Working in Waterways

October 26, 2023

COLORADO
Department of Public Health & Environment

Keep it Clean Partnership

Boulder St. Vrain Watershed

Boulder County

City of Lafayette

City of Louisville

City of Boulder

Town of Superior

City of Longmont Colorado

Stormwater Resources

- Resources, information, events for residents
- Generalized resources for any stormwater program
- Training recordings and registration
- Report pollution form
- Water quality reports for Boulder St. Vrain Watershed

www.KeepitCleanPartnership.org

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For future training opportunities visit:
www.keepitcleanpartnership.org/resources/training/

Today's Presenter

Al Stafford

Work Group Lead for the Clean Water Compliance Unit

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Zoom Functions

- Mute/Unmute
- Chat box
- Raising a hand
- Closed captioning

Agenda

- Overview of Work in Waterways
- Water Quality Control Division involvement
- Obtaining Compliance
  - Permitting
  - Documentation
  - Implementation
  - Maintenance
  - Stabilization
- Conclusion, Questions, and Contact Info

Overview: Working in Waterways

Multiple Types of Projects
- Flood Repairs
- Stream Management
- Capital Improvement
- Roadway and Bridges

Multiple Challenges
- Complex Designs
- Duration of Project

Fluctuating Water Levels

Confined Work Areas

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Multiple Permits & Regulatory Agencies

- Federal (USACE 404, Fish & Wildlife)
- State (Construction Stormwater, Dewatering)
- Local (MS4)


COMPLIANCE
COMPLIANCE
COMPLIANCE
COMPLIANCE

Water Quality Control Division (WQCD)

- Responsible for Implementing NPDES
- Regulate Drinking Water and Clean Water
- Comprised of Multiple Sections
  - Permits
  - Compliance
  - Enforcement

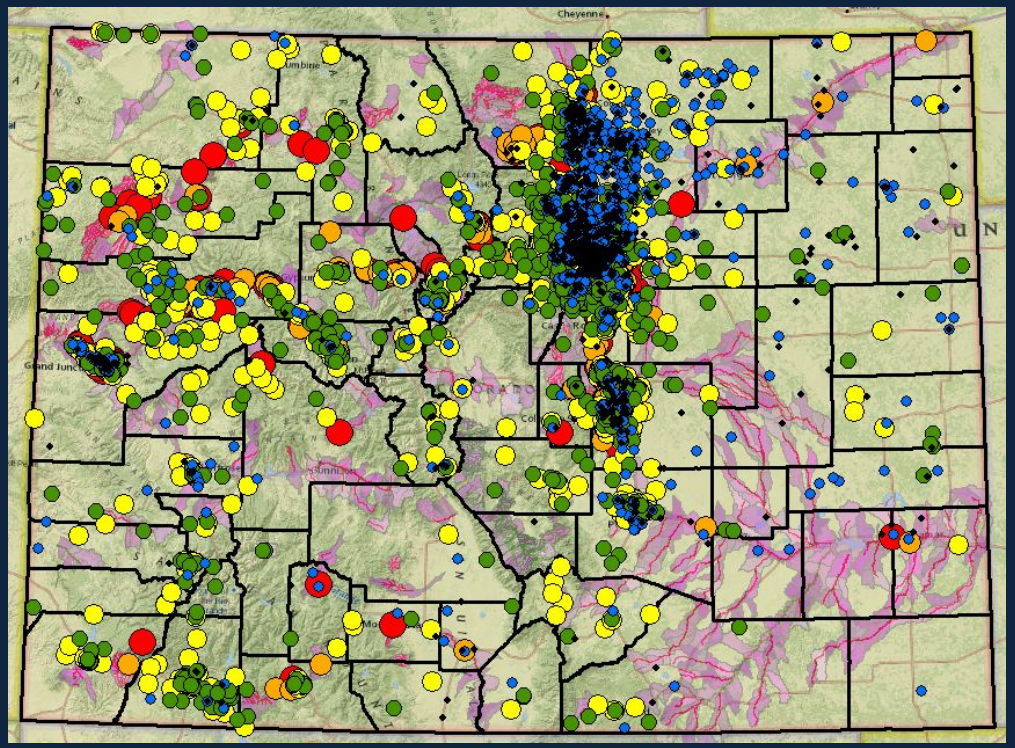
WQCD Construction Permits

CDPS Construction Sector and MS4 permits issued by the Water Quality Control Division	Number of active permits (approximate)	Applications per/year (approximate)
Construction Stormwater	>6500	>1200
Dewatering	230	230
Remediation	170	50
Hydrostatic	20	10
City and County MS4	60	--
Nonstandard MS4	60	--

WQCD Construction Compliance

Site Selection

- Complaints
  - EPA
  - Citizen
  - Municipalities
  - Other agencies
- Prioritized Sites
  - Proximity to water
  - Impairment
  - Size



Construction Stormwater Enforcement

- The Stormwater Civil Penalty Policy was updated in September 2022 to align with the Division's updated penalty authority (Section 25-8-608(1), C.R.S.). As noted in the new policy, violations that occurred on or after July 2, 2020 are subject to a civil penalty of **up to $56,759 per day per violation** (and as adjusted annually for inflation)

Construction Stormwater Enforcement

- Since January 2013, CDPHE has issued $5,918,530 in construction stormwater civil penalties
- Highest penalty since 2012: $950,000
- Lowest penalty since 2012: $3,812
- Median penalty since 2012: $53,168


PERMITTING
STABILIZATION
DOCUMENTATION
COMPLIANCE
MAINTENANCE
IMPLEMENTATION

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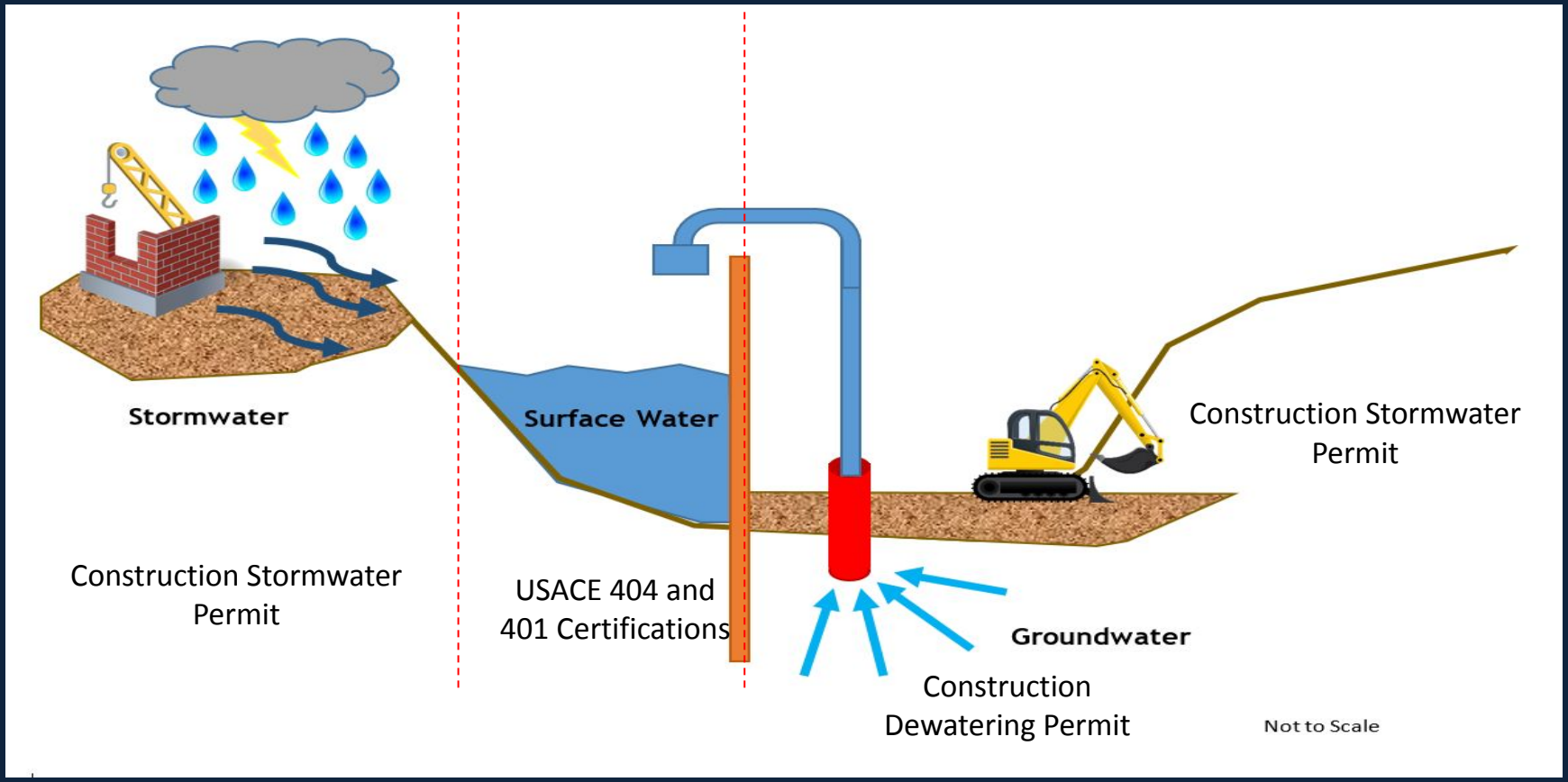
Types of Permits

- Federal Permits
  - Issued through USACE
  - Section 404 of CWA
  - Nationwide or Individual
- State Permits
  - Issued through WQCD
  - 401 Certifications
  - Stormwater, Dewatering
- Local
  - Issued through MS4 or other local regulatory agency
  - Ex. GESC (Douglas County), SWQP (Boulder County)

How Do Permits Relate in Field?




Construction Stormwater Permit
404 Permit
Construction Stormwater Permit
404 Permit
Construction Dewatering Permit

USACE 404 Permits

Nationwide (NWP)

- Activity Specific
- Minimal Impacts
- Up to 60 Days to Issue

Individual/Standard (IP/SP)

- Greater Impact
- Agency Coordination
  - USACE
  - EPA
  - WQCD (401 Certification)
  - Fish & Wildlife
- Up to 120 Days to Issue

USACE 404 Permits

- Dredge material: material that is excavated or dredged from state waters
- Fill material: material placed in state waters where the material (1) replaces any portion of state waters with dry land or (2) changes the bottom elevation of state waters.

  - Rock, sand, soil, clay, construction debris, overburden from mining or other excavation activities, and materials used to create any structure or infrastructure in state waters.

USACE 404 Permits: Sackett Decision

- WOTUS: “relatively permanent, standing or continuously flowing bodies of water”
- Only protects wetlands that are “indistinguishable from [WOTUS]”
- Wetlands are WOTUS only if they have a “continuous surface connection” to WOTUS such that “there is no clear demarcation between ‘waters’ and wetlands”

USACE 404 Permits: Sackett Decision

- The following waters now have CWA protection:
  - Traditional navigable waters.
  - Relatively permanent, standing, or continuously flowing tributaries of traditional navigable waters.
  - Wetlands with a continuous surface connection to traditional navigable waters or relatively permanent, standing, or continuously flowing tributaries of traditional navigable waters.
  - Intrastate lakes, ponds, streams, or wetlands that are relatively permanent, standing, or continuously flowing and have a continuous surface connection to traditional navigable waters or relatively permanent, standing, or continuously flowing tributaries of traditional navigable waters.

Clean Water Policy 17 (CW17)

- State Waters - Any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.

Clean Water Policy 17 (CW17)

- Enforcement discretion approach in absence of permitting program
- Webpage: https://cdphe.colorado.gov/dredge-and-fill

Clean Water Policy 17 (CW17)

- Enforcement discretion provided if:
  1. Owners/operators notify the division of the dredge and fill activity (form on website)
  2. Discharges would have been eligible for coverage under a USACE nationwide or general prior to Sackett
  3. The division is able to conduct oversight of the project
  4. Protective conditions
     i. "Loss" of state waters must not exceed 0.1 acres wetlands or 0.03 acres streambed

Clean Water Policy 17 (CW17)

- Essentially, owners/operators must function as if they had a USACE permit

CW17 Enforcement Approach

- Policy does not limit or preclude the division from pursuing enforcement options concerning any violations of the WQCA.
  - 25-8-501: Discharge without a permit
  - 25-8-606: Clean up Authority for any material deposited in or near state waters that may pollute them
- Does not change the requirement to obtain and comply with permits for stormwater discharges associated with construction activities.

Questions?

WQCD Permits

401 Certifications

- WQCD Reviews and Issues Certifications
- Required for any federal license or permit which may result in any fill or discharge into Waters of the United States

→ NWPs **DO NOT** require certification by WQCD

→ Individual 404 Permit applicants **MUST** also apply for 401 certification through the WQCD

WQCD Permits

Construction Stormwater

- Authorizes the discharge of stormwater that has come in contact with construction activities to Waters of the State
- Required for Construction Activities:
  - Disturbing 1 acre or more
  - Part of a larger common plan of development disturbing 1 acre or more
- Permit Certified 10 Days Prior to Start

WQCD Permits

Construction Dewatering

Authorizes the discharge of groundwater, surface water and/or stormwater mixed with surface or groundwater comes into contact with construction activities to waters of the state

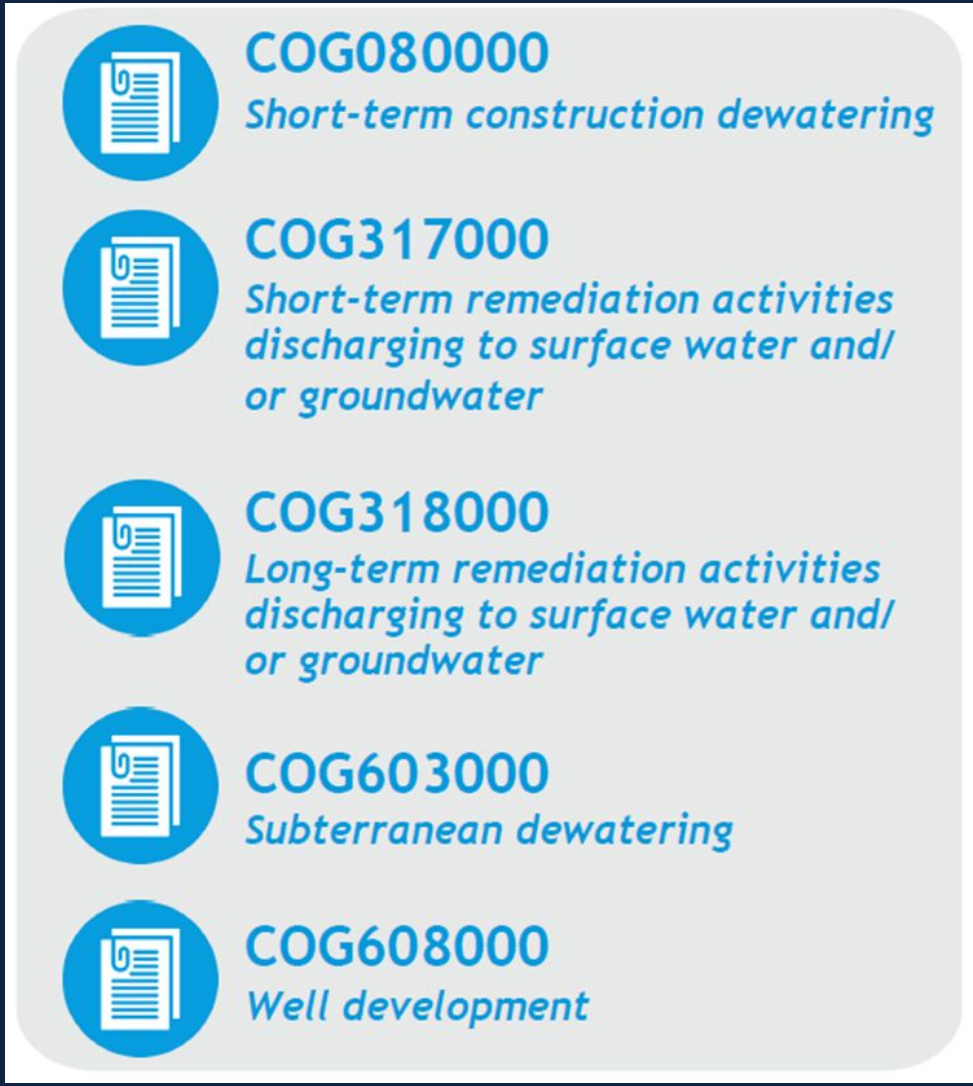
Potential for Remediation

Source water contains a potential level of contamination

Examples:

- Hazardous waste sites, VCUP, Superfund
- LUST, OPS Cleanup
- Dry cleaners, abandoned industrial activities

WQCD Dewatering Permits



Questions?


DOCUMENTATION
COMPLIANCE
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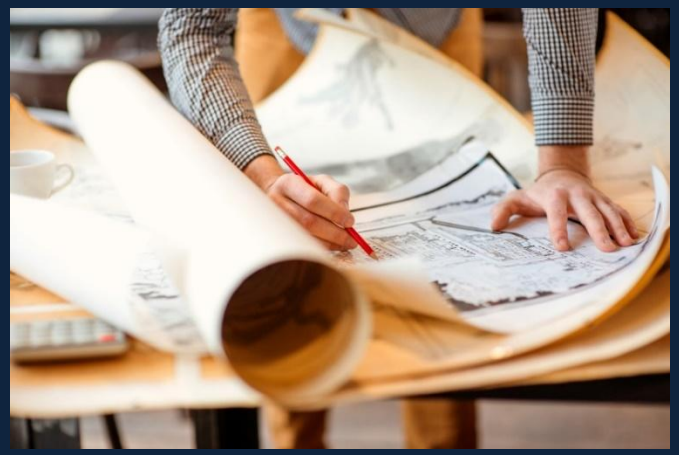
Documentation

- Water Management Plan
  - How will water be “controlled”
- Stormwater Management Plan
  - Implementation Specifications
  - Routine Inspections Reports
- Discharge Logs
  - Records for Monitoring
  - Dewatering Pollutant Control Practices



Design Control Measures

Short-Duration Stream Diversion (April - Oct.)		
Project Duration	3 months	Meets 'Interim Duration' Criteria
Project Time of Year	April - October	
Drainage Basin Area (A)	448	Acres
	0.7	Sq. Miles
Safety Factor (S)	1.5	
Sizing Coefficient (K)	0.5	
Equation TDM-1: Q=S*K*A		
Design Flow Rate (Q)	0.525	cfs

SOURCE: URBAN DRAINAGE SHORT DURATION CALCULATION BOX

Peak-Flow Statistics Flow Report	100 Percent Foothills Region Peak Flow 2016 5099	
Statistic	Value	Unit
2 Year Peak Flood	29.9	ft^3/s
5 Year Peak Flood	96.4	ft^3/s
10 Year Peak Flood	171	ft^3/s
25 Year Peak Flood	303	ft^3/s
50 Year Peak Flood	431	ft^3/s
100 Year Peak Flood	595	ft^3/s
200 Year Peak Flood	791	ft^3/s
500 Year Peak Flood	1110	ft^3/s

SOURCE: USGS STREAMSTATS

ASSUMING A WATERSHED IMPERVIOUSNESS OF ~30% - A MIX OF UNDEVELOPED AREAS AND RESIDENTIAL LOTS

APPROXIMATE 2-YEAR PEAK FLOW RATE OF 75 CFS FOR A TRIBUTARY AREA OF ~0.7 SQUARE MILES

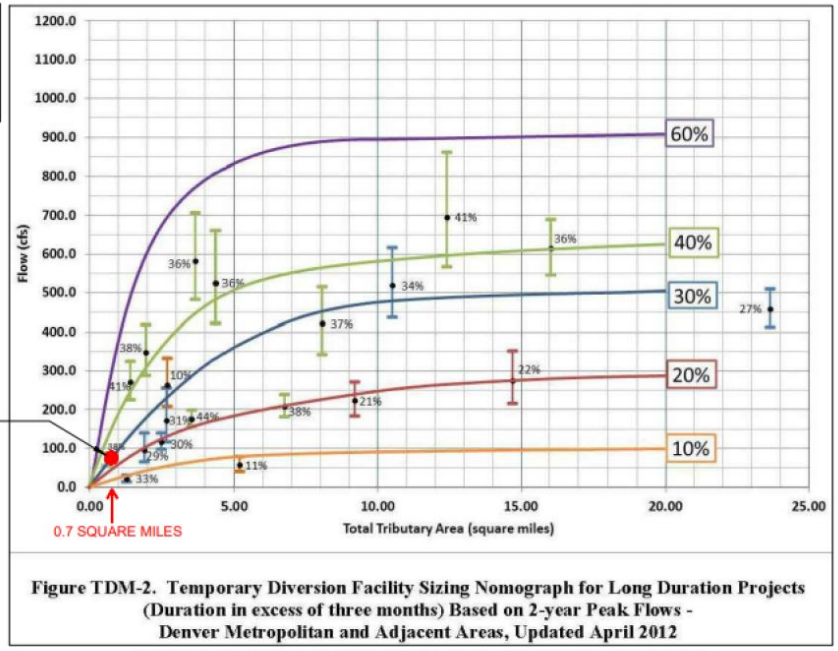
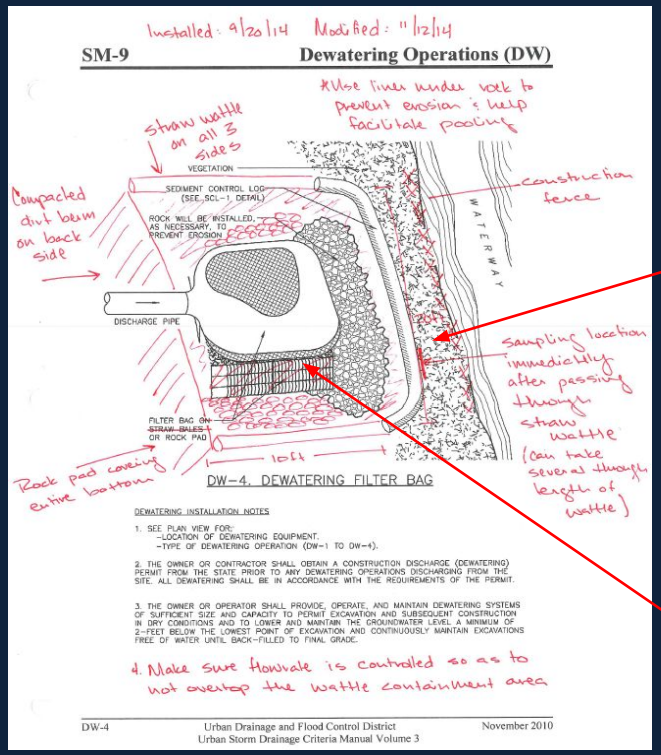
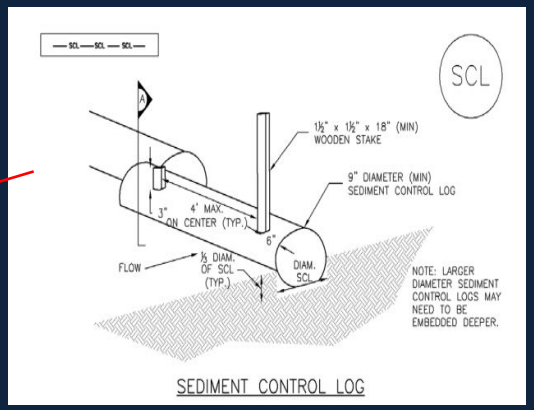


Figure TDM-2. Temporary Diversion Facility Sizing Nomograph for Long Duration Projects (Duration in excess of three months) Based on 2-year Peak Flows - Denver Metropolitan and Adjacent Areas, Updated April 2012

SOURCE: URBAN STORM DRAINAGE CRITERIA MANUAL VOLUME 3

Implementation Specifications

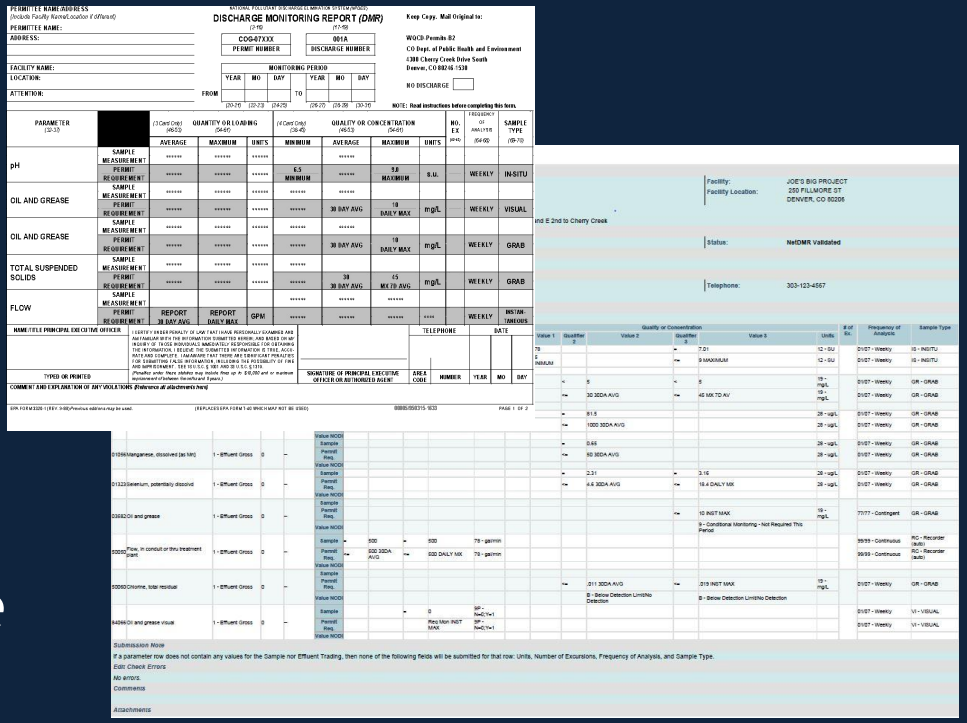




Permittivity	ASTM D 4491	sec^{-1}	1.2
Permeability	ASTM 4491	cm/sec	0.21
Water Flow Rate	ASTM 4491	$l/min/m^2$ ($gal/min/ft^2$)	3866 (95)
Ultraviolet Resistance	ASTM D 4355	%	70
Color			Black

Discharge Monitoring Records

- Must be submitted monthly even if No Discharge to report
- Division is transitioning to *NetDMR*
  - Required by EPA
  - Paper DMRs are being phased out
- Submit by 28th day of the month following the monitoring period



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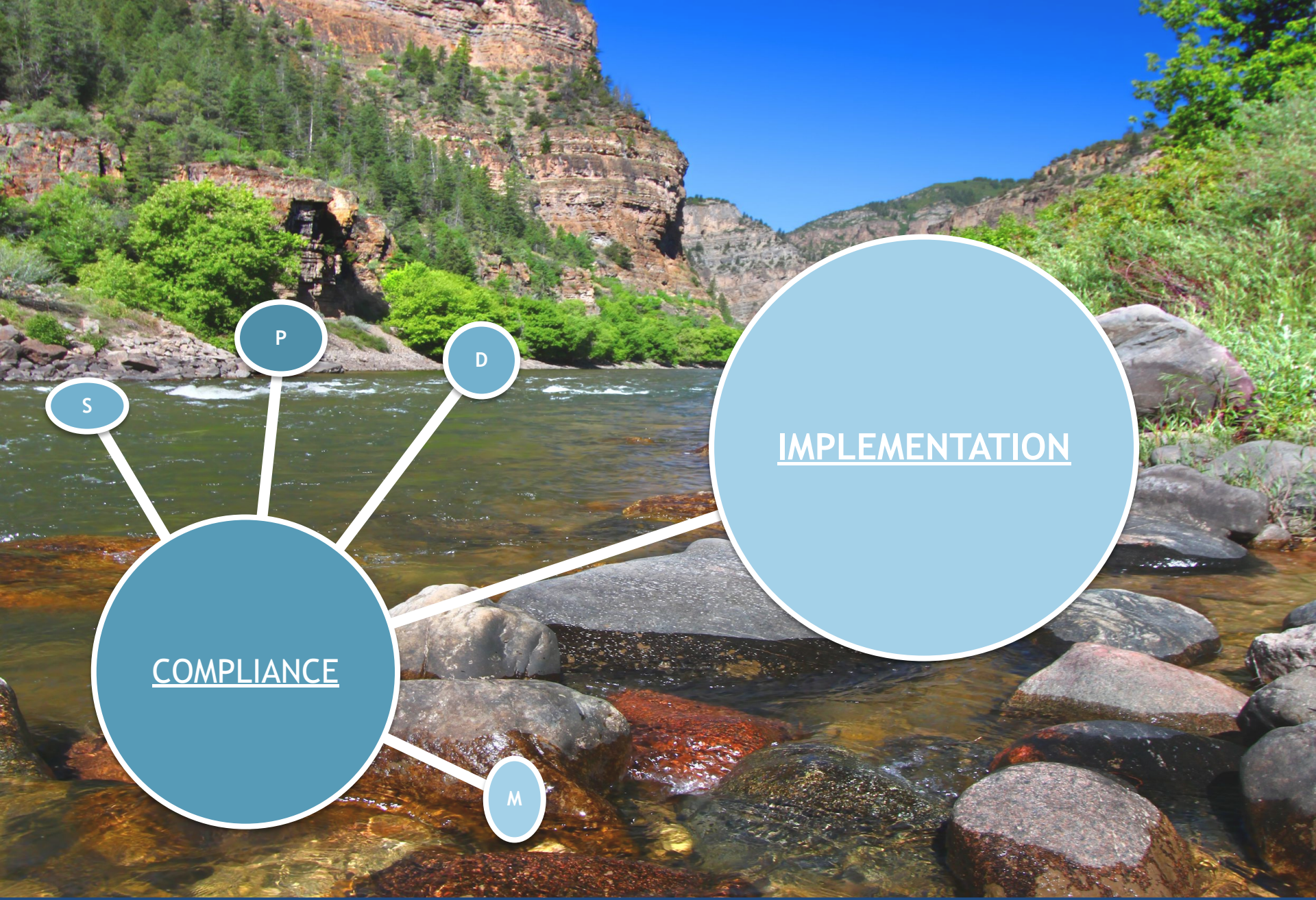

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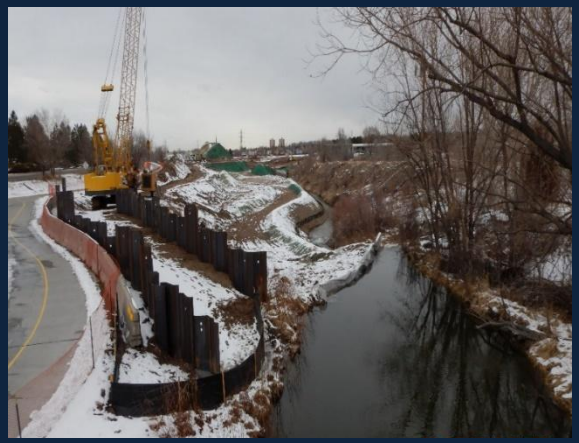
Implement the Plan

Install Control Measures

- Minimize discharge of pollutants
- Install prior to pollutant contributing activities
- In accordance with Good Engineering, Hydrologic and Pollution Control Practices
- Install to specification in plan



Clean Water Diversion

In-Channel Work Area

Natural Non-Erosive Channel Bed

Undisturbed natural stream bank for channel wall.

No additional sediment controls required.

Clean Water Diversion

Clean Water Diversion

Clean Water Diversion

Piped Diversion (48” thick walled fusible plastic)

Protected Outfall

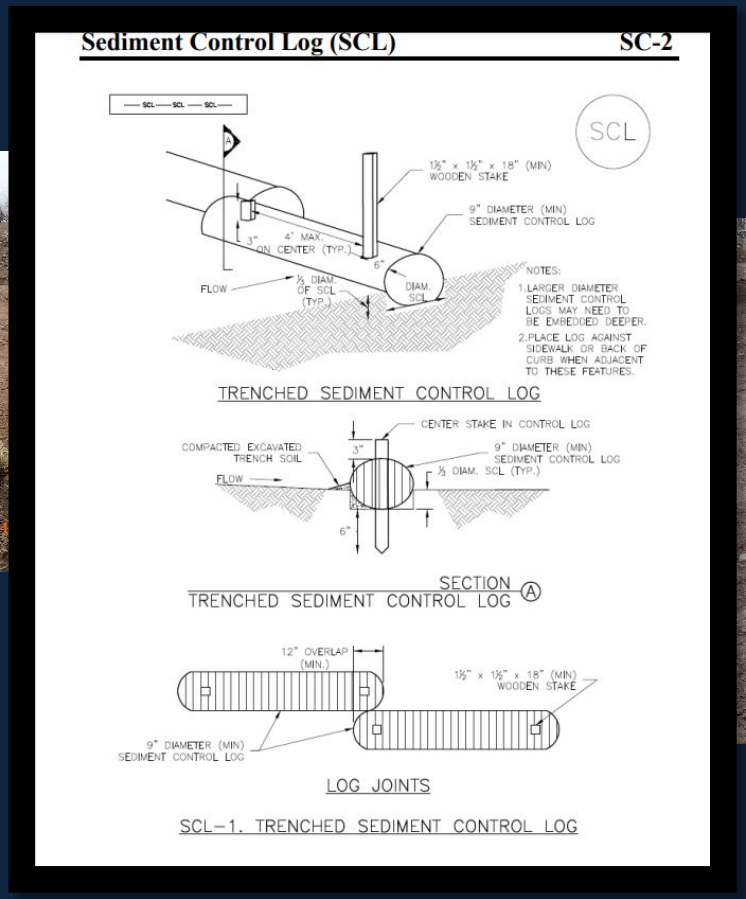
Dry Work Area

Clean Water Diversion

Temporary Stream Crossing

Adequately Sized for
Flow AND Traffic

Importance of Specifications



Sediment Control Log (SCL) **SC-2**

SCL

1½" x 1½" x 18" (MIN) WOODEN STAKE

9" DIAMETER (MIN) SEDIMENT CONTROL LOG

3" 4" MAX. ON CENTER (TYP.)

6"

FLOW

⅓ DIAM. OF SCL (TYP.)

DIAM. SCL

NOTES:
1. LARGER DIAMETER SEDIMENT CONTROL LOGS MAY NEED TO BE EMBEDDED DEEPER.
2. PLACE LOG AGAINST SIDEWALK OR BACK OF CURB WHEN ADJACENT TO THESE FEATURES.

TRENCHED SEDIMENT CONTROL LOG

CENTER STAKE IN CONTROL LOG

COMPACTED EXCAVATED TRENCH SOIL

3"

9" DIAMETER (MIN) SEDIMENT CONTROL LOG

FLOW

⅓ DIAM. SCL (TYP.)

6"

SECTION Ⓐ
TRENCHED SEDIMENT CONTROL LOG

12" OVERLAP (MIN.)

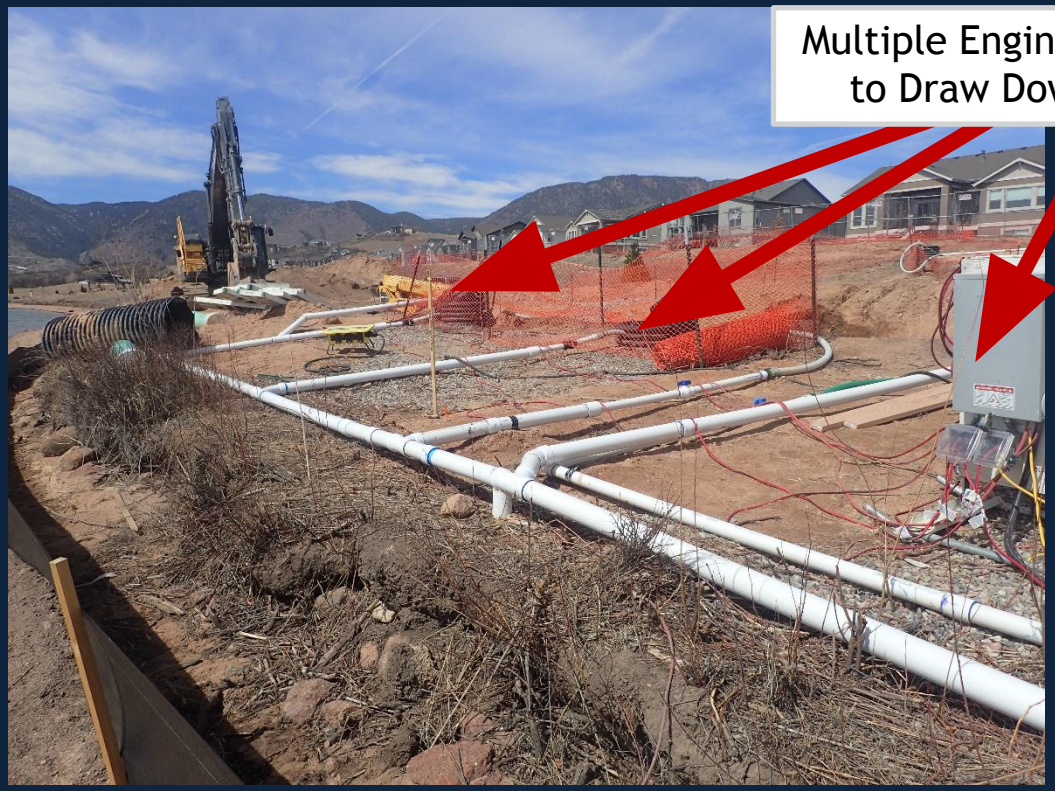
1½" x 1½" x 18" (MIN) WOODEN STAKE

9" DIAMETER (MIN) SEDIMENT CONTROL LOG

LOG JOINTS

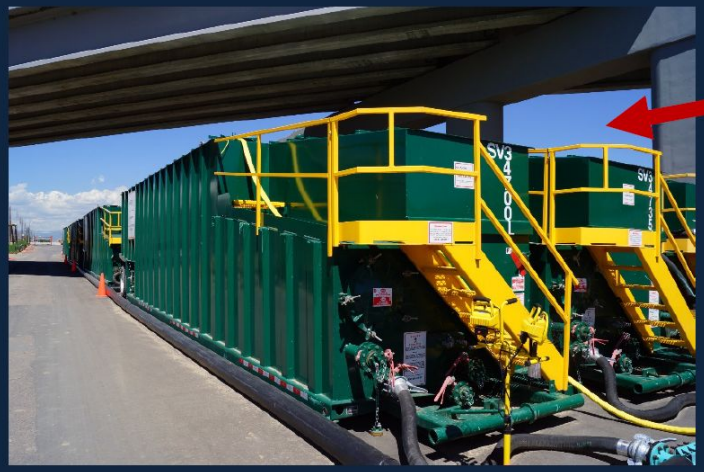
SCL-1. TRENCHED SEDIMENT CONTROL LOG

Dewatering Systems



Dewatering Systems

Remediation Treatment

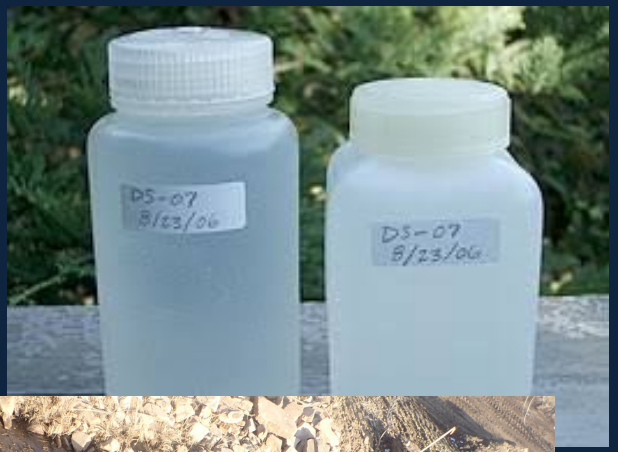


Remediation Baker Tanks

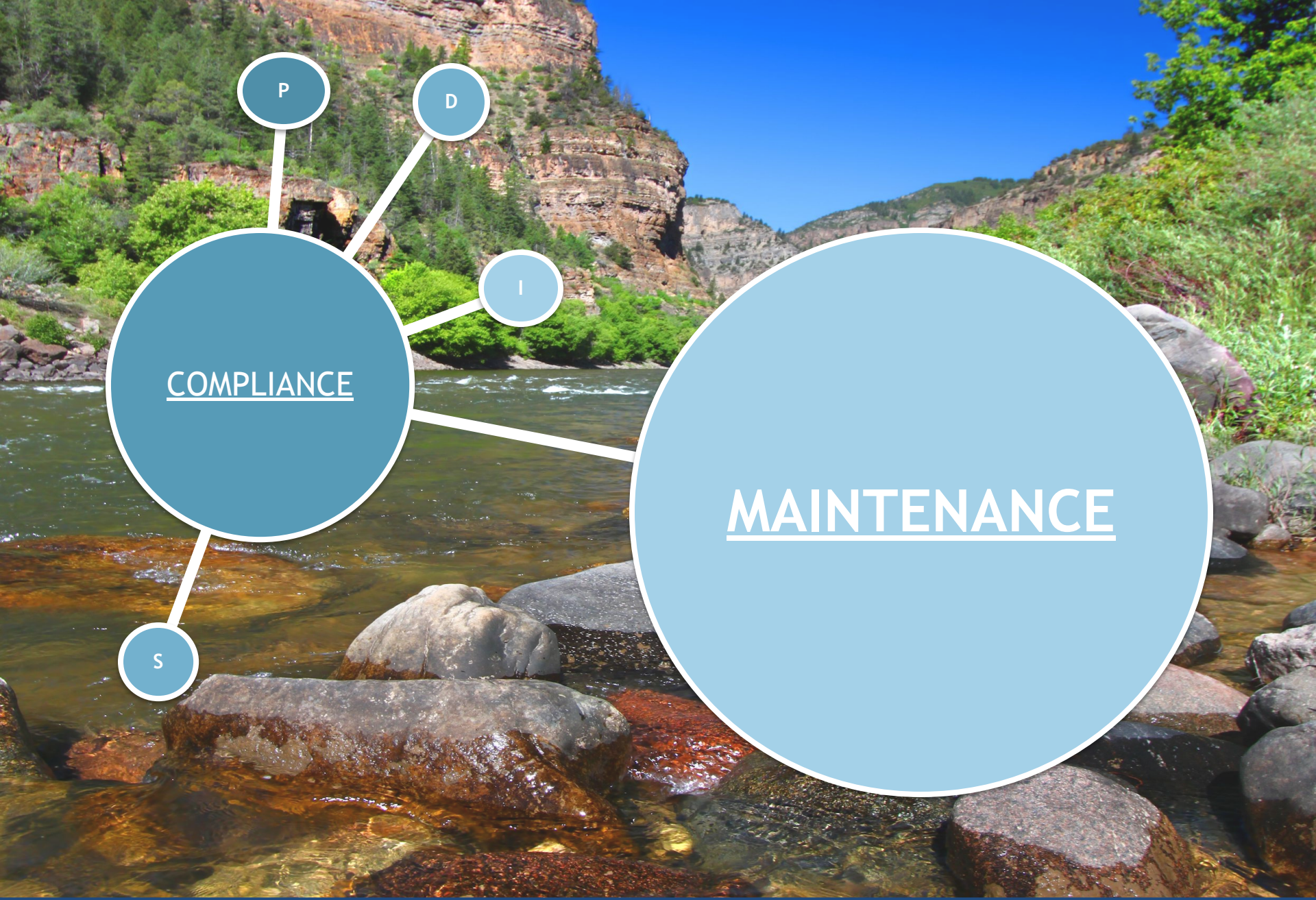
4-Pod Sand Filters

Protect Outfalls

Sampling



Questions?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Inspections

INSPECT the Site to Identify:

- Control measures needing routine maintenance
- Inadequate control measures requiring corrective action

Control Measures Requiring Corrective Action

Look for Control Measures that are:

- not implemented for pollutant source
- not installed to specification
- not functioning as intended
- not in accordance with good engineering, hydrologic, and pollution control practices

Control Measures Requiring Corrective Action

Issue: Control Measures were NOT IMPLEMENTED for pollutant source (disturbed soils)

Corrective Action: Install sediment control measure or stabilize

Control Measures Requiring Corrective Action

Issue: Control Measures were NOT MAINTAINED for pollutant source

Corrective Action: Repair/Replace Liner

Control Measures Requiring Corrective Action

Issue: Control Measures were NOT INSTALLED to specification or in accordance with good engineering, hydrologic and pollution control practices

Corrective Action: Re-install control measures

Control Measures Requiring Corrective Action

Issue: Discharge resulted in erosion of sediment

Maintenance: protect outfall to prevent erosion; install additional control measures

Maintain Documentation

- Update Site Map
- Sign Inspection Records
- Submit Discharge Monitoring Records
- Add Implementation Specifications for New Control Measures
- Review Plans for Adequacy

Questions?


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COMPLIANCE
STABILIZATION

Stabilization

Temporary Stabilization

- Implement within 14 calendar days
- Alternative schedule
  - Function of specific area requires it to remain disturbed
  - Terrain and climate prevent stabilization
  - Must Document in SWMP

Final Stabilization

- Designed and installed as permanent feature
- Remove ALL temporary control measures
- All vegetated areas achieve 70% pre-existing

Temporary Stabilization Methods

Mulching/
Tackifier

Tracking

Blanketing/
Terracing

Surface
Roughening

Final Stabilization Methods

Final Stabilization Methods

Compliance is ACHIEVABLE!!

Navigate to Successful Compliance through:

- Permitting
  - Apply for Correct Permits
- Documentation
  - Develop Thorough Site Specific Documentation
- Implementation
  - Implement the Plan
- Maintenance
  - Perform Maintenance, rinse and repeat!
- Stabilization
  - Implement and Achieve Stabilization

Questions?

Contact Information

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(email is preferred communication method)