



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

June 13, 2014

Mr. Todd Langevin
Division of Fisheries and Wildlife
State of Maine
State House Station #41
Augusta, ME. 04333

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0001082
Maine Waste Discharge License (WDL) Application #W002037-6F-E-R
Proposed Draft Permit

Dear Mr. Langevin:

Enclosed is a **proposed draft** MEPDES permit and Maine WDL (permit hereinafter) which the Department proposes to issue as a final document after opportunity for your review and comment. By transmittal of this letter you are provided with an opportunity to comment on the proposed draft permit and its conditions (special conditions specific to this permit are enclosed; standard conditions applicable to all permits are available upon request). If it contains errors or does not accurately reflect present or proposed conditions, please respond to this Department so that changes can be considered.

By copy of this letter, the Department is requesting comments on the proposed draft permit from various state and federal agencies, as required by our new regulations, and from any other parties who have notified the Department of their interest in this matter.

All comments must be received in the Department of Environmental Protection office on or before the close of business **Monday, July 14, 2014**. Failure to submit comments in a timely fashion will result in the final document being issued as drafted. Comments in writing should be submitted to my attention at the following address:

Maine Department of Environmental Protection
Bureau of Land & Water Quality
Division of Water Quality Management
17 State House Station
Augusta, ME 04333

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
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 04679
(207) 764-0477 FAX: (207) 760-3143

If you have any questions regarding the matter, please feel free to call me at 592-7161.

Sincerely,



Cindy L. Dionne
Division of Water Quality Management
Bureau of Land and Water Quality

Enc.

cc: Dave Marsanskis, Facility Mgr.
Matthew Young, DEP/EMRO
Barry Mower, DEP/CMRO
Pamela Parker, DEP/CMRO
Bob Stratton, DIFW
Lori Mitchell, DEP/CMRO
Environmental Review, DMR
David Webster, EPA
Alex Rosenberg, EPA
David Pincumbe, EPA
Olga Vergara, EPA
Ivy Frignoca, CLF
Trevor White, Indian Township Tribal Government
Dale Mitchell, Passamaquoddy Tribal Government
Laury Zicari, USFWS



DEPARTMENT ORDER

IN THE MATTER OF

ME. DEPT. OF INLAND FISHERIES & WILDLIFE)	MAINE POLLUTANT DISCHARGE
GRAND LAKE STREAM FISH HATCHERY)	ELIMINATION SYSTEM PERMIT
GRAND LAKE STREAM, WASHINGTON CTY, MAINE)	AND
#ME0001082)	WASTE DISCHARGE LICENSE
#W002037-6F-E-R)	RENEWAL
APPROVAL)	

In compliance with the applicable provisions of *Pollution Control*, 38 M.R.S.A. §§ 411 – 424-B, *Water Classification Program*, 38 M.R.S.A. §§ 464 – 470 and *Federal Water Pollution Control Act*, Title 33 U.S.C. § 1251, and applicable rules of the Department of Environmental Protection (Department), the Department has considered the application of the MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE (DIFW), with its supportive data, agency review comments, and other related materials on file, and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

On June 30, 2011, the Department accepted as complete for processing, a renewal application from DIFW for Waste Discharge License (WDL) #W002037-5Q-B-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0001082, which was issued on August 1, 2006 for a five-year term. The 8/1/06 MEPDES permit authorized DIFW to discharge a monthly average of 2.9 million gallons per day (MGD) of fish hatchery wastewater from the DIFW Grand Lake Stream Hatchery to Grand Lake Stream, Class A, in Grand Lake Stream Plantation, Maine.

The Department issued a minor revision to amend the formalin limits on October 10, 2008, and a minor revision to adjust the monitoring frequencies for biochemical oxygen demand (BOD₅) and total suspended solids (TSS) on April 23, 2009. A Consent Agreement (CA) between the Department and DIFW in regards to eight DIFW hatcheries was finalized on June 2, 2010. This CA resolved violations at the Grand Lake Stream hatchery.

PERMIT SUMMARY

This permitting action is carrying forward all the terms and conditions of the previous permitting actions except that it:

1. Eliminates the Schedule of Compliance as established in Special Condition G of the 2006 permit;
2. Eliminates the BOD₅ and pH limitations and monitoring requirements;

PERMIT SUMMARY (cont'd)

3. Revises the dilution factor based on new information gathered and analyzed by the Department's Division of Environmental Assessment (DEA) and a correction of the calculation formula from the previous permit;
4. Revises the water quality based effluent concentration limit for total residual chlorine (TRC) based on the correction of the dilution factor;
5. Amends language in the "Footnotes" section of Special Condition A;
6. Establishes additional requirements to be included in the facility Operations and Monitoring Plan;
7. Eliminates the Special Condition I. *Settling Basin Cleaning* as contained in the 2006 permit;
8. Establishes Special Conditions G. *Use of Drugs for Disease Control* and H. *Spills*;
9. Revises the monitoring frequency for formalin from 1/2weeks to once per occurrence (01/OC), to clarify that formalin is to be reported at each use;
10. Revises the total phosphorous concentration limit to report only;
11. Establishes Special Condition H. *Pesticides and Other Compounds* to replace Special Conditions K. *Therapeutic Agents* and L. *Disinfecting/Sanitizing Agents* from the 2006 permit;
12. Eliminates the reporting requirement for monthly average Fish on Hand and revises the monitoring frequency 2/month to 1/month, to allow for increased monitoring flexibility; and,
13. Eliminates the formalin concentration limit and establishes a mass based limit to allow for increased facility flexibility and management.

CONCLUSIONS

Based on the findings summarized in the attached **PROPOSED DRAFT** Fact Sheet dated June 13, 2014, and subject to the special and standard conditions that follow, 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, *Classification of Maine waters*, 38 M.R.S.A.

CONCLUSIONS (cont'd)

§ 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 natural 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 water 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 discharges will be subject to effluent limitations that require application of best practicable treatment as defined in *Conditions of license*, 38 M.R.S.A. § 414-A(1)(D).
 5. The applicant has objectively demonstrated to the Department's satisfaction that the discharge is necessary and that there are no other reasonable alternatives available, as required by *Standards for classification of fresh surface waters*, 38 M.R.S.A. § 465(2)(C).

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ACTION

Based on the findings and conclusions as stated above, the Department APPROVES the above noted application of the MAINE DEPARTMENT OF INLAND FISHERIES & WILDLIFE to discharge a monthly average of 2.9 MGD of fish hatchery wastewater via Outfall #005A to Grand Lake Stream, Class A, in Grand Lake Stream Plantation, Maine, 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 and the authorization to discharge become effective upon the date of signature below and expire at midnight five (5) years from the effective date. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the authorization to discharge and the terms and conditions of this permit and all modifications and minor revisions thereto remain in effect until a final Department decision on the renewal application becomes effective. [*Maine Administrative Procedure Act*, 5 M.R.S.A. § 10002 and *Rules Concerning the Processing of Applications and Other Administrative Matters*, 06-096 CMR 2(21)(A) (amended August 25, 2013)]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

DONE AND DATED AT AUGUSTA, MAINE, THIS _____ DAY OF _____ 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
PATRICIA W. AHO, Commissioner

Date filed with Board of Environmental Protection _____

Date of initial receipt of application: June 28, 2011

Date of application acceptance: June 30, 2011

This Order prepared by Cindy L. Dionne, BUREAU OF LAND & WATER QUALITY

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge **fish hatchery wastewater from Outfall #005A (fish hatchery and rearing station)** to Grand Lake Stream. Such discharges are limited and must be monitored by the permittee as specified below⁽¹⁾:

Effluent Characteristic	Discharge Limitations					Minimum Monitoring Requirements	
	Monthly <u>Average</u>	Daily <u>Maximum</u>	Monthly <u>Average</u>	Daily <u>Maximum</u>	Daily <u>Minimum</u>	Measurement <u>Frequency</u>	Sample <u>Type</u>
Flow [50050]	2.9 MGD <i>[03]</i>	---	---	---	---	Daily <i>[01/01]</i>	Measured <i>[MS]</i>
TSS [00530]	48 lbs./day <i>[26]</i>	242 lbs./day <i>[26]</i>	6 mg/L <i>[19]</i>	10 mg/L <i>[19]</i>	---	1/Month <i>[01/30]</i>	Composite ⁽²⁾ <i>[CP]</i>
Total Phosphorus ⁽³⁾ [00665]	Report total lbs./month <i>[76]</i>	Maximum 504 lbs./year <i>[50]</i>	Report mg/L <i>[19]</i>	Report mg/L <i>[19]</i>	---	2/Month <i>[02/30]</i>	Composite ⁽²⁾ <i>[CP]</i>
Fish on Hand [45604]	---	Report lbs./day <i>[26]</i>	---	---	---	1/Month <i>[01/30]</i>	Calculate <i>[CA]</i>
Formalin ⁽⁴⁾ [51064]	Report lbs./day [26]	54.8 lbs./day <i>[26]</i>	---	---	---	1/Occurrence <i>[01/OC]</i>	Calculate <i>[CA]</i>
TRC ⁽⁵⁾ [50060]	---	---	---	0.1 mg/L <i>[19]</i>	---	1/Discharge Day <i>[01/DD]</i>	Grab <i>[GR]</i>
Dissolved Oxygen [00300] June 1 – Sept 30	---	---	Report mg/L <i>[19]</i>	Report mg/L <i>[19]</i>	7.5 mg/L <i>[19]</i>	1/Week <i>[01/07]</i>	Measured <i>[MS]</i>

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

FOOTNOTES: See Pages 6 through 7 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES

1. **Sampling** – All effluent monitoring must be conducted at a location following the last treatment unit in the treatment process, as to be representative of end-of-pipe effluent characteristics. Any change in sampling location must be approved by the Department in writing. The permittee must conduct sampling and analysis 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 must be analyzed by a laboratory certified by the State of Maine's Department of Health and Human Services for wastewater. Samples that are sent to a publicly owned treatment works (POTW) licensed pursuant to *Waste discharge licenses*, 38 M.R.S.A. § 413 are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (effective date April 1, 2010). If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report (DMR).

All analytical test results must be reported to the Department including results which are detected below the respective reporting limits (RLs) specified by the Department or as specified by other approved test methods. If a non-detect analytical test result is below the respective RL, the concentration result must be reported as <Y where Y is the RL achieved by the laboratory for each respective parameter. Reporting a value of <Y that is greater than an established RL or reporting an estimated value ("J" flagged) is not acceptable and will be rejected by the Department. Reporting analytical data and its use in calculations must follow established Department guidelines specified in this permit or in available Department guidance documents.

2. **Composite Samples** – Samples must consist of 24-hour composites collected with an automatic composite sampler. Alternatively, when weather conditions and/or equipment prevents automatic compositing and upon Department approval, the permittee may manually composite a minimum of four grab samples collected at two-hour intervals during the working day at the facility. The permittee must indicate the type of sample collected on the DMR.
3. **Total Phosphorus** – Phosphorus concentration monitoring and reporting requirements are seasonal and are only in effect from June 1 through September 30 of each year. The phosphorus mass limit and monitoring requirements are in effect year-round. See **Attachment A** of this permit for sample protocols.
4. **Formalin** – Formalin monitoring must be conducted when in use at the facility and must consist of a calculated effluent mass value. Therefore, the following calculation must be applied to

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES (cont'd)

assess the total mass of formalin discharged per day (lbs./day):

$$\text{Formalin applied (gallons)} \times 9.01^1 \text{ (lbs./gallon)} = \text{Total formalin in effluent (lbs./day)}$$

The permittee must provide this information and calculations to the Department in a document accompanying the monthly DMR. The formalin limit corresponds to two types of treatments:

1. One hour per day treatment typical of hatchery and rearing facility discharges; and
2. Maximum of up to 24 hours of treatment and discharge for addressing emergency conditions at the facility.

Formalin treatments greater than 1-hour in duration must be conducted no more frequently than once every four days. The permittee must provide a list of dates on which treatments greater than 1-hour were performed, and the length of time of each such treatment, with each monthly DMR. For instances when a permittee has not used formalin for an entire reporting period, the permittee must report "NODI-9" for this parameter on the monthly DMR or "N9" if the submittal is an electronic DMR.

5. **TRC Monitoring** – The permittee must utilize a U.S. Environmental Protection Agency (USEPA) approved test method capable of bracketing the TRC limitations specified in this permitting action. For instances when a permittee has not utilized chlorine-based compounds for an entire reporting period, the permittee must report "NODI-9" for this parameter on the monthly DMR or "N9" if the submittal is an electronic DMR.

B. NARRATIVE EFFLUENT LIMITATIONS

1. The permittee must not discharge effluent that contains a visible oil sheen, foam or floating solids at any time which would impair the usages designated for the classification of the receiving waters.
2. The permittee must not discharge effluent that contains materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated for the classification of the receiving waters.
3. The permittee must not discharge effluent that causes visible discoloration or turbidity in the receiving waters that causes those waters to be unsuitable for the designated uses and characteristics ascribed to their class.
4. The permittee must not discharge effluent that lowers the quality of any classified body of water below such classification, or lowers the existing quality of any body of water if the existing quality is higher than the classification.

¹ Formalin has a specific gravity of 1.08 giving it a density of 9.01 lbs./gallon per analysis by Dick Darling, MEDEP.

SPECIAL CONDITIONS

C. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge Permit, accepted for processing on June 30, 2011; 2) the terms and conditions of this permit; and 3) only from Outfall #005A. Discharges of wastewater from any other point source(s) are not authorized under this permit, and must be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit.

D. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee must 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 must include information on:
 - a. The quality or quantity of wastewater introduced to the wastewater 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.

E. MONITORING AND REPORTING

Monitoring results obtained during the previous month must be summarized for each month and reported on separate DMR forms provided by the Department and **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office such that the DMRs 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 must be submitted to the Department assigned inspector (unless otherwise specified by the Department) at the following address:

Department of Environmental Protection
Eastern Maine Regional Office
Bureau of Land and Water Quality
Division of Water Quality Management
106 Hogan Road
Bangor, Maine 04401

Alternatively, if the permittee submits an electronic DMR (eDMR), the completed eDMR must be electronically submitted to the Department by a facility authorized DMR Signatory not later than close of business on the **15th day of the month** following the completed reporting period. Hard copy documentation submitted in support of the eDMR must be postmarked on or before the **thirteenth (13th) day of the month or hand-delivered** to the Department's Regional Office such that it is received by the Department on or before the fifteenth (15th) day of the month following the completed

SPECIAL CONDITIONS

E. MONITORING AND REPORTING (cont'd)

reporting period. Electronic documentation in support of the eDMR must be submitted not later than close of business on the 15th day of the month following the completed reporting period.

F. OPERATIONS AND MAINTENANCE (O&M) PLAN

The permittee must have a current written Operation & Maintenance (O&M) Plan for the facility. The plan must provide a systematic approach by which the permittee must 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. An acceptable O&M plan must ensure the following items are adequately addressed:

1. Solids Control
 - a. Methods and practices to ensure efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges to waters of the State.
 - b. In order to minimize the discharge of accumulated solids from the settling basin, settling tanks, and production systems, identify and implement procedures for routine cleaning of rearing units and settling tanks, and procedures to minimize any discharge of accumulated solids during the inventorying, grading, and harvesting of aquatic animals in the production system.
 - c. Procedure for removal and disposal of mortalities to prevent discharge to waters of the State.
2. Materials Storage
 - a. Ensure proper storage of drugs², pesticides³, feed, and any petroleum and/or hazardous waste products in a manner designed to prevent spills that may result in the discharge of drugs, pesticides, or feed to waters of the State.
 - b. Implement procedures for properly containing, cleaning, and disposing of any spilled material that has the potential to enter waters of the State.

² **Drug.** “Drug” means any substance defined as a drug in section 201(g)(1) of the *Federal Food, Drug and Cosmetic Act* [21 U.S.C. § 321].

³ **Pesticide.** “Pesticide” means any substance defined as a “pesticide” in section 2(u) of the *Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)* [7 U.S.C. § 136 (u)].

F. OPERATIONS AND MAINTENANCE (O&M) PLAN (cont'd)

3. Structural Maintenance
 - a. Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.
 - b. Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.
4. Recordkeeping
 - a. Maintain records for fish rearing units documenting the feed amounts and estimates of the numbers and weight of fish.
 - b. Maintain records that document the frequency of cleaning, inspections, repairs and maintenance.
5. Training
 - a. In order to ensure the proper clean-up and disposal of spilled material adequately, train all relevant personnel in spill prevention and how to respond in the event of a spill.
 - b. Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment to prevent unauthorized discharges.

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the permittee must 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 must be kept on-site at all times and made available to Department and USEPA personnel upon request.

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

G. USE OF DRUGS FOR DISEASE CONTROL

1. **General requirements.** All drugs used for disease prevention or control must be approved or authorized by the U.S. Food and Drug Administration (FDA), and all applications must comply with applicable FDA requirements.
2. **FDA-approved drugs.** Drugs approved by the FDA for fish culture purposes may be used in accordance with label instructions.
 - a) Preventative treatments. The discharge of any approved drug administered as a preventative measure is not authorized by this permit, unless the following conditions are met: the drug

SPECIAL CONDITIONS

G. USE OF DRUGS FOR DISEASE CONTROL (cont'd)

must be approved by FDA, and the treatment and route of administration must be consistent with the drug's intended use. Discharges may occur through direct application of a drug or indirectly through feed, injection, ingestion, or immersion at the facility.

- b) Drugs identified in the permittee's application. The following drugs were identified in the permittee's application as currently being in use:

<u>Name</u>	<u>Freq. of Use</u>	<u>Concentration</u>	<u>Qty. Used/Year</u>
Parasite-S (formalin)	As needed	1:500 / 1:600	55 gal.

- c) Drugs not identified in the permittee's application. When the need to treat or control diseases requires the use of a FDA-approved drug not identified in an application, the permittee must notify the Department orally or by electronic mail prior to initial use of the drug.
- 1) The notification must include a description of the drug, its intended purpose, the method of application, the amount, the concentration, the duration of the use, and information on aquatic toxicity.
 - 2) ***Within seven (7) days of*** the initial notification the permittee must submit a written report that includes all of the information outlined in Section G.2.b)1) above.
 - 3) The Department may require submission of an application for permit modification, including public notice requirements, if the drug is to be used for more than a 30 consecutive day period.
 - 4) 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 use of the drug.
3. **Extralabel drug use.** Extralabel drug use is not authorized by this permit, unless in accordance with a specific prescription written for that use by a licensed veterinarian.
- a) Notification. The permittee must notify the Department orally or by e-mail prior to initial extralabel use of a drug.
- 1) The notification must include a description of the drug, its intended purpose, the method of application, the amount, concentration, and duration of the use, information on aquatic toxicity, and a description of how and why the use qualifies as an extralabel drug use under FDA requirements.
 - 2) ***Within seven (7) days of*** the initial notification the permittee must submit a written report that includes all of the information outlined in Section G.3.a) 1) above. Notice must include documentation that a veterinarian has prescribed the drug for the proposed use. A

SPECIAL CONDITIONS

G. USE OF DRUGS FOR DISEASE CONTROL (cont'd)

copy of the veterinarian's prescription must be maintained on-site during treatment for Department review.

- 3) If, upon review of information regarding the extralabel use of a drug pursuant to this section, the Department determines that significant adverse effects are likely to occur, it may deny, restrict or limit use of the drug.
4. **Investigational New Animal Drug (INAD).** The discharge of drugs authorized by the FDA for use during studies conducted under the INAD program is not authorized by this permit, unless in accordance with specific prior consent given in writing by the Department.
 - a) Initial report. The permittee must provide a written report to the Department for the proposed use of an INAD *within seven (7) days* of agreeing or signing up to participate in an INAD study. The written report must identify the INAD to be used, method of use, dosage, and disease or condition the INAD is intended to treat.
 - b) Evaluation and monitoring. *At least ninety (90) days prior to initial use* of an INAD at a facility, the permittee must submit for Department review and approval a study plan for the use of the drug that:
 - 1) Indicates the date the facility agreed or signed up to participate in the INAD study.
 - 2) Demonstrates that the minimum amount of drug necessary to evaluate its safety, efficacy, and possible environmental impacts will be used.
 - 3) Includes 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. Currently available data or literature that adequately characterize the environmental fate of the INAD and its metabolite(s) may be proposed for consideration in determinations of environmental monitoring and evaluation programs required by the Department pursuant to this section.
 - c) Notification. The permittee must notify the Department orally or by electronic mail *no more than forty-eight (48) hours after* beginning the first use of the INAD under the approved plan.

H. PESTICIDES AND OTHER COMPOUNDS

1. **General requirements.** All pesticides used at the facility must be applied in compliance with federal labeling restrictions and in compliance with applicable statute, Board of Pesticides Control rules and best management practices (BMPs). Chemicals or compounds not registered as pesticides and proposed for use at the facility must be identified in the permittee's application and may only be discharged to waters of the State with express approval in this permitting action.

SPECIAL CONDITIONS

H. PESTICIDES AND OTHER COMPOUNDS (cont'd)

- a) Pesticides identified in the permittee's application. The following pesticides were identified in the permittee's application as currently being in use:

<u>Name</u>	<u>Freq. of Use</u>	<u>Concentration</u>	<u>Qty. Used/Year</u>
Bleach	2-4 times/Year	1:360	6 gallons
Virkon Aquatic	Daily	1:64 (2 oz.: 1 gal. water)	4 gallons

- b) Other compounds identified in the permittee's application. The following compounds were identified in the permittee's application as currently being in use. The permittee is authorized to discharge the following compounds. It is the Department's Best Professional Judgment (BPJ) that the incidental discharge of these chemicals will not cause or contribute to non-attainment of applicable water quality standards.

<u>Name</u>	<u>Freq. of Use</u>	<u>Concentration</u>	<u>Qty. Used/Year</u>
Argentyne Iodine	12 times/Year	80 mL : 1 gal. water	3 gallons
Argentyne Iodine	4x/year	40 mL : 1 gal. water	1 gallons
Sodium Thiosulfate	2-4 times/Year	1.5 kg : 50 cu. feet water	10 pounds

I. SPILLS

In the event of a spill of drugs, pesticides, feed, petroleum and/or hazardous waste products that results in a discharge to waters of the State of Maine, the permittee must provide an oral report of the spill to the Department within 24 hours of its occurrence and a written report within 5 days to the Department. The report must include the identity and quantity of the material spilled.

J. REOPENING OF PERMIT FOR MODIFICATION

In accordance with 38 M.R.S.A. § 414-A(5) and upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time 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.

K. SEVERABILITY

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

ATTACHMENT A

Protocol for Total Phosphorus Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits

Approved Analytical Methods: EPA 365.1 (Rev. 2.0), 365.3, 365.4; SM 4500-P B.5, 4500-P E, 4500-P F; ASTM D515-88(A), D515-88(B); USGS I-4600-85, I-4610-91; OMAAOAC 973.55, 973.56

Sample Collection: The Maine DEP is requesting that total phosphorus analysis be conducted on composite effluent samples, unless a facility's Permit specifically designates grab sampling for this parameter. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. Commercially purchased, pre-cleaned sample containers are an acceptable alternative. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-6 degrees C (without freezing). If the sample is being sent to a commercial laboratory or analysis cannot be performed the day of collection then the sample must be preserved using H₂SO₄ to obtain a sample pH of <2 su and refrigerated at 0-6 degrees C (without freezing). The holding time for a preserved sample is 28 days.

Note: Ideally, Total P samples are preserved as described above. However, if a facility is using a commercial laboratory then that laboratory may choose to add acid to the sample once it arrives at the laboratory. The Maine DEP will accept results that use either of these preservation methods.

Laboratory QA/QC: Laboratories must follow the appropriate QA/QC procedures that are described in each of the approved methods.

Sampling QA/QC: If a composite sample is being collected using an automated sampler, then once per month run a blank on the composite sampler. Automatically, draw distilled water into the sample jug using the sample collection line. Let this water set in the jug for 24 hours and then analyze for total phosphorus. Preserve this sample as described above.

**MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
MAINE WASTE DISCHARGE LICENSE**

**PROPOSED DRAFT
FACT SHEET**

DATE: **JUNE 13, 2014**

PERMIT NUMBER: **#ME0001082**

WASTE DISCHARGE LICENSE: **#W002037-6F-E-R**

NAME AND ADDRESS OF APPLICANT: **MAINE DEPARTMENT OF FISHERIES & WILDLIFE
GRAND LAKE STREAM FISH HATCHERY
284 STATE STREET, 41 STATE HOUSE STATION
AUGUSTA, MAINE 04333**

COUNTY: **WASHINGTON**

NAME AND ADDRESS WHERE DISCHARGE(S) OCCUR(S): **MAINE DEPARTMENT OF FISHERIES & WILDLIFE
GRAND LAKE STREAM HATCHERY
14 HATCHERY LANE, GRAND LAKE, MAINE 04637**

RECEIVING WATER CLASSIFICATION: **GRAND LAKE STREAM/CLASS A**

COGNIZANT OFFICIAL CONTACT INFORMATION:

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(207) 796-5580
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1. APPLICATION SUMMARY

Application: On June 30, 2011, the Maine Department of Environmental Protection (Department) accepted as complete for processing, a renewal application from the Department of Inland Fisheries and Wildlife (DIFW) for Waste Discharge License (WDL) #W002037-5Q-B-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0001082, which was issued on August 1, 2006 for a five-year term. The 8/1/06 MEPDES permit authorized DIFW to discharge a monthly average of 2.9 million gallons per day (MGD) of fish hatchery wastewater from the DIFW Grand Lake Stream Hatchery to Grand Lake Stream, Class A, in Grand Lake Stream Plantation, Maine.

1. APPLICATION SUMMARY (cont'd)

The Department issued a minor revision to amend the formalin limits on October 10, 2008; and a minor revision to adjust the monitoring frequencies for biochemical oxygen demand (BOD₅) and total suspended solids (TSS) on April 23, 2009. A Consent Agreement (CA) between the Department and DIFW in regards to eight DIFW hatcheries was ratified on June 2, 2010. This CA resolved violations at the Grand Lake Stream hatchery.

2. PERMIT SUMMARY

- a. Terms and Conditions: This permitting action is carrying forward all the terms and conditions of the previous permitting actions except:
 1. Eliminates the Schedule of Compliance as established in Special Condition G of the 2006 permit;
 2. Eliminates the BOD₅ and pH limitations and monitoring requirements;
 3. Revises the dilution factor based on new information gathered and analyzed by the Department's Division of Environmental Assessment (DEA) and a correction of the calculation formula from the previous permit;
 4. Revises the water quality based effluent concentration limit for total residual chlorine (TRC) based on the correction of the dilution factor;
 5. Amends language in the "Footnotes" section of Special Condition A;
 6. Establishes additional requirements to be included in the facility Operations and Monitoring Plan;
 7. Eliminates the Special Condition I *Settling Basin Cleaning* as contained in the 2006 permit;
 8. Establishes Conditions G. *Use of Drugs for Disease Control* and H. *Spills*;
 - 9.. Revises the monitoring frequency for formalin from 1/2weeks to once per occurrence (01/OC), to allow for increased monitoring flexibility;
 10. Revises the total phosphorous concentration limit to report only;
 11. Establishes Special Condition H. *Pesticides and Other Compounds* to replace Special Conditions K. *Therapeutic Agents* and L. *Disinfecting/Sanitizing Agents* from the 2006 permit;
 12. Eliminates the reporting requirement for monthly average Fish on Hand and revises the monitoring frequency 2/month to 1/month, to allow for increased monitoring flexibility; and,
 13. Eliminates the formalin concentration limit and establishes a mass based limit for formalin to allow for increased facility flexibility and management.

2. PERMIT SUMMARY (cont'd)

- b. History: The most current relevant regulatory actions include:

February 20, 1975 – The U.S. Environmental Protection Agency (USEPA) issued National Pollutant Discharge Elimination System (NPDES) Permit #ME0001082 to DIFW for the discharge of an unspecified volume of wastewater from the Grand Lake Stream Hatchery to Grand Lake Stream. The Permit was valid through February 15, 1980.

May 11, 1983 – The Maine Board of Environmental Protection issued WDL #2037 for the discharge of a daily maximum of 2.88 MGD of treated fish hatchery wastewater from the DIFW Grand Lake Stream hatchery to Grand Lake Stream, Class B-1. Grand Lake Stream was reclassified by the Maine Legislature as a Class A waterbody in 1985. The WDL was a renewal of an earlier WDL of the same number and was issued for a five-year term.

July 21, 2000 – The Department issued WDL #W-002037-5Q-A-R to DIFW Grand Lake Stream for the discharge of a daily maximum of 2.88 MGD of treated fish hatchery wastewater. The WDL was issued for a five-year term.

January 12, 2001 – The Department received authorization from the USEPA to administer the NPDES permitting program in Maine, excluding areas of special interest to Maine Indian Tribes. From this point forward, the program has been referred to as the MEPDES program, and MEPDES permit #ME0001082 has been utilized for this facility. On March 26, 2011, the USEPA authorized the Department to administer the MEPDES program in Indian territories of the Penobscot Nation and Passamaquoddy Tribe.

September 10, 2001 – The Department suspended monitoring requirements established in WDL # W-002037-5Q-A-R for Outfall #001A, designated for effluent discharges when not cleaning raceways. The Department required monitoring for Outfall #001B, designated for effluent discharges when cleaning raceways, to be conducted by autocomposer. The Department made no mention of Outfall #002A, previously designated for a summary of the flow, mass of fish on hand, and total phosphorus (Kgs/month, Kgs/year) values from Outfalls #001A and #002A; Outfall #003A, previously designated for a summary of the total phosphorus (Kgs/day) values from Outfalls #001A and #002A; or Outfall #004A, previously designated for the flow, BOD₅, TSS, and duration of discharge from the facility's filter backwash.

October 26, 2001 – Based on a review of monitoring results, the Department suspended effluent limits and monitoring requirements established in WDL # W-002037-5Q-A-R for Outfall #004A, designated for the discharge of filter backwash.

February 2002 – On behalf of DIFW, Fishpro Inc. submitted an Alternative Discharge Study report for all nine DIFW hatcheries and rearing stations. The study evaluated eliminating effluent discharges through: piping the discharges to larger receiving waters, connecting to municipal wastewater treatment facilities, wastewater storage collection, land application of wastewater, and discharging to existing wetland areas. The study determined that none of the alternatives evaluated were viable options for the DIFW facilities.

2. PERMIT SUMMARY (cont'd)

September 12, 2002 – The Department submitted a report entitled *Maine Department of Environmental Protection Water Quality Concerns and Effects from State Fish Hatchery Discharges* to the Maine Legislature's Inland Fisheries and Wildlife Subcommittee's Commission to Study the Needs and Opportunities Associated with the Production of Salmonid Sport Fish in Maine and DIFW.

November 2002 – FishPro Inc. submitted to DIFW its *Comprehensive Statewide Fish Hatchery System Engineering Study* addressing recommended upgrades to all DIFW fish hatcheries and rearing facilities.

July 11, 2003 – The Department administratively modified WDL # W-002037-5Q-A-R to extend the 3-year schedule of compliance for BOD₅, TSS, and phosphorus effluent limits established in the WDL through expiration of the WDL.

June 27, 2005 - The Department received a timely application from DIFW for renewal of the WDL for the discharge of fish hatchery wastewater from the Grand Lake Stream facility. The application was assigned WDL #W-002037-5Q-B-R and MEPDES permit #ME0001082.

August 1, 2006 – The Department issued WDL #W-002037-5Q-B-R / #ME0001082 for a five year term.

October 10, 2008 – The Department issued minor revision WDL #W-002037-5Q-C-M / #ME0001082 for the amendment of the formalin concentration limits.

April 23, 2009 – The Department issued minor revision WDL #W-002037-5Q-D-M / #ME0001082 for the amendment of the BOD₅ and TSS monitoring frequency requirements.

June 2, 2010 – The Department entered into a Consent Agreement with DIFW for the violations incurred at several hatchery facilities including Grand Lake Stream hatchery.

June 28, 2011 – DIFW submitted a complete and timely application for renewal of their WDL/MEPDES permit. The application was assigned WDL #W002037-6F-E-R / #ME0001082.

- c. Source Description: The DIFW Grand Lake Stream State Fish Hatchery was constructed in 1936 as a state aquaculture facility and is located on a 13-acre parcel of state owned land. Portions of the facility were added and/or renovated in the 1960s, 1970s, and 1980s. The DIFW Grand Lake Stream facility is a state landlocked Atlantic salmon and brook trout hatchery and rearing facility, raising and stocking West Grand Lake strain salmon and Maine hatchery strain brook trout. Salmon eggs used for hatching and rearing are obtained from up to 1,200 wild fish captured annually in the fall (October) in West Grand Lake. Captured fish are held in a floating net pen and returned to the lake following egg-stripping. The eggs are used at DIFW Grand Lake Stream and at other DIFW hatcheries as needed. Additionally, DIFW Grand Lake Stream maintains broodstock salmon on site as a back-up to the wild capture program. Salmon are raised and stocked out as fall yearlings, spring yearlings, and adult retired broodstock, as well as supplied to other facilities as fall fingerlings, as described below. Brook trout are not hatched on site, but are received from other DIFW hatcheries, such as DIFW Enfield, as fall fingerlings in October-November, raised over the winter at DIFW

2. PERMIT SUMMARY (cont'd)

Grand Lake Stream, and stocked into lakes and streams in May-June each year. DIFW Grand Lake Stream consists of an influent water ultraviolet (UV) disinfection / filter building, a hatchery building, and two lines of covered raceway pools for rearing.

Influent Water: The DIFW Grand Lake Stream hatchery and rearing station obtains its influent water from West Grand Lake, a 14,340-acre lake with a maximum depth of 128 feet. The lake is a dam controlled impoundment, used by Woodland Pulp LLC for storage for downstream hydroelectric generation. Influent water is obtained through a 24-inch diameter iron pipe that intakes approximately 800-feet upstream of the dam at a depth of 15-20-feet. The intake is fitted with a coarse screen, which must be cleaned by a diver approximately once every two years. Influent water passes through the DIFW Grand Lake Stream facility's UV disinfection / filter system, which limits the influent flow to 2,000 gallons per minute (gpm). The UV disinfection system consists of two units of 88 UV lamps per unit. The UV units are used in parallel with each treating a maximum influent flow of 1,000 gpm. The filtering system consists of a 10-micron drum screen. The filter is constantly backwashed to remain clean and efficient. Each spring at a frequency of one to two times per week and sporadically throughout the year, the filter is cleaned with calcium hypochlorite and de-chlorinated with sodium thiosulfate to prevent clogging, as described in Fact Sheet Section 6h. The disinfection/filtration system has significantly reduced past problems with disease and siltation. The influent pipe reduces from 24-inches to 12-inches in diameter in the filter building, then flows to the headboxes of the two raceway lines for distribution. Disinfected and filtered water is pumped to the hatchery building to supply its water needs.

DIFW Grand Lake Stream is a flow-through facility with flows through its hatchery and rearing facilities discharged to Grand Lake Stream, a Class A water and tributary to Big Lake, Class GPA, approximately 2 miles downstream.

Broodstock Facilities: DIFW Grand Lake Stream maintains approximately 750 salmon broodstock in the final two raceway pools. New broodstock year classes are started every two years and old broodstock classes are retired after four years, with the fish stocked in various waters.

Hatchery Facilities: DIFW Grand Lake Stream's hatchery facility consists of forty-two aluminum raceways, that are 8-feet x 14-inches x 6-inches (operational depth) (35-gallons each). The raceways are used for incubation, fry capture, and early rearing. The raceways are arranged in seven sets of two parallel lines (14 lines) of 3 flow-through units. A fifteenth line is used for a "water alarm" and contains no fish. The flow rate for the indoor raceways is 6 gpm or 90 gpm total. Water within the indoor units flows down through each of the three troughs in each line before being discharged. Salmon eggs are introduced into the hatchery in November of each year, hatch in April, and the fry begin being fed by automatic feeders in May-June. After hatching, screens are inserted into the troughs to contain the approximately 80,000 salmon fry kept in the hatchery facility. Fry are moved to the rearing facility raceways in June after DIFW Grand Lake Stream's spring yearling salmon are stocked out. The hatchery facility is then shut down until October when new eggs are brought on station.

Rearing Facilities: DIFW Grand Lake Stream's rearing facilities consist of two lines of seven, 100-foot x 8-foot x 2-foot (operational depth) (12,000 gallons each) covered concrete raceway pools.

2. PERMIT SUMMARY (cont'd)

Salmon fry are moved from the hatchery facility to the raceways in June. Of the fourteen raceway pools, ten are used for salmon fry, two are used for fall yearlings, and two are used for broodstock. In October of each year, fall yearling salmon are stocked in various waters, a portion of the fall fingerling salmon are shipped to the DIFW Embden rearing station, and brook trout are received on station.

The brook trout are housed in raceway space vacated by the salmon. In May-June each year, spring yearling salmon and brook trout are stocked in various waters and the cycle continues as described above.

Fish are fed by automatic feeders within the hatchery facility and for the first month they are in the raceways. Larger fish in the raceways are fed by demand-type feeders. Supplemental hand feeding is conducted as needed. DIFW Grand Lake Stream indicates using an average of 62 pounds of food per day, a maximum of 210 lbs./day, and a period of peak feeding during August, September, and October. DIFW Grand Lake Stream indicates an approximate maximum quantity of fish on station of: 1,400 pounds of broodstock (900 fish), 14,400 pounds of first year fish (64,000 fish), and 500 pounds of second year fish (750 fish). A map showing the location of the treatment facility is included as Fact Sheet **Attachment A**.

- d. Wastewater Treatment: In 2010, the DIFW Grand Lake Stream Hatchery facility underwent renovations. The following text was taken from the 2011 application from DIFW:

“Located at the end of each raceway are quiescent zones to settle solids which are regularly cleaned to a large concrete settling chamber. Water from raceway flow through and the settling chamber combines before leaving the facility at a single discharge point. Emergency bypass is only used when the settling chamber is down for maintenance and cleaning is minimized.”

The following summary was taken from the facility’s Operation and Maintenance Plan:

“The hatchery troughs are cleaned twice daily when fry are being fed. Hatchery flow-through and cleaning wastewater is routed to the settling basin prior to discharge into Grand Lake Stream. For rearing facility cleaning, DIFW staff has historically scrubbed the sides and bottoms from the top end of the raceway pool moving down-flow toward the bottom end. Located at the bottom of all raceway pools, a screened 9.5-foot long “quiescent zone” with a covered discharge pipe leads to the settling basin. A blocking weir is placed in front of the quiescent zone and the discharge plug is pulled. Wastewater is then directed to the settling pond. The use of the blocking weir helps reduce the amount of wastewater going to the settling basin. After the raceway pool and quiescent zone screen are cleaned, the quiescent zone plug is replaced and the cleaners move to the next raceway pool. All raceway pools are cleaned two to three times per week during the summer and once a week during the non-summer period, as needed (all cleaning practices are subject to change due to flow, pool densities, feeding rates and best professional judgment.) All solids are discharged directly to the settling basin except for the dead fish carcasses, which are composted on site.” A process flow diagram submitted by the permittee is included as Fact Sheet **Attachment B**.

3. CONDITIONS OF PERMIT

Conditions of licenses, 38 M.R.S.A. § 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, *Certain deposits and discharges prohibited*, 38 M.R.S.A. § 420 and *Surface Water Toxics Control Program*, 06-096 CMR 530 (effective March 21, 2012) require the regulation of toxic substances not to exceed levels set forth in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 CMR 584 (effective July 29, 2012), 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

Classification of major river basins, 38 M.R.S.A. § 467 (13)(B)(1) classifies the “St. Croix River...All tributaries entering upstream from the dam at Calais, the drainage areas of which are wholly within the State-Class A unless otherwise classified” which includes Grand Lake Stream at the point of discharge. Grand Lake Stream empties into Big Lake, which is classified as “St. Croix River...Those waters impounded in the Grand Falls Flowage including those waters between Route 1 (Princeton and Indian Township) and Grand Falls Dam – Class GPA” pursuant to 38 M.R.S.A. § 467 (13)(A)(2). *Standards for classification of fresh surface waters*, 38 M.R.S.A. § 465 (2) and § 465-A (1) describe the standards for Class A and Class GPA waters, respectively.

38 M.R.S.A. § 465 (2)(C) states “Except as provided in this paragraph, direct discharges to these waters licensed after January 1, 1986 are permitted only if, in addition to satisfying all the requirements of this article, the discharged effluent will be equal to or better than the existing water quality of the receiving waters. Prior to issuing a discharge license, the department shall require the applicant to objectively demonstrate to the department's satisfaction that the discharge is necessary and that there are no other reasonable alternatives available. Discharges into waters of this classification licensed prior to January 1, 1986 are allowed to continue only until practical alternatives exist.”

Prior to issuing a discharge license, the Department shall require the applicant to objectively demonstrate to the Department's satisfaction that the discharge is necessary and that there are no other reasonable alternatives available. An Alternative Discharge Study performed by Fishpro for multiple DIFW facilities (including Grand Lake Stream) indicate that there are no reasonable alternatives to the current discharge. Todd Langevin of DIFW (email correspondence dated July 26, 2013) confirmed the 2002 Fishpro conclusions that no reasonable alternatives exist.

5. RECEIVING WATER QUALITY CONDITIONS

The State of Maine 2012 Integrated Water Quality Monitoring and Assessment Report (Report), prepared by the Department pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists the waters in Grand Lake Stream and tributaries (ABD Assessment Unit ID ME0105000103_502R) as “Category 2: Rivers and Streams Attaining Some Designated Uses – Insufficient Information for Other Uses.” Big Lake at Peter Dana Point (ABD Assessment Unit ID ME0105000105_502R) is listed in Category 2 as well.

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

The Report lists all of Maine's fresh waters as, "Category 4-A: Waters Impaired by Atmospheric Deposition of Mercury." Impairment in this context refers to a statewide fish consumption advisory due to elevated levels of mercury in some fish tissues. The Report states, "All freshwaters are listed in Category 4A (TMDL Completed) due to USEPA approval of a Regional Mercury TMDL. Maine has a fish consumption advisory for fish taken from all freshwaters due to mercury. Many waters, and many fish from any given water, do not exceed the action level for mercury. However, because it is impossible for someone consuming a fish to know whether the mercury level exceeds the action level, the Maine Department of Health and Human Services decided to establish a statewide advisory for all freshwater fish that recommends limits on consumption. Maine has already instituted statewide programs for removal and reduction of mercury sources."

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The 8/1/06 permit included multiple outfall designations. The facility upgrade completed in 2010 combined the multiple points to discharge to the newly constructed settling basin. All final effluent monitoring and sampling is now reported from what is administratively identified as Outfall #005A.

- a. **Flow:** In the 8/1/06 permit, the Department eliminated the daily maximum flow limit and established a monthly average flow limit of 2.9 MGD based on information provided by DIFW on facility operations and design capacity and to provide the facility with operational flexibility. As stated in the previous permit "All new discharges of pollutants or increases in pollutants in a licensed/permitted facility's existing discharge, excluding flow, must meet all Class A standards." This permitting action is carrying forward the monthly average discharge flow limit of 2.9 MGD.

The Department reviewed 75 Discharge Monitoring Reports (DMRs) that were submitted for the period January 2007 – March 2013. A review of data indicates the following:

Flow

Value	Limit (MGD)	Range (MGD)	Mean (MGD)
Monthly Average	2.9	1.11 – 2.07	1.9

- b. **Dilution Factors:** The West Grand Lake dam is owned and operated by Woodland Pulp, LLC. as a storage dam to provide for downstream hydroelectric generation. Operation of the dam is subject to a US Federal Energy Regulatory Commission (FERC) license (#2618) issued to the previous owner, Georgia Pacific Corporation on September 4, 1980, with annual automatic renewals until a new license is issued. Article 34 of the FERC license states, the licensee "*shall discharge from West Grand Lake a contin(u)ous minimum flow of 100 cfs (cubic feet per second) or a flow equal to the inflow to the Lake, whichever is less for the purpose of protecting and enhancing fishery resources in West Branch of the St. Croix River*". It is the Department's understanding that although the minimum flow of 100 cfs was required, it would not be applicable as a guaranteed instantaneous minimum flow to Grand Lake Stream. The previous permit established a 7Q10 of 13.0 cfs based on a modeling method for ungauged streams. However, it was later determined that there was an existing gauge within a half mile of the facility.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

After the 2006 MEPDES permit issuance, DIFW requested that the Department investigate the dilution factors associated with Grand Lake Stream. In 2011, the Department's Division of Environmental Assessment (DEA) reanalyzed the dilution factors associated with Grand Lake Stream.

The following is an excerpt from an email regarding the calculations:

In order to determine the low flow for "a flow equal to the inflow to the lake" our unit assumed that there could be an instantaneous low flow less than the FERC imposed 100 cfs. We used the USGS SIR2004-5026, Estimating Monthly, Annual, and Low 7-day, 10-year Streamflows for Ungaged Rivers in Maine to determine that flow. Unfortunately the watershed for Grand Lake Stream is regulated and the regression equations in this report were developed from unregulated watersheds; they do not apply to Grand Lake Stream.

In our current analysis, we ran the algorithms for low flow conditions for the *USGS Gage 01019000 Grand Lake Stream at Grand Lake Stream, Maine* which is directly downstream of the hatchery and for the period of record 1972 to 2010 and the resulting critical flows are:

7Q10 value is: 103.2
1Q10 value is: 101.6
Harmonic Mean: 250.4

There were no mean daily flows below 100 cfs.

The imposition of the 100 cfs continuous flow and the subsequent storage volume of West Grand Lake eliminates the potential for an instantaneous low flow down to the levels previously calculated. This was confirmed by reviewing data from the *Instantaneous Data Archives* web site for the USGS Grand Lake Stream Gage. This site provides recorded values at a 15 minute interval. For the low flow years of 1991 through 1993, the lowest instantaneous flow was 99 cfs.

The revised dilution factors associated with the permitted discharge flow of 2.9 MGD from the facility and derived in accordance with 06-096 CMR 530(4)(A) were calculated as follows:

$$\text{Modified Acute: } \frac{1}{4} 1Q10 = 25.4 \text{ cfs} \Rightarrow \frac{(25.4 \text{ cfs})(0.6464) + 2.9 \text{ MGD}}{2.9 \text{ MGD}} = 6.7:1$$

$$\text{Acute: } 1Q10 = 101.6 \text{ cfs} \Rightarrow \frac{(101.6 \text{ cfs})(0.6464) + 2.9 \text{ MGD}}{2.9 \text{ MGD}} = 23.6:1$$

$$\text{Chronic: } 7Q10 = 103.2 \text{ cfs} \Rightarrow \frac{(103.2 \text{ cfs})(0.6464) + 2.9 \text{ MGD}}{2.9 \text{ MGD}} = 24.0:1$$

$$\text{Harmonic Mean} = 250.4 \text{ cfs} \Rightarrow \frac{(250.4 \text{ cfs})(0.6464) + 2.9 \text{ MGD}}{2.9 \text{ MGD}} = 56.8:1$$

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

The Department's DEA has determined that DIFW Grand Lake Stream's discharge does not achieve rapid and complete mixing. Thus, the Department is utilizing the default stream flow of ¼ of the 1Q10 in accordance with 06-096 CMR 530(4)(B)(1).

- c. **BOD₅ and TSS:** In the 8/1/06 permit, TSS and BOD₅ concentration limits of 6 and 10 mg/L for monthly average and daily maximum, respectively, were established as best professional judgment (BPJ) of minimum treatment technology.

The Department reviewed 75 DMRs that were submitted for the period January 2007 – March 2013. A review of data indicates the following:

BOD₅ mass

Value	Limit (lbs./day)	Range (lbs./day)	Mean (lbs./day)
Monthly Average	48	0 – 55	9
Daily Maximum	242	14 – 76	34

BOD₅ concentration

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	6	2.0 – 3.3	2
Daily Maximum	10	2.0 – 4.5	2

TSS mass

Value	Limit (lbs./day)	Range (lbs./day)	Mean (lbs./day)
Monthly Average	48	0.0 – 67	5
Daily Maximum	242	14 – 151	34

TSS concentration

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	6	0.6 – 4.0	2
Daily Maximum	10	2.0 – 6.0	2

The Department's Division of Environmental Assessment (DEA) reviewed hatchery information in consideration of using TSS as a surrogate for BOD₅. It should be noted that TSS is more closely related to problems most commonly encountered at aquatic animal facilities such as phosphorous enrichment and solids control. After reviewing approximately 6 years of TSS and BOD₅ data, the Department concluded that the results of the two parameters showed a strong correlation. Therefore, the Department concluded that TSS could be relied upon to reflect BOD₅ conditions. Consequently, this permitting action is carrying forward the mass and concentration limits for TSS. This permit is carrying forward with the previously established monitoring frequency of 1/Month for TSS.

BOD can cause depressed DO in the receiving waters and increased carbon levels may create a favorable environment for nuisance bacterial/fungal growth such as *Sphaerotilus natans* that may

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

result in non-attainment of narrative water quality standards. The Department has not observed nuisance bacterial/fungal growth below discharges from the Grand Lake Stream hatchery in quantities that would constitute a violation of narrative water quality standards, and the historical data indicate DO levels that attain Class B standards. Therefore, the Department concludes that Grand Lake Stream does not exhibit BOD-related impacts.

Given that 1) hatchery operations and processes are not likely to change; 2) that the Department has a statistically significant BOD₅ data set from this and multiple similar hatcheries; 3) that neither the USEPA nor Department have promulgated numeric effluent guidelines for BOD₅ for Concentrated Aquatic Animal Production (CAAPs) facilities (including fish hatcheries); 4) that this permitting action contains effluent monitoring for dissolved oxygen; and 5) that in the best professional judgment of the Department's Division of Environmental Assessment effluent limitations for BOD₅ are not necessary to ensure compliance with water quality standards, this permitting action is eliminating the effluent limitations and monitoring requirements for BOD₅ based on this new information that was not available at the time the previous permit was issued.

Section 402(o) of the Clean Water Act contains prohibitions for anti-backsliding. Generally, anti-backsliding prohibits the issuance of a renewed permit with less stringent limitations than were established in the previous permit. The Clean Water Act contains certain exceptions to anti-backsliding at Section 402(o)(2). In the case of DIFW's Grand Lake Stream facility and the concentration and mass limitations for BOD₅, the Department has determined that these limitations would not have been established at the time the previous permit was issued based on the new information that has been obtained since issuance of the 2006 permit. Section 402(o)(2)(B)(i) of the Clean Water Act contains an exception to anti-backsliding for information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance. Therefore, this permitting action is eliminating the limitations for BOD₅. [It is noted that anti-backsliding prohibitions and exceptions are mirrored in Chapter 523 of the Department's rules at 40 CFR 122.44(1)(2)(i)(B)(1).]

- d. Dissolved Oxygen: The 8/1/06 permit required in-stream DO measurements to be taken at the point of discharge. The Department reviewed 24 DMRs that were submitted for the period June 2007 – September 2012. A review of data indicates the following:

DO

Minimum (mg/L)	Maximum (mg/L)
7.8	10.0

The Class A dissolved oxygen standard is:

The dissolved oxygen content of Class A waters shall be not less than 7 parts per million or 75% of saturation, whichever is higher. The aquatic life and bacteria content of Class A waters shall be as naturally occurs. 38 M.R.S.A. § 465(2)(B).

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

The data indicates that the minimum DO was never below 7.8 mg/L in this monitoring period. This permitting action requires effluent dissolved oxygen monitoring and establishes a minimum dissolved oxygen limitation of 7.5 mg/L to ensure the discharge does not cause or contribute to non-attainment of Class A dissolved oxygen standards. This permitting action is carrying forward the seasonal reporting requirement for dissolved oxygen.

- e. **Total Phosphorus:** As noted in the previous permit, both Big Lake and Grand Lake Stream will receive discharge from Grand Lake Stream hatchery. This section is divided to address each resource separately.

Big Lake - The previous permit established an annual maximum mass limit of 504 pounds, which is considered to be protective of the Class GPA standard that “Class GPA waters must have a stable or decreasing trophic state, subject only to natural fluctuations and must be free of culturally induced algal blooms that impair their use and enjoyment.” 38 M.R.S.A. §465-A(1)(B). The facility is also required to report the monthly mass discharge. Both the annual maximum mass limit and the monitoring frequency are being carried forward in this permitting action. The Department reviewed 37 DMRs that were submitted for the period January 2007 – March 2013. A review of data indicates the following:

Total-P Mass from Outfall 005A

Year	Limit (lbs./year)	Annual Total (lbs.)
2007	504	198.6
2008		176.4
2009		127.3
2010		141.1
2011		144.3
2012		168.8

Grand Lake Stream – Previous permitting action established both mass and concentration limitations for total phosphorous. The daily max mass limitation of 504 lbs./year is a water quality-based limit necessary to ensure compliance with Class GPA water quality standards and is being carried forward in this permitting action. The monthly average concentration limitation of 0.14 mg/L for total phosphorous was established based on BPJ of best practicable treatment for this discharge. The Department is identifying in this permitting action that the concentration limit is not necessary to ensure water quality standards are achieved and that the limitation was established in error. Section 402(o) of the Clean Water Act contains prohibitions for anti-backsliding. Generally, anti-backsliding prohibits the issuance of a renewed permit with less stringent limitations than were established in the previous permit. The Clean Water Act contains certain exceptions to anti-backsliding at Section 402(o)(2). In the case of MDIFW’s Grand Lake Stream facility and the concentration limitation for phosphorous, the Department has determined that establishing a concentration limitation for phosphorus constitutes a technical mistake in issuing the permit. Section 402(o)(2)(B)(ii) of the Clean Water Act contains an exception to anti-backsliding for this reason. Therefore, this permitting action is eliminating the concentration limitation for total phosphorous but is requiring concentration data to

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

be reported. (It is noted that anti-backsliding prohibitions and exceptions are mirrored in Chapter 523 of the Department's rules.)

This permitting action is revising the monitoring frequency from once/2 weeks to 2/Month to allow for increased monitoring flexibility. The Department reviewed 37 DMRs that were submitted for the period January 2007 – March 2013. A review of data indicates the following:

Total-P Concentration from Outfall 005A

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	0.14	0.0 – 0.07	0.03
Daily Maximum	Report	0.0 – 0.11	0.04

- f. **Fish on Hand:** Previous permitting action established a 2/Month reporting requirement for daily maximum mass. However, after review of the data, the Department believes that a 1/Month daily maximum mass reporting requirement is appropriate. Therefore, this permit is establishing a 1/Month reporting requirement of daily maximum mass for fish on hand.

The Department reviewed 75 DMRs that were submitted for the period January 2007 – March 2013. A review of data indicates the following:

Fish on Hand for Outfall 005A

Value	Limit (lbs.)	Range (lbs.)	Mean (lbs.)
Monthly Average	Report	2,274 – 18,095	8,782
Daily Maximum	Report	2,288 – 19,110	9,646

- g. **Formalin:** The October 10, 2008 minor permit revision amended the formalin limits based on the Department's BPJ after reviewing the January 2008 report titled "*Meeting Maine Clean Water Standards during Fish Therapeutic Treatments: Determining the Acute No Effect Concentration (ANOEC) Discharge Concentrations in Hatchery Effluents after Fish Therapeutic Treatments with Formalin, Hydrogen Peroxide, Potassium Permanganate and Sodium Chloride*" by G. Russell Danner and Thora Maltais. Formalin concentration limits were based on the ambient water quality criteria (AWQC) of 25 mg/L and 45 mg/L for a 24-hour application and a 1-hour application, respectively and multiplied by the ¼ 1Q10 dilution factor of 1.6. Based on the new revised dilution factors, the concentration limits would be calculated as shown here:

$$25 \text{ mg/L} \times 6.7 (\frac{1}{4} \text{ 1Q10}) = 167.5 \text{ mg/L } 24\text{-hour treatment}$$
$$45 \text{ mg/L} \times 6.7 (\frac{1}{4} \text{ 1Q10}) = 301.5 \text{ mg/L } 1\text{-hour treatment}$$

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Mass limits derived from the updated concentration limits would be calculated as such:

$$167.5 \text{ mg/L} \times 8.34 \text{ (conversion factor)} \times 2.9 \text{ MGD(flow)} = 4,052 \text{ lbs./day (24-hour treatment)}$$
$$301.5 \text{ mg/L} \times 8.34 \times 2.9 \text{ MGD/24 hours} = 302 \text{ lbs./hour (1-hour treatment)}$$

Since the 2006 permit, mass limits have been carried forward based on the following language from the 2008 revision:

“Effluent mass limits were previously and remain calculated based on the permittee’s projected maximum amount of formalin used per day (6-gallons) times the weight of formalin (9.13 lbs/gal), resulting in a value of 54.8 lbs/day.”

Based on the above mass calculations, the 24-hour and 1-hour treatment limits of 4,052 lbs./day and 302 lbs./hour, respectively, are less stringent than the previously established limit of 54.8 lbs./day. Therefore, based on the Departments BPJ of AWQC, the mass limit established in the 2006 permit (and carried forward since that time) is being carried forward in this permitting action.

The Department is identifying in this permitting action that the formalin concentration limit is not necessary to ensure water quality standards are achieved and that the limitation was established in error. Section 402(o) of the Clean Water Act contains prohibitions for anti-backsliding. Generally, anti-backsliding prohibits the issuance of a renewed permit with less stringent limitations than were established in the previous permit. The Clean Water Act contains certain exceptions to anti-backsliding at Section 402(o)(2). In the case of DIFW’s Grand Lake Stream facility and the concentration limitation for formalin, the Department has determined that establishing a concentration limitation for formalin constitutes a technical mistake in issuing the permit. Section 402(o)(2)(B)(ii) of the Clean Water Act contains an exception to anti-backsliding for this reason. Therefore, this permitting action is eliminating the concentration limitation for formalin. (It is noted that anti-backsliding prohibitions and exceptions are mirrored in Chapter 523 of the Department’s rules.

Formalin monitoring is revised to 1/Occurrence in this permitting action to better clarify the reporting requirement. The Department reviewed 11 DMRs that were submitted for the period November 2010 – March 2013. A review of data indicates the following:

Formalin mass

Value	Limit (lbs./day)	Range (lbs./day)
Monthly Average	54.8	2.0– 6.0
Daily Maximum	54.8	2.0 – 9.0

Formalin concentration

Value	Limit (mg/L)	Range (mg/L)
Monthly Average	Report	0.01 – 6.63
1-Hour Maximum	72	6.6 – 10.1
24-Hour Maximum	40	0.01 – 6.7

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

- h. Total Residual Chlorine: The permittee has stated that calcium hypochlorite (CaCl_2O_2) is used periodically during spring turnover in West Grand Lake and sporadically through the year as needed, to clean the facility's 10-micron influent drumfilter. The permittee states that the filter is placed on bypass mode and drained of water, except for a minimal amount of water allowed to remain in the 10-foot x 9-foot x 6-inch (337-gallon capacity) filter reservoir to aid in filter cleaning. Six pounds of CaCl_2O_2 is mixed in 10-gallons of water and poured over the moving drum filter. The filter is allowed to rotate in the cleaning mixture for 30-minutes. Then, an approximately equal amount of sodium thiosulfate ($\text{Na}_2\text{O}_3\text{S}_2$) is added to the filter reservoir to de-chlorinate the cleaning water before discharge to the receiving water.

The previous permitting action established a water quality-based daily maximum concentration limit of 0.03 mg/L for TRC based on the following calculation:

$$0.019 \text{ mg/L (acute criterion)} \times 1.6 \text{ (dilution factor)} = 0.03 \text{ mg/L}$$

Due to the corrected dilution factors established earlier in this fact sheet (see the anti-backsliding explanation under the Grand Lake Stream phosphorous section), the Department calculated an end-of-pipe water quality based threshold for TRC as follows:

$$0.019 \text{ mg/L (acute criterion)} \times 6.7 \text{ (dilution factor)} = 0.13 \text{ mg/L}$$

Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department permitting actions impose the more stringent of either a water quality-based or best practicable treatment-based limit. The previous permitting action stated: "The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their wastewater with elemental chlorine or chlorine based compounds or use them in their processes." Since the previous permit, for facilities that need to dechlorinate the discharge in order to meet water quality-based thresholds, the Department has established a monthly average BPT limits of 0.1 mg/L. The facility dechlorinates the effluent prior to discharge in order to achieve compliance with the water quality-based thresholds. The monthly average technology-based standard of 0.1 mg/L is more stringent than the calculated chronic water quality-based threshold of 0.13 mg/L and is therefore being established in this permitting action.

The minimum monitoring frequency of once per discharge day is based on the Department's BPJ of monitoring frequencies necessary to more accurately characterize facility effluent conditions. TRC was analyzed only once from 2007 through March 2013. That result was <0.01 mg/L

- i. pH: The previous permit carried forward the established pH limit of 6.0 – 8.5 standard units (SU), pursuant to 38 M.R.S.A. § 464(4)(A)(5) and consistent with the discharge limits established in other MEPDES permits for fish hatcheries.

The Department reviewed 58 DMRs that were submitted for the period June 2008 – March 2013. A

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

review of data indicates the following:

pH

Value	Limit (SU)	Minimum (SU)	Maximum (SU)
Range	6.0 – 8.5	6.3	7.6

Past performance at Grand Lake Stream hatchery indicates that the pH exhibits consistent results within the required limits and that the discharge does not exhibit a reasonable potential to exceed the pH range limitation established by 38 M.R.S.A. § 464(4)(A)(5). Therefore, this permit is eliminating the pH monitoring requirement based on this new information. This action complies with the anti-backsliding provision at 40 CFR 122.44(l)(2)(i)(B)(1).

7. 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 Grand Lake Stream to meet standards for Class A classification or Big Lake to meet standards for GPA classification.

8. PUBLIC COMMENTS

Public notice of this application was made in the *Calais Advertiser* newspaper on or about July 1, 2011. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits must have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to *Application Processing Procedures for Waste Discharge Licenses*, 06-096 CMR 522 (effective January 12, 2001).

9. RESPONSE TO COMMENTS

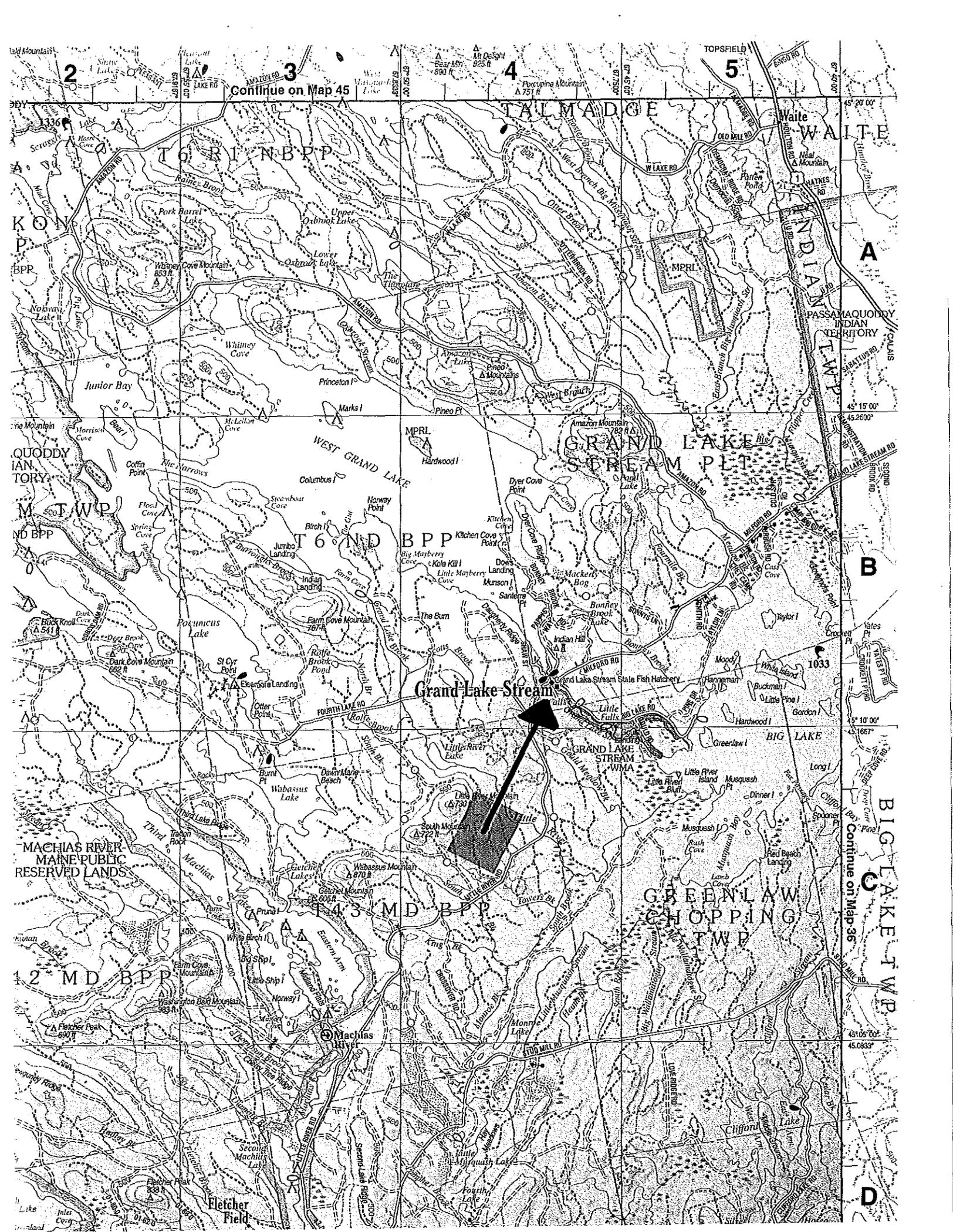
Reserved until the end of the public comment period.

10. DEPARTMENT CONTACTS

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

Cindy L. Dionne
DEP, Division of Water Quality Management
Bureau of Land & Water Quality
17 State House Station, Augusta, ME. 04333-0017
Telephone: (207) 592-7161
E-mail: cindy.l.dionne@maine.gov

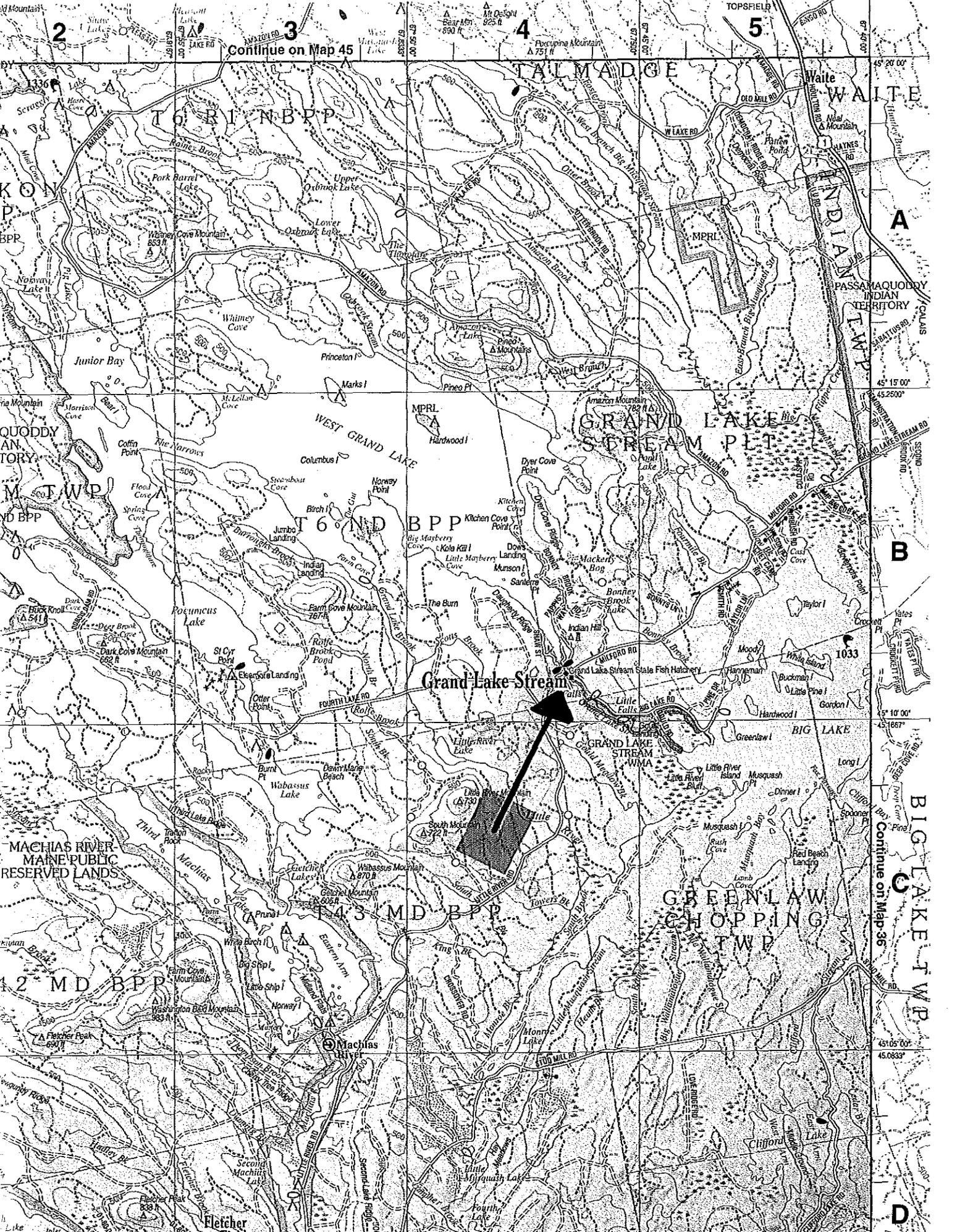
ATTACHMENT A



Continue on Map 45

Continue on Map 35

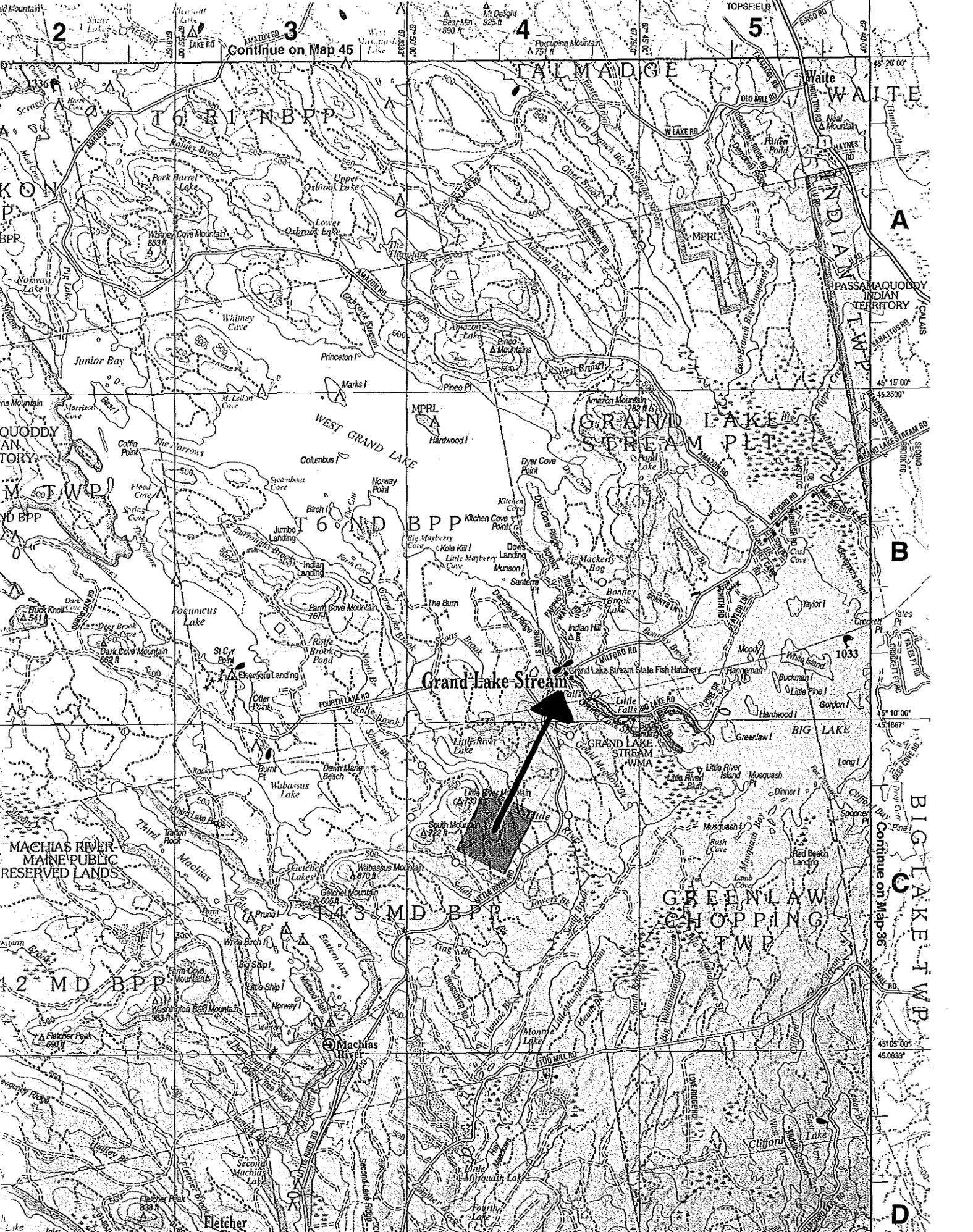
Grand Lake Stream



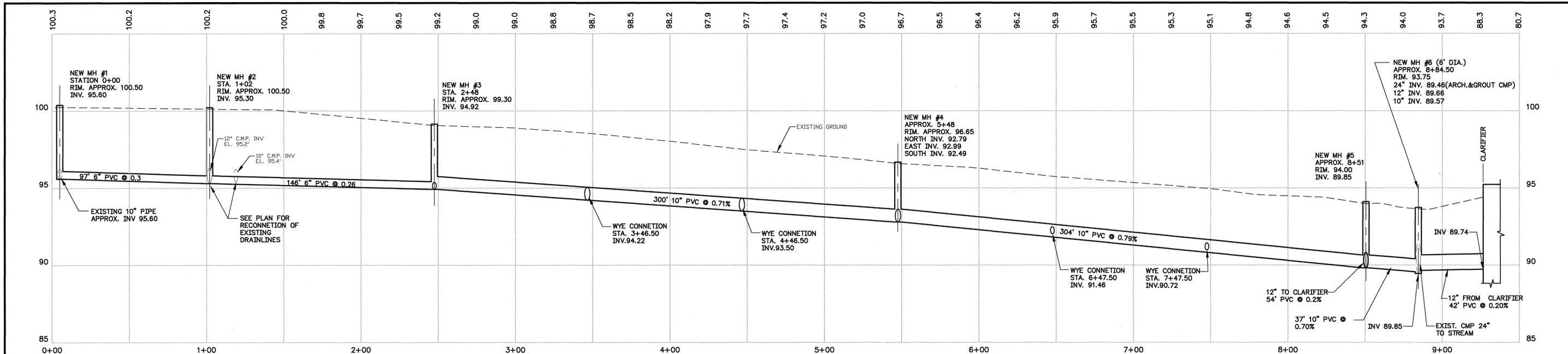
Continue on Map 45

Continue on Map 35

Grand Lake Stream

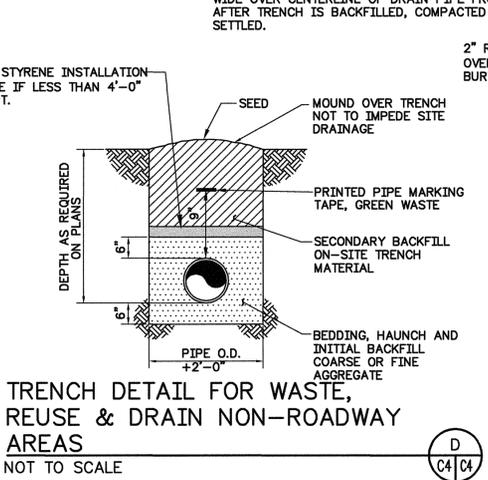
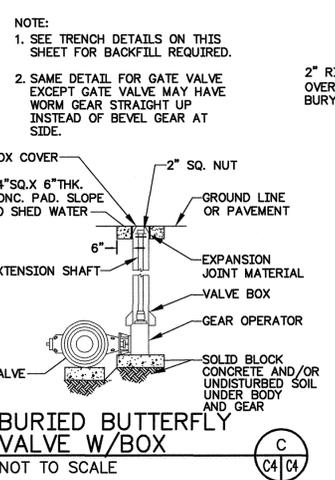
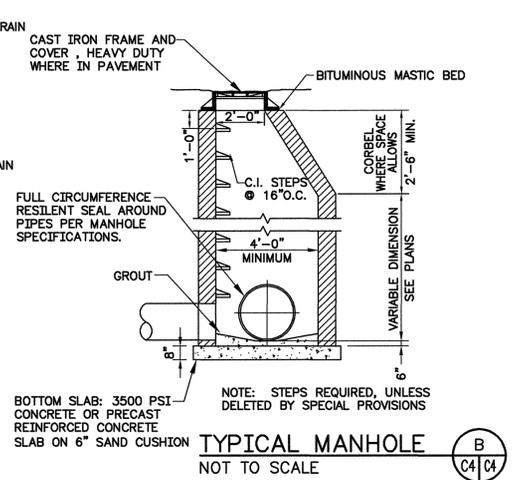
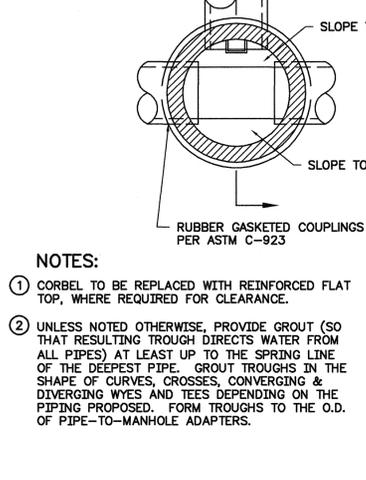
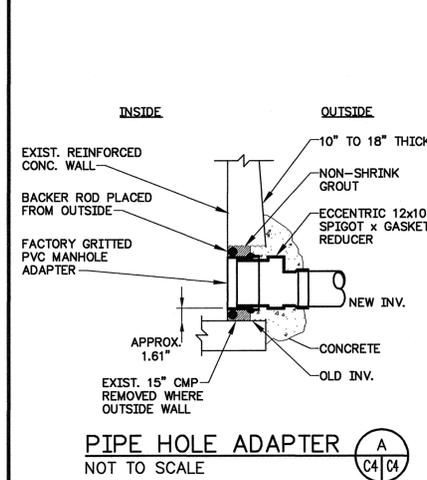
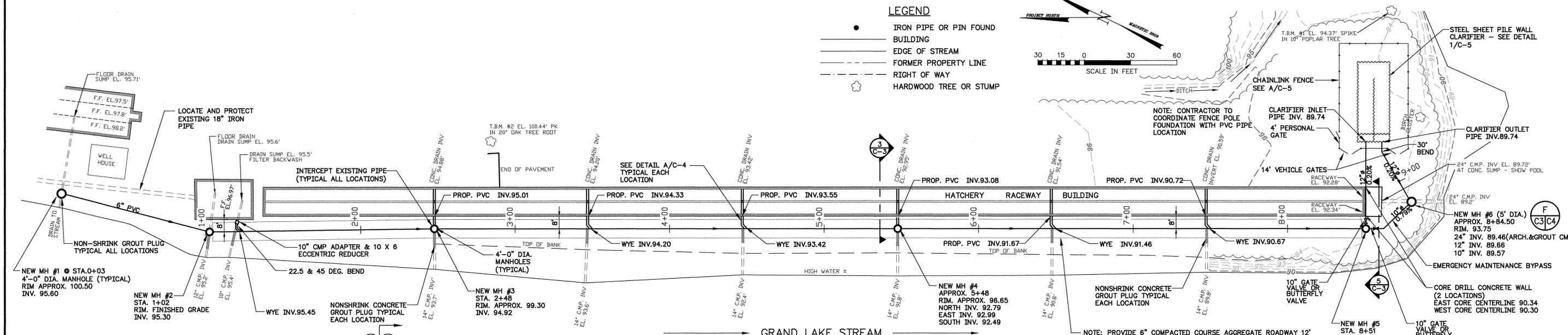
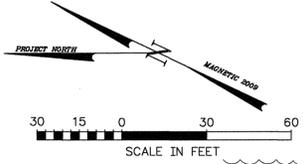


ATTACHMENT B



LEGEND

- IRON PIPE OR PIN FOUND
- ▬ BUILDING
- ▬ EDGE OF STREAM
- ▬ FORMER PROPERTY LINE
- ▬ RIGHT OF WAY
- ⊗ HARDWOOD TREE OR STUMP



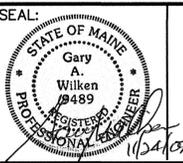
- NOTES:**
1. CORBEL TO BE REPLACED WITH REINFORCED FLAT TOP, WHERE REQUIRED FOR CLEARANCE.
 2. UNLESS NOTED OTHERWISE, PROVIDE GROUT (SO THAT RESULTING TROUGH DIRECTS WATER FROM ALL PIPES) AT LEAST UP TO THE SPRING LINE OF THE DEEPEST PIPE. GROUT TROUGHS IN THE SHAPE OF CURVES, CROSSES, CONVERGING & DIVERGING WYES AND TEES DEPENDING ON THE PIPING PROPOSED. FORM TROUGHS TO THE O.D. OF PIPE--TO-MANHOLE ADAPTERS.

- NOTE:**
1. SEE TRENCH DETAILS ON THIS SHEET FOR BACKFILL REQUIRED.
 2. SAME DETAIL FOR GATE VALVE EXCEPT GATE VALVE MAY HAVE WORM GEAR STRAIGHT UP INSTEAD OF BEVEL GEAR AT SIDE.

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REVISIONS					
NO.	DATE	REMARKS	NO.	DATE	REMARKS



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STATE OF MAINE
 DEPARTMENT OF INLAND FISHERIES AND WILDLIFE



DRAWING TITLE: SITE PLAN & PROFILE	HDR#: 113059
PROJECT: GRAND LAKE STREAM STATE FISH HATCHERY BOND BILL #2 PROJECT EFFLUENT MANAGEMENT SYSTEM	DATE: 11/24/09
	SHEET: C-4