



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

March 3, 2015

Jackson County Permitting and Code Enforcement
ATTN: Mr. Tony Elders, Director
401 Grindstaff Cove Road, Suite 145
Sylva, North Carolina 28779

Subject: Sedimentation and Erosion Control Local Program Informal Review

Dear Mr. Elders:

On February 9, 2015, personnel from NCDENR, DEMLR, Asheville Regional Office Land Quality Section conducted an informal review of the Jackson County Local Program. The County's local program consists of four staff members that perform duties related to erosion and sediment control. Jackson County has 574 active sites, most of which are less than one half acre in disturbance. In 2014 Jackson County received and approved 11 new erosion and sediment control plans that were over an acre. There were 50 erosion and sedimentation complaints and four stop work orders issued by Jackson County in 2014. No notices of violation have been issued by the County in the past year. This review's primary focus was to evaluate Erosion and Sediment Control Plans and to inspect waste sites associated with NCDOT Project R-5000 located along NC Hwy 107 thru Sylva and Cullowhee.

Staff are doing frequent inspections of their projects and are identifying the issues on the site. However, there is insufficient follow up and enforcement for sites with continuing issues. In addition, more attention needs to be given to plan review and assurance that proposed erosion and sedimentation control measures on plans meet the guidelines of the North Carolina Erosion and Sediment Control Planning and Design Manual and NPDES groundcover requirements prior to approval of the plans (for sites greater than one acre). In summary, the Jackson County Local Program should target more thorough plan reviews and more enforcement of sites in violation.

Based on the results of the inspection and review of the waste sites associated with NCDOT Project R-5000 we make the following recommendations concerning these sites:

- A Notice of Violation should be issued to the Locust Creek Waste Site. For any fill slopes steeper than 2:1, a geotechnical slope stability certification by a licensed geotechnical engineer should be required.
- The inspection report for the Tinsel Town Inc. Waste Site should identify items of concern including inadequate ground cover and inadequate slope stabilization; and require corrective action of these items in a timely manner. If these items are not corrected within the requested time frame, a Notice of Violation should be issued.

Division of Energy, Mineral, and Land Resources - Land Quality Section
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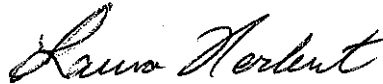
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- Prior to issuing any permits for installation of additional structures closer to the steep slope at the Inez McDowell c/o Wayne Smith Project, the county should require a geotechnical slope stability certification by a licensed geotechnical engineer for all fill slopes steeper than 2:1 at this Project.

Attached is a summary of our findings and recommendations. Please notify us of your progress in addressing these suggestions and recommendations. Please provide us with a status update on the compliance status of the noted projects. We appreciate the assistance of Jackson County staff during our review and thank you again for you and your staff's efforts to protect the State's waters from sedimentation. We look forward to working with you and assisting you in addressing our comments and recommendations. If you have any questions, or would like assistance in these matters, please contact Mr. Fred Walker, Assistant Regional Engineer, or me at (828)296-4500.

Sincerely,



Laura Herbert, PE
Regional Engineer

Enclosure

Ec: Robert Shelton, Jackson County
Ashley Rodgers, PE, NC Sedimentation Specialist

Local Program Report to the SCC

Jackson County's Erosion and Sediment Control Local program was reviewed February 9, 2015. Four staff members perform duties related to erosion and sediment control. Jackson County has 574 active sites, most of which are less than one half acre in disturbance. For 2014 Jackson County received and approved 11 new erosion and sediment control plans that were over an acre. There were 50 erosion and sedimentation complaints and 4 stop work orders issued by Jackson County in 2014. No notices of violation have been issued by the County in the past year. This review's primary focus was to evaluate Erosion and Sediment Control Plans and to inspect waste sites associated with NCDOT Project R-5000 located along NC Hwy 107 thru Sylva and Cullowhee.

Four projects were evaluated during the local program review. Three plans were reviewed and all three had inadequacies with respect to SPCA and NCDENR Design Manual Guidelines. All open projects visited during the review had violations with two sites potentially requiring notices of violation. Slope stabilization and proper measure installation and maintenance were the most serious issues with the waste sites inspected.

The Locust Creek Waste Site

The Locust Creek waste site, also referred to as the Brooks and Reed parcels, requires a Notice of Violation based on inadequate slope stabilization, improper installation of measures, and offsite sediment tracking by vehicles. Previous inspections have noted these violations, but these violations have not been addressed. There were several measures at the site that were not installed properly and are not functioning as they should. This site is most likely in violation of NPDES ground stabilization requirements, but previous inspections have not established the timeline for compliance. Please see the list of erosion and sediment control issues for this site below:

1. Slope drains discharge onto fill slope, also no outlet protection at discharge point of slope drains. Large holes and rills are forming at outlets. Inlet protection is lacking.
2. Slope above skimmer basin appeared steeper than 2 H : 1 V, all fill slopes should be no steeper than 2 H : 1 V. Safety and sustainability issues arise when fill slopes are constructed steeper than 2 H : 1 V. Any proposed slopes that are steeper require a licensed geotechnical engineer to certify the slope stability upon completion.
3. Skimmer basin appeared more than half full of sediment, the skimmer device was stuck in sediment, and two baffles were installed when three are specified for a skimmer basin. Additional baffle would improve sediment treatment efficiency in the basin. Routine maintenance was not evident in the skimmer basin since the skimmer appeared stuck in sediment and there was a thick standing cluster of vegetation growing in the pond indicating it had not been dredged for some time.
4. Matting product was not installed properly on fill slopes, surface preparation was not sufficient and stapling pattern was inadequate. Slope surface should be relatively flat and

free from large rocks and debris which inhibit proper contact between matting and the surface. Rills have formed beneath the matting/seedling.

5. Slope breaks are needed along steep and long slopes per the North Carolina Erosion and Sediment Control Planning and Design Manual Section 6.02. Several rills are forming down the fill slopes throughout the site which indicates inadequate slope break and/or slope stabilization.
6. Ditches and diversions should be lined or stabilized until vegetation is established. The ditch running along the road frontage requires immediate stabilization and reworking to assure depth and channel flow is adequate.
7. Control measure maintenance should be performed frequently to ensure adequate performance of measures. The contractor should inspect measures weekly or after any 0.5 inch rainfall. Silt fence below fill slopes needs maintained and cleaned out in areas, temporary construction entrance requires additional stone since sediment has filled in current entrance and is generating offsite tracking, and the skimmer basin needs to have excess sediment removed.
8. Plan requires phasing and a temporary groundcover plan. With this site being open for an extended period of time a phased approach for establishing groundcover shall be submitted, so that groundcover timelines in both NPDES and North Carolina Erosion and Sediment Control Planning and Design Manual requirements are recognized and met.

The Tinsel Town, Inc. Waste Site

The Tinsel Town Inc. site, also called the 441 site, appears to be less used now than what it had been in the past. Visual clues indicate that very little "land disturbance" has taken place at this site in the past few months. Inadequate groundcover and slope stabilization are the two primary concerns at this site. Please see the list of erosion and sediment control issues for this site below:

1. Slope breaks are needed along steep and long slopes per the North Carolina Erosion and Sediment Control Planning and Design Manual Section 6.02. Rills are forming along two fill slopes which indicates inadequate slope break and/or slope stabilization.
2. Rolled erosion control product should be used on all fill slopes with slopes equal to or steeper than 2 H : 1 V. Slope surface should be relatively flat and free from large rocks and debris which inhibit proper contact between matting and the surface.
3. Ground stabilization timeframes for slopes and other designated areas should be specified on the plan and met in the field.
4. Temporary and vegetative groundcover should be specified in the plans. The contractor should be given specified deadlines to provide stabilized slopes and groundcover before doing additional disturbance on the site.
5. If the above are not addressed in a timely manner, a NOV should be issued.

Inez McDowell c/o Wayne Smith Project

The site referred to as the Inez McDowell c/o Wayne Smith project, also called Old Cullowhee Road site, had adequate vegetative cover and was reported as being closed and stabilized. Two of the three fill slopes on the property appeared to be steeper than 2 H : 1 V. Even with established vegetation the slopes have developed a large erosion gully and additional rills are developing due to the angle of the slope and poor matting installation. In addition the sediment basin has not yet been dewatered, permanently stabilized and closed. It appears the basin is still operational and full of sediment. Due to slope concerns, a geotechnical certification of the finished fill slopes steeper than 2 H : 1 V should be required. Once the slope is certified the sediment basin should be dewatered and stabilize. Please see the list of erosion and sediment control issues for this site below:

1. Slope breaks are needed along steep and long slopes per the North Carolina Erosion and Sediment Control Planning and Design Manual Section 6.02. Rills are forming along the longest fill slope which indicates inadequate slope break and/or slope stabilization.
2. Provide plan to maintain or close out skimmer basin. Leaving the skimmer basin as is with no intended future plans creates a high potential for offsite sedimentation.
3. Provide outlet protection at junction of culverts located at the entrance to property. Some form of energy dissipation at the discharge point is needed due to the elevation drop from the outlets to the bottom of pit.

After reviewing records, we established that the Local Program staff does an adequate job of performing inspections. They appear to visit work sites and make recommendations on a frequent basis. Based on our findings we recommend during plan reviews focus should be on sufficient measures that follow our North Carolina Erosion and Sediment Control Planning and Design Manual guidelines and phasing of the projects. Listed below are recommendations for both reviews and inspections that should minimize future erosion and sediment control projects. Please see recommendations for both phases below.

Recommendations for Reviews

1. Require slope breaks per North Carolina Erosion and Sediment Control Planning and Design Manual.
2. Require RECP on all long and steep slopes and during periods when it is difficult to establish vegetation such as winter months.
3. Require velocity dissipation controls in diversions and ditches.
4. Require plan to state stabilization and groundcover deadlines.
5. All details should be equal or greater to details provided by NCDENR or NCDOT.
6. Require that silt fence be located and installed based on NCDENR guidelines and manufacturer specifications.
7. Require inlet/outlet protection anywhere there is a collection of focused flow or a discharge point from any pipe or channel.
8. Do not allow slope drains to discharge onto fill slopes.

9. Require geotechnical engineer certification on all fill slopes steeper than 2 H : 1 V and on all cut slopes steeper than 1 ½ H : 1 V.
10. Require that areas of high importance on plans are highlighted or symbolized and represented in the legend. For example have the designers hatch areas on the plan to be matted, use heavy weighted lines to depict streams or other important features, and provide phasing narratives for complex measures that will be in use for an extended period. Call outs on plan sheets are also effective means of communication to identify items such as slope grade and conditions that should be satisfied throughout the site.
11. Require drainage area maps and design calculations for temporary and permanent measures.

Recommendations for Inspections

1. Require NPDES/E & SC self inspections be performed and records kept at project sites for all projects.
2. In efforts to minimize environmental impacts and ensure compliance with the Sedimentation Pollution Control Act, after conducting inspections provide the Financially Responsible and/or contractor with a list of items that require attention. Provide a deadline for each item and conduct a follow up inspection once the deadline has passed. If requirements are not met at the time of the next inspection then identify those items to the Financially Responsible and/or the contractor. Proceed with issuing a work stoppage or Notice of Violation and if necessary do not allow any further work until requests have been satisfied.