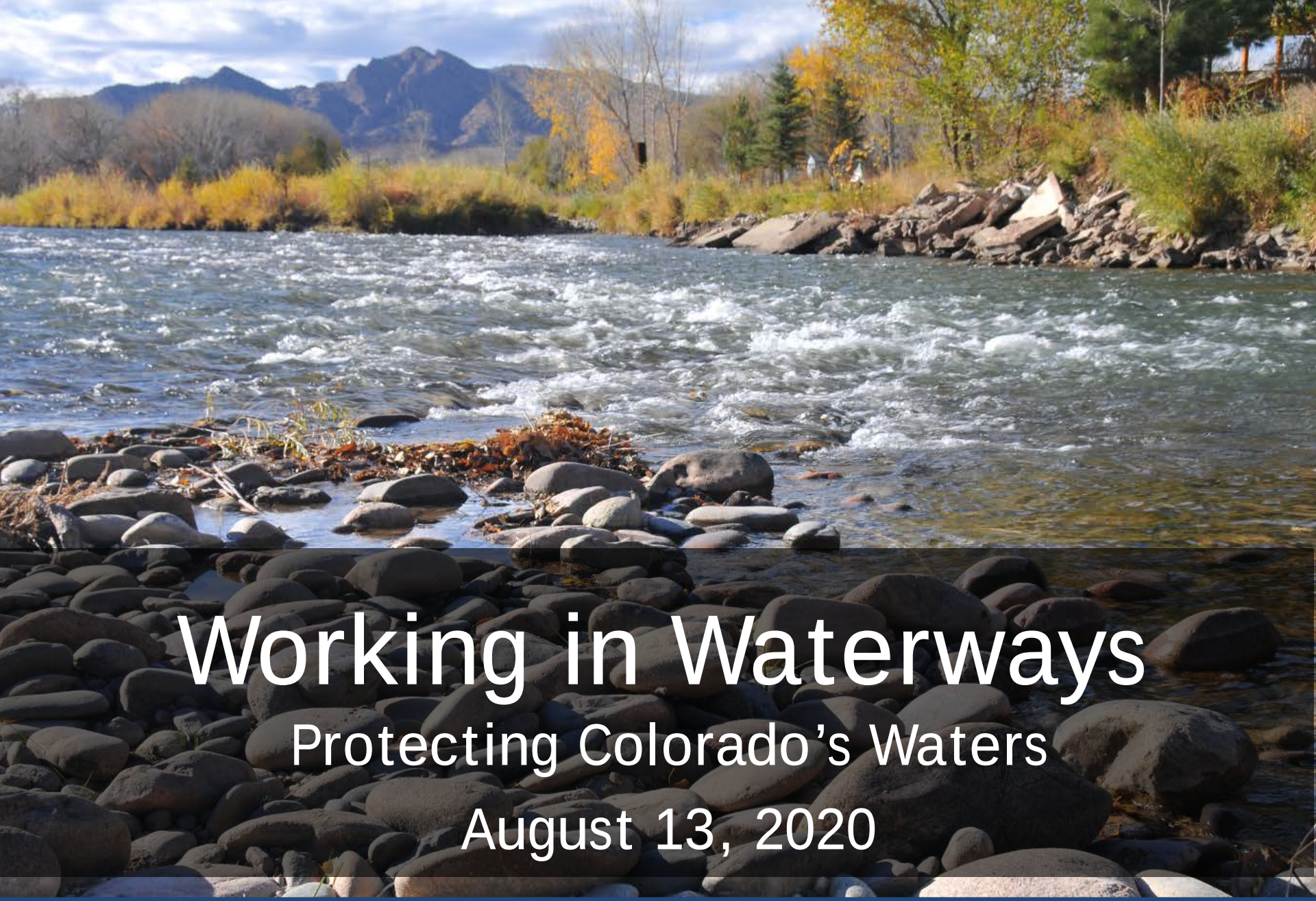


Working in Waterways

Protecting Colorado's Waters

August 13, 2020

COLORADO
Department of Public Health & Environment

Agenda

9:00 – 10:00am Working in Waterways Overview

10:00 – 11:30am USACE Permitting

11:30 – 12:00pm Q & A Session

12:00 – 1:00pm Lunch Break

1:00 – 1:30pm Boulder County Requirements

1:30 – 3:30pm CDPS Permitting

3:30 – 4:00pm Q & A Session

Working in Waterways

Increase of Projects In and Around Waterways

- Flood Repairs
- Stream Management
- Stream Restoration
- Capital Improvement Projects
- Roadway and Bridge Projects

Difficulties of Projects

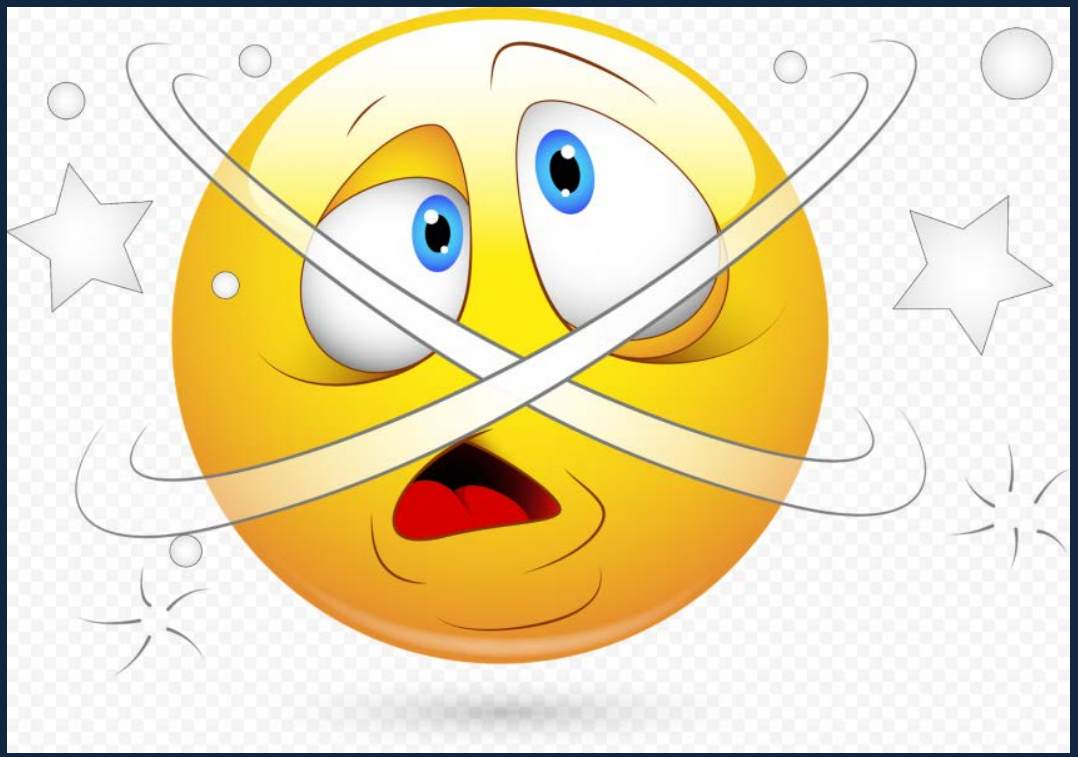
- Live Water
  - Aquatic Habit
  - Fluctuating Water Levels

Difficulties of Projects

- Tight Work Areas

Difficulties of Projects

- Multiple Permits & Regulatory Agencies
  - Federal (404, Fish & Wildlife)
  - State (Construction Stormwater, Dewatering)
  - Local (MS4)



This Training is Here to Help!

- Better Understand Complications
- Raise Awareness
- Create Change
- Provide Pathway to Compliance

<u>COMPLIANCE IS ACHIEVABLE</u>

Let's Start at the Beginning

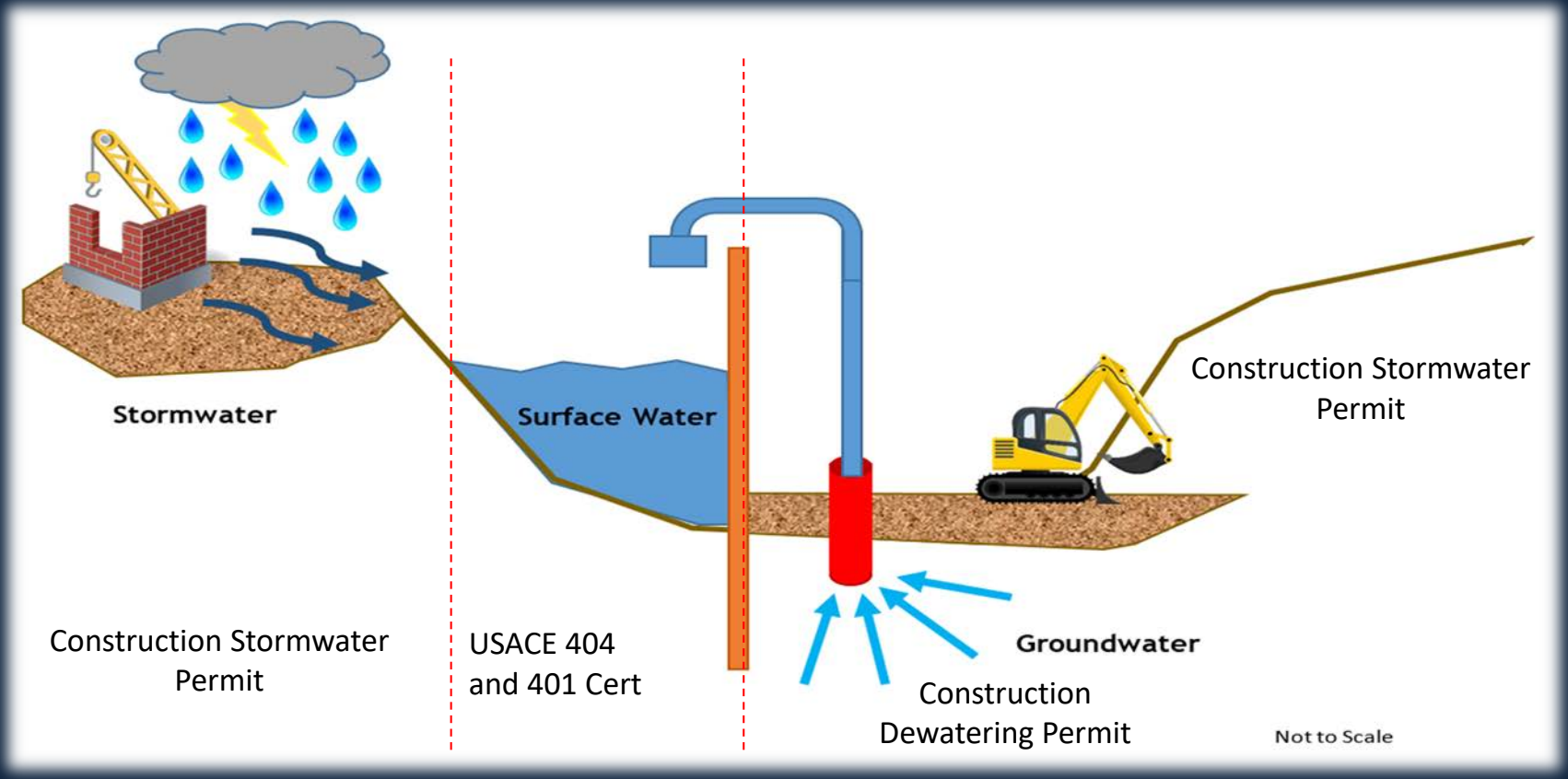
- Compliance Starts in the Design Process
  - Compatible with Watershed
  - Complies with Water Quality Requirements
  - Constructible & Functional

- Collaboration is Key to Success!
  - Owner & Operator are now Co-Permittees

Water Control Plan

- What Permits are Required?
- Identify Resources to Protect
- Stormwater Management Plan
  - Phasing/Sequencing of Work
  - Control Measures
  - Diversions
  - Stream Crossings
  - Stabilization Methods
- Dewatering Plans
- GESC

How Do Permits Relate in Field?




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

Understanding Permits

1. Waters of the State – CDPS Permits
2. Waters of the US – USACE Permits
3. Control Measures – CDPS and USACE Permits
4. Pollutants - CDPS and USACE Permits

Waters of the State

State Waters – *Any and all* surface and subsurface waters which are *contained in* or *flow in or through* the State, but does ***not*** include:

- waters in sewage systems,
- waters in the treatment works of disposal systems,
- waters in potable water distribution systems, and
- all water withdrawn for use until use and treatment have been completed.

Waters of the State

USACE Regulatory Branch

Mission Statement:

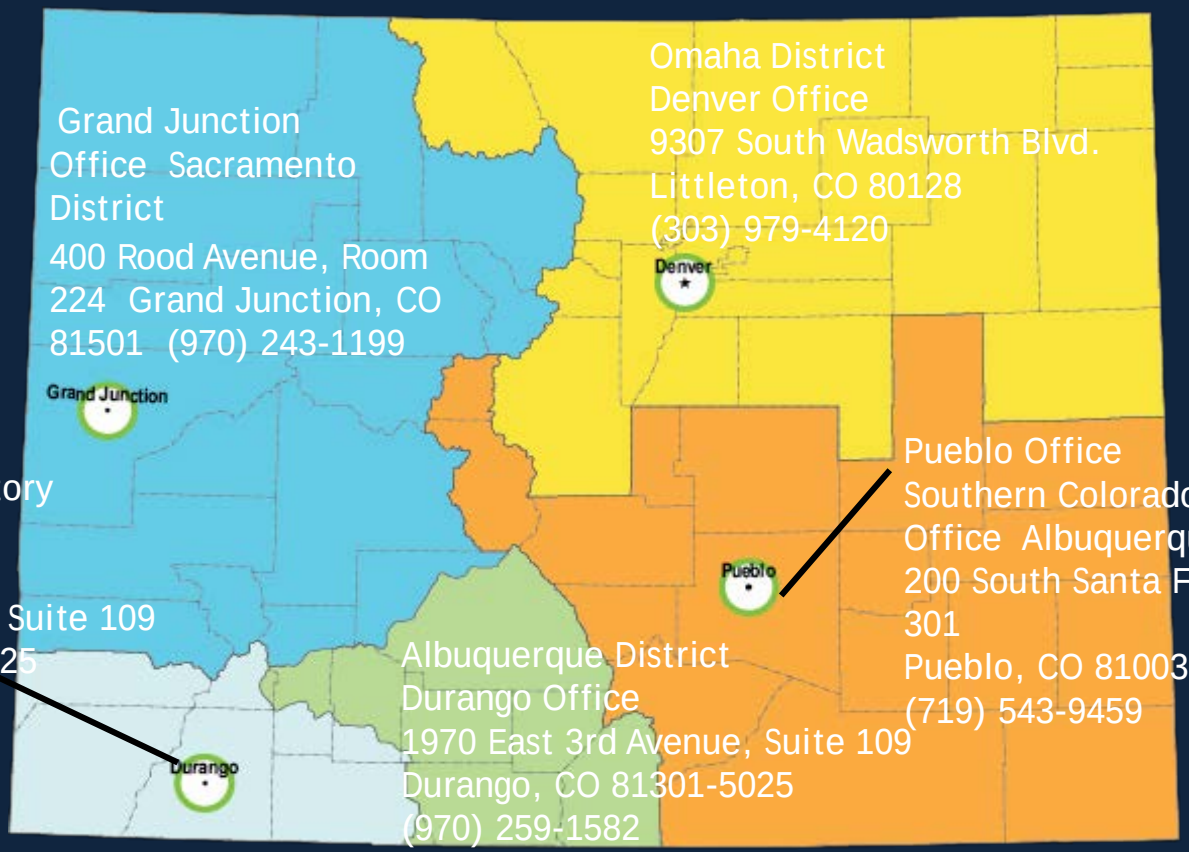
To protect the Nation's aquatic resources and navigation, while allowing reasonable development through fair and balanced permitting decisions

Points of Contact:

Nick Franke, USACE Regulatory Project Manager

Brooke Davis, USACE Senior Regulatory Project Manager/Denver Regulatory Office Enforcement Coordinator

USACE Regions



Waters of the US

The definition is somewhat complicated…

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries

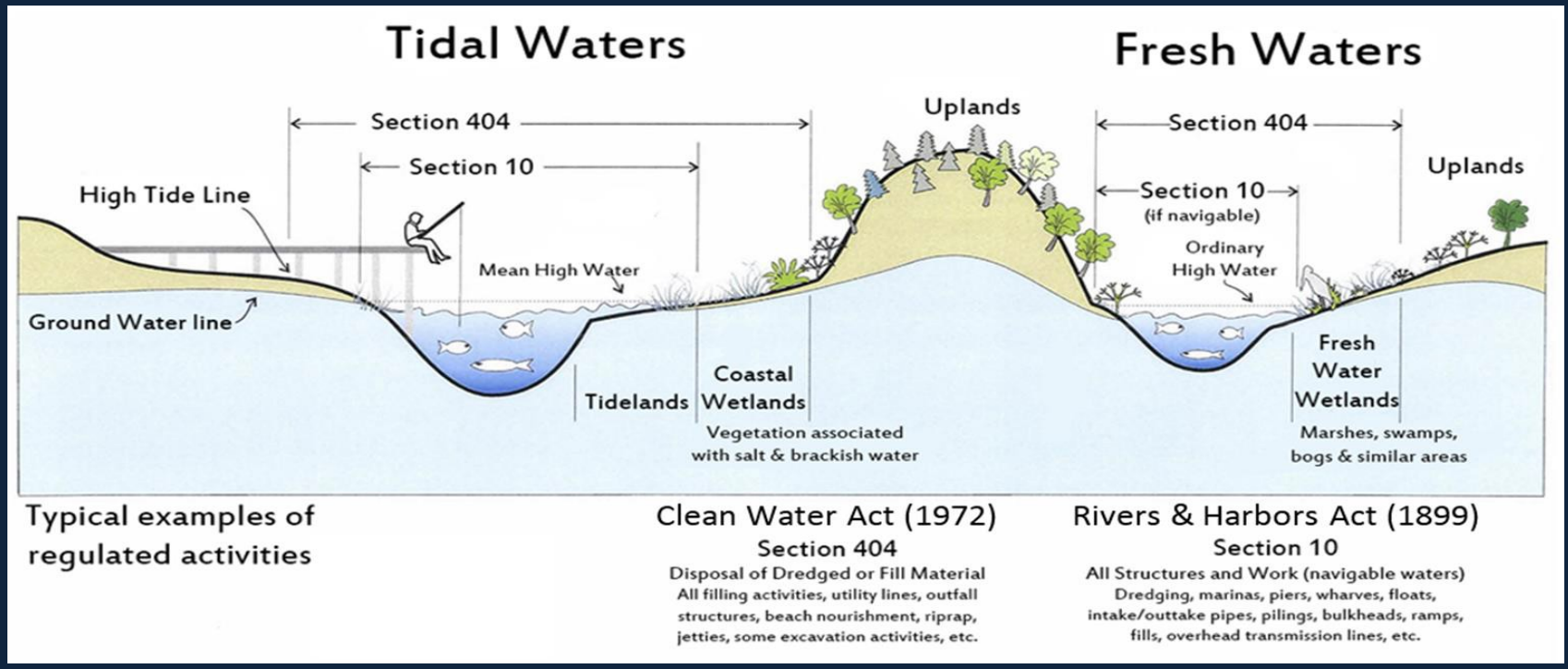
Waters of the US

In General

- Case by case determinations
- Most of the named streams are considered Waters of the US
- Wetlands that are adjacent to Waters of the US
- Agriculture ditches - some may NOT be considered Waters of the US

Waters of the US

Jurisdictional Cross Section



Waters of the US

Non-Tidal Limits of Geographic Jurisdiction

Ordinary High Water Mark (OHWM)

Line on the shore established by the fluctuations of water and indicated by physical characteristics
Applies to jurisdictional rivers, lakes, streams, etc.

Wetlands

Determined by using the 1987 Corps of Engineers Wetland Delineation Manual and Regional Supplements. Wetland indicators are vegetation, soils, and hydrology.

Hydric soils

Vegetation

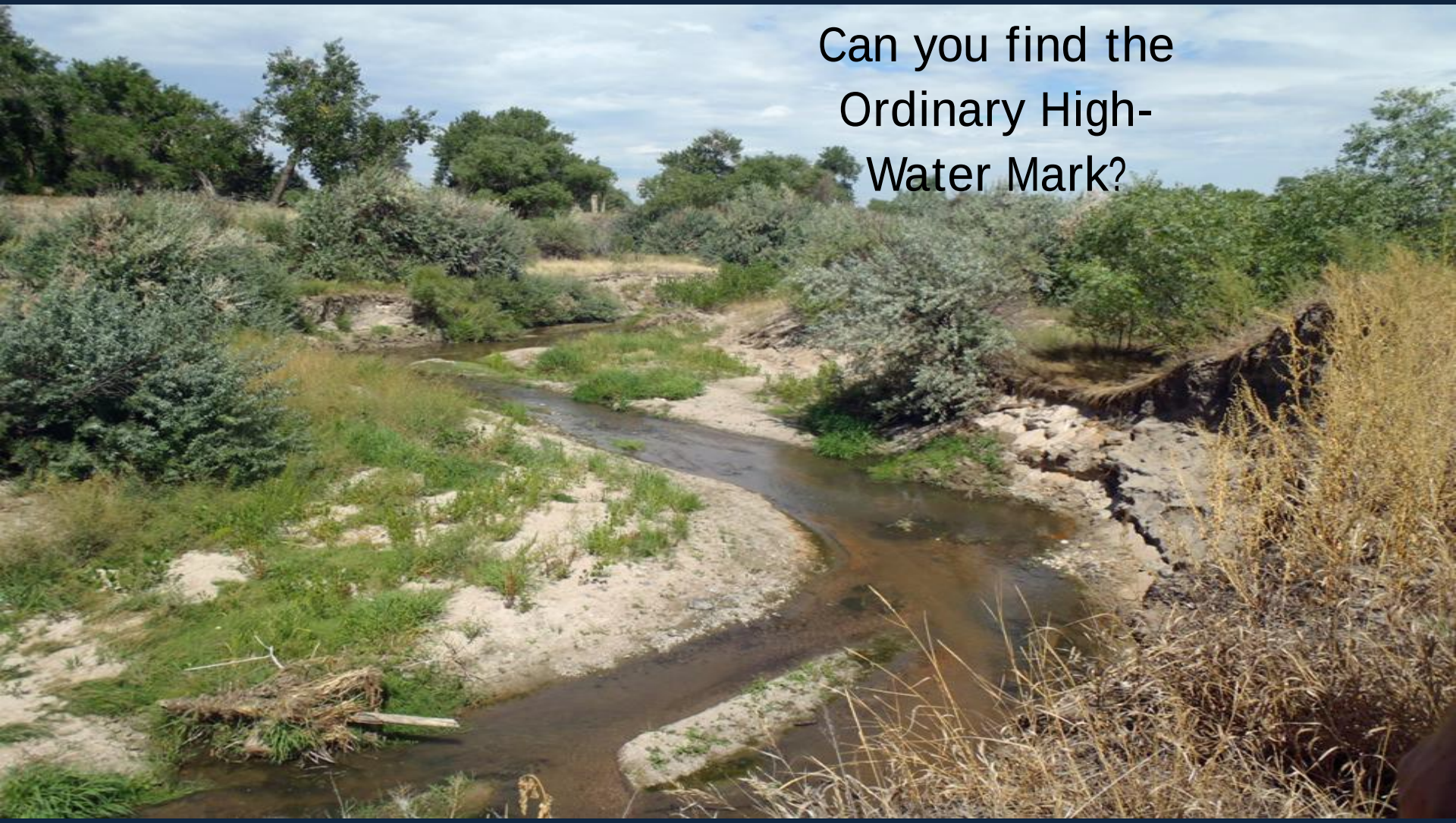
Hydrology

Ordinary High Water Mark

Feature	Description	Interpretations
Drift/wrack	Debris deposited as streamflow recedes (typically during/following flood events); commonly forms linear features or piles and often collects on the upstream side of inundated vegetation or other flow barriers	May indicate the spatial extent of a recent flow event; a concentration of drift features may suggest relatively frequent inundation.
Erosion/scour	The removal of sediment or rock due to mechanical forces (e.g., water or wind)	Typically occurs within the active channel (i.e., below the OHWM) but can also result from extreme flood events or non-fluvial processes.
Bank undercutting	Erosion of channel banks beneath the ground surface such that a "roof" of sediment, roots, etc., remains	Typically occurs within the active channel (i.e., below the OHWM); more commonly in entrenched streams.
Root exposure	Exposure of previously buried roots due to erosion; common along active channel banks, particularly on the outside of bends (meanders)	Suggests the presence of active erosional processes; can also result from infrequent flood events.
Point bars	Depositional features found on the inside of stream bends (meanders).	Suggests relatively frequent inundation; the tops of point bars typically occur below the OHWM.
Water staining	Staining or discoloring of natural (e.g., bedrock) or man-made (e.g., bridges) objects due to the frequent presence of water.	In bedrock or colluvial channels or confined reaches where primary indicators cannot develop, water stains are sometimes the best or only indicator of ordinary flow conditions. However, they may indicate the most frequently experienced flow level (e.g., mean flow) rather than the ordinary extent of high flows, or they may indicate the spatial extent of a recent flood.
Litter removal	The removal of leaves, needles, and other organic ground cover due to flowing water	May indicate the extent of recent flows (depending on the time of year) or may be useful for verifying streamflow in small or hard-to-detect streams.
Silt deposits	Deposition of fine sediments	Generally depositional features rather than erosional ones. Silt deposits found on a floodplain often stand in contrast to the relatively course substrate of the active channel.
Shelving	The presence multiple "benches" and breaks in slope along the margins of the active channel.	Suggests downcutting of the active channel. The lowest bench may represent an emerging floodplain.
Headcut/ knickpoint	An abrupt vertical drop in the stream bed that typically migrates upstream	Sometimes indicates the upper, longitudinal extent of a headwater stream and the OHWM (i.e., the point of stream initiation).
Macro-invertebrates	Invertebrates (animals lacking vertebral columns) that are visible to the naked eye (e.g., aquatic insect larvae, clams, crayfish, aquatic worms, etc.)	Certain aquatic species and aquatic life stages of macroinvertebrates have been found to be strongly tied to streamflow permanence (i.e., ephemeral vs. intermittent vs. perennial) in the Pacific Northwest (Mazzacano and Black 2008, Nadeau 2011, Blackburn and Mazzacano 2012).


Can you find the Ordinary High-Water Mark?


Can you find the Ordinary High-Water Mark?


Can you find the Ordinary High-Water Mark?


Can you find the Ordinary High-Water Mark?
04/21/2009


Can you find the
Ordinary High-
Water Mark?

WOTUS in the News

- 2015 Rule repealed
- Currently enforcing definitions decided in *Rapanos v. US.*
- 2019 "Trump Rule" set to take effect mid-April

Waters of the US

What does this mean for work in waterways?

- When rules change it does not nullify previous determinations
- Still issuing 404 permits
- Jurisdictional issues may come up
- Best way to know -> “Approved Jurisdictional Determination”

- **NO STATUTORY TIMEFRAME FOR APPROVAL OF JDs**

Key Authorities of USACE

Section 10 - Rivers and Harbors Act of 1899
USACE authorizes:
structures and work in
navigable waters of the U.S.

Section 404 – Clean Water Act
USACE authorizes:
the discharge of dredged or fill material
into waters of the U.S.

Types of Corps Permits

- Individual/Standard (IP/SP)
- General
  - Nationwide (NWP)
  - Regional (RGP)
  - Programmatic (PGP)
- Letter of Permission (LOP)

When is a 404 Permit Needed?

- Clean Water Act passed by U. S. Congress in 1972
- Administered by EPA and Corps
- Requires a permit from the Corps of Engineers to place fill material into a jurisdictional wetland or waterway
- Any person, firm, or agency who will place fill material in waters of the United States, must first obtain Section 404 Authorization from the Corps of Engineers

Authorizes the discharge of dredged and fill material into waters of the US

When is a 404 Permit Needed?

Geography – Is this area regulated?

Activity – Is this action regulated by the Corps?

A permit is needed if an activity is regulated (not exempt) within certain waters.

Section 404 of the CWA

Non-Regulated Activities

No Authorization Required
Excavation only:

- Pure excavation is not regulated
- Only “incidental fallback” is allowed
- Use backhoe or front-end loader, no dozers
- The excavated material will be placed in uplands

Any work performed outside of waters of the U.S.
404(f) exemptions

If EVER in doubt, call the USACE and discuss – YOU DON’T WANT A VIOLATION!!!

Important Definitions

Dredged – material that is excavated or dredged from Waters of the United States
Fill – material placed in Waters of the US where the material either
- replaces any portion of a Water of the US with dry land; or
-changes the bottom elevation of any portion of a Water of the US.
Discharge - any addition of dredged or fill material into Waters of the US.

General Permits (Nationwide or Regional)

- Activity specific
- Minimal impacts (typically <0.5-acre, 300 or 500 lf)
- May or may not require a Pre-Construction Notification (PCN)
- 60 days from a “Complete Application”
- All Nationwide Permits are re-issued every 5 years

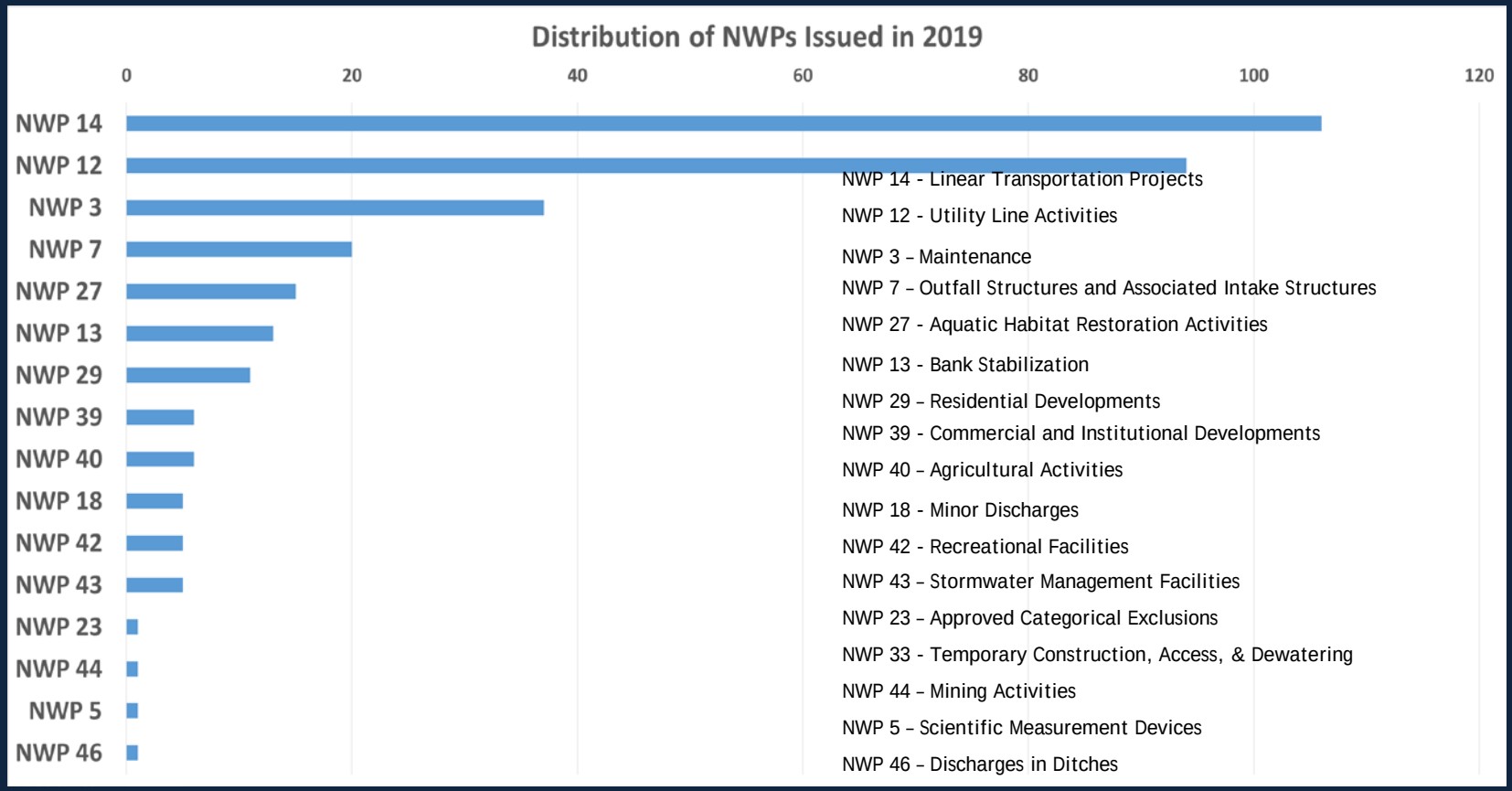
98% of authorizations in FY2019 were GPs
91% were verified in 60 days or less

Nationwide Permits

- Why do we have these types of permits?
- How do they work?
- What type of restrictions do Nationwide permits have?
- How many Nationwide permits are there?

Frequently Used NWPs

NWP 3 - Maintenance
NWP 12 - Utility Line Activities
NWP 13 - Bank Stabilization
NWP 14 - Linear Transportation Projects
NWP 18 - Minor Discharges
NWP 27 - Aquatic Habitat Restoration Activities
NWP 33 - Temporary Construction, Access, & Dewatering
NWP 39 - Commercial and Institutional Developments
NWP 42 - Recreational Facilities
NWP 45 - Repair of Uplands Damaged by Discrete Events


Distribution of NWPs Issued in 2019
0
20
40
60
80
100
120
NWP 14
NWP 12
NWP 3
NWP 7
NWP 27
NWP 13
NWP 29
NWP 39
NWP 40
NWP 18
NWP 42
NWP 43
NWP 23
NWP 44
NWP 5
NWP 46
NWP 14 - Linear Transportation Projects
NWP 12 - Utility Line Activities
NWP 3 – Maintenance
NWP 7 – Outfall Structures and Associated Intake Structures
NWP 27 - Aquatic Habitat Restoration Activities
NWP 13 - Bank Stabilization
NWP 29 – Residential Developments
NWP 39 - Commercial and Institutional Developments
NWP 40 – Agricultural Activities
NWP 18 - Minor Discharges
NWP 42 - Recreational Facilities
NWP 43 – Stormwater Management Facilities
NWP 23 – Approved Categorical Exclusions
NWP 33 - Temporary Construction, Access, & Dewatering
NWP 44 – Mining Activities
NWP 5 – Scientific Measurement Devices
NWP 46 – Discharges in Ditches

NWP Selected General Conditions

GC 2 – Aquatic Life Movement

GC 9 – Management of Water Flows

GC 12 – Soil Erosion and Sediment Control

GC 18 – Endangered Species

GC 20 – Historic Properties

GC 23 – Mitigation

GC 31 – Pre-construction Notification (PCN)

Regional Conditions of NWP

What regional conditions **apply?**

RC #5 – Important Spawning Areas
RC #6 - Fens
RC #7 - Springs
RC #8 – Suitable Fill
4 other RCs apply to specific NWPs/activities;

Check with USACE if you have questions!

CO's Regional Conditions include protections for specific types of aquatic resources:

- Aquatic nuisance species prevention
- Critical Resource Waterways
- Gold Medal (important spawning areas)

Regional General Permits

- Why do we have these types of permits?
- How do they work?
- What type of restrictions do they have?
- 4 RGPs in Denver right now

Regional General Permits

https://www.nwo.usace.army.mil/Missions/Regulatory-Program/Colorado/Regional-General-Permits/

Denver Regional General Permits

Permit #	Activity	Applicant	Expires
RGP 12-DEN	Aquatic Habitat Improvement for Stream Channels in Colorado	General Public	10/21/2021
RGP 96-DEN	Natural Disaster Mitigation and Flood-Related Activities in Colorado	General Public	7/31/2021
RGP-7-DEN	Channel Maintenance and Construction on Tributaries to the South Platte River	Urban Drainage and Flood Control District	1/6/2022
RGP-37-DEN	Stream Stabilization Projects in Colorado	General Public	10/2/2022

Individual 404 Permits

- More than minimal impacts
- Full public interest review
- 22 different factors
- Agency coordination
  - USACE
  - EPA
  - WQCD
- Fish & Wildlife
- 401 Water Quality Certification from WQCD
- 120 days from a “Complete Application”
- Separate Special and General Conditions for Individual Permit
- Requires an Alternatives Analysis (NEPA)

Section 401 Water Quality Cert

Projects authorized by General Permits in the State of Colorado have been certified by statute. Pursuant to section 25-8-302(1)(f) Colorado Revised Statute, General or Nationwide permits under Section 404 of the Federal Act are certified without the addition of BMPs or other conditions, and no further action on such permits by the applicant or the Colorado Water Quality Control Division is required. (From Colorado Department of Public Health and Environment – Water Quality Control Commission, Regulation No. 82, 5 CCR 1002-82).

401 WQCs pertain to the quality of the actual water within a WOTUS

Section 401 Water Quality Cert

- Individual Permits are not valid until individual 401 certifications are received from the CDPH&E
- IPs contain conditions relating to water quality
  - Prevent oils/petroleum products from entering
  - Spill prevention and cleanup
  - Minimizing turbidity
  - Erosion protection
  - etc.

Applying for a 404 Permit

The application must include a statement describing how impacts to waters of the United States are to be avoided and minimized

The application must also include either:

a)statement describing how I impacts to waters of the United States are to be compensated for

b) statement explaining why compensatory mitigation should not be required

Applying for a 404 Permit

Statutory Timeframes:

- 60 days for General Permits
- 120 days for Individual Permits

Clock starts when application is federally COMPLETE!

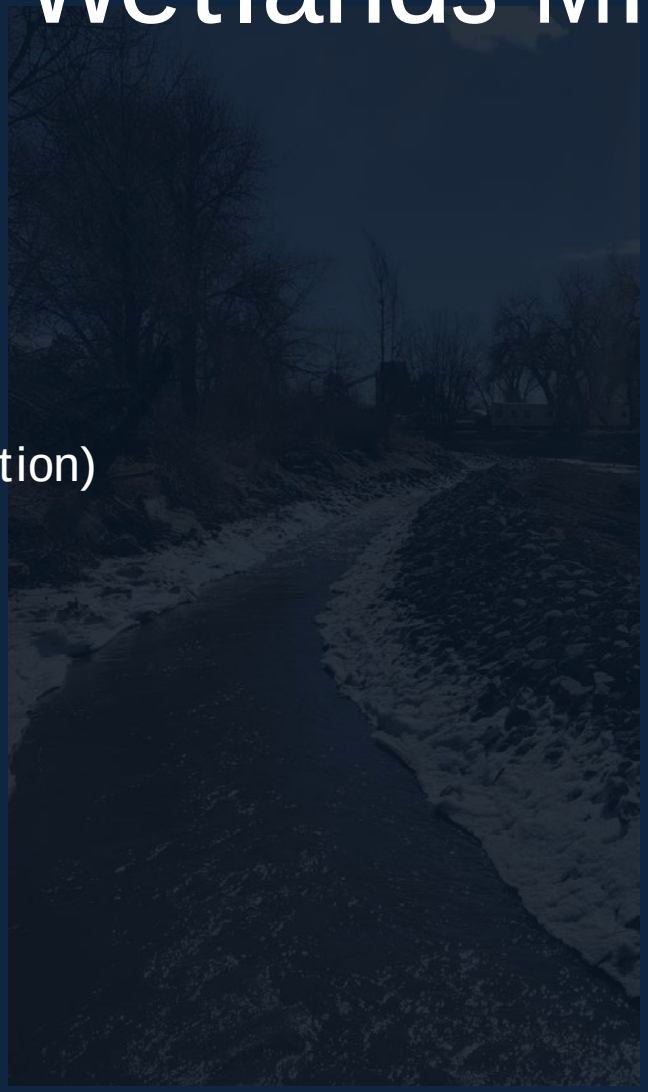
Applying for a 404 Permit

Methods for Compensating (33 CFR 332)

- On-site or off-site permittee-responsible
- Mitigation banks
- In-lieu fee mitigation

Wetlands Mitigation

Methods
Enhancement
Establishment (creation)
Preservation
Restoration
Re-establishment
Rehabilitation



Mitigation Plan Components
Objectives
Site selection
Site protection instrument
Baseline information
Determination of credits
Mitigation work plan
Maintenance plan
Performance standards
Monitoring requirements
Long-term management plan
Adaptive management plan
Financial assurances

Wetlands Mitigation Monitoring

USACE Compliance Oversight

- 10% Compliance Inspections
- Permits
- Mitigation Banks and Sites
- Random/unannounced inspections
- Certain projects may be targeted
- Stealth mode – You may have had inspection and you didn't even know
- Inspections are very different than WQCD inspection
- Investigation of complaints

USACE Inspection Process

- Permit gives USACE permission to enter site at any time
- Take project file (plans/designs) to site
- Has project been constructed as planned?
- No report
- If findings of non-compliance the permittee is notified
- Permittee should respond with corrective actions
- Unresolved non-compliance actions are subject to administrative penalties

USACE Enforcement

Permit Compliance

- Not in compliance with the terms and conditions of the issued permit(s)

VS

Unauthorized Activities

- Performed without the required permit(s)

USACE Enforcement

Project that was determined in Non-compliance with General Condition 12. Soil Erosion and Sediment Controls of the Nationwide Permits

- Permit Compliance
  - Section 404(s) – "Any person…in violation of any [permit] condition or limitation…" is subject to non-compliance actions
  - Gives us the authority to require compliance with Corps-issued permits via orders and penalties
  - Typically, the EPA is not involved

USACE Enforcement

GC 12 - Soil Erosion and Sediment Controls

Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

USACE Enforcement

Project that was determined to be in Non-Compliance with General Condition 2 - Aquatic Life Movements

USACE Enforcement

GC 2 - Aquatic Life Movements

No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

What is a Violation?

Unauthorized Activities

- Section 404(a) - "The Secretary may issue permits…for the discharge of dredged or fill material into the navigable waters…"
- If the activity cannot be covered under a General Permit (non-compliance) or is not exempt
- Must have required elements

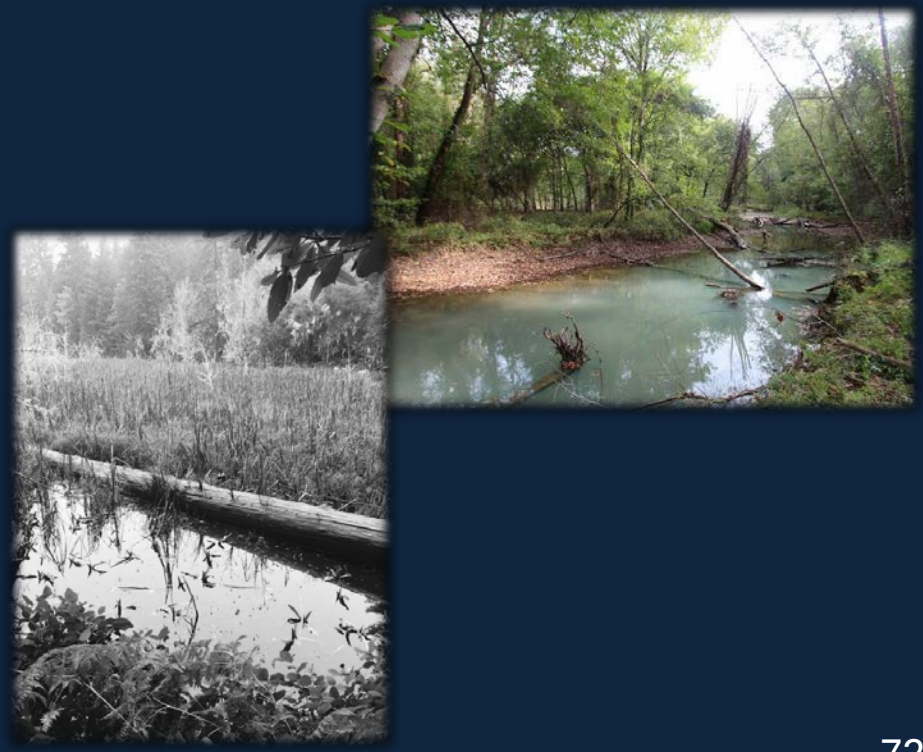
Elements of a Violation

1. **Discharge of Dredged or Fill Material (Pollutant)…**
   - Replacing any portion of a water of the U.S. with dry land; or
   - Changing the bottom elevation of any portion of a water of the U.S.

Elements of a Violation

2. Into Waters of the U.S…

You all should know what this is by now… I am not going to bore you…



Elements of a Violation

3. From a Point Source…

- Any discernible, confined, and discrete
- conveyance (such as a pipe, ditch, or conduit)
- Including bulldozers, back-hoes, dump trucks, other equipment, etc.

Elements of a Violation

4. By Any Person…

"Person" includes both:

Party who actually performed the work,

AND

Party with responsibility for or control over the performance of the work

Elements of a Violation

5. Without Authorization or Exemption

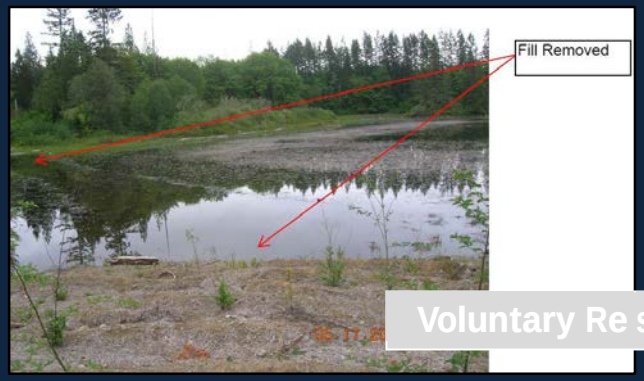
2002

2018

Enforcement Resolution

Resolution Options

- Voluntary restoration
- After-the-fact permit application
- Refer to EPA
- Penalties
- Litigation
- Nationwide Permit 32 for Enforcement Actions



Voluntary Re storation

Unauthorized Fill

Litigation

US Army Corps of Engineers

More Information:
http://www.nwo.usace.army.mil/Missions/Regulatory-Program/Colorado/

Omaha District covers part of the State of Colorado; depending upon where each project is located, appropriate contact office will vary


COLORADO
Department of Public
Health & Environment
Water Quality Control Division

Water Quality Control Division

- ❑ Division Overview
- ❑ WQCD Permits for Waterway Projects
- ❑ WQCD Inspection Process
- ❑ Alternative Compliance Model
- ❑ Enforcement

Quick WQCD Overview

- Delegated by the EPA to Implement CWA
- Regulate Discharges to Waters of the State
- Colorado Discharge Permitting System
- Made up of Multiple Units
  - Permits
  - Compliance and Enforcement
  - Environmental Data Unit

WQCD Permits for Work in Water

- 401 Certifications
- Construction Stormwater
- Dewatering
  - Construction
  - Remediation

401 Certification

- 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

Required Submittals

- Certification Request Form
- **Signed** Copy of the 404 Permit Application
- Project Site Plan
- List or Description of BMPs

401 Certification Process

- Preliminary Review of Proposed Project
- Public Notice (30 Days)
- Review of Public Comments
- Final Water Quality Certification

WQCD Contact

Scott Garncarz
Scott.Garncarz@state.co.us
303.692.2374

Construction Stormwater Permit

CDPS General Permit ID COR400000

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 Modification to be Issued Shortly

Basic Permit Requirements

- Permit certification 10 days prior to start
- Implement Control Measures to Meet Effluent Limitations
- Maintenance and Corrective Actions
- Stabilization Requirements
- Stormwater Management Plan
- Conduct Routine Site Inspections
- 24-Hour Noncompliance Reporting

Effluent Limitations

- Incorporates guidelines issued by the EPA
- Does NOT impose numeric effluent limits
- Does NOT require submission of effluent monitoring data
- Practice-based effluent limitations for stormwater discharges

Control Measure Requirements

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

Clean Water Diversions

- Allowable Non-Stormwater Discharge
- Divert water around work area
- Create dry in-channel work area
- Channel in non-erosive condition
- Sediment control measures installed at edge of diversion
- Matches specification in plan

Proper DESIGN is KEY to SUCCESS

Clean Water Diversion

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

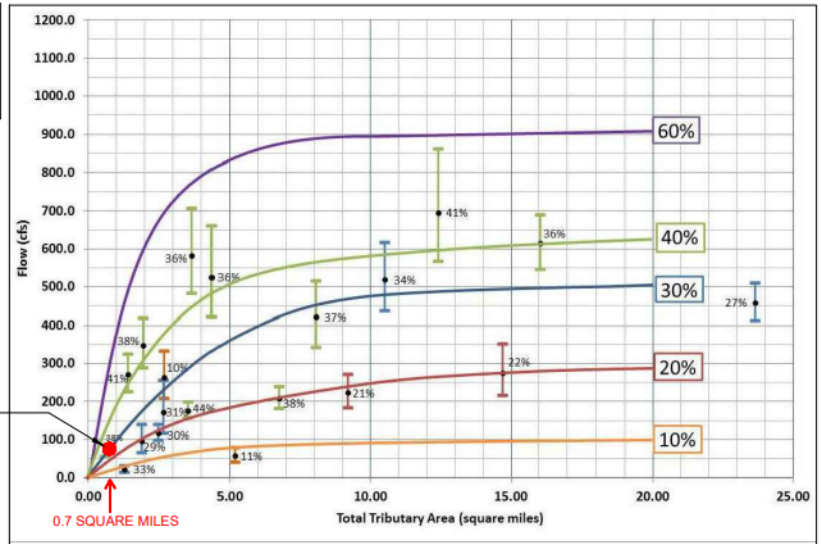


Figure TDM-2. Temporary Diversion Facility Sizing Nomograph for Long Duration Projects (Duration in excess of three months) Based on 2-year Peak Flows - Denver Metropolitan and Adjacent Areas, Updated April 2012

SOURCE: URBAN STORM DRAINAGE CRITERIA MANUAL VOLUME 3

COLORADO
Department of Public Health & Environment

Clean Water Diversion

Clean Water Diversion

Clean Water Diversion

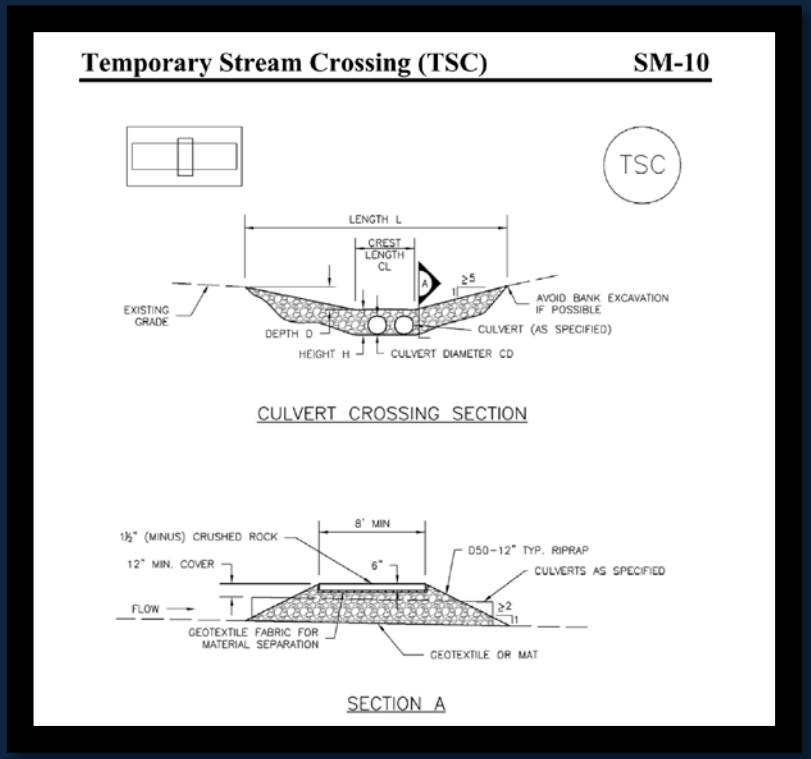
Clean Water Diversion

Piped Diversion (48” thick walled fusible plastic)

Protected Outfall

Dry Work Area

Temporary Stream Crossing



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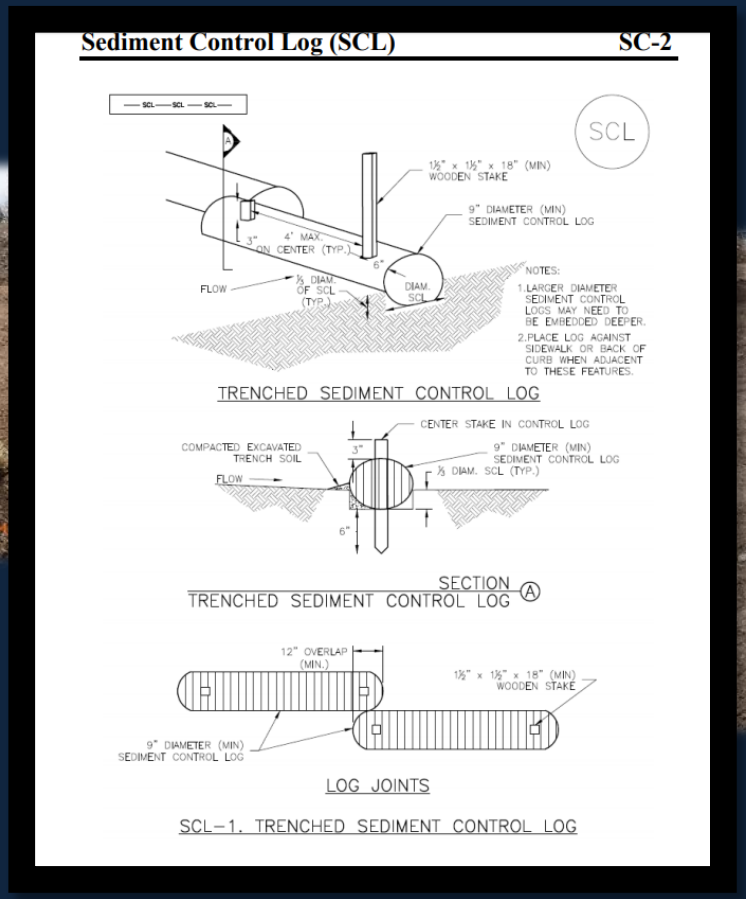
Department of Public Health & Environment

Temporary Stream Crossing

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

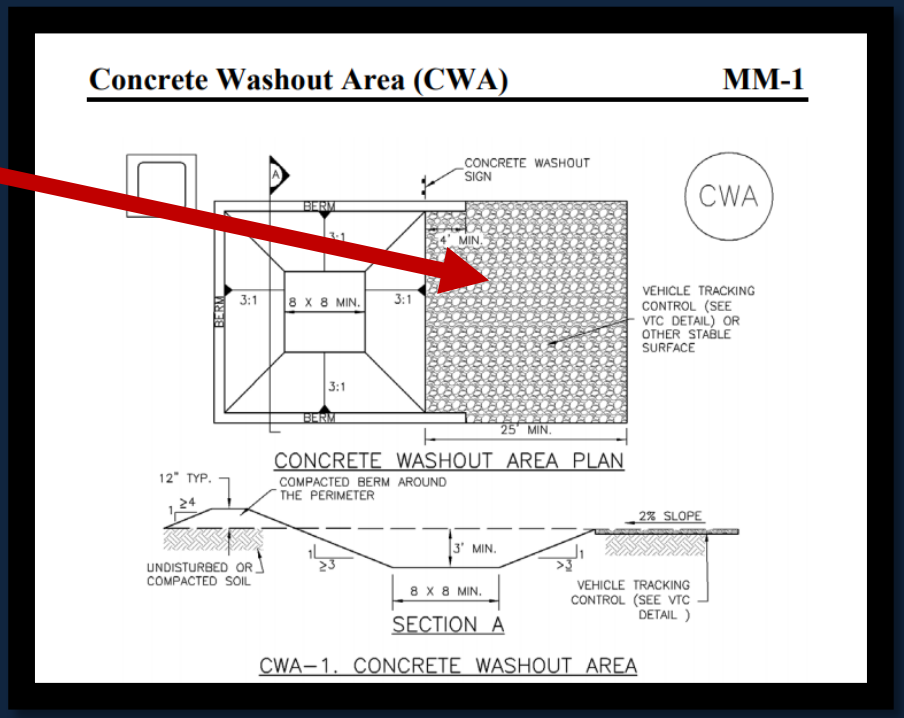
9" DIAMETER (MIN) SEDIMENT CONTROL LOG

LOG JOINTS

SCL-1. TRENCHED SEDIMENT CONTROL LOG

Importance of Specifications

VTC does not Match Specification



COLORADO
Department of Public Health & Environment

Stabilization Requirements

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
Roughenin
g

Final Stabilization Methods

Final Stabilization Methods

Stormwater Management Plan

LIVING DOCUMENT

- Kept up-to-date to match CURRENT site conditions
- Must maintain a record of changes

Retained on Site

- Notify division if kept offsite

Available upon Request

- Division requests 2nd copy during inspection

Stormwater Management Plan

1. Qualified Stormwater Manager
2. Spill Prevention and Response Plan
3. Materials Handling
4. Potential Sources of Pollution
5. Implementation of CMs
6. Site Description
7. Site Map
8. Final Stabilization
9. Inspection Reports

All Sections MUST be addressed in Plan!!

Specifications for ALL Control Measures

24 Hour Reporting

Permittees are required to orally notify the division within **24 HOURS** of the following circumstances on noncompliance:

- Endanger health or the environment regardless of the cause
- Unanticipated Bypass
- Upset

Written notification is required within 5 days

To Report Noncompliance Call
303.692.3500

Should I Call?

Should I Call?

Dewatering General Permits

Limitations on Coverage

Construction Dewatering

- Source water has come in contact with construction activities
- Cannot have pollutants in the discharge at a concentration greater than the water quality standard for the receiving water

Remediation

Source water contains a potential level of contamination that may cause high concentrations of pollutants.

Examples:

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

DEWATERING PERMITS RENEWED - EFFECTIVE JUNE 1, 2020

ADMINISTRATIVELY EXTENDED GENERAL PERMITS*

COG070000
Construction dewatering

Currently permitted construction dewatering activities under COG070000 will be completed under COG070000.

COG315000
Remediation activities discharging to surface water

Currently permitted short-term (<2 year) remediation activities under COG315000 will be completed under COG315000.

Currently permitted long-term (>2 year) remediation activities under COG315000 will have renewed coverage under COG318000.

COG316000
Remediation activities discharging to groundwater

Currently permitted short-term (<2 year) remediation activities under COG316000 will be completed under COG316000.

Currently permitted long-term (>2 year) remediation activities under COG316000 will have renewed coverage under COG318000.

COG603000
Subterranean dewatering or well development

All currently permitted activities under COG603000 will have renewed coverage under COG608000, COG603000, or COG318000 as applicable.

NEW GENERAL PERMITS*

COG080000
Short-term construction dewatering

New coverage for construction dewatering activities will be permitted under COG080000.

COG317000
Short-term remediation activities discharging to surface water and/or groundwater

New coverage for short-term (<2 year) remediation activities will be permitted under COG317000.

COG318000
Long-term remediation activities discharging to surface water and/or groundwater

New and renewed coverage for long-term (>2 year) remediation activities will be permitted under COG318000.

COG603000
Subterranean dewatering

New and renewed coverage for long-term (>2 year) subterranean dewatering activities will be permitted under COG603000.

COG608000
Well development

New and renewed coverage for well development and pumping test activities will be permitted under COG608000.

**Coverage will be provided or renewed as applicable per the terms and conditions of the general permits.*

Dewatering Activities Covered

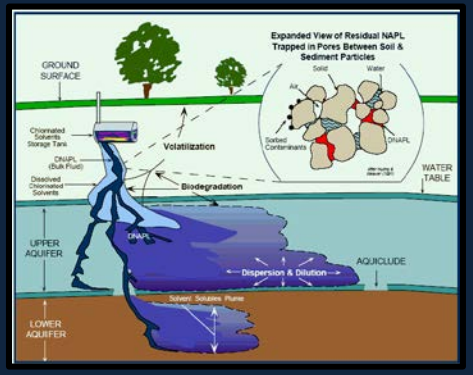
Discharge of source water including:

- Discharge of groundwater
- Discharge of surface water (mixed with groundwater)
- Stormwater mixed with groundwater or surface water

****The discharge of stormwater alone does <u>NOT</u> require a separate dewatering permit****

Determining Permit Coverage

Division's review of application identifies sources of potential contamination



Leaking Underground Storage Tanks

Voluntary Cleanup Programs (VCUPs)
Corrective Action Sites
Historical Landfills
Superfund Sites
National Priorities List (NPL) Sites
Naturally Occurring Contaminants (Metals)

Construction Dewatering Permit

Required when groundwater, surface water and/or stormwater mixed with surface or groundwater comes into contact with construction activities

Permit Requirements

- Permitted outfalls
- Pollution control measures
- Flow limitations
- Discharge log
- Sampling requirements
- Additional site-specific limitations

Construction Dewatering

Components of a Dewatering System

- Intake Area
- Treatment Process
- Discharge Point

Components of a Dewatering System

The Intake Area is the
First Area of Treatment

- Clean hole
- Clean aggregate gravel pack
- Clean slotted pipe
- Pump goes in center of pipe aggregate placed around pump

Example of Intake Areas

Example of Intake Areas

Example of Intake Areas

More Difficult to Treat Water that Looks Like This

Components of a Dewatering System

The **Treatment Process** Removes Pollutants introduced by construction

- No Treatment
- Filtering
- Settling

Examples of Treatment

Examples of Treatment

Examples of Treatment

Examples of Treatment

Remediation Baker Tanks

4-Pod Sand Filters

Components of a Dewatering System

Outfall-Discharge Area

- Cannot cause Erosion
- Sampling Point
- Make Accessible

Examples of Outfalls

Examples of Outfalls

Examples of Outfalls

Types of Outfalls

- **Defined** – known location
- **Undefined** – location to be determined

COLORADO
Department of Public Health & Environment

Permit Certification

CERTIFICATION TO DISCHARGE UNDER CDPS GENERAL PERMIT COG070000
CONSTRUCTION DEWATERING OPERATIONS

Colorado Department of Public Health and Environment

Certification Number: **COG07XXXX**

This Certification to Discharge specifically authorizes:

XYZ Construction
to discharge from the facility identified as

Cherry Creek Utility Repair
to: **Cherry Creek**

Facility Located at: 348 Speer Blvd Denver, CO 80203, Denver County
Center Point Latitude 39.72540 Longitude -104.98423

Defined Discharge Outfall(s) to Surface Water	Outfall(s) Lat Long	Discharge Outfall(s) Description*	Receiving Stream
Outfall Number 001-A	39.72540, -104.98423	Discharge to storm sewer inlet south of 13th Ave. at Speer Blvd. Sampling shall occur after the implementation of any best management practice or treatment and prior to discharge into the storm sewer inlet.	**Cherry Creek**

*All discharges must comply with the lawful requirements of federal agencies municipalities, counties, drainage districts and other local agencies regarding any discharges to storm drain systems, conveyances, or other water courses under their jurisdiction.

Effluent Limitations & Monitoring

Permit Limitations and Monitoring Requirements apply to 001-A as outlined in the Permit Part I.B and Part I.C

Parameter	Units	Discharge Limitations Maximum Concentrations			Monitoring Frequency	Sample Type
		30-Day Average	7-Day Average	Daily Max.		
APPLICABLE TO ALL DISCHARGES AS LISTED IN GENERAL PERMIT						
pH, (Min-Max)	s.u.	NA	NA	6.5 -8.5	Weekly	In-situ
Total Suspended Solids	mg/l	30	45	NA	Weekly	Grab
Flow	gpm	NA	NA	600	Weekly	Instantaneous or Continuous
Oil and Grease Visual		NA	NA	NA	Weekly	Visual
Oil and Grease	mg/l	NA	NA	10	Weekly	Grab

Effluent Limitations & Monitoring

Limitations

- Flow
- pH
- Oil and Grease
- Total Suspended Solids

Receiving Stream Limitation

- Total Dissolved Solids
- Total Phosphorus
- 303d List Impaired Streams

Site Specific Limitations

- BTEX
- E. Coli and Total Coliform

Total Suspended Solids

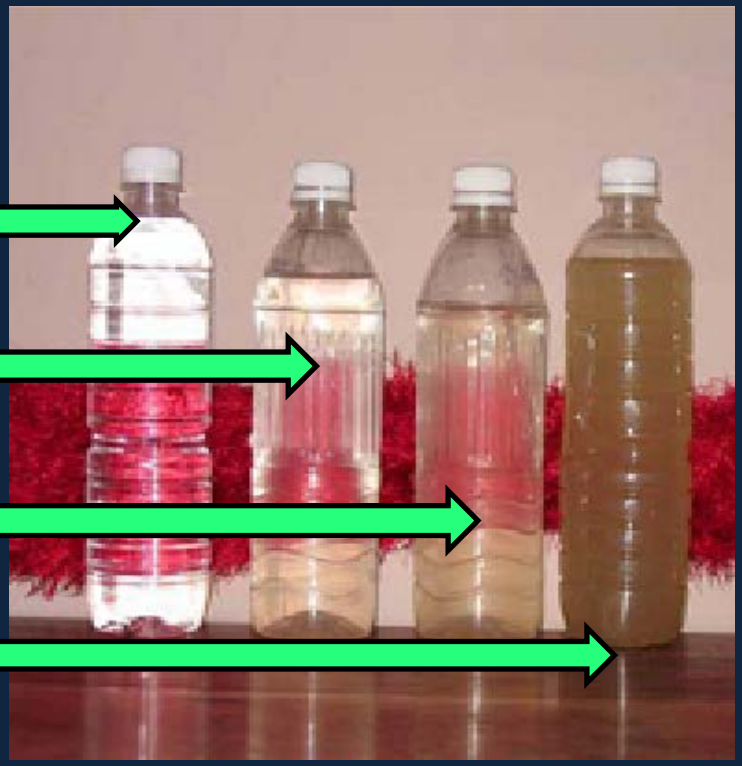
An example of visual observation of effluent as compared to a typical bottled drinking water on left

< than 5 mg/l

5-15 mg/l

15-30 mg/l

> 45 mg/l



Construction Dewatering Compliance

Permit Requirements:

- Pollution Control Practices
- Discharge Log
- Record Keeping
- Sampling
- Discharge Monitoring Reports

Discharge Log Requirements

- Dates and Times when a Discharge Commences and Ends
- Records for Monitoring
- For undefined outfall:
  - Receiving Water
  - Lat/Long of outfall
  - General description of location
  - Map showing discharge locations
- Description of Pollutant Control Practices
- Method used to measure flow
- Log must be updated within 72 hours of any activity requiring documentation

Examples of Pollution Control Practices

- Location
- Well point
- Gravel Packs
- Riser piper/slotted
- Pump
- Hose – no leaks
- Discharge end
- Sampling point
- Dewatering bag/ no bag

Description of Pollutant Control Practices

- Drawing, sketch, and/or written description of the installation and implementation specifications
- Identify Pollutant control filter maximum flow rate (for filter devices, settling devices, gravel packs, etc)
- Identify the residence time for settling devices
- For Other Techniques & Methods Implemented

  -Document the technique used and its intended purpose

  -The maximum flow rate for operation that will maintain compliance
- If No Treatment is identified to be necessary, include a statement justifying that no treatment will be provided

Examples of Pollution Control Practices

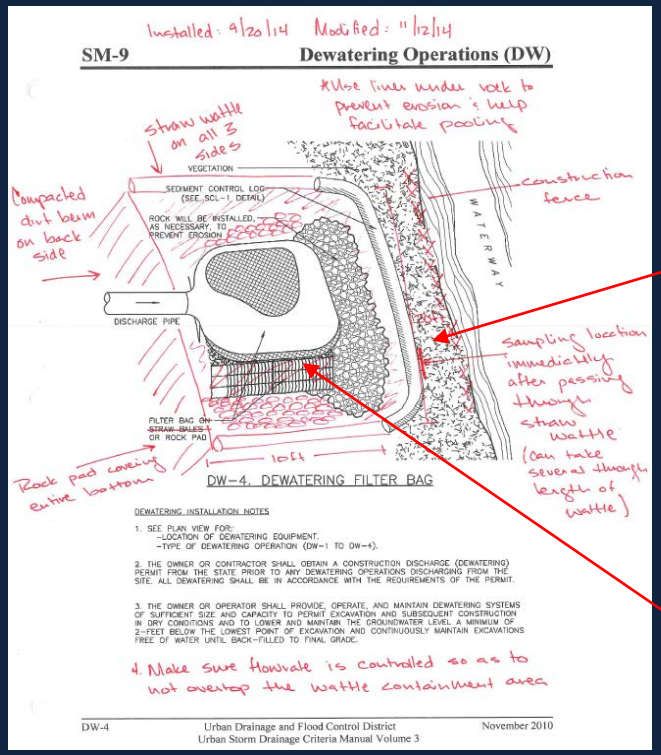
- Filter Devices – Dewatering bags
- Energy dissipation devices

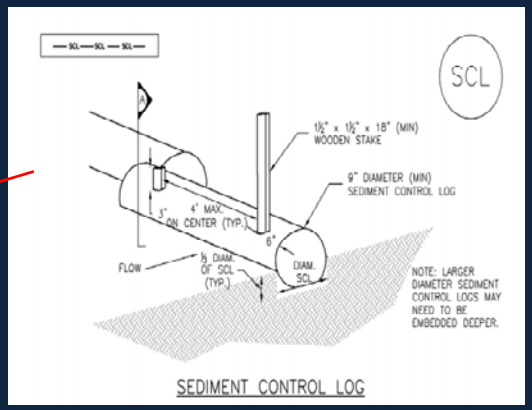
Examples of Pollution Control Practices

Examples of Pollution Control Practices

Examples of Pollution Control Practices

Control Measure Specifications





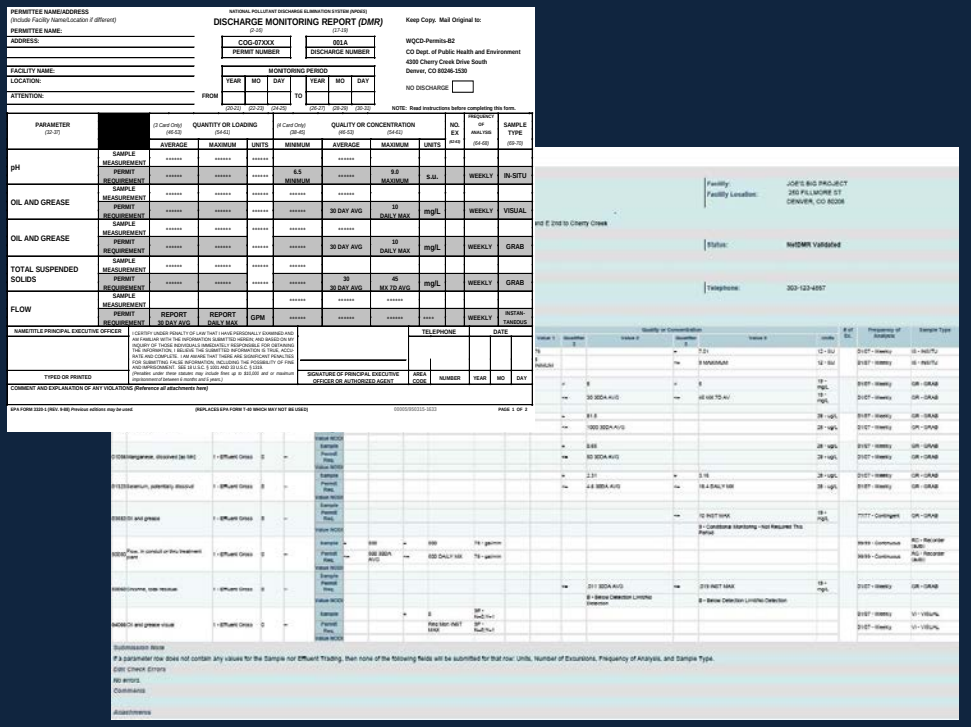
Permittivity	ASTM D 4491	sec^{-1}	1.2
Permeability	ASTM 4491	cm/sec	0.21
Water Flow Rate	ASTM 4491	$l/min/m^2$ ($gal/min/ft^2$)	3866 (95)
Ultraviolet Resistance	ASTM D 4355	%	70
Color			Black

Records for Monitoring

- Date, type, exact location, and time of sampling
- The individuals who performed the sampling
- Date(s) the analyses were performed
- Analytical techniques or methods used
- Results of such analyses
- Any other observations which may result in an impact on the quality or quantity of the discharge

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



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT *(DMR)*

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

PERMITTEE NAME:

ADDRESS:

FACILITY NAME:

LOCATION:

ATTENTION:

COG-07XXX — PERMIT NUMBER

001A — DISCHARGE NUMBER

MONITORING PERIOD — YEAR MO DAY FROM TO YEAR MO DAY

Keep Copy. Mail Original to:

WQCD-Permits-B2
CO Dept. of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530

NO DISCHARGE

NOTE: Read instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
pH	SAMPLE MEASUREMENT	******	******	******		******					
	PERMIT REQUIREMENT	******	******	******	6.5 MINIMUM	******	9.0 MAXIMUM	S.U.		WEEKLY	IN-SITU
OIL AND GREASE	SAMPLE MEASUREMENT	******	******	******	******	******					
	PERMIT REQUIREMENT	******	******	******	******	30 DAY AVG	10 DAILY MAX	mg/L		WEEKLY	VISUAL
OIL AND GREASE	SAMPLE MEASUREMENT	******	******	******	******	******					
	PERMIT REQUIREMENT	******	******	******	******	30 DAY AVG	10 DAILY MAX	mg/L		WEEKLY	GRAB
TOTAL SUSPENDED SOLIDS	SAMPLE MEASUREMENT	******	******	******	******						
	PERMIT REQUIREMENT	******	******	******	******	30 30 DAY AVG	45 MX 70 AVG	mg/L		WEEKLY	GRAB
FLOW	SAMPLE MEASUREMENT				******	******	******				
	PERMIT REQUIREMENT	REPORT 30 DAY AVG	REPORT DAILY MAX	GPM	******	******	******	****		WEEKLY	INSTAN-TANEOUS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319.
(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

TELEPHONE — AREA CODE — NUMBER

DATE — YEAR MO DAY

TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

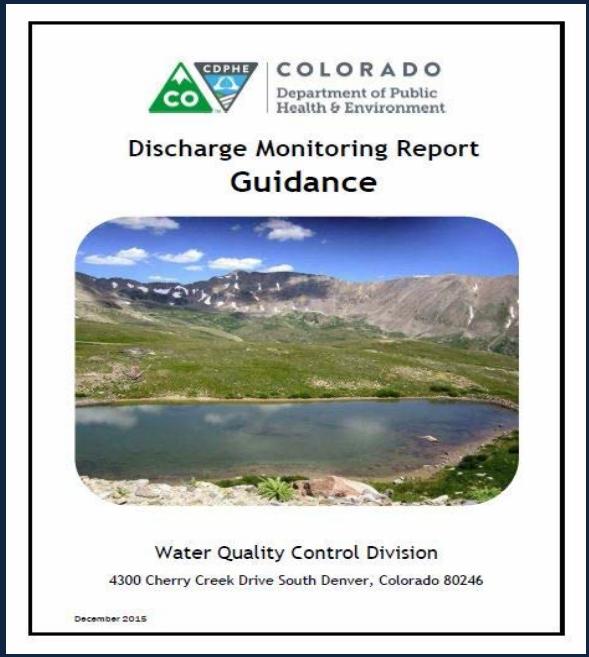
EPA FORM 3320-1 (REV. 9-98) Previous editions may be used. (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED) 00000/950315-1633 PAGE 1 OF 2

NetDMR

How to get started?

1. Visit www.coloradowaterpermits.com
2. Scroll down to E-Reporting Rule
3. Follow the instructions

Comprehensive DMR Guidance Document Available!



Review DMRs for Accuracy!

Compare your DMRs against the effluent limitations and monitoring requirements in your permit/certification EARLY!

This includes:

- Contact Information
- Outfall numbers and descriptions
- List of parameters
- Numerical effluent limits
- Monitoring frequency

Contact the division immediately if you find any discrepancies

*****Always follow the permit/certification requirements*****

Additional Permit Compliance Reminders

- All DMRs, including those submitted via NetDMR, must be received by the Division *no later than* the 28th day of the month following the end of the monitoring period.
- You are required *to retain* at least 1 copy of the DMR in your records for at least 3 years.
- A cover letter/attachment/comment *must accompany* your DMR when the DMR includes a violation of a permit condition, including failure to sample.
- If a permit violation occurs, *you must document the cause(s) of the violation* and the *actions the operator has taken and/or plans to take* to remedy the violation(s). This documentation should be submitted along with the DMR for the monitoring period.

All permit non-compliance MUST be documented and reported to the Division

Low Risk Discharge Policy

- Uncontaminated groundwater to land
- Cannot cause a violation of groundwater standard
- Cannot leave site as Surface Runoff
  - -Land application
  - -Dust control

Low Risk Guidance Policy

Cannot cause a violation to a ground water standard

- Construction Dewatering
- Subterranean or Foundation Dewatering
- Foundation Dewatering
- Uncontaminated vault Dewatering
- Utility work

Applying for a Permit

Colorado Environmental Online Services (CEOS)

- Web based platform
- Apply for permits
- Pay permit fees
- Upload documents
- Modify information on file

Paper applications or forms will no longer be accepted

Setting Up CEOS Account

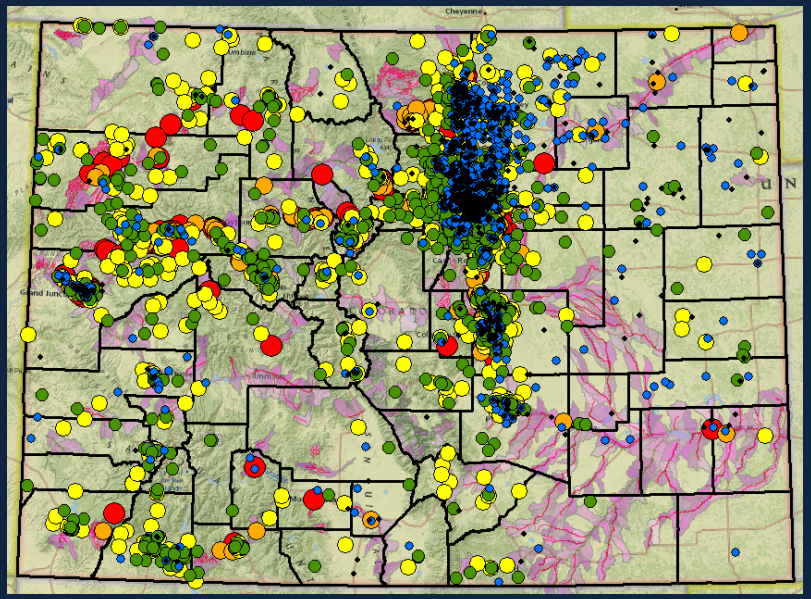
- Online tutorial (25 minutes)

https://ceos.colorado.gov/CO/CEOS/Public/Client/CO_CIMPLE/Doc/CEOS_Online_Tutorial.mp4

- Responsible Officer (Permittee)
- Verify Identity

WQCD Inspection Process

- Inspection Notification
  - Letter, checklist, request for records
  - Update site contacts
- Field Inspection
  - Records review
  - Field inspection
- Preliminary Report
- Final Report
- Response**
- Follow-up Inspection**



Records Review

Stormwater Management Plan

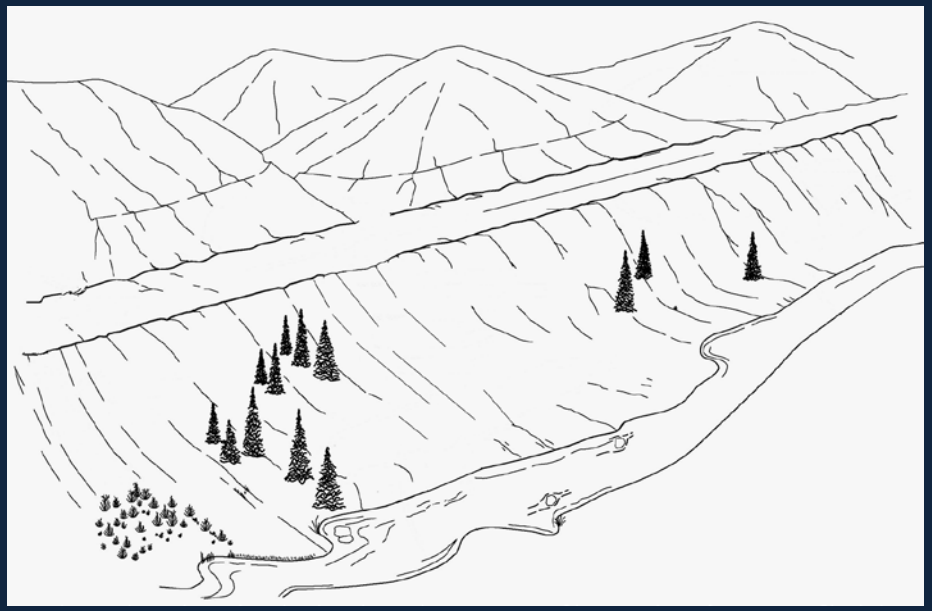
- Narrative
- Inspection Records (6 months)
- Specifications
- Site Map

Discharge Log

- Time and date when discharges start/end
- DMRs
- Analytical Results
- Description of Pollutant Control Practices

Stormwater Field Inspection

Evaluating the Construction Site



- **Is there a pollutant source?**
- **Are there down gradient control measures?**
- **Are the control measures adequate?**

General Field Findings

Control Measures are:

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

Stormwater Field Inspection

Pollutant Source: Disturbed Soils

Down Gradient Control Measures: Not Implemented

Finding: Control Measures were NOT IMPLEMENTED for pollutant source

Stormwater Field Inspection

Pollutant Source: Disturbed Soils

Down Gradient Control Measures: Yes – Clean Water Diversion

Are Control Measures Adequate: No – Liner is Torn

Finding: Control Measures were NOT MAINTAINED for pollutant source

Stormwater Field Inspection

Pollutant Source: Concrete Washout

Down Gradient Control Measures: Yes – Concrete Washout Area

Are Control Measures Adequate: No – Liner is Torn, Pit is Full

Finding: Control Measures were NOT MAINTAINED for pollutant source

Stormwater Field Inspection

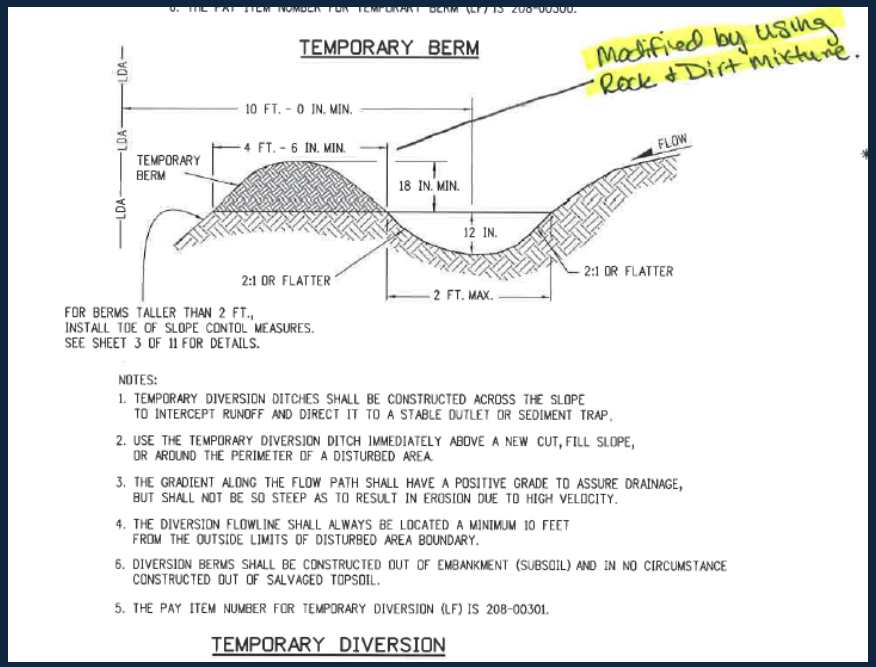
Pollutant Source: Disturbed Soils

Down Gradient Control Measures: Yes – Diversion Channel, Check Dam

Are Control Measures Adequate: No – Channel is erosive, Check dam not installed adequately

Finding: Control Measures were NOT INSTALLED to specification

Stormwater Field Inspection



Stormwater Field Inspection

Pollutant Source: Disturbed Soils

Down Gradient Control Measures: Yes – Rock/Soil Barrier

Are Control Measures Adequate: No – Barrier itself can contribute pollutants

Finding: Control Measures were NOT INACCORDANCE WITH GOOD ENGINEERING, HYROLOGIC AND POLLUTION CONTROL PRACTICES

Dewatering Field Inspection

Discharge Point

- Correct location certified in permit
- Does not cause erosion

Dewatering System

- Installed as described in Discharge Log
- In accordance with good engineering, hydrologic and pollution control practices
- Properly implemented, installed and maintained
- Discharge does not exceed effluent limitations

Dewatering Field Inspection

Finding:

Discharge Resulted in Erosion of Sediment

Dewatering Field Inspection

Finding:

Discharge Exceeded Effluent Limitations

Dewatering Field Inspection

Alternative Compliance Model

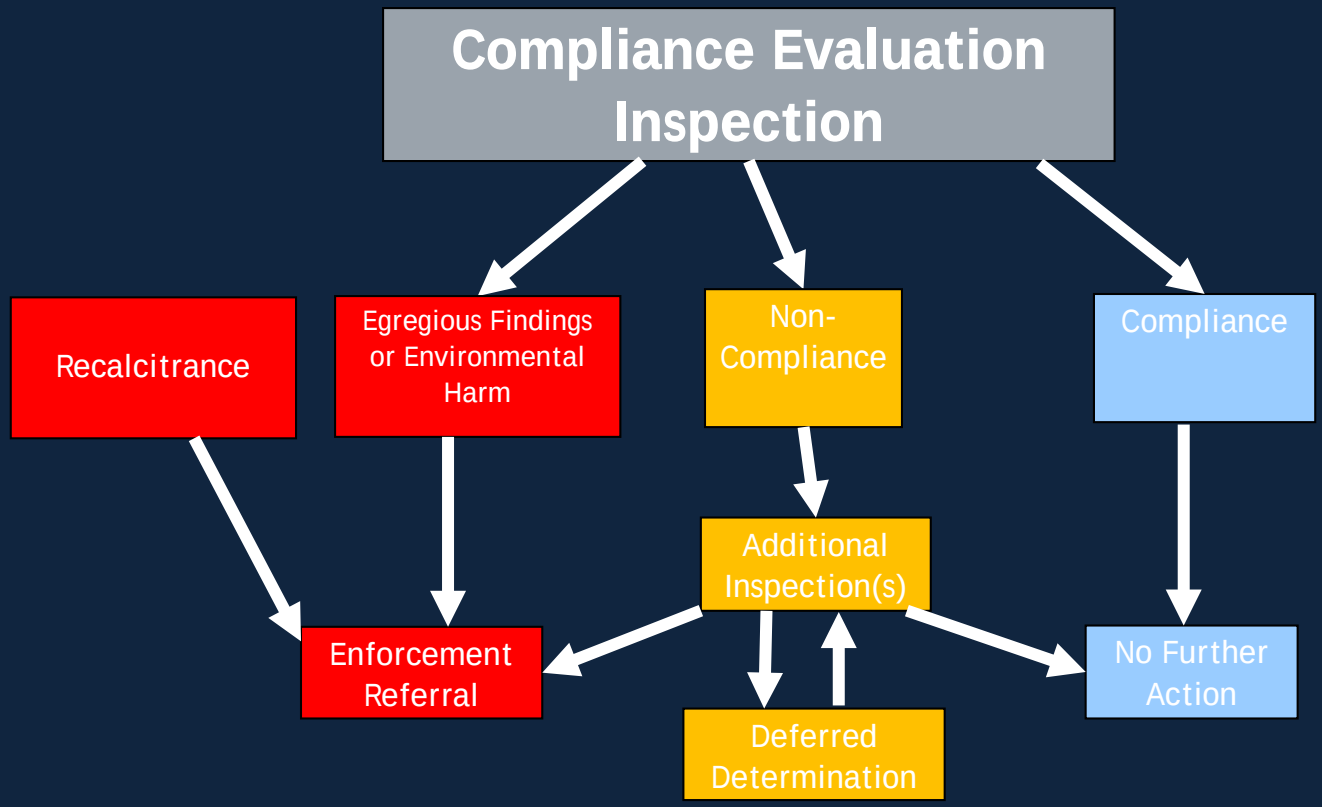
When a site meets the criteria for formal enforcement after initial Compliance Evaluation Inspection:

- Permittee given the opportunity to correct findings and bring site into compliance
- Division conducts follow-up inspection(s)

Outcome: Permittee's stormwater management program:

- Demonstrates Compliance
- Meets criteria for formal enforcement

Alternative Compliance Model

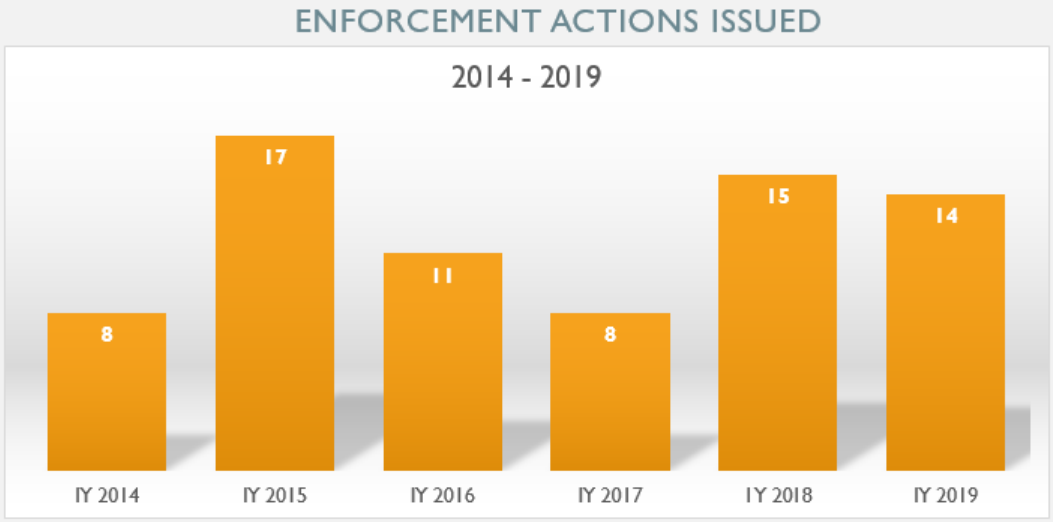


Formal Enforcement

Permittee fails to bring program into compliance the Inspection Audit (typically 1-4 Inspections) is Referred for Formal Enforcement

- Evaluate Findings Against Enforcement Response Guide
- Review Compliance Determinations & Permittee Response
- Issue Notice of Violation (NOV)
- Penalty Calculation and Settlements
- Fines $10,000/day per violation

NUMBER OF CONSTRUCTION STORMWATER ENFORCEMENT ACTIONS



INSPECTION ENFORCEMENT IN THE NUMBERS

- Since 2009, approx. $7.4 million collected in construction stormwater civil penalties.
- Highest penalty since 2009: $284,929.00
  - IY 2018
    - Highest penalty: $249,060
    - Average penalty: $164,530
  - IY 2019
    - Highest penalty: $130,000
    - Average penalty: $85,346


Questions?

Thank You!

Janel Servis and Aqua Terra

Similar private trainings will be available through Aqua Terra

janel@aquaterraenvironmentalllc.com

720-737-6041

Contact Information

Elisabeth Miller

Elisabeth.Miller@state.co.us
303.692.3516

www.colorado.gov/cdphe/wqcd