



## NTL ALASKA, INC.

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### Introduction to Alaskan Water Systems

This is the official introductory course for Alaskan small water systems operations and maintenance. This course is accredited for 3.0 CEU's and qualifies the student to take ADEC Provisional Level 1 certification exams.

All persons applying for Provisional exams must have a high school diploma or GED certificate. Provisional exams require that an operator have at least three FULL TIME months of operations experience OR completion of an approved training course such as Introduction to Alaskan Water Systems.

Exam applications will be filled out during the class and the exams will be proctored on the last day of class.

All exam fees should be remitted to NTL along with the class registration fees. NTL will take care of all submittals and remittance to the State of Alaska.

The two exams available for the **Introduction to Alaskan Water Systems** Class are:

- Water Treatment, Provisional Level 1
- Water Distribution, Provisional Level 1

A Provisional Level 1 certificate will be issued to any person who passes the exam with a 70% or higher score at an approved course. Provisional certification can be upgraded to Level 1 certification without further testing once operators meet the Level 1 eligibility requirements. Operators must apply to ADEC for the upgrade by presenting evidence of 1,950 hours of appropriate operational experience. Applications for upgrade of provisional certificates to level 1 will be reviewed four times per year at dates published on the ADEC statewide training calendar.

The State of Alaska charges a \$20.00 application fee and \$30.00 for each exam that you request:

- One exam  $20.00 + 30.00 = \$50.00$
- Two exams  $20.00 + 60.00 = \$80.00$

## **INTRODUCTION TO SMALL WATER SYSTEMS**

TEXT PROVIDED: *Introduction to Small Water Systems*, Skeet Arasmith, 1996

INSTRUCTOR: Michael R. Pollen, President, NTL Alaska, Inc.

### **Course Outline:**

- I. **Introduction to Drinking Water Systems**
  - A. Hydrologic Cycle
  - B. What is a Drinking Water System
  - C. Reasons for Drinking Water Systems
  - D. Classifications of Systems
  
- II. **Basic Science Concepts**
  - A. Chemistry
  - B. Microbiology
  - C. Hydraulics
  - D. Electricity
  
- III. **Water Sources**
  - A. Surface Water
  - B. Groundwater
  - C. GUDISW
  
- IV. **Treatment**
  - A. Control of Turbidity and Color
  - B. Control of Hardness, Iron and Manganese
  - C. Common Filter Problems
  - D. Disinfection
  - E. Fluoride
  - F. Corrosion Control
  
- V. **Distribution Systems**
  - A. Pipes and Fittings
  - B. Fire Hydrants
  - C. Watering Points
  - D. Haul Systems

**VI. Pumping Systems**

- A. Pump Types
- B. Pump Components
- C. Pump Maintenance

**VII. Safety**

- A. Electrical Safety
- B. Confined Space Overview
- C. First Aid
- D. Fire Safety

**VIII. Regulations and Monitoring**

- A. Alaska Drinking Water Regulations
- B. Operator Sampling and Testing

**IX. Math Concepts**

- A. Surface area
- B. Volume
- C. Flow
- D. Loading rates
- E. Detention time
- F. Backwash rates
- G. Dosing formulas

**X. Course Closure & Evaluation**

**XI. Final Exams on Day 5** (*Exams will be administered by an independent proctor selected by ADEC*)

- A. ADEC Water Treatment Provisional Level 1 Exams
- B. ADEC Water Distribution Provisional Level 1 Exams