SWPPP Stormwater Pollution Prevention Plan

Logan Simpson Design Inc.

Stormwater Outreach for Regional Municipalities (STORM)

Kevin Boesch, CPESC

Overview

- Maintaining an Updated SWPPP
  - Site Map
  - Required Elements
    - Good Examples
    - Bad Examples
- Inspections
  - Inspection Frequencies
  - Inspection Techniques
  - Inspection of Control Measures
    - Good Examples
    - Bad Examples
- Updates vs. Amendments
- Modifications vs. Corrective Action

Maintaining and Updated SWPPP

- Updating the document for current conditions:
  - Text
  - Design
  - Schedule
  - Change in Operator/Operations
  - **Site Maps**

Text

emergency procedures, inspection reports and the SWPPP documents are up-to-date and available at the project site.

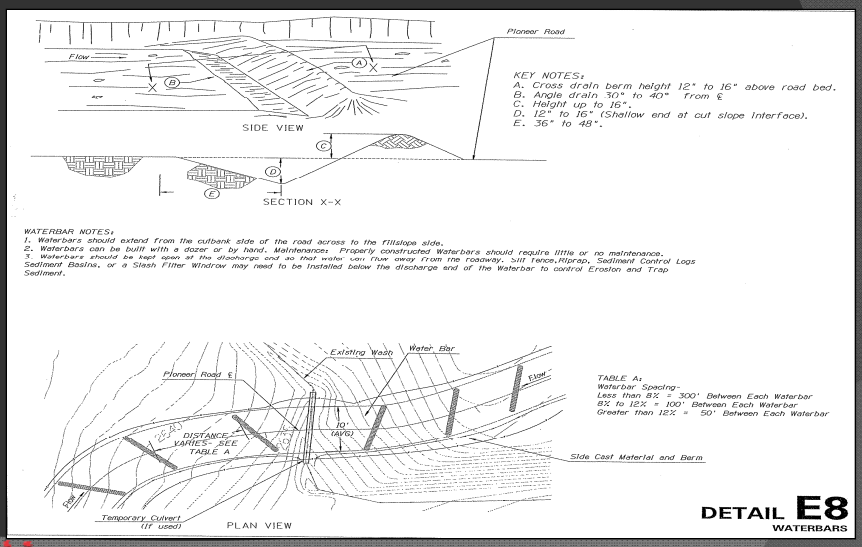
Frequency of Inspections **(Part 4.1.2)**
~~Fourteen day~~ Monthly inspections will be performed to ensure that good housekeeping and BMPs remain effective. Inspections will confirm that the Operator is maintaining BMPs to a functional level at or greater than intended functional operating limits. Based on the inspection results the Operator shall revise the SWPPP as necessary to achieve stormwater control requirements. The reduced inspection frequency of this site is based on the fact that no further construction activity will resume on this site and it is located in a semi-arid area (Part 4.1.4.2.)

The Project Inspector will update this SWPPP as required and be capable of identifying existing and predictable effects of the activities of construction personnel and equipment (including subcontractors) as required to correctly implement measures to minimize or eliminate contamination to downstream drainage resources. The Project Inspector will be familiar with SWPPP measures that will be employed on the project and will ensure that emergency procedures, inspection reports and the SWPPP documents are up-to-date and available at the project site.

Inspection Schedule **(Part 4.1.2)**
All control measures, including BMPs and good housekeeping practices, will be inspected at least once every ~~14 calendar days~~ month and within 24 hours of the end of each storm event greater than 0.25 inches.

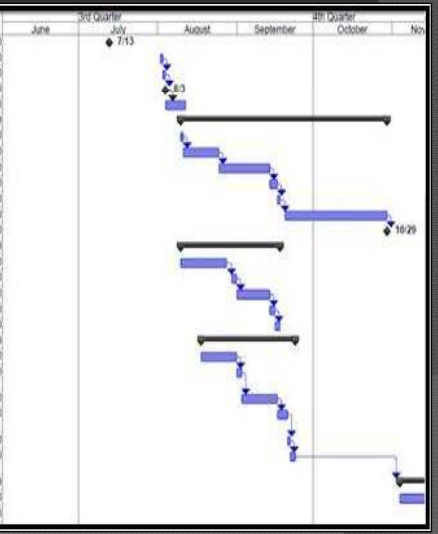
Requirements of Inspections **(Part 4.1.6)**
Erosion and sediment controls are to be installed in accordance with the sequencing provisions in this SWPPP and/or coordinated with related construction activities as required to meet stormwater control requirements. BMPs

Design



Schedule

ID	Task Name	Duration	Start
1	Notice to Proceed	0 days	Tue 7/13/10
2	Pre-Construction Mtg. with USACE	1 day	Mon 8/2/10
3	Team Mtg	1 day	Tue 8/3/10
4	Receive Digital 100% plans	0 days	Tue 8/3/10
5	Prepare Roll Plots	6 days	Wed 8/4/10
6	**SWPPP**	**59 days**	**Tue 8/10/10**
7	Mtg. with ADOT to discuss SWPPP scope	1 day	Tue 8/10/10
8	Prepare SWPPP documents	10 days	Wed 8/11/10
9	Draft SWPPP to RE for Review	14 days	Wed 8/25/10
10	Review SWPPP Edits and Make any Changes	3 days	Tue 9/14/10
11	Edit SWPPP & Submit NOI to ADEQ	1 day	Fri 9/17/10
12	ADEQ review period	30 days	Mon 9/20/10
13	ADEQ issues NOI	0 days	Fri 10/29/10
14	**Phase 1 Clearing and Grubbing**	**29 days**	**Tue 8/10/10**
15	Clearing area staked and RE verification	14 days	Tue 8/10/10
16	Mobilization	2 days	Mon 8/30/10
17	Clearing and Grubbing	9 days	Wed 9/1/10
18	Verify Control Measures	2 days	Tue 9/14/10
19	Prepare Pipe Extention Areas	2 days	Thu 9/16/10
20	**Perimeter Control Measure Installation Phase**	**27 days**	**Wed 8/18/10**
21	Installation of Permeter Controls	10 days	Wed 8/18/10
22	Installation of Stabilized Construction Entrances (2)	2 days	Wed 9/1/10
23	Prepare Construction Yard Permiter Controls	10 days	Fri 9/3/10
24	Prepare Equipment Maintenance Area with Drip Pans/Spill Kits	2 days	Fri 9/17/10
25	Install Portable Toilets and Stake Down	1 day	Tue 9/21/10
26	Install Concrete Washouts at Sta 1295+26 Lt & Sta 1745+50 Rt	2 days	Wed 9/22/10
27	**Pipe Extensions**	**88 days?**	**Thu 11/4/10**
28	Prepare Pipe Extention Areas 3, 4 and 5	31 days	Thu 11/4/10
29	Prepare Pipe Extention Areas 1,2 and 6	25 days	Fri 12/17/10



Change in Operator

Contact Information/Responsible Parties **(Part 1.1)**

Owner/Operator

Owner: Logan Simpson Design Inc. (Part 1.1.a)
New Guy **Updated March 3, 2013**
Principal

Address: 51 West Third Street, Suite 450
Tempe, AZ 85281

Telephone: (480) 967-1343
E-Mail Address: nguy@logansimpson.com

Responsibilities: Supervise day-to-day operations pertaining to the SRP Pinal West to Pinal Central Data Recovery Project)

Signature: See Form on Page 18

~~Owner: Logan Simpson Design Inc.~~
~~Name: Gregory D. Brown MA, RPA~~
~~Principal~~

~~Address: 51 West Third Street, Suite 450~~
~~Tempe, Arizona 85281~~

~~Telephone: (480) 967-1343~~
~~E-Mail Address: gbrown@logansimpson.com~~

~~Responsibilities: Supervise and direct all activities pertaining to El Caliche Archaeological Data Recovery Project~~
~~Signature: See page 17~~

Site Map

- **Required Elements**
  - **The CGP lists 10 major elements, most with subsets:**
    - Topography of the site, existing types of cover (e.g., forest, pasture, pavement, structures), and drainage pattern(s) before and after major grading activities;
    - Drainage divides and direction of stormwater flow for all drainage areas located within the project;

Site Map

- Areas of soil disturbance and areas that will not be disturbed. Boundaries of the property and of the locations where construction activities will occur, including locations:
  - Where construction and phasing of activities will occur
  - Where stockpiles will be located
  - Any crossings of surface waters
  - Where vehicles will exit onto paved roads
  - Construction support activity areas
    - Dedicated to your project

Site Map

- Locations of temporary and permanent control measures
- Locations where stabilization control measures are expected to occur
- Areas protected by buffers
  - Can be the 50-foot buffer or other buffer areas
  - The site map must reflect these buffers

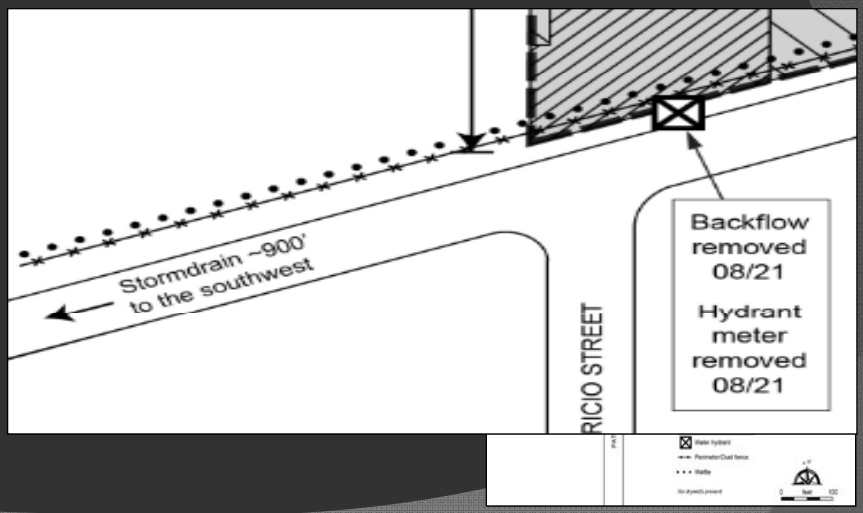
Site Map

- Locations of on-site material, waste, borrow areas, or equipment storage areas, and other supporting activities
- Locations of all potential pollutant-generating activities (I.e. fueling and maintenance operations; concrete, paint, and stucco washout

Site Map

- Locations of all surface waters and any impaired waters or OAWs within 1/4 mile of the facility. If none exist on site, the SWPPP has to make this statement
- Stormwater discharge location(s), using arrows to indicate discharge direction. Including:
  - Discharges to waters of the U.S. or to an municipal separate storm sewer systems (MS4s)

Site Map

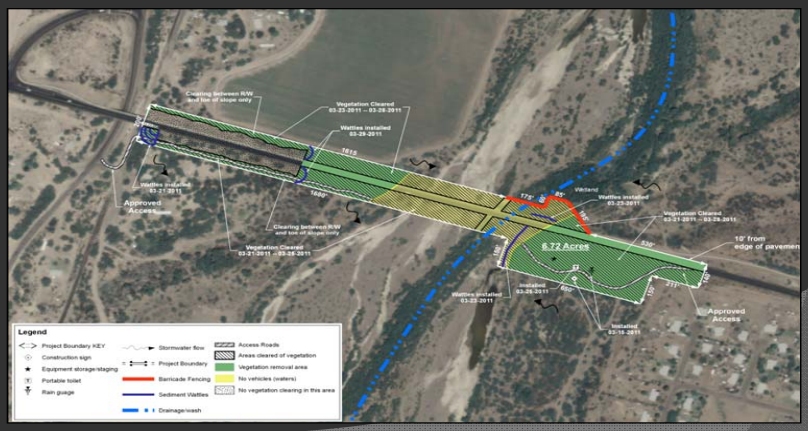


Site Map

- Locations and registration numbers of all on-site drywells and drywells on adjacent properties
  (If none exist the SWPPP shall indicate so)
- Areas where final stabilization has been accomplished
- Location and boundaries of environmentally sensitive areas and buffer zones to be preserved

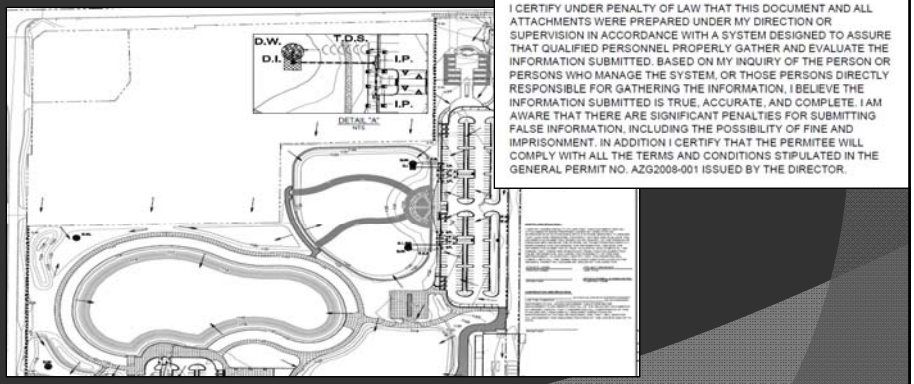
Site Map

- Site map with all 20 elements (updated)



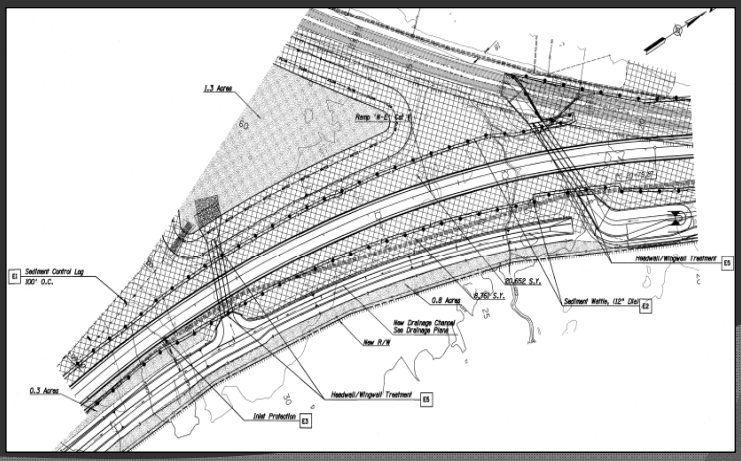
Site Map

- Not so good



Site Map

- Only four elements



Inspections

- Inspection frequencies
  - When is an inspection required

Inspections

- Routine inspection schedules
  - Inspection Frequencies
    - Once every 7 calendar days
    - Once every 14 calendar days, and also within 24 hours of each storm event of 0.5 inch or greater
    - Once per month, but not within 14 calendar days of the previous inspection and within 24 hours of the occurrence of a storm event of 0.25 inch or greater

Inspections

- Reduced inspection schedule
  - The operator may reduce inspection if the entire site has been temporarily stabilized, discharges or runoff is unlikely due to lack of rain or winter conditions
    - Inspected at least once per month (but not within 14 calendar days of the previous inspection) and before an anticipated storm event and within 24 hours of each storm event of 0.5 inch or greater in 24 hours

Inspections

- Inspection schedule for Inactive and Unstaffed sites
  - A site is inactive and unstaffed that will have an anticipated period of no construction activity for at least six consecutive months
  - Before becoming I&U and once every 6 months and within 24 hours of each 0.5 inch or greater rain event in 24 hours

Impaired or OAW sites are not eligible for this reduced inspection frequency unless they have undergone temporary stabilization

Inspections

- Inspection schedule for sites within 1/4 mile of Impaired Waters or OAWs
  - If any portion of the construction site is within 1/4 mile of an Impaired water or OAW, the operator shall inspect the site at least once every 7 calendar days

You can reduce inspections to the once per month and before an anticipated storm event and within 24 hours of each storm event of 0.5 inch or greater in 24 hours for areas of the construction site that have undergone temporary or final stabilization

Inspections

- Who performs inspections
  - In the SWPPP, Identify:
    - Personnel responsible for conducting inspections

Inspections

- The inspector should:
  - Be a qualified person
    - A "Qualified Person" is someone knowledgeable in the principles and practices of erosion and sediment control and who possesses the skills to assess conditions at the site that could impact stormwater quality and the effectiveness of the control measures

Inspections

- The qualified personnel should review the requirements of the permit and know they are responsible for:
  - The design, installation, maintenance, and/ or repair of control measures (including pollution prevention measures) and treatment chemicals;
  - Conducting stormwater inspections
  - Taking corrective actions

Inspections

- The inspector:
  - Have a “Delegation of Authority”
  - ADEQ GCP Appendix B.9.b.
    - All reports, including inspection reports, must be signed by the signatory or a person described as a duly authorized representative of that person

Inspections

- Scope
  - The inspector has to examine each of the following:
    - All structural controls to ensure they are in place and functioning as intended
    - The effectiveness of non-structural controls and practices (such as good housekeeping practices and pollution prevention measures)
    - All areas of the site used for storage of materials that are exposed to precipitation

Inspections

- The objective of inspections are to maintain structural and non-structural control measures at the site effectively

Inspections

- This is not control measure maintenance

Inspections

- Inspect:
  - Locations where new or modified control measures are necessary to meet the requirements

Inspections

- Inspect:
  - Locations where vehicles and equipment enter or exit the site

Inspections

- Inspect:
  - Site conditions for evidence of, or the potential for, pollutants entering the municipal separate storm sewer

Inspections

- Inspect:
  - The presence of conditions that could lead to spills, leaks, or other accumulations of pollutants on the site

Inspections

- Inspect:
  - Discharge locations
    - Are erosion and sediment control measures are effective in preventing significant impacts to receiving waters

Inspections

- Inspect:
  - All locations where temporary stabilization measures have been implemented

Inspections

- Inspect:
  - When a discharge is occurring during an inspection, observe and note the physical characteristics
    - Standard qualitative parameters:
      - Color
      - Clarity
      - Odor
      - Oily sheen
      - Solids
      - Foam

Inspections

- Inspect:
  - When there is no discharge, look for evidence of erosion, sedimentation and other pollutants, and the presence of current or prior discharges
  - Check the sources of any discharge as well

Inspections

- Inspect:
  - Disturbed areas of the site, storage areas, and activities that are exposed to precipitation
  - Evidence of or the potential for pollutants leaving the site or entering drainage systems

Inspections

- Inspect:
  - Control measures identified in the SWPPP
  - Proper operation and effectiveness of the control measure
  - Necessary modifications/additions of control measures

Inspection Techniques

- What works:
  - Take a copy of approved SWPPP on the field inspection
  - Use an inspection form (ADEQ Inspection Report)
  - Inspect the entire site including the perimeter and off site locations
  - Start inspection area(s) where discharge possibility is the highest

Inspection Techniques

- What works:
  - Walk perimeter of the construction yard
  - Identify existing conditions
  - Take photographs (always document)
  - Identify changes in construction that may require amendments to the SWPPP
  - Evaluate Active and Non-Active construction areas

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Inspection Techniques

- Ask yourself questions
  - Is an effective combination of erosion and sediment control being implemented?
  - Are the appropriate non-stormwater control measures being used?
  - Are the appropriate Waste Management and Materials Pollution Control Measures being used?
  - Was this area like this on the last inspection?
  - Were issues identified in the last inspection addressed now?

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Inspection Techniques

- What to look for:
  - Comprehensive site compliance
  - Erosion and/or Sediment
  - Control measure (selection, installation and maintenance)
  - Off-site accumulation of sediment or other pollutants

Inspection Techniques

- What to look for:
  - Good Housekeeping
    - Material and chemical storage/handling
    - Debris and litter control
    - Perimeter and general site conditions
    - Employee training
    - Equipment preventative maintenance
    - Proper inventory and handling of cleaning products
    - Sanitary needs
    - Waste streams

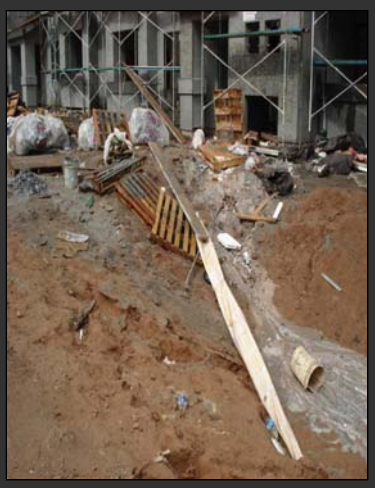
Inspection Techniques

- What to look for:
  - Failures
    - Breaches or potential to breach
    - Control measures either not effective or incorrect applications thereof

Inspection Techniques

- When Should You Be Concerned
  - Control measures not being used
  - Control measures installed incorrectly
  - Control measures absent
  - Control measures failures
  - Employees not following established practices

Inspection



- What are Agencies Looking for
  - EPA and ADEQ
    - Gross neglect
    - No records or inability to produce them
    - Practices established, yet not being followed

Control Measures

- Good Examples

Control Measures

- Good Examples

Control Measures

- Good Examples

Control Measures

- Good Examples

Control Measures

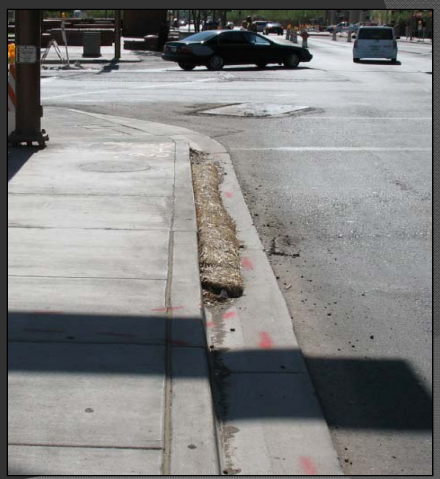
- Bad Examples

Control Measures

- Bad Examples

Control Measures

- Bad Examples



Control Measures

- Bad Examples

Updates vs. Amendments

- Updates:
  - Are all new records included in the binder
    - Inspection reports
    - Discharge Monitoring Reports
  - Are the site maps up to date
  - Minor maintenance or relocation of control measures

Updates vs. Amendments

- Amendments:
  - The SWPPP has to be revised to reflect current conditions and to maintain accuracy within 7 calendar days whenever:

Updates vs. Amendments

- There is a change in design, construction, operation, or maintenance at the construction site that may have a significant effect on the discharge of pollutants to the waters of the U.S. that has not been previously addressed in the SWPPP; or

Updates vs. Amendments

- During inspections, monitoring if required, or investigations by the operator or by ADEQ or USEPA, it is determined the discharges are causing or contributing to water quality exceedances or the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the construction site; or

Updates vs. Amendments

- There is a change to the stormwater team

Demotavateus.com

Modifications vs. Corrective Action

- Modification:
  - The operator has to complete required revisions to the SWPPP within 7 calendar days following the occurrence of any of the conditions listed below.
  - The operator has to modify the SWPPP, including the site map(s), in response to any of the following conditions:

Modification

- New operators become active in construction activities at the site
- Construction plans are changed (affecting any discharge)
- Control measures, pollution prevention measures, or other activities at the site are no longer accurately reflected in the SWPPP
  - This includes changes made in response to corrective actions being triggered

Modification

- Areas on the site map where operational control has been transferred (and the date of transfer) since initiating permit coverage

Modification

- If inspections or investigations by site staff, or by local, state, or federal officials determine that SWPPP modifications are necessary for compliance with the CGP

Modification

- ADEQ determines it is necessary to impose additional requirements on the discharge
  - If this occurs, the following items have to be included in the SWPPP:
    - A copy of any correspondence describing requirements; and
    - A description of the control measures that will be used to meet the requirements

Modification

- To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the control measures implemented at the site

Modification

- If you are using chemicals for additional control measures
  - When a change in chemical treatment systems or chemically-enhanced control is made, or use of a different treatment chemical, different dosage rate, or different area of application

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Modification

- SWPPP Modification Records
  - Operators are required to maintain records showing the dates of all SWPPP modifications
    - The SWPPP has to include the name of the person authorizing each change and a brief summary of all changes

Corrective Action

- **Triggers:**
  - Corrective actions are actions the operator takes to modify, or replace any control measure that failed to meet the conditions of the CGP.
    - There are three listed conditions when the operator must employ new or modified control(s):

Corrective Action

1. A necessary control measure was never installed, was installed incorrectly, or not in accordance with the requirements in the CGP

Corrective Action

2. One of these prohibited discharges is occurring or has occurred
   - Wastewater from washout of concrete, stucco, paint, form release oils, curing compounds
   - Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
   - Soaps or solvents used in vehicle and equipment washing; and
   - Toxic or hazardous substances from a spill or other release.

Corrective Action

3. ADEQ or EPA determines you need to modify your control measures to meet the requirements of the CGP

Corrective Action

- **Corrective Action Deadlines**
  - Any control measures or repairs required must be installed and working no later than 7 calendar days from the time of discovery
    - If this is not possible the CGP does have timeframe allowances
      - Rationale and reasons must be provided

Corrective Action

- **Corrective Action Report**
  - For each corrective action you must document the details of the corrective action in the inspection report as well

ADEQ	Section IV. Corrective Action Report Form

Section IV.A. – General Information
(Complete this section within 24 hours of discovering the condition that triggered corrective action)

Date/ Time Problem First Discovered	Date: __ / __ / ____ Time: _____ __AM __PM	Today's Date	__ / __ / ____
Name and Contact Information of Individual Completing this Form	Name: _____ Contact information: _____		

What site conditions triggered the requirement to conduct corrective action? *(Check the box that applies)*

- ☐ A necessary stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or 3
- ☐ A prohibited discharge described in Part 1.4 has occurred or is occurring
- ☐ ADEQ or USEPA has determined that modifications to the control measures are necessary to meet the requirements of Part 3.

Provide a description of the problem: (Provide description of the specific problem that triggered the need for corrective action, and the specific location where it was found. If you have already provided this explanation in an inspection report, you can refer to that report.)

Corrective Action

- **Corrective Action Report**
  - Construction Sites Located within 1/4 Mile of an Impaired Water or OAW have to submit the CAR and retain a copy of the inspection report documenting the corrective action(s) onsite with the SWPPP

Summary

- Always update your documents
- Inspect and maintain control measures
  - Structural and non-structural (employee training)
- Know the Permit
- Read the Permit
  - What you have to do
  - When you have to do it
  - When in doubt, go to the Permit

- **Kevin Boesch** kboesch@logansimpson.com
  - **Logan Simpson Design Inc.**
    - Certified Professional in Erosion and Sediment Control (CPESC)
    - SWPPP Preparation
    - Stormwater Inspections
    - Training
    - Monitoring
    - Compliance Inspections