

INDIAN HEALTH SERVICE (IHS) SANITATION FACILITIES CONSTRUCTION (SFC) PROGRAM



Sanitary Surveys: Turning a Requirement into an Opportunity

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Indian Health Service Seattle District Engineer

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EPA Region X Tribal Drinking Water



Agenda

- ▣ IHS O&M program
- ▣ EPA Tribal Drinking Water Direct Implementation
- ▣ Sanitary Survey – a Requirement
- ▣ Sanitary Survey – an Opportunity
- ▣ Questions



Who we are...

IHS O&M Team



LCDR Sandy Redsteer

- Northern Arizona (BS)
- 2 yrs TUC
- 12 yrs HIS
- 2 yrs private sector



Richard Moore, P.E.

- Humboldt St. (BS)
- 1.5 yrs TUC
- 25 yrs private sector

LCDR Mike O'Shea, P.E.

- UC St Barbara (BS),
- San Diego St (MS)
- 1 yr, TUC
- 5 yrs ANTHC;
- 2 yrs SSMFO
- 3 years Peace Corps



Ladd Folster

- 25 yrs TUC
- ANTHC, Spokane
- Billings
- Water Operator

Matty Haith, P.E.

11 yrs Army Engineer, 6 months IHS
Stanford (MS – Civil Eng)
Univ. Missouri S&T (MS – Env Eng)
US Military Academy (BS – Env Eng.)

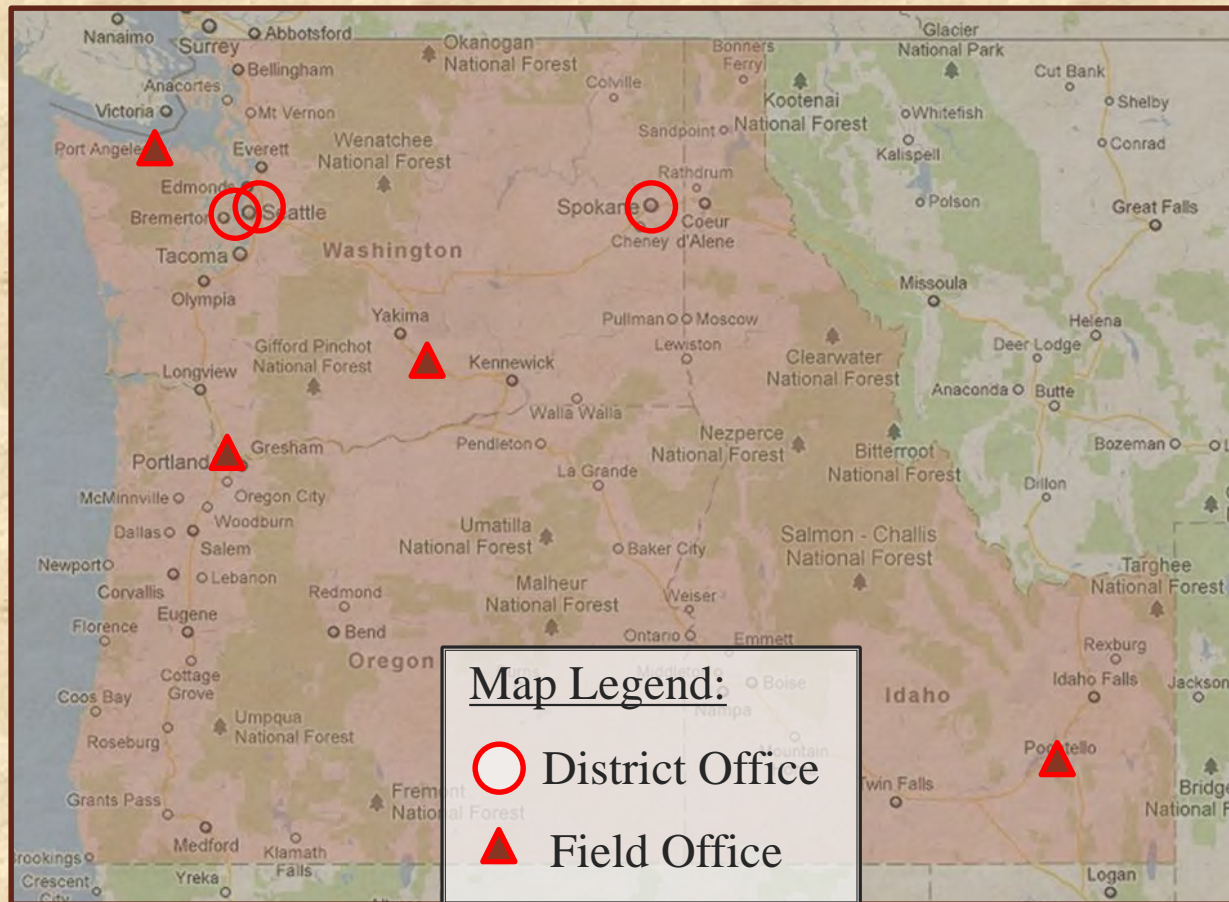


Warren Nilchee

Retired SEP 2016



Where we are...



- ❖ Olympic District
 - ❖ **3 TUCS**
 - ❖ Port Angeles Field Office
- ❖ Seattle District
 - ❖ **DUC**
- ❖ W. Oregon / Yak
 - ❖ Yakama Field Office
- ❖ Spokane District
 - ❖ **1 TUC**
 - ❖ Fort Hall Field Office



What we do...

Portland Area Utility Consultant Mission Statement

Portland Area utility consultants enhance operations and maintenance of Tribal public water systems and injection wells to ensure safe drinking water and public health for American Indians in Washington, Oregon, and Idaho.



EPA Tribal Drinking Water Direct Implementation

- Compliance on SDWA regulations
- Compliance & technical assistance
- Administer the PWSS and TSA funds
 - PWSS funds O&M work at HIS
 - TSA contributes to infrastructural projects
- Enforce the SDWA



Public Water System Supervision TUC Tasks

- Assist EPA w/ notifying PWS of new & existing regulations
- Sanitary Surveys
- Water Quality Monitoring Program (WQMP)
- RTCR Level I and Level II Assessments
- Seasonal System Start-up Plan
- Groundwater Under Direct Influence (GWUDI) of Surface Water



TUC PWSS Tasks (cont.)

- Capacity Assessment
- Capacity Development
- Comprehensive Performance Evaluations
- Review Water System Plans and Specifications
- Oversight and admin



DOH Primacy Water Systems

- ▣ Chapter 7 DOH 331-486: Sanitary Survey Field Guide
- ▣ Technical assistance available through private contractors and local health jurisdictions
- ▣ Must gain DOH approval prior to authorizing payment



Who we serve...

**37 out of the 43 Portland Area Tribes
...every Tribe in WA, OR, ID
with a Public Water System**

Type of PWS	#
CWS	83
NTNCWS	25
TNCWS	27
Total PWS	135



How we're funded...



EPA
Region 10



- ▣ Public Water System
Supervision (PWSS)
Interagency Agreement = 3.5 TUCs
\$600k per year
- ▣ Underground Injection
Control (UIC)
Interagency Agreement = 0.5 TUC
\$70k per year

Both authorized by SDWA



Portland Area O&M Program

Strengths

- ▣ Relationship with Tribes
- ▣ IHS (usually) has record drawings for water systems
- ▣ Interaction between engineers and utility consultants
- ▣ Work closely with EPA
- ▣ Experienced consultants

Challenges

- ▣ Restrictions on TUC duties due to funding
- ▣ 135 Public Water Systems
- ▣ Codes for Tribal water systems





Pop Quiz

Who funds IHS' O&M program?

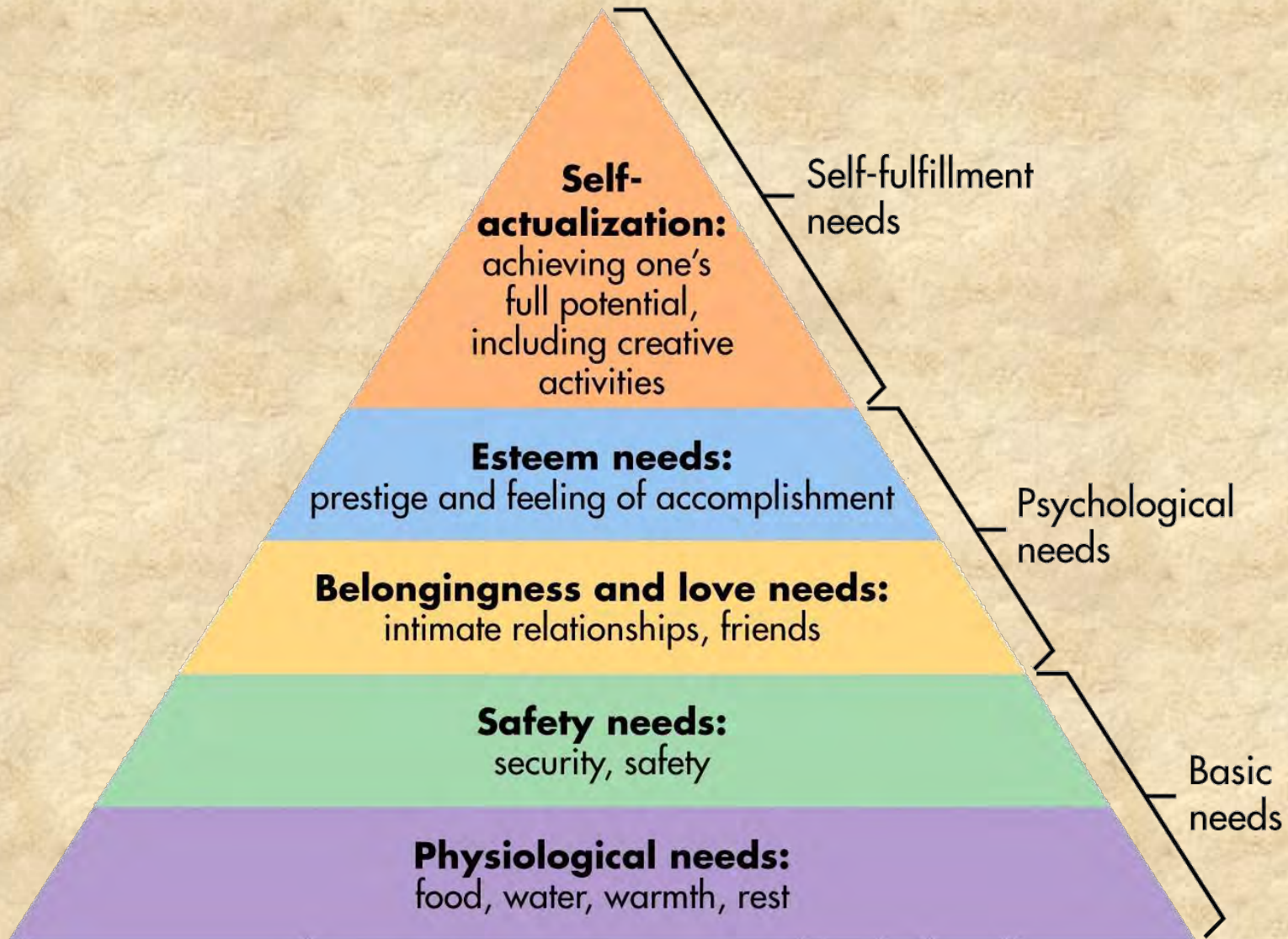
EPA Region X

True or False: IHS Tribal Utility Consultants can assist with wastewater facilities and operations?

False

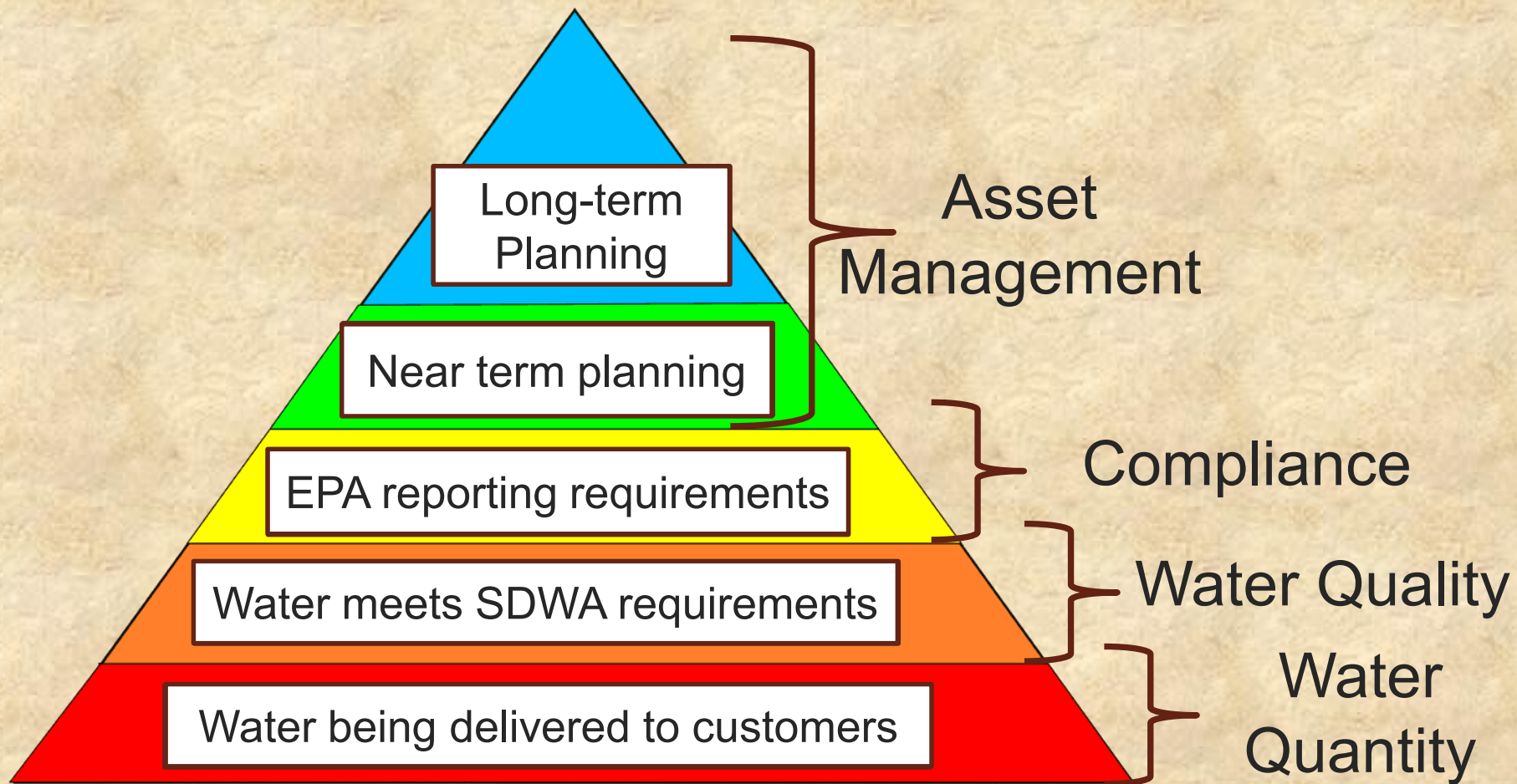


Maslow's Hierarchy of Needs





Water System Hierarchy of Needs





Timeline of Utility “Event”

Event

- Water Outage
- Water main brake
- MCL violation
- Significant deficiency



Prevent/Mitigate

- Water Quality Monitoring Plans
- Taking samples
- ***Sanitary Surveys***

Reaction

- Repair/upgrade
- Treatment
- Change operations



Sanitary Survey: A Requirement

Title 40, Part 141

§141.401 Sanitary surveys for ground water systems.

...an onsite review to evaluate the adequacy of the system, its sources and operations, and the distribution of safe drinking water.



Sanitary Survey Components

The sanitary survey must include an evaluation of...

- (1) Source
- (2) Treatment
- (3) Distribution system
- (4) Finished water storage
- (5) Pumps, pump facilities, and controls
- (6) Monitoring, reporting, and data verification**
- (7) System management and operation**
- (8) Operator compliance with State requirements



Follow up to Sanitary Survey Deficiencies

- ▣ **Significant deficiencies must be corrected within:**
 - **120 days for ground water**
 - **45 days for surface water**

- ▣ **Or systems must request an extension from the EPA**



DOH 331-486

Sanitary Survey Field Guide

7.0 We Want Results, Not Endless Compliance Actions

As stated above, the objective of each sanitary survey is to:

- Identify issues that threaten the safety and reliability of the drinking water supply.
- Understand the water system operation, its capabilities, weaknesses, and current condition.
- Understand the water system's challenges, the owner or operator's commitment level, and their preparedness to face challenges effectively.
- Identify gaps between what should be and what is, and understand the role health officials can play in closing those gaps.



Pop Quiz

How long do water systems have to fix significant deficiencies (surface water and ground water systems)?

45 days for SW

120 days for GW



Sanitary Survey: An Opportunity

Event

- Water Outage
- Water main brake
- MCL violation
- Significant deficiency



Plan & Manage

- Asset Management
- Capacity Development
- Optimization
- ***Sanitary Surveys***

Prevent/Mitigate

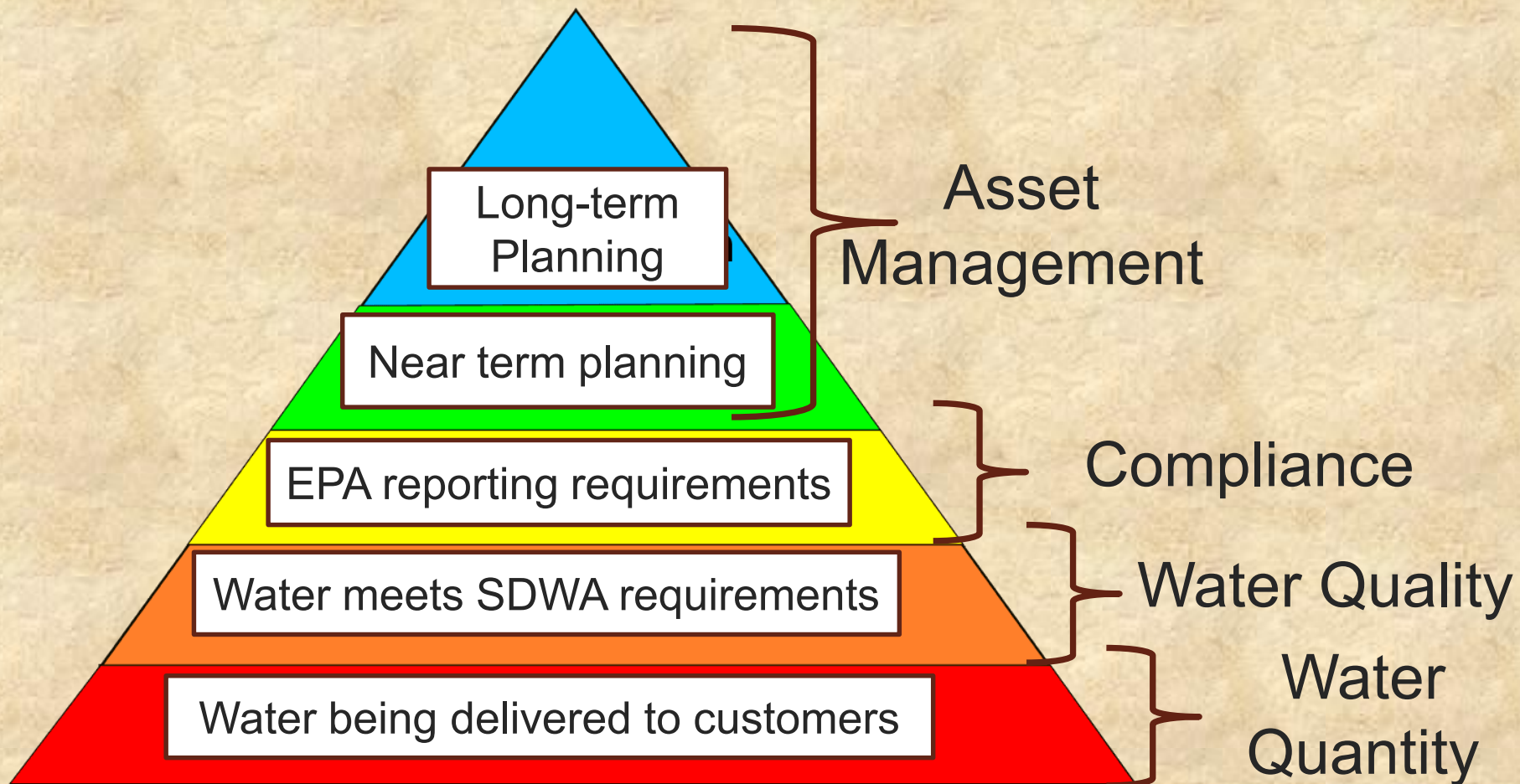
- Water Quality Monitoring Plans
- Taking samples
- ***Sanitary Surveys***

Reaction

- Emergency Response
- Repair/upgrade
- Treatment
- Change operations



Water System Hierarchy of Needs





Who should attend the sanitary survey?

- ▣ Inspector
- ▣ Operator(s)
- ▣ Utility/Public works director
- ▣ Planner
- ▣ Health Director



Significant Deficiencies VS Minor Deficiencies & Recommendations

- Significant deficiencies are defects that cause or have the potential to cause the introduction of contamination into the water delivered to consumers.

SIGNIFICANT DEFICIENCY				
YES	NO	N/A	UNK	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. Is the well provided with a sanitary cap, vent, and seal that are properly installed

- Minor deficiencies and recommendations focus on assessing and improving the operation of a water system

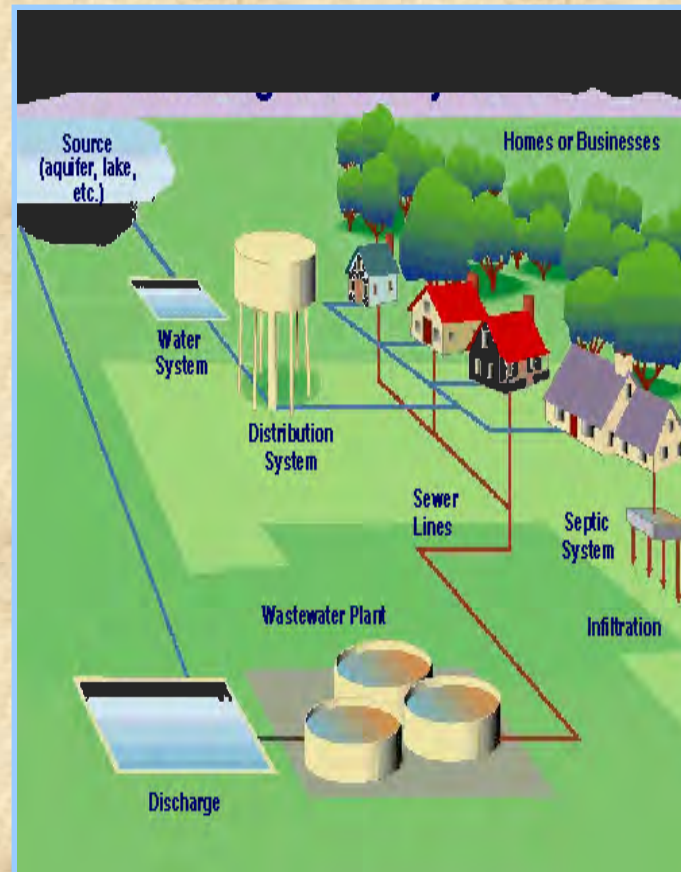
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	222. Does the Water System have an Operating Budget?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	223. Does the Water System have a service area and facility map?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	223. Does the Water System have a water facilities inventory?



Sources

Major concerns during a sanitary survey

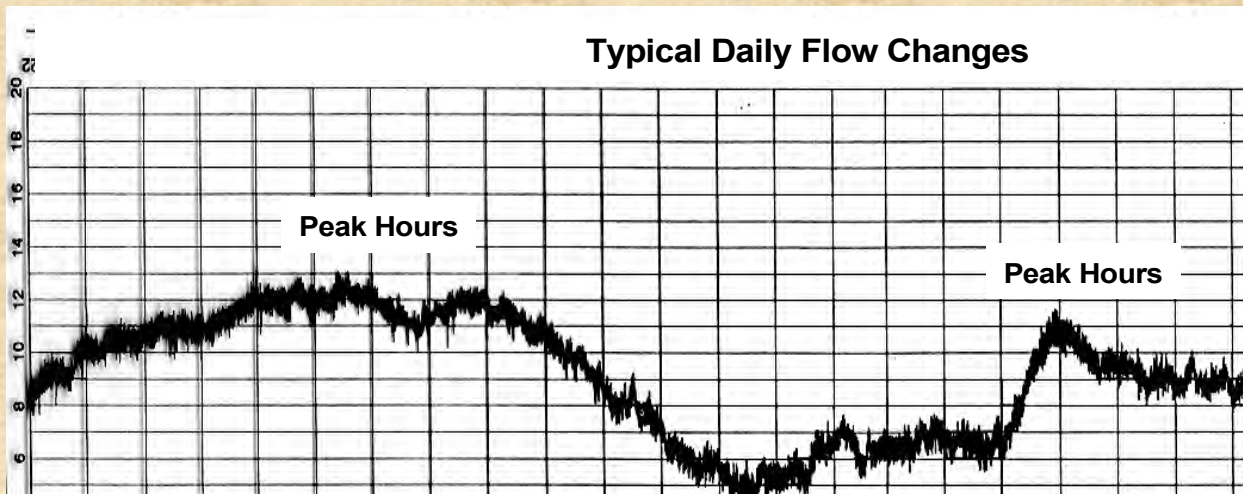
- Quantity of Water
- Quality of Water
- Source Protection
- Specific Sanitary Risks
 - Wells
 - Surface Sources
 - Springs
 - Transmission

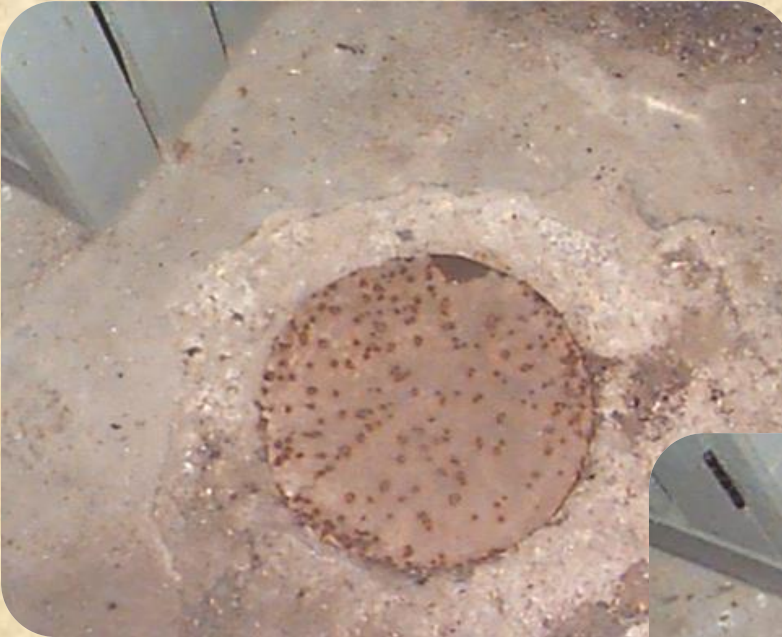




Quantity of Water

- What is the total design production capacity?
- What is the present average daily production?
- What is the maximum daily production?
- Is the safe yield sufficient to meet current and future demands?
- Is source quantity adequate?



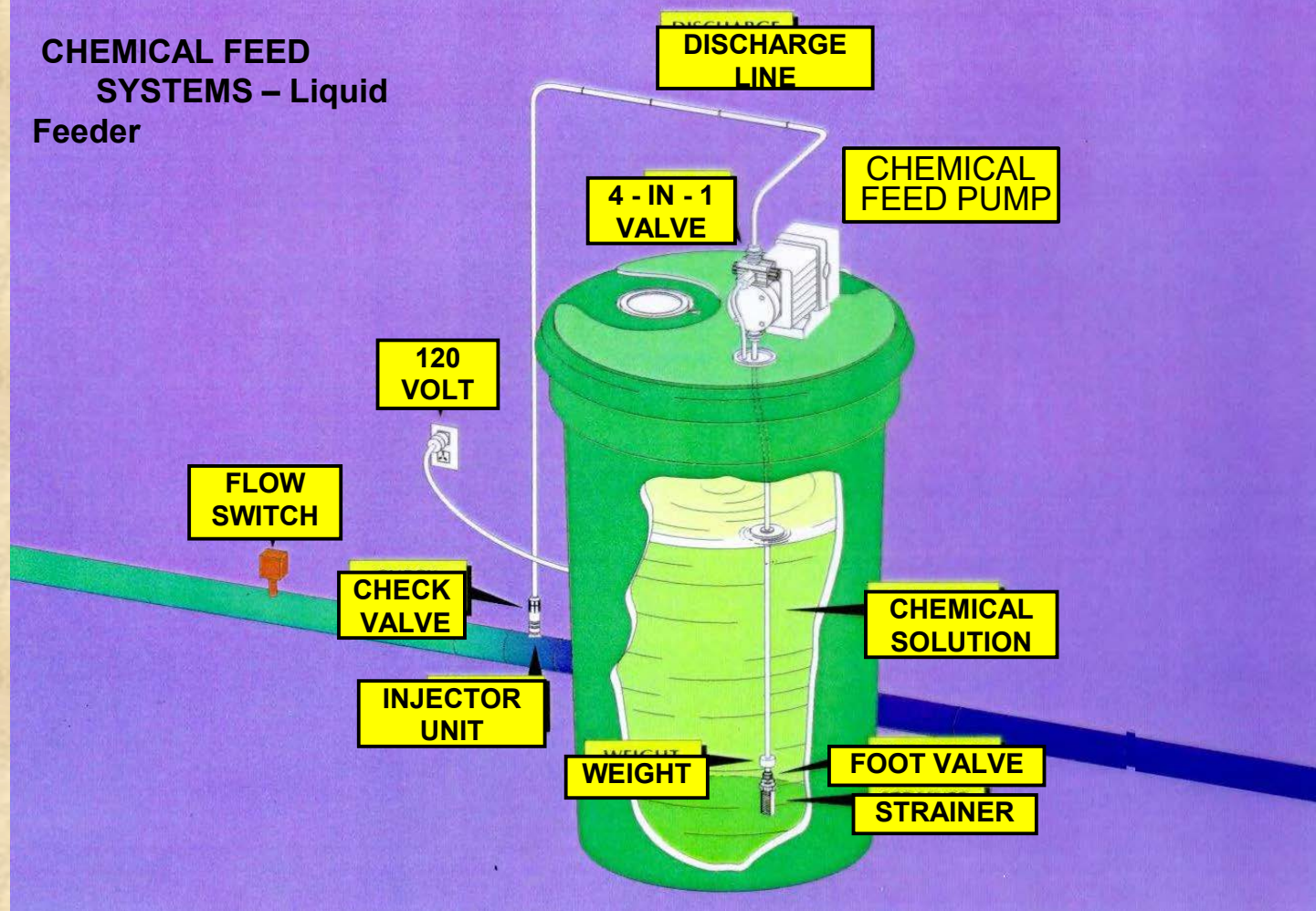


“Abandoned” Well





CHEMICAL FEED SYSTEMS – Liquid Feeder



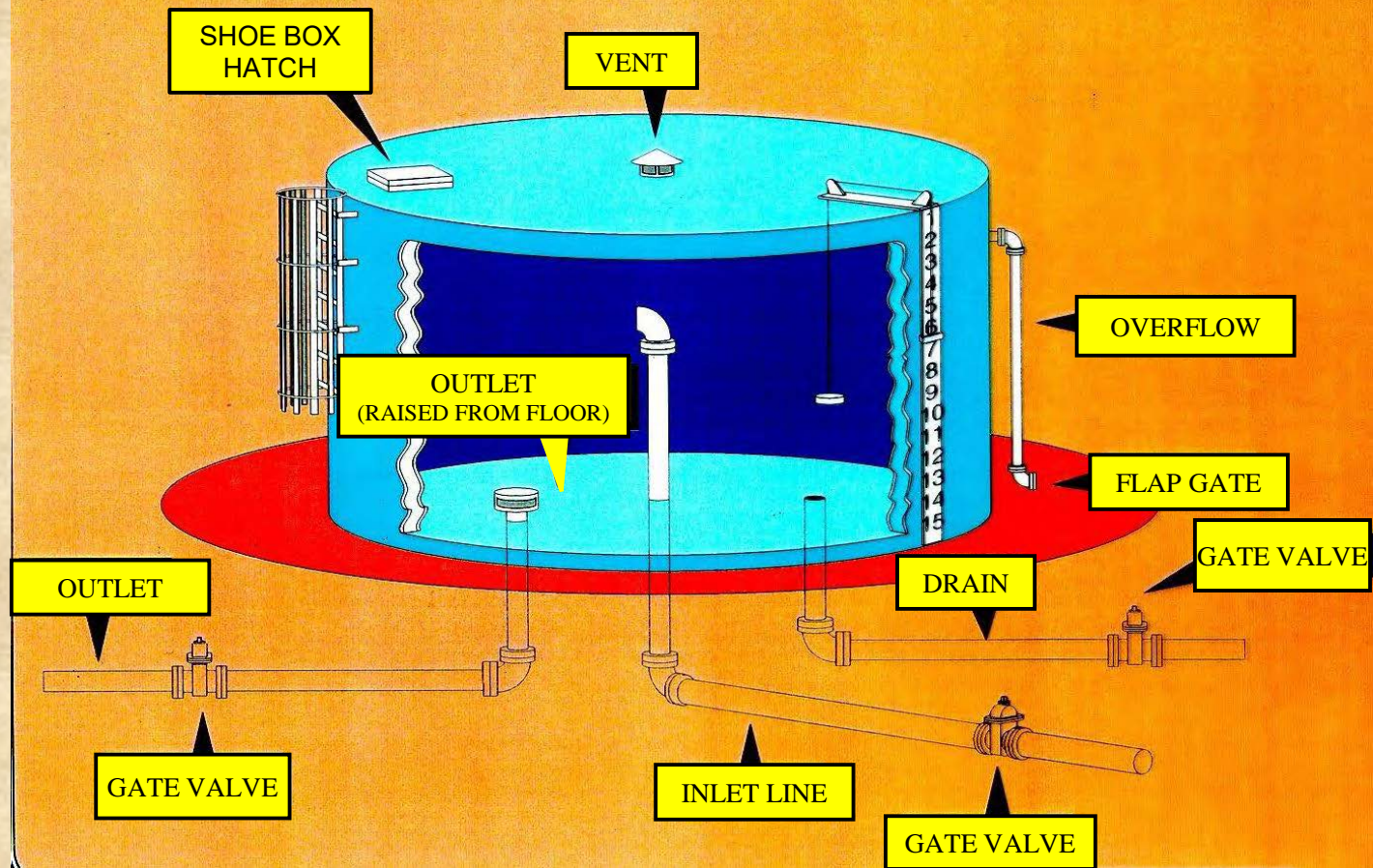


Storage Tanks

- Assure availability of safe drinking water at all times
- Adequate Pressure
- Meeting emergency needs



Tank Materials and Components

















Chapter 10

UTILITY MANAGEMENT

The operation and maintenance of a water system is dependent on management.

Management is a process that provides funding and support (administrative, personnel, purchasing, etc.) to ensure:

- **Utility cost, quantity and quality goals are met**
- **Customers are satisfied**
- **Viability of the utility**



Capacity Development

- **Technical Capacity**

- Operator Licenses
- As-built dimensions and capacities
- Response to past sanitary surveys

- **Managerial Capacity**

- Source Water Protection Plan
- Decision Making authorities (including \$)
- Goals set by management

- **Financial Capacity**

- Operating Budget and monthly statements
- Annual Financial Report
- Cost of Water



Details to Consider –

There are 6 areas of utility management that contribute to sanitary risk

- Organization**
- Planning**
- Personnel**
- Operations and Maintenance**
- Customer Service**
- Finance**



IHS O&M Scoring

16 potential points for IHS' Sanitation Deficiency System awarded based on O&M

- ▣ EPA compliance
- ▣ Certified operator
- ▣ Preventative maintenance
- ▣ Records keeping (As-builts, maintenance records, sampling records)
- ▣ SOP
- ▣ Emergency Response Plan
- ▣ Budget and user fee structure



Top Performing Tribal Utilities

- ▣ LUMMI O&M ORG.
- ▣ QUILEUTE O&M ORG.
- ▣ SAUK SUIATTLE O&M
- ▣ SILETZ O&M ORG
- ▣ SKOKOMISH O&M ORG
- ▣ SWINOMISH O&M ORGANIZATION
- ▣ UPPER SKAGIT O&M ORGANIZATION



Questions?



1. Develop and maintain an inventory of sanitation deficiencies in Indian and Alaska Native communities.

2. Provides environmental engineering assistance with utility master planning and sanitary surveys.



3. Develops multi-agency funded sanitation projects; accomplishes interagency coordination . . . leverages IHS funds.

Memorandum of Agreement, Project PC-06-K75, Page 7 of 7

IN WITNESS TO THE TERMS OF THIS AGREEMENT, the parties have subscribed their names.

10-18-06
Date

FOR THE MAKAH INDIAN TRIBE:

[Signature]
Chairperson, Makah Tribal Council, having been duly authorized to enter into this Agreement on behalf of the Makah Tribe, as evidenced by the attached Resolution made by the Council.

10/11/06
Date

FOR THE INDIAN HEALTH SERVICE:

[Signature]
Director, Portland Area Indian Health Service,
Department of Health and Human Services.

10/20/06
Date

FOR WASHINGTON STATE:

[Signature]
Water Resources Program Manager, Washington
State Department of Ecology

10-25/06
Date

FOR THE BUREAU OF INDIAN AFFAIRS:

[Signature]
Director, Northwest Region
Bureau of Indian Affairs, Department of Interior

10/18/06
Date

FOR THE U.S. NAVY:

[Signature]
Department Head, Code 30, Expeditionary
Maneuver Warfare and Combating Terrorism S&T
Department, Office of Naval Research

Oct 25, 2006
Date

FOR THE BUREAU OF RECLAMATION:

[Signature]
Area Manager for the Lower Columbia Area Office
Bureau of Reclamation

Oct 20, 2006
Date

FOR THE U.S. COAST GUARD:

[Signature] CAPT LUC G.
Commander, U.S. Coast Guard Group Port Angeles



4. Provides water supply and waste disposal facilities.



5. Provides professional engineering design and/or construction services for water supply and waste disposal facilities.





6. Provides technical consultation and training to improve the operation and maintenance of tribally owned water supply and waste disposal systems.

7. Advocates for Tribes during the development of policy, regulations, and Programs.





8. Assists Tribes with sanitation facility emergencies.