all disinfectants and/or sanitizing agents used that have the potential to enter the waste stream or receiving water, their volumes and concentrations as used and concentrations at the point of discharge, shall be maintained at the facility for a period of five years. This permitting action only authorizes the discharge of those materials applied for, evaluated by the Department, and either regulated or determined to be deminimus in this permitting action or in subsequent Department actions.

L. MINIMUM TREATMENT TECHNOLOGY REQUIREMENT:

Between 2000 and 2002, eleven Maine fish hatcheries were evaluated to identify potential options for facility upgrades. All nine Maine Department of Inland Fisheries and Wildlife hatcheries were evaluated by FishPro Inc., while the two USFWS hatcheries were evaluated by the Freshwater Institute. Recommended wastewater treatment upgrades for each of the facilities included microscreen filtration of the effluent. Based on the information provided and Department BPJ, the Department is specifying that minimum treatment technology for the Pierce Pond Township facility shall consist of treatment equal to or better than 60-micron microscreen filtration of the effluent, wastewater settling/clarification, removal of solids. Dead River Hatchery shall provide treatment equal to or better than the BPJ minimum treatment technology and shall comply with all effluent limitations, monitoring requirements, and operational requirements established in this permitting action. Additional treatment may be necessary to achieve specific water quality based limitations.

SPECIAL CONDITIONS
M. AMBIENT MACROINVERTEBRATE BIOMONITORING:

Based on available data, the Department is concerned with the effects of fish hatchery effluent discharges on rivers and streams in Maine. As macroinvertebrate communities provide indications of the overall ecological health of a receiving water, the Department has determined that biomonitoring is needed to better evaluate attainment of river and stream water classification standards and designated uses, resource impacts, and corrective measures when necessary. In order to address this need, this permitting action requires Dead River Hatchery to conduct ambient macroinvertebrate biomonitoring **annually beginning calendar year 2006. On or before three months following the effective date of this permit**, Dead River Hatchery shall submit a biomonitoring plan for Black Brook to the Department's Division of Environmental Assessment for review and approval ***[34099]***. The plan shall be consistent with "*Methods for Biological Sampling and Analysis of Maine's Rivers and Streams*" (DEP #LW0387-B2002, August 2002) and shall include a scope of work and schedule, monitoring locations and maps, methods and materials, and reporting procedures for the biomonitoring program. Biomonitoring shall be conducted according to a Department approved monitoring plan. Results shall be reported to the Department in a biomonitoring report by December 15 each year ***[90199, 90299, 90399, 90499, 90599]***. If the receiving water is determined by the Department to be meeting criteria, standards, and designated uses for its assigned water quality class, the Department will reopen the permit pursuant to Permit Special Condition N, to modify or discontinue the biomonitoring requirement.

N. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, new water quality monitoring data or modeling information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at anytime and with notice to the permittee, modify this permit to; 1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded, (2) require additional monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

O. SEVERABILITY

In the event that any provision, or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all respects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: September 29, 2005
Revised: December 7, 2005, December 16, 2005

MEPDES PERMIT NUMBER:	# ME0110477
WASTE DISCHARGE LICENSE:	# W-000905-5Q-C-R/D-T
FORMER PERMIT COMPLIANCE SYSTEM TRACKING	#MEU500905

NAME AND ADDRESS OF APPLICANT:

DEAD RIVER HATCHERY
Nestle Waters North America
109 Poland Spring Drive
Poland Spring, Maine 04274

COUNTY: SOMERSET

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

DEAD RIVER HATCHERY
Pierce Pond Township, Maine
(HCR 68, Box 510
North New Portland, Maine 04961)

RECEIVING WATER / CLASSIFICATION: Black Brook, Class B

COGNIZANT OFFICIAL AND TELEPHONE NUMBER:

Mr. Chris Pray, Facility Manager (207) 628-2816
Mr. Mark Laplante, Natural Resource Supervisor (207) 998-6383

1. APPLICATION SUMMARY

The applicant has applied for a renewal and transfer of Waste Discharge License (WDL) #W-000905-41-A-R, which was issued on April 19, 1985 for a five-year term. The WDL approved the discharge of a daily average of 1.5 million gallons per day (MGD) of fish hatchery wastewater to Black Brook, Class B-1 (since revised to Class B) from a commercial rainbow trout hatchery and rearing facility in Pierce Pond Township, Maine.

2. PERMIT SUMMARY

a. Regulatory - January 12, 2001 – The Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. On October 30, 2003, after consultation with the U.S. Department of Justice, USEPA extended Maine's NPDES program delegation to all but tribally owned lands. In those areas, the Department maintains the authority to issue WDLs pursuant to Maine law. The extent of Maine's delegated authority is under appeal at the time of this permitting action. From this point forward, the program will be referred to as the Maine Pollutant Discharge Elimination System (MEPDES) program and permit #ME0110477 will be utilized as the primary reference number for the Pierce Pond Township facility instead of the previously assigned Permit Compliance System tracking number of #MEU500905. Any previous NPDES permits issued by the EPA will be replaced by the MEPDES permit upon issuance. Once retired, all terms and conditions of any NPDES permits are null and void.

b. Terms and conditions – This permitting action is different from the April 19, 1985 WDL in that it is:

1. revising the 1.5 MGD daily average discharge flow limit to a monthly average flow limit;
2. establishing BOD and TSS monthly average and daily maximum mass and concentration limits with a provision for the Department to establish new limits in the future based on technology performance analyses of the industry as a whole;
3. establishing seasonal total phosphorus monthly average and daily maximum mass and concentration monitoring and reporting requirements with implementation of monthly average water quality based mass and concentration limits in three years;
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6. establishing monthly average and daily maximum reporting requirements for mass of fish onhand;
7. establishing a daily minimum effluent limit and monthly average and daily maximum monitoring requirements for effluent dissolved oxygen;
8. revising the previously established pH limit range to 6.0-8.5 standard units.
9. establishing minimum monitoring frequency and sample type requirements based on Department best professional judgement (BPJ);
10. eliminating settleable solids effluent limits and reporting requirements;
11. eliminating ammonia nitrogen effluent limits and reporting requirements;
12. requiring a current facility Operation and Maintenance Plan;
13. establishing requirements for settling basin cleaning;
14. requiring compliance with existing state salmonid fish health rules;
15. establishing requirements related to proper use and record keeping of therapeutic agents;
16. establishing record keeping requirements for disinfecting/sanitizing agents;
17. establishing BPJ derived minimum treatment technology requirements for the Dead River facility and;
18. establishing requirements for annual ambient macroinvertebrate biomonitoring.

c. History: The most recent licensing/permitting actions include the following:

June 9, 1976 – The Maine Department of Environmental Protection issued WDL #905 for the discharge of a daily average of 1.5 MGD of treated fish hatchery wastewater from the Beautiful Valley Trout Farm hatchery in Pierce Pond Township to Black Brook, Class B-1. The WDL was issued for a five-year term.

April 19, 1985 – The Department issued WDL #W-000905-41-A-R to Beautiful Valley Trout Farm for the discharge of a daily average of 1.5 MGD of treated fish hatchery wastewater. The WDL was issued for a five-year term.

March 25, 1987 – The Department issued # W-000905-41-B-M, transferring the WDL for the Pierce Pond Township facility to Sea Run Partnership. The term of the WDL remained the same as in #W-000905-41-A-R.

July 1, 1999 - The Department received an application from Sea Run Holdings, Inc. for renewal of the WDL for the discharge of fish hatchery wastewater from the Pierce Pond Township facility. The application was assigned #W-000905-5Q-C-R.

2004 -The Pierce Pond Township facility was purchased by Nestle Waters North America Inc. and renamed the Dead River Hatchery.

September 2005 – The Department eliminated the Permit Compliance System tracking number of #MEU500905 previously assigned to the Pierce Pond Township facility in favor of MEPDES permit #ME0110477.

d. Source Description/ Facility Operation:

The Dead River fish hatchery and rearing facility was originally built in 1947. The facility was constructed and operated by the Maine Department of Inland Fisheries and Wildlife (MDIFW) until it was closed in 1968. The facility was purchased by the Schoenthaler family in approximately 1971 and reopened as Beautiful Valley Trout Farm in 1974. In approximately 1984, Evelyn Sawyer bought the facility, renamed it Sea Run Holdings, Inc. and operated it until 2004 when the property was purchased by Poland Spring Water Company and renamed as the Dead River Hatchery. The Dead River facility raises rainbow trout for sale to private pond owners. The trout are Donaldson strain, believed originally imported by MDIFW from Tennessee.

Influent Water:

Influent water for the facility is obtained from two streams and from on-site groundwater springs. Cold Brook is located on the south side of the facility and Black Brook is located on the north side of the facility, with both streams flowing westerly and converging below (northwest of) the Dead River Hatchery. Influent flows from the two streams are blended based on their volumes and temperatures. In the summer, Cold Brook provides approximately 60% of facility water needs, with the remainder supplied from Black Brook and groundwater sources. Influent water is obtained from Cold Brook through three separate ductile iron pipes, a 6-inch diameter, an 8-inch diameter, and a 10-inch diameter pipe. Influent water from Black Book is obtained through a 15-inch diameter ductile iron pipe. Each surface water inlet is equipped with a course steel grate to screen out large organic matter. Dead River Hatchery also obtains water from ten, 4-foot to 5-foot diameter overburden tiles, which are connected to provide a source of 500-600 gallons per minute (GPM) of 41 degree Fahrenheit (41F) flow year round. All influent water is provided to Dead River Hatchery through gravity flow. Surface and groundwater sources are able to be blended in valve/head boxes at four locations at the heads of the facility hatchery building, two sets of raceways, and the former juvenile raceway labyrinth, which is no longer operated. Flows are blended in this manner to provide the necessary water volumes and temperatures for fish development. The water is then distributed via steel piping of various sizes ranging from 6-inches to 15-inches in diameter through the facility, which includes broodstock tanks, egg/fry troughs, external fish tanks and raceways.

Broodstock and Hatchery Operation:

Broodstock: Dead River Hatchery obtains its eggs from rainbow trout broodstock maintained on site. The hatchery building contains two, 6-foot diameter x 2-feet deep (425-gallons each) and two, 5-foot diameter x 2.5-feet deep (370-gallons each) circular fiberglass tanks used to house broodstock in late fall at a temperature 41F. The broodstock supply consists of two year-classes, a younger and an older class, with approximately 100 fish in each class. Eggs are obtained from broodstock between February and April each year from the older broodstock class when the fish are 3, 4, and 5-years old. When an age class reaches three years of age, the older class (now 5+ years old) is retired and a new class is started so that Dead River Hatchery always has a class in the 3-5 year old range. After they have been stripped of eggs, the broodstock fish are moved to outside raceways. Water is supplied and exits broodstock tanks via parallel independent flow. Flow through wastewater from the broodstock tanks is typically discharged via a straight trough through the former juvenile raceways labyrinth to the south side (Cold Brook) raceways. Broodstock tank wastewater can also be discharged directly to the facility wastewater ditch and settling pond. Broodstock tank wastewater is treated as described below.

Eggs and Fry: Eggs are placed in egg/fry troughs that are arranged in four lines. Each line consists of six sets of troughs (10-feet long x 2-feet, 8-inches wide x 1-foot deep), bisected in width, with water supplied via gravity flow in series through each line. The eggs are hatched in the egg/fry troughs and fry are kept in these structures until they reach the swim up / feeding stage in approximately June. At that time, the fish are moved to outside circular

tanks. Flow through wastewater from the egg/fry troughs is typically discharged via a straight trough through the former juvenile raceways labyrinth to the south side (Cold Brook) raceways. Egg/fry trough wastewater can also be discharged directly to the facility wastewater ditch and settling pond. Egg/fry trough wastewater is treated as described below.

Outside Rearing Operations:

Circular Tanks: Rearing structures at Dead River Hatchery include ten, 12-foot diameter x 3.5-feet deep (2,960-gallons each) circular fiberglass tanks. Fish are kept in these tanks until approximately July-August, at which time they reach approximately 2-3 inches in length and are then moved to raceways. Each tank receives and discharges its wastewater independently of the other tanks. Outside tank wastewater is treated as described below.

Raceways: Dead River Hatchery has two lines of linear raceways. The southern most line, which is closest to Cold Brook, consists of 18 raceways arranged six long by 3 wide. The northern most line, which is closest to Black Brook, also consists of 18 raceways arranged 6 long by 3 wide, but is then followed by 3 wider raceway sections that encompass the same width as the upgradient divided sections. Each of the 36 "divided" raceway sections is 100-feet long by 5-feet wide by 2-feet deep, while the 3 wider sections are 100-feet long by 15-feet wide by 2-feet deep. Water from Black Brook is only piped to the northernmost or "Black Brook" raceways, while water from Cold Brook is piped to all areas. Because of its proximity to Cold Brook, the southern most line of raceways is referred to as the "Cold Brook" raceways. Dead River Hatchery maintains approximately 1,500 fish in each raceway section. All fish are maintained in the raceways until they reach 2-years of age and approximately 12 to 14-inches in length. Dead River Hatchery sells both 1-year and 2-year old fish to customers for private stocking. Raceway wastewater is treated as described below.

e. Wastewater Treatment: Wastewater treatment at the Dead River facility consists of the following. Although the previous licensing action only refers to Outfall #001, Dead River Hatchery has historically operated three wastewater outfalls to Black Brook, functioning as described below.

Flow-through water in the broodstock tanks and egg/fry troughs typically flows to the south side (Cold Brook) raceway, but can be routed directly to a facility wastewater ditch, which in turn flows to a settling pond to be discharged to the receiving water. These structures are described further below. Flow-through water through the raceways has been historically discharged to the receiving water through two outfalls, one located at the end of each raceway. Flow-through water in the outside circular tanks is discharged via a center drain in each tank which is piped to the facility wastewater ditch and subsequently flows to the settling pond and to the receiving water.

The egg/fry troughs, broodstock tanks, and outside circular tanks are cleaned once per year when they are empty. Raceways are cleaned up to three times per year depending on need. All Dead River Hatchery structures are cleaned with water only and no chemical or cleaning

agents. Wastewater generated while cleaning structures is routed to an approximately 750-foot long vegetated, constructed wastewater ditch that runs parallel to the raceways to the north. As noted above, the wastewater ditch enters the facility wastewater settling pond, then discharges to the receiving water through Outfall #001A.

The raceways at Dead River Hatchery have small rough-screened settling or quiescent zones at the end of each individual raceway, equipped with approximately 12-inch diameter concrete pipes that are used to discharge raceway cleaning water directly to the wastewater ditch and settling pond. Dead River Hatchery personnel open the side discharge valve at the beginning of cleaning, which takes approximately one hour per individual raceway section. During raceway cleaning, raceway flow-through water was historically routed directly to the facility settling pond by closing the raceway outfalls and opening pipes at the end of the raceways that connect the south (Cold Brook) raceway to the north (Black Brook) raceway to the settling pond.

The Dead River Hatchery settling pond is an excavated earthen pond approximately 100 feet long by 50 feet wide by 8-feet deep (300,000-gallon capacity). Dead River Hatchery estimates that the settling pond provides approximately one hour of retention time. The settling pond outlets through an 8-foot wide by approximately 30-foot long constructed conveyance ditch, then through a 500-foot to 600-foot long channel to Black Brook, that is believed to have been established historically by the existence of the hatchery discharge. Large wetland areas exist in proximity to the Dead River facility. The areas adjacent (north and south) of Dead River Hatchery consist of palustrine forested and scrub-shrub wetlands. The area below (west) of Dead River Hatchery and adjacent to Black Brook consists of palustrine scrub-shrub wetland. Braided surface water channels are common throughout these areas.

During winter conditions, fish in the raceways are only fed intermittently, raceways are not cleaned, and the facility discharge has historically consisted of flow-through water via the two "raceway outfalls".

The permittee is currently improving the facility outfall infrastructure to provide for permanently piping all flow-through and cleaning wastewater from the "Cold Brook" (south side) raceways to the bottom of the "Black Brook" (north side) raceways, then piping all wastewater from both raceway systems to the top (southeastern) end of the facility settling pond. The permittee anticipates needing to remove the last Black Brook (north side) raceway section to accommodate this design. These improvements serve to provide more consistent wastewater treatment and to establish a single facility outfall (#001A) below the settling pond. Improvements also include installation of a formal flow monitoring structure at the settling pond outlet, thus improving effluent monitoring capabilities and effluent data consistency. These improvements are anticipated to be completed and in operation prior to the effective date of this permitting action and this permitting action is being developed accordingly.

Use of agents for therapeutic and disinfecting/sanitizing purposes are addressed in subsequent Fact Sheet sections titled accordingly.

3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A., Section 420 and Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS:

Maine law, 38 M.R.S.A., Section 467.4.D(2)(a) classifies Black Brook below the Dead River Hatchery discharge as a Class B water. Maine law, 38 M.R.S.A., Section 465.3, describes the standards for Class B waters.

5. RECEIVING WATER QUALITY CONDITIONS:

The State of Maine 2004 *Integrated Water Quality Monitoring and Assessment Report* (DEPLW0665), prepared pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act includes the receiving water in the designation *Tributaries of Dead River entering below Flagstaff Lake* (Assessment Unit ME0103000204, Segment ID 310R), listed in Category 2, Rivers and Streams Attaining Some Designated Uses – Insufficient Information for Other Uses (204.9 mile segment of Class A and B waters). All freshwaters in Maine are listed as only partially attaining the designated use of recreational fishing due to a fish consumption advisory (Category 5-C). The advisory was established in response to elevated levels of mercury in some fish caused by atmospheric deposition. The Department has no information that the Dead River facility causes or adversely contributes to the attainment conditions listed in the 303(d)/305(b) report indicated above.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS:

On June 30, 2004, USEPA finalized the Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (National Effluent Guidelines). The earlier September 12, 2002 proposed National Effluent Guidelines (NEGs) and subsequent working draft NEGs established numerical limitations for the discharge of TSS and requirements for facilities to develop and implement best management practices (BMP) plans for control of other pollutants.

In the final NEGs, EPA expressed effluent limitations in the form of narrative standards, rather than as numerical values. The final NEGs require facilities to develop and implement BMPs regarding operation and maintenance of the facility, as does this permitting action. EPA stated that it determined it more appropriate to promulgate limits "*...that could better*

respond to regional and site-specific conditions and accommodate existing state programs in cases where these appear to be working well." The final NEGs reference a section of the federal Clean Water Act inclusive of 40 CFR, Part 125.31(f), which states, "*Nothing in this section shall be construed to impair the right of any State or locality under section 510 of the Act to impose more stringent limitations than those required by Federal law.*" Section 510 states, "*Except as expressly provided in this Act, nothing in this Act shall (1) preclude or deny the right of any State...to adopt or enforce...any standard* o(r) *limitation respecting discharges of pollutants, or...any requirement respecting control or abatement of pollution; except that if an effluent limitation...or standard of performance is in effect under this Act, such State...may not adopt or enforce any effluent limitation...or standard of performance which is less stringent than the effluent limitation...or standard of performance under this Act; or (2) be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to the waters...of such States* ".

Pursuant to Maine Law (38 M.R.S.A., §414-A.1), the Department shall only authorize discharges to Maine waters when those discharges, either by themselves or in combination with other discharges, "*will not lower the quality of any classified body of water below such classification*". *Further, "the discharge will be subject to effluent limitations that require application of the best practicable treatment". "Best practicable treatment* (BPT) *means the methods of reduction, treatment, control and handling of pollutants, including process methods, and the application of best conventional pollutant control technology or best available technology economically available, for a category or class of discharge sources that the department determines are best calculated to protect and improve the quality of the receiving water and that are consistent with the requirements of the Federal Water Pollution Control Act" (40 CFR). "If no applicable standards exist for a specific activity or discharge, the department must establish limits on a case-by-case basis using best professional judgement...*" considering "*...the existing state of technology, the effectiveness of the available alternatives for control of the type of discharge and the economic feasibility of such alternatives...*". Pursuant to 38 M.R.S.A, §414-A.1 and §464.4, the Department regulates wastewater discharges through establishment of effluent limitations and monitoring requirements that are protective of Maine waters.

Between calendar years 2000 and 2002, eleven Maine fish hatcheries were evaluated to identify potential options for facility upgrades. All nine Maine Department of Inland Fisheries and Wildlife hatcheries were evaluated by FishPro Inc., while the two USFWS hatcheries were evaluated by the Freshwater Institute. Recommended wastewater treatment upgrades for each of the facilities included microscreen filtration of the effluent. Based on the information provided and Department best professional judgement (BPJ), the Department is specifying that minimum treatment technology for the Pierce Pond Township facility shall consist of treatment equal to or better than 60-micron microscreen filtration of the effluent, wastewater settling/clarification, and removal of solids (Permit Special Condition L, Fact Sheet Section 13). Dead River Hatchery shall provide treatment equal to or better than the BPJ minimum treatment technology and shall comply with all effluent limitations, monitoring requirements, and operational requirements established in this permitting action. Additional treatment may be necessary to achieve specific water quality based limitations.

a. Flow: The previous licensing action contained a daily average flow discharge limit of 1.5 MGD, with monitoring requirements consisting of semi-annual estimates. In this permitting action, the Department is carrying forward the 1.5 MGD limit as a monthly average flow limit. This permitting action requires daily measurement of discharge flow, consistent with Department guidelines for wastewater treatment facility discharges.

b. Dilution Factors: Dilution factors associated with wastewater discharges are derived in accordance with freshwater protocols established in Department Regulation Chapter 530, Surface Water Toxics Control Program, October 2005 and methods for low flow calculation contained in Estimating Monthly, Annual, and Low 7-day, 10-year Streamflows for Ungaged Rivers in Maine (Scientific Investigations Report 2004-5026, US Department of Interior, US Geological Service). To calculate potential effects from a facility's effluent discharge, the Department utilizes the receiving water's available dilution during low flow conditions. The Dead River facility discharges its treated effluent via a small channel which flows into Black Brook. Typically, these types of discharges do not achieve rapid and complete mixing with the receiving water since initial dilution is based on mixing resulting from the momentum of a discharge as it exits a discharge pipe (jet effect) as well as the dispersion of the effluent plume as it rises to the surface of the receiving water. With a monthly average flow limitation of 1.5 MGD, the dilution factors associated with the Dead River facility are calculated as follows:

Mod. Acute: ¼ 1Q10 = 0.19 cfs $\Rightarrow \frac{(0.19\text{ cfs})(0.6464) + 1.5\text{ MGD}}{1.5\text{ MGD}} = 1.1:1$

Acute: 1Q10 = 0.76 cfs $\Rightarrow \frac{(0.76\text{ cfs})(0.6464) + 1.5\text{ MGD}}{1.5\text{ MGD}} = 1.3:1$

Chronic: 7Q10 = 0.9 cfs $\Rightarrow \frac{(0.9\text{ cfs})(0.6464) + 1.5\text{ MGD}}{1.5\text{ MGD}} = 1.4:1$

Harmonic Mean = 2.7 cfs $\Rightarrow \frac{(2.7\text{ cfs})(0.6464) + 1.5\text{ MGD}}{1.5\text{ MGD}} = 2.2:1$

Chapter 530.4.B(1) states that analyses using numeric acute criteria for aquatic life must be based on ¼ of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone. The regulation goes on to say that where it can be demonstrated that a discharge achieves rapid and complete mixing with the receiving water by way of an efficient diffuser or other effective method, analyses may use a greater proportion of the stream design, up to including all of it. As stated above, Dead River Hatchery's discharge does not achieve rapid and complete mixing, thus the Department is utilizing the default stream flow of ¼ of the 1Q10 pursuant to Chapter 530.5 in acute evaluations.

c. BOD and TSS: The previous licensing action contained effluent limitations and monitoring requirements for total suspended solids (TSS), but none for biochemical oxygen demand (BOD). The TSS limits consisted of a daily average mass limit of 2.2 kg of TSS per 100 kg of fish on hand and a daily maximum mass limit of 2.9 kg/100 kg of fish on hand. Monitoring requirements consisted of a composite of three grab samples collected during facility cleaning on a semi-annual basis.

In licensing actions for twelve state and commercially owned fish hatcheries in 1999 and 2000, the Department established monthly average concentration limits for BOD and TSS of 2 mg/L based on the Department's best professional judgement of best practicable treatment (BPJ of BPT) limits. The BPT limits were developed based on the Department's analysis of effluent data from licensed fish hatcheries in Maine supplied through Discharge Monitoring Reports (DMRs). Based on this analysis, the Department determined that the concentration limits of 2 mg/L constituted achievable levels of these pollutants in fish hatchery wastewater. The Department also required that the BOD and TSS effluent mass be monitored and reported in pounds per 100 pounds of fish on hand. Through extensive facility inspections in 2002, the Department discovered significant variability in facility effluent sampling procedures, calling into question the validity of submitted DMR data, the previous data analysis, and the Department's previous assumptions and conclusions.

In the 2002 proposed NEGs, EPA recommended national TSS effluent limitations for re-circulating and flow-through hatcheries of various designs and levels of production. The most restrictive recommended limits were based on a secondary level of fish hatchery wastewater treatment and consisted of a monthly average limit of 6 mg/L and a daily maximum limit of 10 mg/L. The 2002 proposed draft NEGs did not propose to regulate BOD as EPA believed it would be managed through best management practices at the hatcheries and treatment for TSS.

According to EPA's final NEGs, effluent from fish hatcheries and rearing facilities can contain "*...high concentrations of suspended solids and nutrients, high BOD and low dissolved oxygen levels. Organic matter is discharged primarily from feces and uneaten feed*". As stated in the 2002 proposed NEGs, "*elevated levels of organic compounds contribute to eutrophication and oxygen depletion.*" This is expressed as BOD "*...because oxygen is consumed when microorganisms decompose organic matter*". "*The greater the BOD, the greater the degree of pollution and the less oxygen available.*" The discharge of high BOD wastewater to small receiving waters with insufficient dilutions can result in formation of oxygen deficient areas known as sag points. Oxygen sag points represent both localized impacts to habitat and aquatic life as well as barriers to migration throughout the receiving water. Based on this premises and a long standing practice of regulating effluent BOD, the Department considers BOD a significant pollutant and therefore is establishing effluent limitations and monitoring requirements.

Although previous license limits were expressed in kgs of pollutant per 100 kgs of fish on hand, the license did not require the licensee to report the mass of fish on hand. In its 1999 permit renewal application, Dead River Hatchery reported a maximum quantity of fish on hand at any time of 200,000 fish weighing a total of 15,000 pounds (6,804 kg). The Department used this information to convert the previously established kgs of pollutant per hundred kgs of fish limits to more conventional units to allow for comparison to limits presently being established in hatchery discharge permits. The conversion was accomplished as follows:

6,804 kg fish x 2.2 kgs/100 kgs = 150 kgs/day (330 lbs/day) monthly average.
A concentration limit can be calculated using the monthly average discharge flow of 1.5 MGD as follows:

330 lbs/day divided by 8.34 lbs/gal divided by 1.5 MGD = 26.4 parts per million (mg/L).

6,804 kg fish x 2.9 kgs/100 kgs = 197 kgs/day (434 lbs/day) daily maximum.
A concentration limit can be calculated using the monthly average discharge flow of 1.5 MGD as follows:

434 lbs/day divided by 8.34 lbs/gal divided by 1.5 MGD = 34.7 parts per million (mg/L).

Comparatively, mass limits based on concentration limits of 6 mg/L (monthly average) and 10 mg/L (daily maximum) and the 1.5 MGD monthly average flow established in this permitting action, would yield:

A monthly average mass limit of 6 mg/L X 1.5 MGD X 8.34 lbs/gal = 75 lbs/day

A daily maximum mass limit of 10 mg/L X 1.5 MGD X 8.34 lbs/gal = 125 lbs/day

In this permitting action the Department is establishing a BPJ of minimum treatment technology for the Pierce Pond Township facility. (Permit Special Conditions L, Fact Sheet Section 13). BOD and TSS concentration limits of 6 mg/L for monthly average and 10 mg/L for daily maximum, as well as mass limits based on the concentration limits and the monthly average effluent flow, shall be in effect for Outfall #001A. These numbers are based on fish hatchery wastewater secondary treatment projections and the Department's judgement that effluent BOD should also be regulated. The Department has evaluated actual and projected post-facility upgrade effluent quality data for a significant number of fish hatcheries in Maine and determined that facilities incorporating the minimum treatment technology outlined can be expected to consistently meet the BOD and TSS concentration limits established in this permitting action. It is the Department's intent to re-evaluate and potentially revise limits in the future based on statistical evaluations of demonstrated performance of consistently and properly utilized treatment technology for the industry. The Department reserves the right to reopen facility discharge permits to establish these limits pursuant to Special Condition N of this permit.

This permitting action establishes once per two week effluent BOD and TSS monitoring on a year round basis based on the Department's BPJ of monitoring frequencies necessary to more accurately characterize facility effluent conditions.

d. Total Phosphorus and Orthophosphate: Phosphorus is a nutrient that encourages the growth of plants such as planktonic algae and macrophytes in northern waters. Oxygen levels in the water are reduced in the early morning hours due to extended nighttime respiration of algae. The decomposition of excess plant material further reduces the amount of available oxygen in the water through biochemical oxygen demand. Lowering oxygen levels in a receiving water impacts the aquatic life in that water, making it unfit for some forms of life. Further, enrichment from excess nutrients, such as phosphorus, can result in reductions in aquatic macro-invertebrate species diversity, an indicator of the overall health of a receiving water. Excess phosphorus can also result in undesirable aesthetic conditions in a receiving water, impacting that water's ability to meet standards for maintaining recreational use, a designated use by law. Therefore, any increase in the phosphorus content in a receiving water has the potential to cause or contribute to non-attainment of classification standards. Orthophosphate is the portion of total phosphorous that is readily available for uptake by aquatic plants. It is important to be able to characterize the facility effluent in terms of the relationship between orthophosphate and total phosphorus in order to better understand the effects on the receiving water. Maine law (38 MRSA § 464.4.A.4) states that *"...the Department may not issue a water discharge license for...the...discharge of pollutants to waters of the State that...cause those waters to be unsuitable for the designated uses and characteristics ascribed to their class"*.

The previous licensing action contained no effluent limitations or monitoring requirements for total phosphorus or orthophosphate. The Department typically utilizes a 0.035-mg/L instream phosphorus concentration limit (ambient water quality threshold) and the dilution provided in a receiving water to calculate water quality based effluent limits. Based on Department research, the AWQC of 0.035 mg/L corresponds to the maximum level at which algae blooms will not typically occur in a receiving river or stream under normal circumstances. As phosphorus is typically of concern under chronic discharge conditions, the 7Q10 dilution of 1.4:1 described in Fact Sheet Section 6b, Dilution Factors, is being utilized in calculation of a monthly average water quality based effluent limit of 0.05 mg/L. This permitting action is also establishing a monthly average mass limit of 0.61 lbs/day based on the concentration limit, monthly average effluent flow limit, and a conversion factor of 8.34 lbs/gallon. Further, this permitting action is establishing monitoring and reporting requirements for the monthly average and daily maximum phosphorus and orthophosphate masses and concentrations discharged. In free flowing rivers and streams, phosphorus and orthophosphate are typically summer time concerns for water quality. Therefore, this permitting action establishes phosphorous and orthophosphate limits and monitoring requirements from June 1 through September 30 each year. As phosphorous limitations constitute new water quality based limits for the Dead River facility, this permitting action provides a schedule of compliance for their effective date (Permit Special Condition G) to provide for infrastructure, operation and

maintenance upgrades, as appropriate, to insure compliance, pursuant to 38 M.R.S.A. §414-A.2. The monthly average phosphorous limits shall be in effect beginning June 1, 2009. Prior to this date, the permittee shall be subject to monitoring and reporting requirements for this parameter, but not effluent limitations. Orthophosphate monitoring and reporting requirements are being established seasonally during 2006. This permitting action establishes a once per two-week monitoring requirement based on the Department's BPJ of monitoring frequencies necessary to more accurately characterize facility effluent conditions. Based on the results of monitoring, the Department may reopen the permit in the future pursuant to Special Condition N to address facility specific effluent limitations, monitoring and operational requirements.

Reported values shall be expressed in gross end-of-pipe values and phosphorous and orthophosphate analysis shall be conducted on the same sample collected. Laboratory analysis shall consist of a low-level phosphorus analysis with a minimum detection limit of 1 part per billion (1 ug/L).

e. Fish on Hand: This permitting action is establishing a reporting requirement for monthly average and daily maximum mass of fish on hand, intended to assist both the Department and the permittee in evaluating management practices at the facility and trends in effluent quality and receiving water impacts. This permitting action establishes once per two week monitoring on a year round basis based on the Department's BPJ of monitoring frequencies necessary to accurately characterize facility effluent conditions.

f. Dissolved Oxygen (effluent): Because of the low dilution of facility effluent provided in the receiving water and to determine effluent effects on the receiving water, this permitting action establishes seasonal monthly average and daily maximum concentration monitoring requirements for effluent dissolved oxygen (D.O.). Further, based on Department modeling and to ensure compliance with Class B D.O. standards, this permitting action establishes a seasonal daily minimum effluent D.O. limit of 7.5 mg/L and once per week monitoring requirements from June 1 through September 30 each year. In addition to requirements established in Permit Special Condition A to report daily minimum, daily maximum, and monthly average concentration results, the permittee shall submit all data from effluent dissolved oxygen monitoring to the Department in a supplemental report accompanying the appropriate monthly discharge monitoring report pursuant to Permit Special Conditions A (footnote 5) and E.

g. pH: The previous licensing action contained the requirement, "the pH shall not be less than 6.0 or greater than 8.0 at any time", with monitoring requirements consisting of a composite of three grab samples collected during facility cleaning on a semi-annual basis. This permitting action is establishing a pH range limitation of 6.0-8.5 standard units and a minimum monitoring requirement of once per two weeks. This effluent limit and monitoring requirement is consistent with the pH limit established in discharge licenses for other fish hatcheries and is considered by the Department as a best practicable treatment standard.

h. Settleable Solids: The previous licensing action established a daily maximum limit for settleable solids of 0.2 ml/l and required monitoring consisting of a composite of three grab samples collected during facility cleaning on a monthly basis. The origin of this limit is unknown but assumed to be from Department BPJ at the time of issuance. In this permitting action, the Department is eliminating the effluent limit and monitoring requirement for settleable solids, based on the Department BPJ that effluent quality is appropriately maintained for fish hatcheries and rearing facilities through the limitations and monitoring requirements established for other parameters.

i. Ammonia: The previous licensing action contained a daily average ammonia nitrogen mass limit of 0.09 kgs/100 kgs of fish on hand and a daily maximum limit of 0.12 kgs/ 100 kgs of fish on hand. Monitoring requirements consisted of a composite of three grab samples collected during facility cleaning on a semi-annual basis. These limits were apparently based on 1974 draft EPA Best Available Technology (BAT) guidelines for fish hatcheries with wastewater settling and sludge removal, which were never promulgated.

Water quality based limits for ammonia are calculated pursuant to USEPA guidance (1993) for sensitivities of salmonids and other cold water species. Ammonia toxicity varies with pH and temperature, therefore the Department and EPA evaluate criteria protective for both acute and chronic exposure at a pH of 7.0 and temperature of 25 degrees Celsius.

With dilution factors as calculated above (Fact Sheet Section 6b, Dilution Factors) and chronic and acute water quality based criterion shown below, monthly average (chronic) and daily maximum (acute) water quality based limits for ammonia are calculated as follows:

Chronic Criterion	Acute Criterion	Dilution Factors	Chronic Limit	Acute Limit
3.0 mg/L	24.1 mg/L	1.4:1 (c) 1.1:1 (a)	4.2 mg/L	26.5 mg/L

The Department reviewed five years of effluent data for the Dead River facility to determine whether the discharge exceeds or has a reasonable potential (RP) to exceed ambient water quality criteria (AWQC) for ammonia. Although previous license limits were expressed in kgs of pollutant per 100 kgs of fish on hand, the license did not require the licensee to report the mass of fish on hand. Using the maximum quantity of fish on hand of 15,000 pounds (6,804 kg) reported in the 1999 renewal application, the Department converted values reported in kgs/100 kgs of fish on hand to standard mass values then to concentration values for comparison to the water quality based limits.

Discharge monitoring report (DMR) data revealed an average of the daily average ammonia values of 0.037 kgs/100 kgs of fish on hand. DMR data further revealed an average of the maximum ammonia values of 0.063 kgs/100 kgs and a maximum ammonia value of 0.08 kgs/100 kgs. To convert these values to conventional mass values:

6,804 kg fish x 0.037 kgs ammonia /100 kgs fish = 2.52 kgs/day (5.6 lbs/day) average
6,804 kg fish x 0.063 kgs /100 kgs = 4.29 kgs/day (9.5 lbs/day) average maximum
6,804 kg fish x 0.08 kgs /100 kgs = 5.44 kgs/day (12.0 lbs/day) maximum

Using the five-year average discharge flow of 1.2 MGD from facility DMR data and a conversion factor of 8.34 lbs/gallon, yields the following concentration values:

5.6 lbs/day / 1.2 MGD / 8.34 lbs/gal = 0.56 mg/L average
9.5 lbs/day / 1.2 MGD / 8.34 lbs/gal = 0.95 mg/L average maximum
12.0 lbs/day / 1.2 MGD / 8.34 lbs/gal = 1.2 mg/L maximum

The facility's average ammonia effluent value represents 13% of the calculated water quality based chronic value above, while the facility's average maximum and maximum effluent values represent 3.6% and 4.5% of the calculated water quality based acute value respectively. Based on this data, the Department has determined that the Dead River facility discharge does not exceed or have an RP to exceed AWQC for ammonia. Therefore, the Department is eliminating ammonia effluent limitations and monitoring requirements in this permitting action.

j. Chlorine: The previous licensing action contained a daily average chlorine concentration limit of 0.095 mg/L and a daily maximum limit of 0.16 mg/L. Monitoring requirements consisted of a composite of three grab samples collected during facility cleaning on a daily basis. Chlorine requirements were established based on the licensee's request to be able to periodically chlorinate flow-through water for disease control. Chlorine limits were apparently based on the Department's BPJ of water quality based limits. Dead River Hatchery reports that chlorine is no longer used at the facility in such a way that it would enter the waste-stream or receiving water. Therefore, chlorine limits and monitoring requirements are being eliminated in this permitting action.

7. ANTI-BACKSLIDING

Federal regulation 40 CFR, §122(l) and Department rules Chapter 523.5(1) contain the criteria for what is often referred to as the anti-backsliding provisions of the Federal Water Pollution Control Act (Clean Water Act). In general, the regulation states that except for provisions specified therein, effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards or conditions in the previous permit. Allowable exceptions to the anti-backsliding provisions, which include when:

(1) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation and

(2) information is available which was not available at the time of the permit issuance (other than revised regulations, guidance or test methods) and which would justify the application of less stringent effluent limitations at the time of permit issuance.

This permitting action revises previously established effluent limitations and monitoring requirements for several pollutants and eliminates those for settleable solids and ammonia. The rationale for these actions is contained in Fact Sheet Section 6, *Effluent Limitations & Monitoring Requirements*. The Department believes that these actions are consistent with the anti-backsliding provisions.

8. ANTI-DEGRADATION

Maine's anti-degradation policy is included in 38 M.R.S.A., Section 464(4)(F) and addressed in the *Conclusions* section of this permit. Pursuant to the policy, where a new or increased discharge is proposed, the Department shall determine whether the discharge will result in a significant lowering of existing water quality. Increased discharge means a discharge that would add one or more new pollutants to an existing effluent, increase existing levels of pollutants in an effluent, or cause an effluent to exceed one or more of its current licensed discharge flow or effluent limits, after the application of applicable best practicable treatment technology. As revisions to previous effluent limitations for some pollutants may appear less restrictive, the Department is addressing the implications under the anti-degradation policy.

This permitting action revises previously established effluent limitations and monitoring requirements for several pollutants and eliminates those for settleable solids and ammonia. The rationale for these actions is contained in Fact Sheet Section 6, *Effluent Limitations & Monitoring Requirements*. Based on the information provided in the referenced section, the Department does not consider these actions to result in increased discharges of pollutants and therefore does not consider the anti-degradation policy to be of issue.

9. SETTLING BASIN CLEANING:

Discharge of inadequately treated fish hatchery wastewater (excess feed and fish waste) contributes solids, BOD, and nutrients to receiving waters, which can contribute to eutrophication and oxygen depletion. This, in combination with other pollutant specific toxic effects, impacts the aquatic life and habitat value in the receiving water. Typical hatchery wastewater treatment practices include effluent filtration and settling with solids removal.

In this permitting action, the Department is requiring that any settling structures be cleaned when accumulated materials occupy 20% of a basin's capacity, when material deposition in any area of the basins exceeds 50% of the operational depth, or at any time that solids from the basins are contributing to a violation of permit effluent limits.

10. DISEASE AND PATHOGEN CONTROL AND REPORTING:

Maine Department of Inland Fisheries and Wildlife (MDIFW) Rules (Chapter 2.03-A) and Maine Department of Marine Resources (MeDMR) Rules (Chapter 24.21) state that *"the transfer and/or introduction of organisms fall within the jurisdiction of the Department of Marine Resources (12 MRSA, §6071) into coastal waters within the State of Maine and the Department of Inland Fisheries and Wildlife (12 MRSA, §§7011, 7035 and 7201, 7202) into public and/or private waters within the State of Maine. These rules are intended to protect wild and farmed salmonid fish populations and shall be applicable to all individuals involved in the culture and movement of live salmonids and gametes."* Further, both agencies' rules define Diseases of Regulatory Concern as *"...infectious agents that have been demonstrated to cause a significant increase in the risk of mortality among salmonid populations in the State of Maine. Diseases of Regulatory Concern are classified by the Commissioner into three (3) disease categories: exotic, endemic (limited distribution) and endemic based on an annual review and analysis of epidemiological data."* The previous licensing action contained no provisions related to pathogen control and reporting. In this permitting action, as a salmonid aquaculture facility, Dead River Hatchery must comply with MDIFW and MeDMR salmonid fish health rules (12 MRSA, §6071; 12 MRSA, §§7011, 7035, 7201, and 7202, or revised rules). The cited rules include requirements for notification to the appropriate agency within 24-hours of pathogen detection. In the event of a catastrophic pathogen occurrence, the permittee shall submit to the Department for review, information on the proposed treatment including materials/chemicals to be used, material/chemical toxicity to aquatic life, the mass and concentrations of materials/chemicals as administered, and the concentrations to be expected in the effluent. The Department will address such occurrences through administrative modifications of the permit.

11. THERAPEUTIC AGENTS:

In the June 30, 2004 final NEGs, EPA requires proper storage of drugs, pesticides and feed and requires facilities to report use of any investigational new animal drug (INAD), extra-label drug use, and spills of drugs, pesticides or feed that results in a discharge to waters of the U.S.

The previous licensing action contained no provisions related to the use of therapeutic agents. This permitting action requires that all medicated fish feeds, drugs, and other fish health therapeutants shall be registered with USEPA as appropriate, approved by the US Food and Drug Administration (USFDA), and applied according to USFDA accepted guidelines and manufacturer's label instructions. Records of all such materials used are to be maintained at the facility for a period of five years.

This permitting action does not authorize routine off-label or extra-label drug use. Such uses shall only be permitted in emergency situations when they are the only feasible treatments available and only under the authority of a veterinarian. The permittee shall notify the Department in writing within 24-hours of such use. This notification must be provided by the veterinarian involved and must include the agent(s) used, the concentration and mass

applied, a description of how the use constitutes off-label or extra-label use, the necessity for the use in terms of the condition to be treated and the inability to utilize accepted drugs or approved methods, the duration of the use, the likely need of repeat treatments, and information on aquatic toxicity. If, upon review of information regarding the use of a drug pursuant to this section, the Department determines that significant adverse effects are likely to occur, it may restrict or limit such use.

This permitting action does not authorize the discharge of drugs authorized by the USFDA pursuant to the Investigational New Animal Drug (INAD) program. As the INAD program typically involves the long-term study of drugs, their benefits and effects, the permittee is anticipated to be able to notify the Department of its intent to conduct, and provide information related to, such study. The permittee is required to provide notification to the Department for review and approval prior to the use and discharge of any drug pursuant to the INAD program. This notification must include information to demonstrate that the minimum amount of drug necessary to evaluate its safety, efficacy, and possible environmental impacts will be used. Notifications must also include an environmental monitoring and evaluation program that at a minimum describes sampling strategies, analytical procedures, evaluation techniques and a timetable for completion of the program. The program must consider the possible effects on the water column, benthic conditions and organisms in or uses of the surrounding waters. Review and approval of INAD related uses and discharges will be addressed through administrative modifications of the permit.

Formalin: Dead River Hatchery does not utilize or discharge formalin at the Pierce Pond Township facility.

Sodium Chloride: Dead River Hatchery uses sodium chloride (NaCl, salt) for treatment of fungal infections or external parasites on fish as needed in the outside 12-foot diameter circular tanks only. For treatment, the water depth in each tank is reduced to 16-inches, which equates to a volume of approximately 1,120 gallons per treated tank. One 50-pound bag of salt is used per tank. To estimate a worst case scenario of effluent salt concentration, the Department used the unlikely scenario that all 10 outside tanks would be treated simultaneously, with a total of 500-pounds of salt. As the 12-foot diameter tanks discharge to the facility wastewater ditch and settling pond, the settling pond's 300,000-gallon capacity is available for dilution of the salt laden wastewater prior to discharge to the receiving water. The concentration in the final effluent can be calculated as follows:

500-lbs NaCl divided by 0.30 million gals divided by 8.34 lbs/gal = 200 ppm salt discharged.

The average concentration of NaCl in seawater is estimated at 35 parts per thousand (ppt) or 35,000 ppm. The Department's Division of Environmental Assessment (DEP DEA) reports that sampling results in Maine marine waters indicate salinity levels of approximately 30 ppt or 30,000 ppm. The DEA further reports that instream NaCl levels of between 1 and 5 ppt (1,000 and 5,000 ppm) can potentially result in harm to freshwater aquatic life. The effluent concentrations calculated above would be subject to further dilution upon entering the receiving water. In that the effluent NaCl concentrations are anticipated to fall below the 1,000 ppm level of concern, the Department is not establishing specific limitations or

monitoring requirements for NaCl in this permitting action. Instead, use of NaCl shall be consistent with the use and record keeping requirements for therapeutic agents specified above.

It should be noted that this is an extremely conservative calculation as it is unlikely that all tanks will be treated simultaneously. Further, after completion of facility wastewater infrastructure upgrades described in Fact Sheet Section 2e, all facility wastewater (1.5 MGD) will be combined at all times, providing for significant further dilution of the outside tank component of the waste-stream. Thus, the Department anticipates significantly less concentrations of effluent NaCl than described above.

Other Materials: Dead River Hatchery reports using no other therapeutic or medicinal agents.

12. DISINFECTING/SANITIZING AGENTS:

This permitting action requires Dead River Hatchery to maintain records of all sanitizing agents and/or disinfectants used that have the potential to enter the waste-stream or receiving water, their volumes and concentrations as used and concentrations at the point of discharge, at the facility for a period of five years.

This permitting action only authorizes the discharge of those materials applied for, evaluated by the Department, and either regulated or determined to be deminimus in this permitting action or in subsequent Department actions. The discharges of any other agents or waste products not specifically included in this permitting action are considered unauthorized discharges pursuant to Permit Special Condition C.

13. MINIMUM TREATMENT TECHNOLOGY REQUIREMENT:

Between 2000 and 2002, eleven Maine fish hatcheries were evaluated to identify potential options for facility upgrades. All nine Maine Department of Inland Fisheries and Wildlife hatcheries were evaluated by FishPro Inc., while the two USFWS hatcheries were evaluated by the Freshwater Institute. Recommended wastewater treatment upgrades for each of the facilities included microscreen filtration of the effluent. Based on the information provided and Department BPJ, the Department is specifying that minimum treatment technology for the Dead River facility shall consist of treatment equal to or better than 60-micron microscreen filtration of the effluent, wastewater settling/clarification, removal of solids. Dead River Hatchery shall provide treatment equal to or better than the BPJ minimum treatment technology and shall comply with all effluent limitations, monitoring requirements, and operational requirements established in this permitting action. Additional treatment may be necessary to achieve specific water quality based limitations.

It is the Department's intent to evaluate effluent data and potentially revise technology based effluent limits in the future based on statistical evaluations of demonstrated performance of consistently and properly utilized treatment technology. The Department reserves the right to reopen facility discharge permits to establish these limits.

14. AMBIENT MACROINVERTEBRATE BIOMONITORING:

Based on available data, the Department is concerned with the effects of fish hatchery effluent discharges on rivers and streams in Maine. As macroinvertebrate communities provide indications of the overall ecological health of a receiving water, the Department has determined that biomonitoring is needed to better evaluate attainment of river and stream water classification standards and designated uses, resource impacts, and corrective measures when necessary. In order to address this need, this permitting action requires Dead River Hatchery to conduct ambient macroinvertebrate biomonitoring annually beginning calendar year 2006. On or before three months following the effective date of this permit, Dead River Hatchery shall submit a biomonitoring plan for Black Brook to the Department's Division of Environmental Assessment for review and approval. The plan shall be consistent with "*Methods for Biological Sampling and Analysis of Maine's Rivers and Streams*" (DEP #LW0387-B2002, August 2002) and shall include a scope of work and schedule, monitoring locations, methods and materials, and reporting procedures for the biomonitoring program. Biomonitoring shall be conducted according to a Department approved monitoring plan. Results shall be reported to the Department in a biomonitoring report by December 15 each year. If the receiving water is determined by the Department to be meeting criteria, standards, and designated uses for its assigned water quality class, the Department will reopen the permit pursuant to Special Condition N of this permit, to modify or discontinue the biomonitoring requirement.

15. SALMON GENETIC INTEGRITY AND HATCHERY ESCAPE PREVENTION:

Leading up to the formal listing of the Atlantic salmon as an endangered species on November 17, 2000, and in subsequent draft MEPDES Permit / Maine WDL reviews, the US Fish and Wildlife Service and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) have advocated for genetic testing of Atlantic salmon housed at hatchery and rearing facilities to ensure that they are of North American origin, as well as employment of a fully functional Containment Management System (CMS) at the facility to prevent the escape of raised salmon or other species of concern in order to avoid impacts on native fish populations. The release or escape of certain species is also of concern to the Maine Department of Inland Fisheries and Wildlife (MDIFW), which manages fisheries resources in Maine.

Dead River Hatchery is a commercial rainbow trout hatchery and rearing facility that produces fish for private stocking. Dead River Hatchery does not raise Atlantic salmon and thus is not subject to salmon genetic testing requirements. Its rainbow trout eggs come from broodstock kept at the facility, originating from a known strain. Dead River Hatchery reports that effluent screens are in place at the outlets of the egg/fry troughs, broodstock tanks, outside rearing tanks, and raceways to prevent the escapement of fish. All screens are sized according to the size of the fish and are inspected regularly. Any escapees would have to elude these measures to enter the receiving water. The MDIFW reports that the receiving water and waters in its vicinity are managed for brook trout and landlocked salmon.

However, MDIFW has indicated that they see no need for a CMS plan at Dead River Hatchery, as rainbow trout are already established in the brook and river downstream and because the presence of smallmouth bass below Grand Falls already impacts the agency's ability to manage the drainage below Flagstaff Dam for native species. Further, MDIFW regulates the species raised at hatcheries and rearing facilities in Maine through Cultivation Licenses issued by that agency.

USFWS and NOAA Fisheries have stated that they see no need to require a CMS plan at Dead River Hatchery from an endangered Atlantic salmon perspective, unless the facility raises salmon at some point in the future, as the facility is located outside the geographic range of the Gulf of Maine Distinct Population (Segment (DPS)) of Atlantic Salmon. Therefore, this permitting action does not require a CMS plan at this time, but advises Dead River Hatchery that if the facility ever intends to house Atlantic salmon or other species determined by USFWS, NOAA Fisheries, or MDIFW to be of risk to native salmon, other native species, or to aquatic habitats, it should submit plans for initiating genetic testing (salmon only) and/or a CMS for review and approval prior to introducing those species at the facility.

16. DISCHARGE IMPACT ON RECEIVING WATER QUALITY:

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of Black Brook to meet standards for Class B classification. In response to concerns with effects of fish hatchery effluent discharges on rivers and streams in Maine and limited available data, as outlined in Permit Special Condition M and Fact Sheet Section 14, Dead River Hatchery is required to conduct ambient macroinvertebrate biomonitoring during the term of this permit. Data collected will be used to evaluate attainment of water classification standards and designated uses, resource impacts, and corrective measures when necessary.

17. PUBLIC COMMENTS:

Public notice of this application was made in the Waterville Sentinel newspaper on or about July 1, 1999. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

18. DEPARTMENT CONTACTS:

Additional information concerning this permitting action may be obtained from and written comments should be sent to:

Robert D. Stratton
Division of Water Resource Regulation
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

Telephone: (207) 287-6114
Fax: (207) 287-7191
email: Robert.D.Stratton@maine.gov

19. RESPONSE TO COMMENTS:

During the period of September 29, 2005 through October 31, 2005, the Department solicited comments on the proposed draft MEPDES Permit to be issued to the Dead River Hatchery for the discharge of fish hatchery wastewater to Black Brook in Pierce Pond Township, Maine. On November 15, 2005, Dead River Hatchery submitted a letter commenting on the proposed draft permit. Dead River Hatchery's comments and the Department's responses are summarized below.

Comment 1, Permit Special Condition M, Fact Sheet Section 14, Ambient Macroinvertebrate Biomonitoring: Dead River Hatchery expressed concern that the permittee is required to conduct annual ambient macroinvertebrate biomonitoring beginning in 2006. Dead River Hatchery noted that it would have to hire a consultant to prepare a scope of work / plan and perform the required monitoring, that the Department has a yearly budget for biomonitoring, and requested that the Department prioritize its annual biomonitoring program to conduct the monitoring in Black Brook itself.

Response 1: As described in the permit and fact sheet sections referenced above, the Department is concerned with the effects of fish hatchery effluent discharges on rivers and streams in Maine. As macroinvertebrate communities provide indications of the overall ecological health of a receiving water, the Department has determined that biomonitoring is needed to better evaluate attainment of river and stream water classification standards and designated uses, resource impacts, and corrective measures when necessary. The Department has discovered occurrences of non-attainment of aquatic life standards below hatchery and rearing facilities in Maine and has designed effluent limitations, monitoring and operational requirements in this and other hatchery and rearing facility discharge permits to correct and/or prevent this condition. The Department has no historical macroinvertebrate monitoring data for Black Brook and therefore must establish this requirement for the Dead River Hatchery. Biomonitoring plans are required to be consistent with methods developed by the Department, both simplifying plan development and ensuring data quality. As stated, if "*the receiving water is determined by the Department to be meeting criteria, standards, and designated uses for its assigned water quality class, the Department will reopen the permit pursuant to Special Condition O* (now N) *of this permit, to modify or discontinue the*

biomonitoring requirement." Thus, the Department does not consider either development of a biomonitoring plan or execution of the monitoring to be significant burdens to the permittee. The Department has a limited budget for biomonitoring and does not have the ability to undertake the monitoring requirements for the Dead River Hatchery. Pursuant to Department rule Chapter 2, Section 11F, an "*applicant for a license has the burden of proof to affirmatively demonstrate to the Department that each of the licensing criteria in statute or rule has been met*". The Department sees no reason to modify the permit at this time.

In response to the Department's response, the permittee indicated that it intends to reevaluate future use of the Dead River facility and desired production during 2006. The permittee indicated that it anticipates reducing biomass on site in the future and asked if monitoring requirements could be reevaluated if the mass of fish on hand were to be maintained below 600-pounds. The Department's DEA has indicated that biomass levels above 600-pounds at the Dead River facility necessitate the biomonitoring requirements established in this permitting action. However, if the mass of fish on hand were to be maintained below 600-pounds, it would warrant reevaluation and likely elimination of biomonitoring requirements.

Comment 2, Permit Special Condition N, Fact Sheet Section 15, Ambient Dissolved Oxygen and Temperature Monitoring: Dead River Hatchery expressed concern that the permittee is required to conduct ambient dissolved oxygen and temperature monitoring in Black Brook at its confluence with the conveyance channel from the facility. In addition to concerns with the time and cost necessary to develop and execute a monitoring plan, Dead River Hatchery questioned the value in ambient monitoring when minimum effluent dissolved oxygen limits and monitoring requirements are established and will be conducted.

Response 2: The Department is establishing seasonal ambient dissolved oxygen and temperature monitoring requirements in rivers and streams receiving fish hatchery and rearing facility wastewater discharges with low effluent dilution in order to obtain additional data on related receiving water effects and identify the need for any necessary corrective measures. Ambient monitoring is established in addition to a minimum effluent limit and monitoring requirements, as the effects of wastewater discharges on dissolved oxygen levels in the receiving water are typically realized at a point downstream of the point of discharge, referred to as the sag point. However, unusual site conditions at the Dead River Hatchery facility warrant reconsideration of these requirements.

As noted in Fact Sheet Section 2, the Dead River "*...settling pond outlets through an 8-foot wide by approximately 30-foot long constructed conveyance ditch, then through a 500-foot to 600-foot long channel to Black Brook... . Large wetland areas exist in proximity to the Dead River facility. The areas adjacent (north and south) of Dead River Hatchery consist of palustrine forested and scrub-shrub wetlands. The area below (west) of Dead River Hatchery and adjacent to Black Brook consists of palustrine scrub-shrub wetland. Braided surface water channels are common throughout these areas.*" The Department maintains the value of conducting both effluent and ambient monitoring in low dilution scenarios to determine the information noted above. However, the Department also notes the strong potential for this information to be masked at the Dead River facility due to natural

influences from adjacent wetland areas. Therefore, the Department has eliminated the requirements for ambient dissolved oxygen and temperature monitoring at the Dead River facility.

Comment 3, Permit Special Condition A, Fact Sheet Section 6c, BOD and TSS: Dead River Hatchery comments that because the BOD and TSS concentration and mass limits established in this permitting action "*are new and more stringent technology-based treatment requirements, the Department may establish a schedule of compliance*" pursuant to 38 M.R.S.A, §414-A(2) and requests "*...a one-year compliance period prior to the BOD and TSS limitations taking effect*".

Response 3: Dead River Hatchery is correct that the Department has the authority to establish a schedule of compliance pursuant to 38 M.R.S.A, §414-A(2). However, the Department notes that a schedule of compliance "*...must be as short as possible, based on consideration of the technological, economic and environmental impact of the steps necessary to attain those standards*". Dead River Hatchery has not demonstrated that it can not comply with the new limits, indicated why a one-year delay in implementation of the BOD and TSS limits is necessary, nor specified what physical or operational modifications to the facility would be investigated and incorporated during this period.

Dead River Hatchery's previous licensing action, which was issued in 1985 and expired in 1990, contained no limits or monitoring requirements for BOD. Monitoring for TSS was only required on a semi-annual basis and TSS concentration and mass limits were so lenient in comparison to current standards, as shown in Fact Sheet Section 6c, that they effectively required minimal wastewater treatment for compliance. Thus, given the previously absent or minimal requirements, there is only limited effluent quality data for the Dead River Hatchery.

In this permitting action the Department is establishing BOD and TSS concentration limits of 6 mg/L for monthly average and 10 mg/L for daily maximum, as well as mass limits based on the concentration limits and the monthly average effluent flow. As stated in Fact Sheet Section 6c, these numbers are based on fish hatchery wastewater secondary treatment projections and the Department's judgement that effluent BOD should also be regulated. The Department has evaluated actual and projected post-facility upgrade effluent quality data for a significant number of fish hatcheries in Maine and determined that facilities incorporating the minimum treatment technology outlined can be expected to consistently meet the BOD and TSS concentration limits established in this permitting action. The minimum treatment technology requirements are already incorporated or exceeded on a widespread basis at facilities in Maine. It is the Department's intent to re-evaluate and potentially revise limits in the future based on statistical evaluations of demonstrated performance of consistently and properly utilized treatment technology for the industry. The Department sees no reason to modify the permit at this time.

Comment 4, Permit Special Condition A, Fact Sheet Section 6d, Total Phosphorus and Orthophosphate: Dead River Hatchery questions the validity of the "*...water quality criterion for total phosphorus of 0.035 mg/L...*" used in establishment of total phosphorus concentration and mass limits. Dead River Hatchery further comments, the "*so-called ambient water quality criteria for total phosphorus used in this licensing has not to our knowledge ever been adopted as a water quality criterion and is apparently based solely on Department research. It is not clear what research is referred to or whether it is available for public review or whether it is applicable to rivers and streams having the characteristics of Black Brook... . The licensee requests that DEP conduct additional phosphorus research during the compliance schedule period to determine whether, and to what extent, a phosphorus limit is necessary on these receiving waters.*"

Response 4: The Department has provided information on the impacts of total phosphorus and orthophosphate in receiving waters as well as the need for effluent limitations and monitoring requirements in Fact Sheet Section 2d. As noted, the "*...Department typically utilizes a 0.035-mg/L instream phosphorus concentration limit (ambient water quality threshold) and the dilution provided in a receiving water to calculate water quality based effluent limits. Based on Department research, the AWQC of 0.035 mg/L corresponds to the maximum level at which algae blooms will not typically occur in a receiving river or stream under normal circumstances.*" The 0.035 mg/L value is not a promulgated ambient water quality criterion, but a critical ambient threshold at which adverse effects have been shown to occur in receiving waters, in turn impacting attainment of classification standards and designated uses. As noted in 38 MRSA § 464.4.A.4, "*...the Department may not issue a water discharge license for...the...discharge of pollutants to waters of the State that...cause those waters to be unsuitable for the designated uses and characteristics ascribed to their class*". This threshold value has been determined through 20-years of Department research and is regularly used in development of phosphorus limits. The Department's Land and Water Bureau Policy Statement – Phosphorus Requirements for Point Source Discharges describes receiving water impacts from phosphorus discharges and outlines applicable case studies, including studies specifically conducted on the fish hatchery and rearing facility industry. The Policy Statement states,

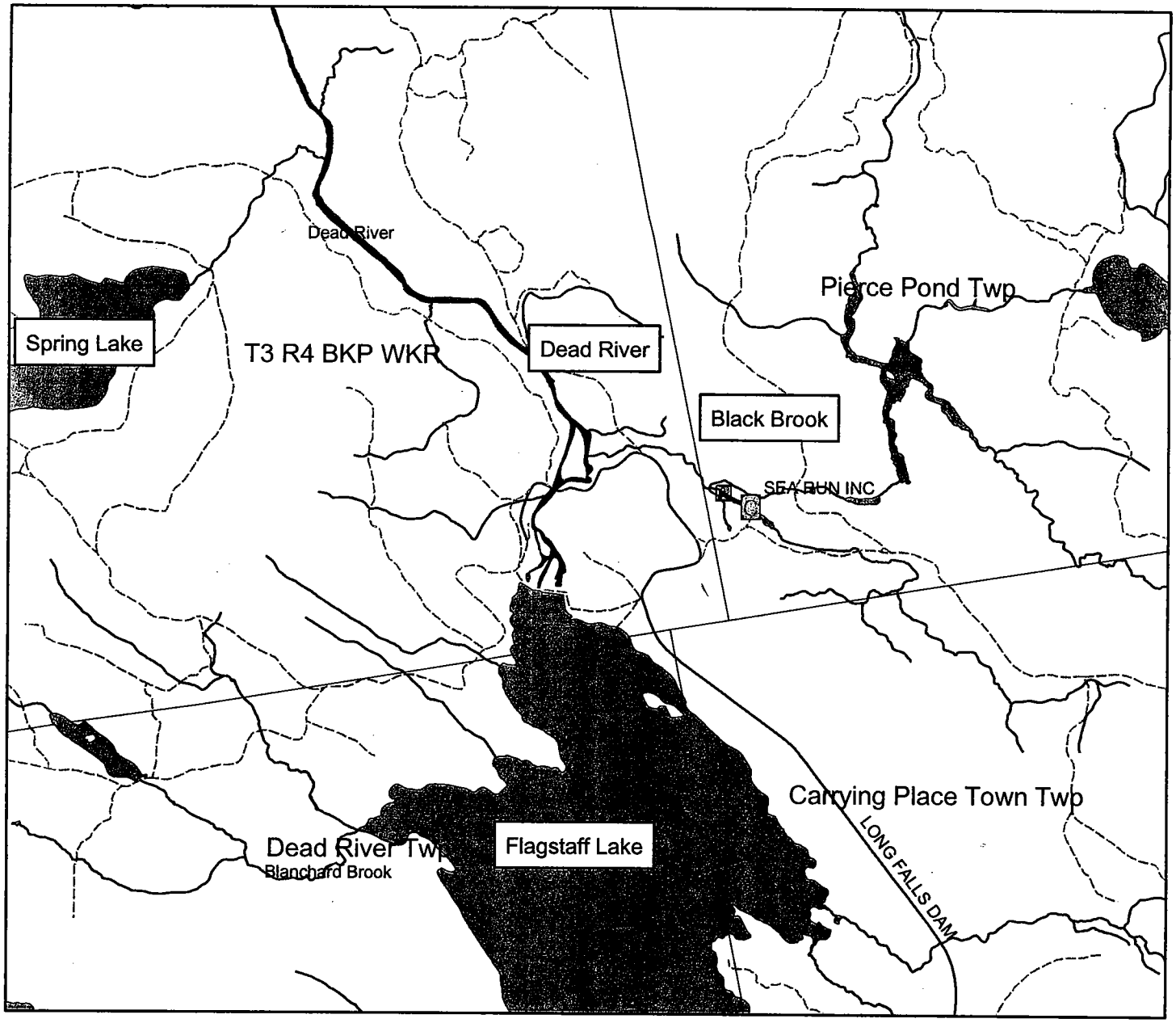
"Fish Hatchery Studies

Dissolved oxygen, temperature, phosphorus, and biomonitoring data were collected at the receiving waters to a number of fish hatchery discharges to assure that attainment of minimum dissolved oxygen criteria (was achieved). *All of the receiving water classifications are class B or higher requiring that minimum dissolved oxygen should exceed 7 ppm. Fish Hatcheries usually use the receiving water as both intake and discharge and require good water quality. BOD and non-point sources can be assumed to be minimal. It was found that the threshold phosphorus should not exceed 30 to 35 ppb* (0.030 to 0.035 ppm) *to meet dissolved oxygen criteria. The amount of dissolved oxygen allocation is approximately around 1.5 ppm.*"

Although variability can certainly be found in receiving waters, each of the receiving waters studied were "*class B or higher*", which is also the classification of Black Brook. The Department's study indicated a threshold range of 0.030 to 0.035 mg/L. Although it would be appropriate to establish the critical threshold anywhere within this range, the Department utilizes the upper 0.035 mg/L value. Dead River Hatchery's previous licensing action, which was issued in 1985 and expired in 1990, contained no limits or monitoring requirements for total phosphorus or orthophosphate. Thus, there is no effluent quality data available for the Dead River Hatchery. Nonetheless, the Department established requirements for total phosphorus and orthophosphate monitoring only, during a compliance (implementation) schedule that was designed to "*...provide for infrastructure, operation and maintenance upgrades, as appropriate, to insure compliance*" with effluent limits effective beginning June 1, 2009. When Dead River Hatchery begins to undertake effluent monitoring for these parameters and to adhere to annual requirements for facility evaluation and reporting established in Permit Special Condition G, it will become clearer if a shorter implementation period will be feasible. The Department sees no reason to modify the permit at this time.

ATTACHMENT A

(Facility Location Maps)



Legend

Rivers

- AA
- A
- B
- C

Streams

- AA
- A
- B
- C
- Ponds and Lakes
- Wastewater_Facilities
- Wastewater_Outfalls

Roads

JURISDICTION

- Town Road
- Town Road - Summer
- Town Road - Winter
- State-aided Highway
- State Highway
- Toll Highway
- Private Road
- Reservation Road
- Seasonal Parkway

N

0 0.3 0.6 1.2 1.8 2.4 Miles

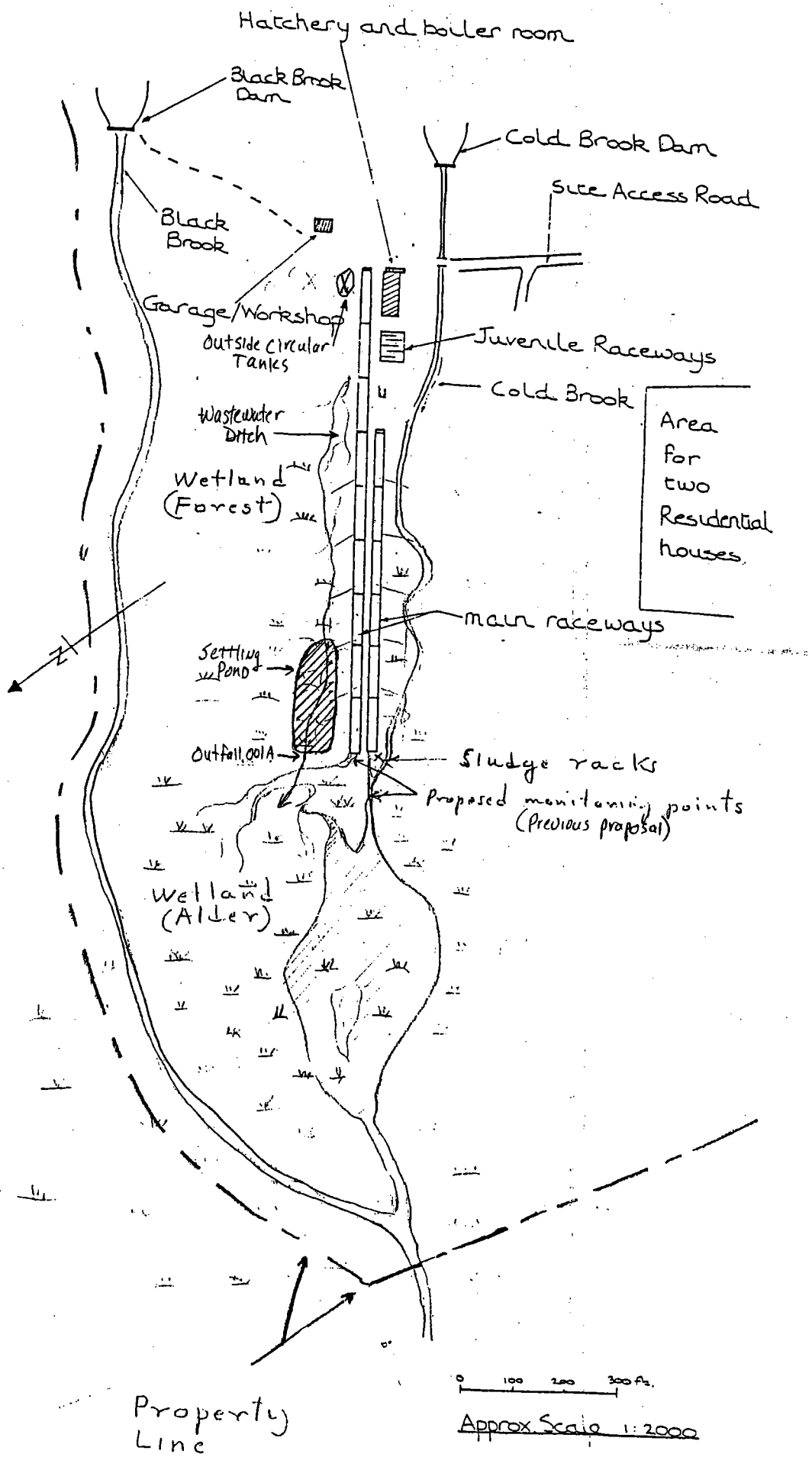
Dead River (Sea Run) Hatchery
Pierce Pond TWP, Maine

Map created by:
Bob Stratton
Division of Water Resource Regulation
Maine Department of Environmental Protection

DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF MAINE

ATTACHMENT B

(Facility Site Plans)


Hatchery and boiler room
Black Brook Dam
Cold Brook Dam
Site Access Road
Black Brook
Garage/Workshop
Outside Circular Tanks
Juvenile Raceways
Cold Brook
Wastewater Ditch
Wetland (Forest)
Area for two Residential houses.
main raceways
Settling Pond
Outfall 001A
Sludge racks
Proposed monitoring points (Previous proposal)
Wetland (Alder)
Property Line
0 100 200 300 ft.
Approx. Scale 1:2000

ATTACHMENT C

(Engineer's Facilities Planning Report)

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Land and Water Quality
Division of Environmental Compliance and Technical Assistance

INVESTIGATION PROTOCOL

All reports, plans and specifications shall be submitted by the dates specified in the permit. The documents submitted for formal approval shall include the engineer's report, final plans and specifications.

Procurement of Engineering Services.

This step requires retaining an engineering firm to plan, study, and design the project. The owner then hires one or more separate construction contractors to build the project; construction services, including construction management, are performed by the design firm. Start-up and operator instruction services are performed by the design engineer.

Engineer's Facilities Planning Report (Reports Required Pursuant to Permit Special Condition G).

The purpose of the report is to present in clear, concise form a description of the problem, alternative solutions examined, rejected and recommended, their technical and financial feasibility, and their environmental impact. The report should contain a detailed basis of design covering each component of the treatment process. The engineer's report should provide a description of alternative wastewater treatment processes screened for consideration, as well as factors considered in selecting processes. Such factors should include:

Compatibility with existing facilities
Flexibility for expansion
Ability to meet required permit limits
Suitability to handle probable variations in plant loading
Proven effectiveness
Land area requirements
Labor requirements
Construction costs
Operational costs
Energy requirements
Odor potential

System Alternatives: The engineer must carefully consider all feasible designs for the facility. The initial evaluation should focus on the technical appropriateness of all alternatives. Then, those deemed technically appropriate should receive in-depth technical and economic evaluation. The alternatives that should be evaluated include: source reduction through pollution prevention, storage and release to the receiving water as appropriate to reduce toxic amounts, conveyance of the waste to the POTW, pretreatment, conventional treatment and innovative/alternative treatment.

Conclusions, Recommendations, and Proposed Schedules: The engineer's facility planning report should clearly summarize the detailed evaluations contained in the body of the report. Provide a clear description of what is being proposed and propose an implementation schedule for approval. A typical schedule should reflect various future phases of the project such as required approvals, final design, bidding, contract award, construction and start-up. The facility shall be fully operational within the timeframes established in the permit.

Final Design Contract Drawings and Specifications

Plans should consist of general views, specific plan areas, elevations, sections, and details. Together with the specifications, these provide information for the contract and construction of the project. Complete technical specifications for the work should accompany the plans. Technical specifications should be clear and concise. They should include, but are not limited to, all construction information that the builder needs that is not shown on the plans, such as details of the design requirements, including the quality of materials, lists of required manuals, tools, chemicals, spare parts, and calibration equipment.