

10.13 EROSION CONTROL INSPECTION PROCEDURE

Standard of Practice

Background

Inspection of erosion control for construction sites is a requirement of the City's code and MS4 permit requirements. The importance of high quality erosion control inspection is explained in the Project Management Manual section 10.07—Construction Site Erosion Control. The following accepted practice has been prepared to ensure that inspectors have the understanding and guidance necessary to conduct thorough and comprehensive inspections that not only provide accurate documentation, but also provide guidance for contractors and permit holders to implement effective erosion control strategies.

Standard of Practice

Construction Site Inspector—Role and Responsibilities

The inspector determines compliance with permit conditions, applicable regulations, plans, specifications, and other requirements and assesses the adequacy of Best Management Practices (BMPs) to comply with the requirements of City of Salem Revised Code, Chapter 75 "Erosion Prevention and Sediment Control." This is primarily accomplished by reviewing on-site activities during construction and wet weather events.

Professional Responsibilities

Inspectors are expected to perform their duties with a high degree of professionalism. Facts are to be noted and reported completely, accurately, and objectively. Inspectors should also be tactful, courteous, and diplomatic when working with construction operators and other members of the public. During an inspection, inspectors should not speak derogatorily of any product, manufacturer, or person.

When problems are found that are not significant, inspectors should provide technical assistance on approaches for dealing with minor issues that do not warrant a violation notice. This could include minor issues that, if not corrected, could lead to a violation. Technical assistance refers to providing general guidance on how to solve erosion and sediment control problems without providing specific design details. The inspector does not provide engineering advice.

Inspection Procedures

An on-site construction site inspection will typically consist of the following components, followed by the development of an inspection report:

- Pre-Inspection Preparation
- Records Review
- Site Inspection
- Exit Comments to site Operator

Pre-Inspection Preparation:

Plan your inspection by targeting construction sites in priority areas (i.e. sites near surface waters or areas undergoing rapid development), large construction sites, or sites with a history of compliance problems. Be flexible, and plan your inspections immediately prior to or during anticipated rain events, or immediately following actual rain events (this is the best time to conduct stormwater inspections).

In preparing for an inspection, also review available files such as permits, erosion and sediment control plans, past inspection reports, downstream water quality problems from monitoring website reports, and other pertinent correspondence. This would include past inspection reports in order to verify that problems have been corrected.

Finally, be prepared for the inspection. Dress for the weather and take appropriate safety gear. Make sure you have the following: inspection credentials, digital camera, copies of inspection forms, copy of the general permit, and logbook for taking notes, and personal protective equipment.

Entry:

Before entering the construction site, observe the surroundings and various stages of construction. Note areas for in-depth review and any clear violations. This is also a good time to view construction site entrances and perimeter controls. Indicate on the inspection form the date/time and weather conditions (e.g., light rain, sunny, some rain in previous 24 hours). See Attachment A—Erosion Sediment Control Report.

When entering the site, ask to speak with someone who is familiar with the construction site's permits. Always note the names of the individuals with whom you meet. Present your credentials and explain the purpose of your inspection. Ensure that the construction operator accompanies you during the inspection. Ask if there are any specific safety issues or requirements for this site.

Records Review:

Ask to see a copy of their permit, including a copy of all construction site inspections (i.e. the inspections owners/operators are required to make weekly as well as within 24 hours of a rain event greater than 0.5 inches in a 24-hour period). Specific items in the permit to review and record in your notes include:

- Primary erosion prevention and sediment control BMPs used on-site.
- Inspection and maintenance records, which are required to be kept with the 1200C Permit. Operator is required to inspect the site once every seven days and within 24 hours after a rain event greater than 0.5 inches in 24 hours.
- Pollution prevention practices (especially for fueling, solid waste, hazardous materials, and vehicle washing).
- Discharge points from the project to surface waters and wetlands.

Include in your notes a general narrative of the construction activity (e.g., construction of subdivision on 2.5 acre parcel). Ask the construction operator to describe the project as you review the permit. Questions you can ask include:

- When do you plan to complete construction?
- Do you store or use hazardous materials or waste fluids on-site? Do you refuel vehicles or equipment on-site?
- Does this project include concrete pouring, and how do you handle washout of concrete trucks?
- Does the project have a rain gage, and how do you track rainfall amounts?
- What procedures do you institute in advance of forecasted rain events?
- Where are the critical areas of protection?
- Where is the construction draining to?
- Do you understand the potential environmental impacts and ramifications of those impacts if your project site protection fails?

The permit must include a narrative describing the timing for installation of all erosion prevention and sediment control BMPs. The permit must also address phasing. If these items are not addressed to the satisfaction of the inspector or if construction sequencing has changed substantially, the construction operator may be asked to submit a revised plan for permitting. Ask for a copy of the site map and the BMP list to determine if it is specific to the construction site you're inspecting. The site map and BMP list can be marked up during your inspection to indicate locations of potential violations and as a reminder to ensure that BMPs are implemented. Remember that these items are enforceable and that the permit requires them to fully implement their permit requirements.

Remember, erosion plans are dynamic documents; they should be updated when:

- A change in design, construction, operation, maintenance, weather, or seasonal conditions has a significant effect on stormwater discharges;
- Inspections indicate the plan is not effective; or
- The plan is not consistent with the terms of the permit.

Discuss with the site contact whether any amendments have been made to the plan. The constantly changing conditions at a construction site (from rough grading to building construction) mean that the BMPs in the plan must change as the site conditions change. If their plan is not available for review, this will make your inspection more difficult. Note the lack of an on-site plan and/or permit on the inspection form.

Site Inspection:

A keen eye, an understanding of the construction sequencing process, and accurate documentation are the keys to an effective construction site inspection. Use the inspection form and take notes regarding the location and condition of BMPs, discharge points, and inlets. Use photos to document concerns/violations and indicate on a rough diagram where the photos were taken. Keep a written log of preliminary findings during your inspection to facilitate your report.

A note about construction activity: Construction activity, by its very nature, is a "dirty" business. In many cases, land is cleared and graded to conform to the new site requirements. During a rain event, even the best-managed construction sites will look "muddy." Your role as a construction inspector is to ensure that sediment and other pollutants in stormwater are satisfactorily treated on site and do not impact waters of the state. Become familiar with typical construction practices, terminology, and conditions, and use this experience during your inspection.

Recommended Construction Inspection Sequence

1. *Plan your inspection.* Review the site map and plan how you will conduct the inspection (this is particularly important for large construction sites). Identify the significant pollutant sources and BMPs you want to inspect (silt fence installation, sediment basins, slope stabilization, material storage areas, etc.). Consider the direction stormwater will flow as you plan the inspection. Begin your inspection at the low point on the construction site, observing all discharge points, and walk up the slope to inspect the rest of the site. Consider the current sequence of construction phasing when planning your inspection.
2. *Inspect discharge points and downstream, off-site areas for signs of impact.* When inspecting discharge points from the site, if it appears that sediment is leaving the site, walk downstream to document the extent of travel and impact on receiving waters or storm drain systems. Make sure you walk "down the street" if necessary to inspect off-site areas for signs of discharge. This is particularly important in areas with existing curbs and gutters. Inspect down-slope municipal catch basin inlets to ensure that they are adequately protected. Note on the inspection form all environmental impacts and document with photographs when possible.
3. *Inspect perimeter controls.* Note the type of perimeter controls installed at the site, and whether these have been properly installed and maintained. Inspect the construction exit to determine if there is excessive tracking of sediment from the site. Is street sweeping being used? If so, what is the frequency? Is there evidence of additional construction entrances being used that are not on the plan or are not stabilized? If a truck wash is being used, is it functioning and is it being maintained? Do vehicles leaving the site understand how to use the truck wash properly?

Check all sediment controls. All storm drains must be protected; temporary stockpiles must have sediment controls and cannot be placed in surface water or stormwater conveyances.

4. *Compare BMPs in the plan with construction site conditions.* Are all BMPs required by the plan in place? Are additional BMPs needed? Evaluate whether BMPs have been adequately installed and maintained. Describe in your notes the potential violations and their location. Look for areas where BMPs are needed, but are missing and are not included in the plan.
5. *Inspect disturbed areas not currently being worked.* Disturbed areas need to have temporary or permanent cover when they are not being actively worked. All exposed soil areas must be stabilized no later than 14 days after the construction activity in that portion of the site has been temporarily or permanently ceased. Note in the inspection report any bare soils where work has been inactive for two weeks or more.
6. *Inspect areas with final stabilization.* Inspect any stabilized areas to ensure that excessive erosion is not occurring. Temporary BMPs in areas with final stabilization must be removed and sediment must be cleaned out of all conveyances and temporary sediment basins that will be used as permanent water quality basins. Areas where temporary BMPs have been removed must be stabilized and seeded.

Common Compliance Problems at the Construction Site

The following compliance problems are commonly found at construction sites. Keep these common problems in mind as you conduct inspections.

1. *No temporary or permanent cover.* All exposed soil areas must be stabilized no later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Ask the contractor when particular exposed soils were last worked to help you determine if there is compliance.
2. *No sediment controls on-site.* The permit requires established sediment control practices (e.g., sediment traps/basins, down-gradient silt fence or sediment barriers, check dams, etc.) on down-gradient perimeters before up-gradient land disturbing activities begin.
3. *No sediment control for temporary stockpiles.* Temporary stockpiles must have silt fence or other effective sediment controls, and cannot be placed in surface waters (or curb and gutter systems).
4. *No inlet protection.* All storm drain inlets that receive a discharge from the construction site must be protected before construction begins and must be maintained until the site is stabilized. Inlet protection may be removed for a particular inlet if a specific safety concern has been identified and the removal is approved by the inspector.
5. *No BMPs to minimize vehicle tracking on to the road.* Vehicle exists must use BMPs such as rock pads, concrete or steel wash racks, or equivalent systems to prevent vehicle tracking of sediment.
6. *Sediment on the road.* If BMPs are not adequately keeping sediment off the street, then the permit requires tracked sediment to be removed (e.g. street sweeping).
7. *Improper solid waste or hazardous materials management.* Solid waste must be disposed of properly, and hazardous materials (including oil, gasoline, and paint) must be properly stored (which includes secondary containment).

8. *Dewatering at the construction site.* Typically dewatering occurs where building footings are being constructed. Have measures been taken to ensure that the pumped discharge is not causing erosion? Is the discharge turbid, and if so, is it treated before discharging from the site? Has ditching been used to dewater, and if so, is that water resulting in the discharge of sediment and causing water quality impairments?
9. *Concrete washout.* Is concrete wash out being prevented from entering the site drainage system or water way?

Photographs

A digital camera is extremely useful during an inspection. Take digital photographs to document your findings and provide a site overview as you write your report. Take photos of the site entry sign, all potential violations, and a general view(s) of the construction site. Be certain to photograph impacts to waters of the state; try to document with photos that the construction project is the only source of the impact (not other upstream sources), so take shots above and below the project at the impacted water body. Remember that you do not need to incorporate all of the photos you take into your inspection report. Photograph model BMPs that could be useful as examples to other construction operators.

On the site map, indicate approximate locations of where you took photos, and the direction of the photograph. Keep notes for each photograph you take, as you need to describe the potential violation in your report.

When taking a photograph, make sure you keep perspective in mind. If the viewer will have difficulty understanding how large something is (for example, a rill/gully), then use a prop such as a person, hardhat, or other object for perspective.

Exit Comments to Site Operator

Review the inspection forms and determine the severity of any identified deficiencies. It is best to lead off your exit dialogue with one or more positive comments regarding the site and then list your negative findings in order of severity. Therefore, come up with a few positive examples of what they are doing right.

Debrief the person in charge. Explain that the results of the inspection are preliminary and are not final until all documents and photos have been reviewed and a supervisor has reviewed your report. Explain the identified deficiencies and any areas of concern. Where possible, cite the section of the permit that requires these missing practices. While it is important that you provide a comprehensive site assessment, it is acceptable to indicate that you are uncertain about certain deficiencies/points, and that additional review is required.

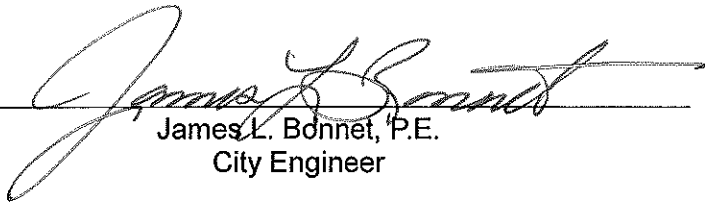
Lastly, don't tell the construction operator which BMP to use. Explain the problem or the permit requirement that must be met, and describe how other construction sites have addressed typical problems. It is acceptable to tell the construction operator about what typically works and what doesn't work in the field, but do not specify the BMP to use (especially if it is a proprietary BMP). Ultimately, it is up to the construction operator to decide which BMPs to use. If a violation has not been corrected within the time frame allowed by the Inspector, issue a non compliance notice. See Attachment B—Notification of Erosion Control Noncompliance Incident. Follow up with a compliance inspection to verify the correction has been completed.

Revisions

N/A

Attachments:

1. Erosion Sediment Control Report
2. Notification of Erosion Noncompliance Incident



James L. Bonnet, P.E.
City Engineer

2/22/13
Date



Erosion Sediment Control Report
 City of Salem Public Works Department
 Construction Inspection Section

This form must be completed weekly for active projects, bi-weekly for inactive projects, and within 24 hours of any rain event exceeding 1/2" of rain in a 24-hour period.

PROJECT NAME	WEEK ENDING
CONTRACTOR AND/OR SUBCONTRACTOR	PROJECT #
CONTRACTOR'S REPRESENTATIVE	INSPECTOR'S TIME - HOURS

WEATHER											
RAIN IN LAST 24 HOURS (INCHES)											
CLEAR	FAIR	CLOUDY	SHOWERS	RAIN	SNOW	TEMP	<32	32-50	50-70	70-85	>85
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WIND		STILL	LOW	MED	HIGH	HUMIDITY		DRY	LOW	MED	HUMID
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Check "Yes," "No," or "N/A" if not applicable. If any answer is "No," describe needed correction(s) in the space provided below each question or on an attached sheet.

NO.	DESCRIPTION	YES	NO	N/A
1.	Is the ESCP (Erosion Sediment Control Plan) available on-site and being properly implemented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
2.	Is the contractor maintaining and/or inspecting the devices on a regular basis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
3.	Is all perimeter sediment fencing properly installed, maintained, and functioning?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
4.	Are all catch basin controls properly installed, maintained, and functioning?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				

NO.	DESCRIPTION	YES	NO	N/A
5.	Are all construction entrances properly installed, maintained, and functioning?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
5 (a)	If evidence of tracking, is contractor removing noticeable deposits?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
6.	Has all disturbed soil, not being worked within last 14 days, been temporarily stabilized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
7.	Is dust being controlled properly where evident?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
8.	Are hazardous materials properly stored with secondary containments, where applicable?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
9.	Are all other erosion prevention measures in place and functioning properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
10.	Have required corrective actions been entered into the Inspection Log Action List?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				
11.	Have items noted on last inspection been corrected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:				

DATE

INSPECTOR

REVIEWED BY PM/CA: _____

DATE: _____

Note: Deficiencies must be corrected within seven (7) days unless otherwise noted.



Notification of Erosion Control Noncompliance Incident

Date: _____

Weather Conditions: _____

Observed By: _____

Location of Incident (Use address if possible, or block number and street, and a subdivision name if applicable.):

Description of Noncompliance Incident:

Possible Responsible Party for Noncompliance Incident (e.g., name of a builder, delivery truck, landscape company, etc.):

Contacted someone on site regarding noncompliance incident? Yes No

Contact Name: _____

Repeat Noncompliance Incident? Yes No

cc: File