MARINA FUELING FACILITY INSPECTIONS in NORTHERN CALIFORNIA and the JANUARY 1999 MARINA ADVISORY PANEL

Karen L. Clementsen
Acting Unit Chief

California Regional Water Quality Control Board,
Central Valley Region
Redding Branch Office

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INTRODUCTION

• Marina Facility Inspections
• Reporting My Findings
• Marina Advisory Panel
PURPOSE: To Determine Compliance with Waste Discharge Requirements

“THE DISCHARGE OF PETROLEUM PRODUCTS TO GROUNDWATER, SURFACE WATER OR SURFACE WATER DRAINAGE COURSES IS PROHIBITED”

- **SHASTA LAKE** (Shasta County): 11 marinas
- **LAKE OROVILLE** (Butte County): 2 marinas
MARINA FUEL STORAGE AND PIPING INSPECTION FORM (Summer 2001)

- **SHASTA COUNTY** (12 marinas)
  - Shasta Lake, Whiskeytown Lake
- **TEHAMA COUNTY** (1 marina)
  - Black Butte Lake
- **BUTTE COUNTY** (2 marinas)
  - Lake Oroville
- **PLUMAS COUNTY** (7 marinas)
  - Lake Almanor, Bucks Lake
METHODS OF PETROLEUM STORAGE

UNDERGROUND TANKS

Double-wall tanks or Lined single-wall tanks?
ABOVEGROUND TANKS (LAND-BASED)

Tank secondary containment?
ABOVEGROUND FLOATING ON THE WATER: BARGE TYPE

CORROSION, CATASTROPHIC FAILURE, PROCEDURE FOR FUELING THE BARGE?
ABOVEGROUND FLOATING TANKS
ABOVE THE WATER: ON FLOTATION

STABILITY, CATASTROPHIC FAILURE,
PROCEDURE FOR FUELING THE BARGE?
TYPES OF PIPING OBSERVED

- Rigid Metallic
  - Single-wall
  - Galvanized

- Flexible Non-metallic
  - Double-wall
  - Commonly used underground at gasoline stations

- Rubber Hose
  - Single-wall
HOW LONG DOES IT TAKE FOR GALVANIZED STEEL PIPE TO CORRODE IN FRESH WATER?
HOW TO PREVENT OR CONTROL PIPE CONNECTION LEAKS?
ARE CONTAINMENT BOXES THE BEST SOLUTION?
WHAT MATERIALS ARE USED TO CONSTRUCT THE CONTAINMENT BOXES?
WILL FLEXIBLE NON-METALLIC PIPING ENDURE VARYING ENVIRONMENTAL CONDITIONS?

TEMPERATURE CHANGES, ABRASION, SUNLIGHT
CAN FLEXIBLE NON-METALLIC PIPING BE PROPERLY INSTALLED ABOVEGROUND, OVER-WATER, UNDER WATER?
LEAK DETECTION
MONITORING

Pressure Boot for Monitoring Interstitial Space
LEAK DETECTION MONITORING FOR UNDERWATER PIPING?
RUBBER HOSE:
PERMEABILITY? SECONDARY CONTAINMENT?

Steel-Braid Covering
ARE ALTERNATIVE SECONDARY CONTAINMENT MATERIALS APPROPRIATE?

DRAIN PIPE
FUEL DISPENSERS

- PUMPS FOR GRAVITY-FEED SYSTEMS
- LAND-BASED DISPENSERS
- OVER-WATER DISPENSERS
  - HOSE REELS
  - DISPENSER CONTAINMENT
  - FILTERS
LAND-BASED DISPENSERS USED FOR GRAVITY FEED TANKS
LAND-BASED NON-RETAIL FUEL DISPENSING

Dispenser nozzle and Pump
ARE HOSE REELS FOR OVER-WATER DISPENSERS NECESSARY?
REPORTING MY FINDINGS (early 1990s)

- Aboveground Storage Tank
  State/Regional Board Roundtable

- Underground Storage Tank
  State/Regional Board Roundtable

- California Air Resources Board Staff Meeting
MARINA ADVISORY PANEL  
(late 1990s)

- Executive Order: Governor Pete Wilson (October 8, 1997)

- “To Evaluate Refueling Practices at Marinas Located on Surface Water Bodies Serving as Drinking Water Sources, and Identify if any Further Upgrades Should be Made to Eliminate Releases to the Water Body.”

- Twenty members: Representing Industry(6), Government (9), and Water Agencies(5)
MARINA ADVISORY PANEL TEAMS

- FUEL STORAGE AND TRANSFER SYSTEMS
  (11 members)

- FLOATING FUEL AND CONTAINMENT SYSTEMS
  (6 members)

- VESSEL FUELING (6 members)

- VESSEL EMISSIONS (7 members)

- JANUARY 1999 REPORT:
  http://www.swrcb.ca.gov/cwphome/ust/docs/
VESSEL EMISSIONS TEAM RECOMMENDATIONS

- Promote management practices for reducing emissions in the MTBE Management Practices Guide
- Encourage reservoir owners to establish a water quality goal for MTBE
- Ensure that adequate research is undertaken to investigate the multi-media fate and transport of any new oxygenates or reformulated gasoline components
VESSEL FUELING TEAM RECOMMENDATIONS

● The SWRCB should consult with the California Air Resources Board regarding gasoline exposure and the use of hold-open latches.

● The SWRCB should consult with the National Marina Manufacturing Association and U.S. Coast Guard regarding possible statutory requirements for vessel fuel/air separator systems.

● The California Legislature should provide financial incentives to encourage research and development of marina fuel dispenser nozzles.
VESSEL FUELING TEAM RECOMMENDATIONS (Continued)

- The SWRCB should contact the California Integrated Waste Management Board and recommend they increase their grant program for bilge pump-out systems.

- The SWRCB should encourage development of a clearinghouse for gathering educational materials and distributing them to marinas.
The SWRCB should develop regulations which provide consistency and adequate spill and fire prevention for California’s waterways. These regulations should, as a minimum, incorporate:

- Secondary containment for entire tank capacity
- An overfill prevention device
- A spill prevention system for the tank
- Positive protection against siphoning fuel from the tank
- The system must be capable of withstanding the worst weather conditions
- The system must be capable of withstanding a collision from a boat
- A leak detection system
The SWRCB should complete the team’s analysis of state vessel laws and regulations.

California professional engineers should be required to certify that the design complies with the regulations and the system was constructed to the standards of design.

A thorough analysis of existing and proposed systems should be undertaken to insure that new regulations address the widest variety of systems.

The SWRCB should engage in discussions with third party entities to pursue certification for floating fuel systems.
The SWRCB should complete the team’s analysis of existing statutes and regulations.

The Underground and Aboveground Petroleum statutory and regulatory requirements for marina piping should be consistent and designed specifically for marinas.

The SWRCB should meet with Independent Third Party Testing Organizations, Product Manufacturers, Marina Industry Representatives, and Design Professionals to develop appropriate standards for fuel transfer systems specific to marina requirements.
FUEL STORAGE AND TRANSFER SYSTEMS
TEAM RECOMMENDATIONS
(Continued)

- The California Legislature should provide financial incentives to encourage research and development of new products specifically designed for marina fuel transfer systems.

- The California Legislature should evaluate the feasibility of State grants or low interest loans to assist marina operators in implementing more stringent standards.
SUMMARY

- Each marina fuel facility has a unique design, the environmental conditions in which they operate are variable, and the threat of petroleum releases to surface waters is high.

- In 1999, the Marina Advisory Panel made recommendations for upgrading fueling systems at marinas:
  - The SWRCB complete work started by the Advisory Panel
  - The SWRCB consult with other Agencies and Independent Third Party Testing Organizations to develop appropriate standards for marina fuel facilities
  - The statutory and regulatory requirements for underground and aboveground petroleum storage at marinas should be consistent and specifically developed for the industry.