

Memorandum



Date: May 12, 2014

Project No.: N/A

Project Name: Connecticut Department of Transportation

Subject: *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities – Turbidity Monitoring*

Summary:

The Connecticut Department of Energy and Environmental Protection (CTDEEP), General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities effective October 1, 2013 requires turbidity monitoring (Section 5(c)) for Sites as follows:

<i>Area of Soil Disturbance</i>	<i>Monitoring Required?</i>	<i>Monitoring Frequency</i>	<i>Sample Method</i>
Sites which disturb 1 acre or more, but less than 5 acres	Only IF a Registration is required *	Monthly IF a Registration is required *	Procedure consistent with 40 CFR Part 136 (EPA Method 180.1)
Sites which disturb 5 acres or more	Yes	Monthly	Procedure consistent with 40 CFR Part 136 (EPA Method 180.1)

* - Registration is required for ConnDOT projects.

Turbidity Monitoring Requirements

1. The permit requires sampling at least **once every month** until final stabilization of the drainage area associated with each outfall is achieved.
2. Samples shall be collected during **normal working hours** which must be identified in the *Stormwater Pollution Control Plan (Plan)*.
3. Samples shall be collected from discharges resulting from a storm event that occurs at least 24 hours from any previous storm generating a stormwater discharge.
4. Samples shall be **grab samples** taken at least **three (3)** separate times during the storm event and shall be representative of the flow. (Note: The stormwater discharge turbidity value reported to DEEP is the **average** value of grab samples taken for each sampling point during a given storm.)
5. Sampling is required at all point source discharges of stormwater from disturbed areas. Where there are 2 or more substantially identical discharge points, up to 5

substantially identical outfalls may be identified for **one (1) representative discharge**.

If such project continues for more than one (1) year, the permittee shall rotate twice per year the sample location such that a different discharge point is sample every six (6) months.

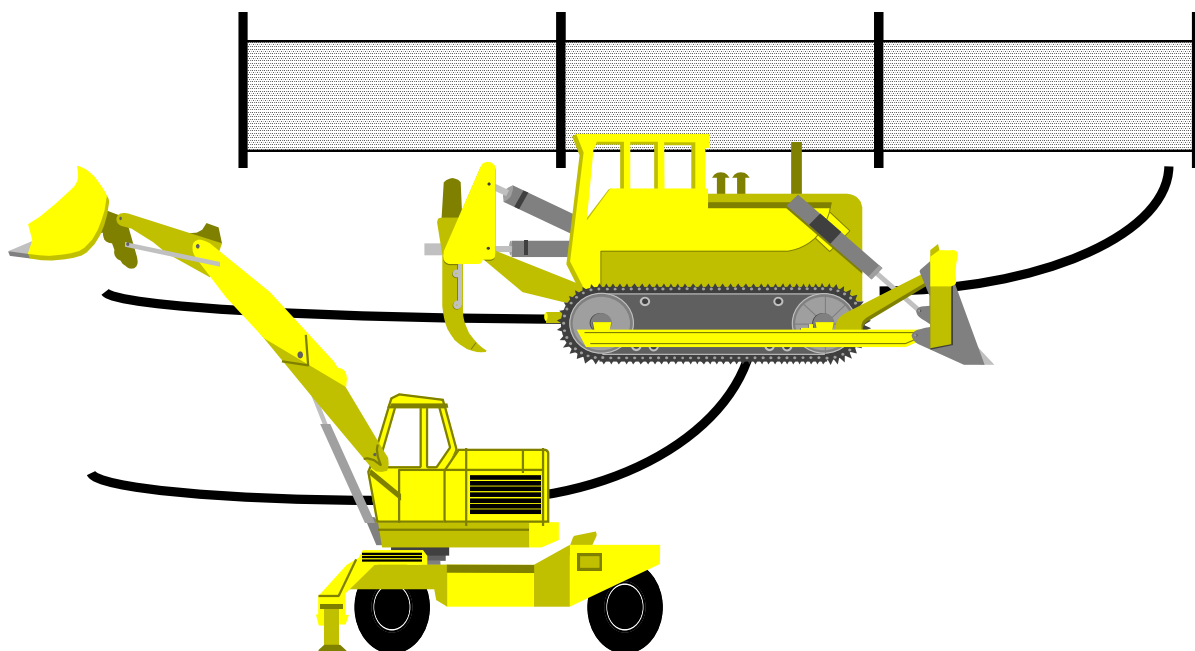
6. For **Linear Projects**, up to ten (10) substantially identical outfalls may identified for one (1) representative discharge.
7. All sampling point(s) shall be identified in the *Plan* and clearly marked in the field with a flag, stake or other visible marker.

Sample Collection and Analysis – EPA Method 180.1

EPA Method 180.1 covers determination of turbidity by nephelometry. The applicable range is 0-49 nephelometric turbidity units (NTU). (See attached).

- Samples shall be grab samples taken at least three (3) separate times during the storm event.
- Samples may be taken manually or by an in-situ turbidity probe or other automatic sampling device equipped to take individual turbidity readings (not composite).
- The first grab sample shall be taken within the first hour of stormwater discharge from the site.
- In cases where the samples are collected manually and the discharge begins outside of normal working hours, the first sample shall be taken at the start of normal working hours.
- Samples should be collected in clean plastic bottles (100 ml) as is. No chemical preservation is required.
- Samples shall be collected at the designated locations in the Plan. (See attached “How to do Stormwater Monitoring: A Guide to Construction Sites” from Washington State, Department of Ecology.)
- Cool sample to 4°C.
- Samples shall be analyzed as soon as possible after collection (within 48 hours).
- Samples may be analyzed in the field with a portable turbidimeter (See attached Construction Effluent Monitoring Kit) or analyzed in the laboratory (\$4/sample under the current DAS laboratory contract) within 48 hours of collection with samples stored at 4°C.

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities



Issuance Date: August 21, 2013
Effective Date: October 1, 2013

Printed on recycled paper

General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

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General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Section 1. Authority

This general permit is issued under the authority of section 22a-430b of the Connecticut General Statutes.

Section 2. Definitions

The definitions of terms used in this general permit shall be the same as the definitions contained in section 22a-423 of the Connecticut General Statutes and section 22a-430-3(a) of the Regulations of Connecticut State Agencies. As used in this general permit, the following definitions shall apply:

“*x-year, 24-hour rainfall event*” means the maximum 24-hour precipitation event with a probable recurrence interval of once in the given number of years (i.e. $x=2, 25$ or 100), as defined by the National Weather Service in Technical Paper Number 40, “Rainfall Frequency Atlas of the United States,” May 1961, and subsequent amendments, or equivalent regional or state rainfall probability information developed therefrom.

“*Annual sediment load*” means the total amount of sediment carried by stormwater runoff on an annualized basis.

“*Aquifer protection area*” means aquifer protection area as defined in section 22a-354h of the Connecticut General Statutes.

“*Best engineering practices*” means the design of engineered control measures to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable.

“*CFR*” means the Code of Federal Regulations.

“*Coastal area*” means coastal area as defined in section 22a-93(3) of the Connecticut General Statutes.

“*Coastal waters*” means coastal waters as defined in section 22a-93(5) of the Connecticut General Statutes.

“*Commissioner*” means commissioner as defined in section 22a-2(b) of the Connecticut General Statutes.

“*Construction activity*” means any activity associated with construction at a site including, but not limited to, clearing and grubbing, grading, excavation, and dewatering.

“*Department*” means the Department of Energy & Environmental Protection.

“*Developer*” means a person who or municipality which is responsible, either solely or partially through contract, for the design and construction of a project site.

“*Dewatering wastewater*” means wastewater associated with the construction activity generated from the lowering of the groundwater table, the pumping of accumulated stormwater or uncontaminated groundwater from an excavation, the pumping of surface water from a cofferdam, or pumping of other surface water that has been diverted into a construction site.

“*District*” means a soil and water conservation district established pursuant to section 22a-315 of the Connecticut General Statutes. Appendix E lists the Districts, their geographic delineations, and contact information.

“*Disturbance*” means the execution of any of the construction activity(ies) defined in this general permit.

“*Effective Impervious Cover*” is the total area of a site with a Rational Method runoff coefficient of 0.7 or greater (or other equivalent methodology) from which stormwater discharges directly to a surface water or to a storm sewer system.

“*Engineered stormwater management system*” means any control measure and related appurtenances which requires engineering analysis and/or design by a professional engineer.

“*Erosion*” means the detachment and movement of soil or rock fragments by water, wind, ice and gravity.

“*Fresh-tidal wetland*” means a tidal wetland with an average salinity level of less than 0.5 parts per thousand.

“*Grab sample*” means an individual sample collected in less than fifteen minutes.

“*Groundwater*” means those waters of the state that naturally exist or flow below the surface of the ground.

“*Guidelines*” means the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, established pursuant to section 22a-328 of the Connecticut General Statutes.

“*High Quality Waters*” means those waters defined as high quality waters in the Connecticut Water Quality Standards published by the Department, as may be amended.

“*Impaired water(s)*” means those surface waters of the state designated by the commissioner as impaired pursuant to Section 303(d) of the Clean Water Act and as identified in the most recent State of Connecticut Integrated Water Quality Report.

“*In Responsible charge*” means professional experience for which the Commissioner determines that a professional’s primary duties consistently involve a high level of responsibility and decision making in the planning and designing of engineered stormwater management systems or in the planning and designing of soil erosion and sediment controls for residential and commercial construction projects. The Commissioner shall consider the following in determining whether a professional’s experience qualifies as responsible charge experience:

- (i) the level of independent decision-making exercised;
- (ii) the number of individuals and the disciplines of the other professionals that the professional supervised or coordinated;
- (iii) the extent to which a professional’s responsibilities consistently involved the review of work performed by other professionals involved the planning and designing of engineered stormwater management systems or the planning and designing of soil erosion and sediment controls for residential and commercial construction projects;
- (iv) the extent to which a professional’s responsibilities consistently involved the planning and designing of engineered stormwater management systems or the planning and designing of soil erosion and sediment controls for residential and commercial construction projects and whether such responsibilities were an integral and substantial component of the professional’s position;
- (v) the nature of a professional’s employer’s primary business interests and the relation of those interests to planning and designing of engineered stormwater management systems or to planning and designing of soil erosion and sediment controls for residential and commercial construction projects;

- (vi) the extent to which a professional has engaged in the evaluation and selection of scientific or technical methodologies for planning and designing of engineered stormwater management systems or for planning and designing of soil erosion and sediment controls for residential and commercial construction projects;
- (vii) the extent to which a professional drew technical conclusions, made recommendations, and issued opinions based on the results of planning and designing of engineered stormwater management systems or of planning and designing of soil erosion and sediment controls for residential and commercial construction projects; or
- (viii) any other factor that the Commissioner deems relevant.

“*Individual permit*” means a permit issued to a specific permittee under section 22a-430 of the Connecticut General Statutes.

“*Inland wetland*” means wetlands as defined in section 22a-38 of the Connecticut General Statutes.

“*Landscape Architect*” means a person with a currently effective license issued in accordance with chapter 396 of the Connecticut General Statutes.

“*Linear Project*” includes the construction of roads, railways, bridges, bikeways, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

“*Locally approvable project*” means a construction activity for which the registration is not for a municipal, state or federal project and is required to obtain municipal approval for the project.

“*Locally exempt project*” means a construction activity for which the registration is for a project authorized under municipal, state or federal authority and may not be required to obtain municipal approval for the project.

“*Low Impact Development*” or “*LID*” means a site design strategy that maintains, mimics or replicates pre-development hydrology through the use of numerous site design principles and small-scale treatment practices distributed throughout a site to manage runoff volume and water quality at the source.

“*Minimize*”, for purposes of implementing the control measures in Section 5(b)(2) of this general permit, means to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

“*Municipal separate storm sewer system*” or “*MS4*” means conveyances for stormwater (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) owned or operated by any municipality and discharging to surface waters of the state.

“*Municipality*” means a city, town or borough of the state as defined in section 22a-423 of the Connecticut General Statutes.

“*Nephelometric Turbidity Unit*” or “*NTU*” means a unit measure of turbidity from a calibrated nephelometer.

“*Normal Working Hours*”, for the purposes of monitoring under Section 5(c) of this general permit, are considered to be, at a minimum, Monday through Friday, between the hours of 8:00 am and 6:00 pm, unless additional working hours are specified by the permittee.

“*Permittee*” means any person who or municipality which initiates, creates or maintains a discharge in accordance with Section 3 of this general permit.

“*Person*” means person as defined in section 22a-423 of the Connecticut General Statutes.

“*Phase*” means a portion of a project possessing a distinct and complete set of activities that have a specific functional goal wherein the work to be completed in the phase is not dependent upon the execution of work in a later phase in order to make it functional.

“*Point Source*” means any discernible, confined and discrete stormwater conveyance (including but not limited to, any pipe, ditch, channel, tunnel, conduit, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft) from which pollutants are or may be discharged.

“*Professional Engineer*” or “*P.E.*” means a person with a currently effective license issued in accordance with chapter 391 of the Connecticut General Statutes.

“*Qualified Inspector*” means an individual possessing either (1) a professional license or certification by a professional organization recognized by the commissioner related to agronomy, civil engineering, landscape architecture, soil science, and two years of demonstrable and focused experience in erosion and sediment control plan reading, installation, inspection and/or report writing for residential and commercial construction projects in accordance with the Guidelines; or (2) five years of demonstrable and focused experience in erosion and sediment control plan reading, installation, inspection and/or report writing for residential and commercial construction projects in accordance with the Guidelines; or (3) certification by the Connecticut Department of Transportation (DOT).

“*Qualified professional engineer*” means a professional engineer who has, for a minimum of eight years, engaged in the planning and designing of engineered stormwater management systems for residential and commercial construction projects in accordance with the Guidelines and the Stormwater Quality Manual including, but not limited to, a minimum of four years in responsible charge of the planning and designing of engineered stormwater management systems for such projects.

“*Qualified soil erosion and sediment control professional*” means a landscape architect or a professional engineer who: (1) has for a minimum of eight years engaged in the planning and designing of soil erosion and sediment controls for residential and commercial construction projects in accordance with the Guidelines including, but not limited to, a minimum of four years in responsible charge of the planning and designing of soil erosion and sediment controls for such projects; or (2) is currently certified as a professional in erosion and sediment control as designated by EnviroCert International, Incorporated (or other certifying organization acceptable to the commissioner) and has for a minimum of six years experience engaged in the planning and designing of soil erosion and sediment controls for residential and commercial construction projects in accordance with the Guidelines including, but not limited to, a minimum of four years in responsible charge in the planning and designing of soil erosion and sediment controls for such projects.

“*Registrant*” means a person or municipality that files a registration.

“*Registration*” means a registration form filed with the commissioner pursuant to Section 4 of this general permit.

“*Regulated Municipal Separate Storm Sewer System*” or “*Regulated MS4*” means the separate storm sewer system of the City of Stamford or any municipally-owned or -operated separate storm sewer system (as defined above) authorized by the most recently issued General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 general permit) including all those located partially

or entirely within an Urbanized Area and those additional municipally-owned or municipally-operated Small MS4s located outside an Urbanized Area as may be designated by the commissioner.

“*Retain*” means to hold runoff on-site to promote vegetative uptake and groundwater recharge through the use of runoff reduction or LID practices or other measures. In addition, it means there shall be no subsequent point source release to surface waters from a storm event defined in this general permit or as approved by the commissioner.

“*Runoff reduction practices*” means those post-construction stormwater management practices used to reduce post-development runoff volume delivered to the receiving water, as defined by retaining the volume of runoff from a storm up to the first half inch or one inch of rainfall in accordance with Sections 5(b)(2)(C)(i)(a) or (b), respectively. Runoff reduction is quantified as the total annual post-development runoff volume reduced through canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended filtration or evapo-transpiration.

“*Sediment*” means solid material, either mineral or organic, that is in suspension, is transported, or has been moved from its site of origin by erosion.

“*Site*” means geographically contiguous land on which a construction activity takes place or on which a construction activity for which authorization is sought under this general permit is proposed to take place. Non-contiguous land or water owned by the same person shall be deemed the same site if such land is part of a linear project (as defined in this section) or is otherwise connected by a right-of-way, which such person controls.

“*Soil*” means any unconsolidated mineral and organic material of any origin.

“*Stabilize*” means the use of measures as outlined in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, or as approved by the commissioner, to prevent the visible movement of soil particles and development of rills.

“*Structural measure*” means a measure constructed for the temporary storage and/or treatment of stormwater runoff.

“*Standard Industrial Classification Code*” or “*SIC Code*” means those codes provided in the Standard Industrial Classification Manual, Executive Office of the President, Office of Management and Budget 1987.

“*Standard of care*”, as used in Section 3(b), means to endeavor to perform in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

“*Stormwater*” means waters consisting of rainfall runoff, including snow or ice melt during a rain event.

“*Stormwater Quality Manual*” means the 2004 Connecticut Stormwater Quality Manual published by the Connecticut Department of Energy & Environmental Protection, as amended.

“*Surface water*” means that portion of waters, as the term “waters” is defined in section 22a-423 of the Connecticut General Statutes, located above the ground surface.

“*Tidal wetland*” means a wetland as that term is defined in section 22a-29(2) of the Connecticut General Statutes.

“*Total disturbance*” means the total area on a site where soil will be exposed or susceptible to erosion during the course of all phases of a project.

“*Total Maximum Daily Load*” or “*TMDL*” means the maximum capacity of a surface water to assimilate a pollutant as established by the commissioner, including pollutants contributed by point and non-point sources and a margin of safety.

“*Upland soils*” means soils which are not designated as poorly drained, very poorly drained, alluvial, or flood plain by the National Cooperative Soils Survey, as may be amended, of the Natural Resources Conservation Service of the United States Department of Agriculture and/or the inland wetlands agency of the municipality in which the project will take place.

“*Water company*” means water company as defined in section 25-32a of the Connecticut General Statutes.

“*Water Quality Standards or Classifications*” means those water quality standards or classifications contained in the Connecticut Water Quality Standards published by the Department, as may be amended.

“*Water Quality Volume*” or “*WQV*” means the volume of runoff generated by one inch of rainfall on a site as defined in the 2004 Connecticut Stormwater Quality Manual, as amended.

Section 3. Authorization Under This General Permit

(a) *Eligible Activities*

This general permit authorizes the discharge of stormwater and dewatering wastewaters to surface waters from construction activities on a site, as defined in this general permit, with a total disturbance of one or more acres of land area on a site, *regardless of project phasing*.

In the case of a larger plan of development (such as a subdivision), the estimate of total acres of site disturbance shall include, but is not limited to, road and utility construction, individual lot construction (e.g. house, driveway, septic system, etc.), and all other construction associated with the overall plan, regardless of the individual parties responsible for construction of these various elements.

(b) *Requirements for Authorization*

This general permit authorizes the construction activity listed in the “Eligible Activities” section (Section 3(a)) of this general permit provided:

(1) Coastal Management Act

Such construction activity must be consistent with all applicable goals and policies in section 22a-92 of the Connecticut General Statutes, and must not cause adverse impacts to coastal resources as defined in section 22a-93(15) of the Connecticut General Statutes. Please refer to the Appendix D for additional guidance.

(2) Endangered and Threatened Species

Such activity must not threaten the continued existence of any species listed pursuant to section 26-306 of the Connecticut General Statutes as endangered or threatened and must not result in the destruction or adverse modification of habitat designated as essential to such species. See Appendix A.

(3) Aquifer Protection Areas

Such construction activity, if it is located within an aquifer protection area as mapped under section 22a-354b of the General Statutes, must comply with regulations adopted pursuant to section 22a-354i of the General Statutes. Please refer to the Appendix C for additional guidance.

For any construction activity regulated pursuant to sections 8(c) and 9(b) of the Aquifer Protection Regulations (section 22a-354i(1)-(10) of the Regulations of Connecticut State Agencies), the Stormwater Pollution Control Plan (Plan) must assure that stormwater run-off generated from the regulated construction activity (i) is managed in a manner so as to prevent pollution of groundwater, and (ii) complies with all the requirements of this general permit.

(4) Mining Operations Exception

The stormwater discharge resulting from an activity classified as Standard Industrial Classification 10 through 14 (the mining industry) is not authorized by this general permit and is regulated under the most recently issued General Permit for the Discharge of Stormwater Associated with Industrial Activity.

(5) Discharge to POTW

The stormwater is *not* discharged to a Publicly Owned Treatment Works (POTW).

(6) Discharge to Groundwater

The stormwater is *not* discharged entirely to groundwater, meaning a stormwater discharge to a surface water will not occur up to a 100-year, 24-hour rainfall event.

(7) Such construction activity must be consistent with the Wild and Scenic Rivers Act (16 U.S.C. 1271-1287) for those river components and tributaries which have been designated as Wild and Scenic by the United States Congress. Further, such construction activities must not have a direct and adverse effect on the values for which such river designation was established. Please refer to Appendix H for additional guidance.

(8) Certification Requirements for Registrants and other Individuals

As part of the registration for this general permit, the registrant and any other individual or individuals responsible for preparing the registration submits to the commissioner a written certification which, at a minimum, complies with the following requirements:

- (A) The registrant and any other individual or individuals responsible for preparing the registration and signing the certification has completely and thoroughly reviewed, at a minimum, this general permit and the following regarding the activities to be authorized under such general permit:
 - (i) all registration information provided in accordance with Section 4(c)(2) of such general permit;
 - (ii) the project site, based on a site inspection;
 - (iii) the Stormwater Pollution Control Plan; and
 - (iv) any plans and specifications and any Department approvals regarding such Stormwater Pollution Control Plan;

- (B) The registrant and any other individual or individuals responsible for preparing the registration and signing the certification pursuant to this general permit has, based on the review described in section 3(b)(8)(A) of this general permit, made an affirmative determination to:
- (i) comply with the terms and conditions of this general permit;
 - (ii) maintain compliance with all plans and documents prepared pursuant to this general permit including, but not limited to, the Stormwater Pollution Control Plan;
 - (iii) properly implement and maintain the elements of the Stormwater Pollution Control Plan; and
 - (iv) properly operate and maintain all stormwater management systems in compliance with the terms and conditions of this general permit to protect the waters of the state from pollution;
- (C) Such registrant and any other individual or individuals responsible for preparing the registration certifies to the following statement: "I hereby certify that I am making this certification in connection with a registration under such general permit, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY] and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(b)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."
- (9) The registrant has submitted to the commissioner a written certification by a professional engineer or, where appropriate, a landscape architect licensed in the State of Connecticut for the preparation, planning and design of the Stormwater Pollution Control Plan and stormwater management systems:
- (A) The professional engineer or landscape architect shall certify to the following statement:
- "I hereby certify that I am a [professional engineer][landscape architect] licensed in the State of Connecticut. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY]. I certify that I have thoroughly and completely reviewed the Stormwater

Pollution Control Plan for the project or activity covered by this certification. I further certify, based on such review and on the standard of care for such projects, that the Stormwater Pollution Control Plan has been prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, the Stormwater Quality Manual, as amended, and the conditions of the general permit, and that the controls required for such Plan are appropriate for the site. I further certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement in this certification may subject me to sanction by the Department and/or be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

- (B) Nothing in this section shall be construed to authorize a professional engineer or a landscape architect to engage in any profession or occupation requiring a license under any other provision of the general statutes without such license.

(10) Plan Review and Certification by a District for Locally Approvable Projects

For those Plans not reviewed in accordance with Section 3(b)(11), below, the registrant has submitted to the commissioner a written certification by the appropriate regional District for the review of the Stormwater Pollution Control Plan pursuant to Appendix F, which, at a minimum, complies with the following requirements:

- (A) the Plan Review Certification must be signed by the District. Information on the District review process is outlined in the Memorandum of Agreement provided in Appendix F. In cases where the District is unable to complete review of the Plan within the time limits specified in the Memorandum of Agreement in Appendix F, a notice to that effect signed by the District may be submitted in lieu of the certification.
- (B) the Stormwater Pollution Control Plan has been prepared in accordance with the requirements of Section 5(b) of the general permit.
- (C) Nothing in this subsection shall be construed to authorize District personnel to engage in any profession or occupation requiring a license under any other provision of the general statutes without such license.

(11) Plan Review and Certification by a Qualified Soil Erosion and Sediment Control Professional and Qualified Professional Engineer for Locally Approvable Projects

For those Plans not reviewed in accordance with Section 3(b)(10), above, the registrant has submitted to the commissioner a written certification by a qualified professional engineer or a qualified soil erosion and sediment control professional in accordance with the following requirements:

- (A) for projects disturbing more than one acre and less than fifteen (15) acres, such qualified soil erosion and sediment control professional or qualified professional engineer:
 - (i) is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the registrant; and
 - (ii) has no ownership interest of any kind in the project for which the registration is being submitted.

- (B) for projects disturbing fifteen (15) acres or more, such qualified soil erosion and sediment control professional or qualified professional engineer:
 - (i) is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the registrant;
 - (ii) did not engage in any activities associated with the preparation, planning, designing or engineering of such plan for soil erosion and sediment control or plan for stormwater management systems on behalf of such registrant;
 - (iii) is not under the same employ as any person who engaged in any activities associated with the preparation, planning, designing or engineering of such plans and specifications for soil erosion and sediment control or plans and specifications for stormwater management systems on behalf of such registrant; and
 - (iv) has no ownership interest of any kind in the project for which the registration is being submitted.
- (C) The qualified professional engineer or qualified soil erosion and sediment control professional signing the certification has, at a minimum, completely and thoroughly reviewed this general permit and the following regarding the discharges to be authorized under such general permit:
 - (i) all registration information provided in accordance with Section 4(c)(2) of such general permit;
 - (ii) the site, based on a site inspection;
 - (iii) the Stormwater Pollution Control Plan;
 - (iv) the Guidelines;
 - (v) the Stormwater Quality Manual, if applicable; and
 - (vi) all non-engineered and engineered stormwater management systems, including any plans and specifications and any Department approvals regarding such stormwater management systems.
- (D) Affirmative Determination
 - (i) The qualified soil erosion and sediment control professional signing the certification must have made an affirmative determination, based on the review described in section 3(b)(11)(C) of this general permit that:
 - (a) the Stormwater Pollution Control Plan prepared and certified pursuant to the registration is adequate to assure that the project or activity authorized under this general permit, if implemented in accordance with the Stormwater Pollution Control Plan, will comply with the terms and conditions of such general permit; and
 - (b) all non-engineered stormwater management systems:
 - (1) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically

practicable and that conform to those in the Guidelines and the Stormwater Quality Manual;

- (2) will function properly as designed;
- (3) are adequate to ensure compliance with the terms and conditions of this general permit; and
- (4) will protect the waters of the state from pollution.

(ii) The qualified professional engineer signing the certification must have made an affirmative determination, based on the review described in section 3(b)(11)(C) of this general permit that:

- (a) the Stormwater Pollution Control Plan prepared and certified pursuant to the registration is adequate to assure that the activity authorized under this general permit, if implemented in accordance with the Stormwater Pollution Control Plan, will comply with the terms and conditions of such general permit; and
- (b) all non-engineered and engineered stormwater management systems:
 - (1) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable and that conform to those in the Guidelines and the Stormwater Quality Manual;
 - (2) will function properly as designed;
 - (3) are adequate to ensure compliance with the terms and conditions of this general permit; and
 - (4) will protect the waters of the state from pollution.

(E) The qualified professional engineer or qualified soil erosion and sediment control professional shall, provided it is true and accurate, certify to the following statement:

"I hereby certify that I am a qualified professional engineer or qualified soil erosion and sediment control professional, or both, as defined in the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and as further specified in sections 3(b)(11)(A) and (B) of such general permit. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY]. I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(11)(C) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I further certify that I have made the affirmative determination in accordance with Sections 3(b)(11)(D)(i) and (ii) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be

punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

- (F) Nothing in this subsection shall be construed to authorize a qualified soil erosion and sediment control professional or a qualified professional engineer to engage in any profession or occupation requiring a license under any other provision of the general statutes without such license.

(12) New Discharges to Impaired Waters

New stormwater discharges directly to an impaired water, as indicated in the State's Integrated Water Quality Report, must be in accordance with the following conditions:

- (A) Stormwater discharges that go directly to impaired waters seeking authorization under this general permit shall comply with the requirements of this subsection (B) below if the indicated cause or potential cause of the impairment is one of the following:
- Site Clearance (Land Development or Redevelopment)
 - Post-Development Erosion and Sedimentation
 - Source Unknown (if cause of impairment is Sedimentation/Siltation)
- (B) Such stormwater discharge is authorized if the permittee complies with the requirements of Section 5(b)(3) of this permit and receives a written affirmative determination from the commissioner that the discharge meets the requirements of that section. In such case, the permittee must keep a copy of the written determination onsite with the Plan. If the permittee does not receive such affirmative determination, the construction activity is not authorized by this general permit and must obtain an individual permit.

(c) **Registration**

Pursuant to the "Registration Requirements" section (Section 4) of this general permit, a completed registration with respect to the construction activity shall be filed with the commissioner as follows:

(1) Locally Approvable Projects

The registration must:

- (A) Be electronically submitted, along with all required elements in subsections (B), (C) and (D), below, at least sixty (60) days prior to the planned commencement of the construction activity.
- (B) Include the Registration Form (available at www.ct.gov/deep/stormwater).
- (C) Include any additional forms and information regarding compliance and/or consistency with the Coastal Management Act, Impaired Waters (including TMDL requirements), Endangered and Threatened Species, and Aquifer Protection Areas that may be required pursuant to the "Requirements of Authorization" section (Section 3(b)).
- (D) Include a Plan Review Certification in accordance with the "Plan Review Certification" (Section 5(b)(8)).

Locally Approvable projects may also choose to make their Plan electronically available in accordance with Section 4(c)(2)(N) of this general permit. The 60 day period cited in subsection

(A), above, will not begin until all required elements have been submitted. Failure to include any of these required submissions shall be grounds to reject the registration.

(2) Locally Exempt Projects

The registration must:

- (A) Be electronically submitted, along with all required elements in subsections (B), (C) and (D), below, at least:
- (i) sixty (60) days prior to the planned commencement of the construction activity if the site has a total disturbed area of between one (1) and twenty (20) acres; *or*
 - (ii) ninety (90) days prior to the planned commencement of construction activity if the site:
 - (a) has a total disturbed area greater than twenty (20) acres;
 - (b) discharges to a tidal wetland (that is not a fresh-tidal wetland) within 500 feet of the discharge point; *or*
 - (c) is subject to the impaired waters provisions of Section 3(b)(12).
- (B) Include the Registration Form (available at www.ct.gov/deep/stormwater).
- (C) Include any additional forms and information regarding compliance and/or consistency with the Coastal Management Act, Impaired Waters (including TMDL requirements), Endangered and Threatened Species, and Aquifer Protection that may be required pursuant to the “Requirements of Authorization” section (Section 3(b)).
- (D) Include an electronic copy of the Stormwater Pollution Control Plan (Plan) (or a web address where the electronic Plan can be downloaded) for the commissioner’s review. The electronic Plan shall be in Adobe™ PDF format or similar publicly available format in common use. **DO NOT INCLUDE** in this electronic copy any pages or other material that do not pertain to stormwater management or erosion and sedimentation control (such as electrical and lighting plans, boundary or lot surveys, building plans, non-stormwater related detail sheets, etc.).

The 60 or 90 day periods cited in subsections (A), above, will not begin until all required elements have been submitted. Failure to include any of these required submissions shall be grounds to reject the registration.

(3) Re-Registration of Existing Projects

For sites previously registered under any previous version of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and for which no Notice of Termination has been submitted pursuant to the “Termination Requirements” section (Section 6), a Re-Registration Form (available at www.ct.gov/deep/stormwater) pursuant to Section 4(c)(3) shall be submitted on or before February 1, 2014. The re-registration fee is payable (or waived) in accordance with Section 4(c)(1)(A)(iii). Resubmission of the permittee’s Plan is not required unless specifically requested by the commissioner.

(d) *Small Construction*

For construction projects with a total disturbance of between one and five acres, the permittee shall adhere to the erosion and sediment control land use regulations of the municipality in which the construction activity is conducted, as well as the Guidelines and the Stormwater Quality Manual.

No registration or Plan review and certification shall be required for such construction activity provided a land-use commission of the municipality (i.e. planning/zoning, wetland, conservation, etc) reviews and issues a written approval of the proposed erosion and sediment control measures, pursuant to the requirements of section 22a-329 of the Connecticut General Statutes. In the absence of such municipal commission approval, the permittee shall register with the DEEP under the requirements for a Locally Exempt Project and comply with all applicable conditions of this general permit.

(e) *Geographic Area*

This general permit applies throughout the State of Connecticut.

(f) *Effective Date and Expiration Date of this General Permit*

The registration provisions of Section 3(c) and 4 of this General Permit, including any applicable definitions or provisions referred to in those sections insofar as they facilitate submission of a registration, shall be effective September 1, 2013. All remaining provisions of this General Permit shall be effective on October 1, 2013. The provisions of this General Permit shall expire on September 30, 2018.

(g) *Effective Date of Authorization*

A construction activity is authorized by this general permit at such time as specified in subsections (1) and (2), below.

(1) Authorization Timelines

The activity is authorized based on the following timelines unless superseded by subsection (2), below:

- (A) for locally approvable projects, sixty (60) days after the submission of the registration form required by Section 4(c), or
- (B) for locally exempt projects under 20 acres, sixty (60) days after the submission of the registration form required by Section 4(c), or
- (C) for locally exempt projects over 20 acres, ninety (90) days after the submission of the registration form required by Section 4(c).

(2) Alternate Authorization Timelines

If one of the following conditions for authorization applies, that condition shall supersede those of subsection (1), above:

- (A) for sites for which the registration and Plan availability and review provisions of Section 4(e) are completed prior to the authorization periods in subsection (1), above, the commissioner may authorize the activity upon such completion, or

- (B) for sites subject to the conditions of Section 3(b)(2), 3(b)(12) and/or Section 5(a)(2), the activity is authorized on the date of the commissioner's affirmative determination and/or approval, or
- (C) for sites authorized by any previous version of this general permit and for which no Notice of Termination has been submitted pursuant to the "Termination Requirements" section (Section 6), the activity is authorized effective October 1, 2013. Authorization under this general permit shall cease if a re-registration form is not submitted on or before February 1, 2014.

(h) *Revocation of an Individual Permit*

If a construction activity is eligible for authorization under this general permit and such activity is presently authorized by an individual permit, the existing individual permit may be revoked by the commissioner upon a written request by the permittee. If the commissioner revokes such individual permit in writing, such revocation shall take effect on the effective date of authorization of such activity under this general permit.

(i) *Issuance of an Individual Permit*

If the commissioner issues an individual permit under section 22a-430 of the Connecticut General Statutes, authorizing a construction activity authorized by this general permit, this general permit shall cease to authorize that activity beginning on the date such individual permit is issued.

Section 4. Registration Requirements

(a) *Who Must File a Registration*

With the exception noted in the "Small Construction" section (Section 3(d)) of this general permit, any person or municipality which initiates, creates, originates or maintains a discharge described in the "Eligible Activities" section (Section 3(a)) of this general permit shall file with the commissioner a registration form that meets the requirements of the "Contents of Registration" section (Section 4(c)) of this general permit (or a re-registration form) and the applicable fee within the timeframes and in the amounts specified in Sections 3(c) and 4(c)(1)(A), respectively. Any such person or municipality filing a registration remains responsible for maintaining compliance with this general permit.

(b) *Scope of Registration*

Each registration shall be limited to the discharge at or from one site; no registration shall cover discharges at or from more than one site.

(c) *Contents of Registration*

(1) Fees

(A) Registration Fee

A registration, if required, shall not be deemed complete unless the registration fee has been paid in full.

(i) Locally Approvable Projects

A registration fee of \$625.00 shall be submitted to the Department with the registration form.

(ii) Locally Exempt Projects

A registration fee shall be submitted with a registration form as follows:

- (a) For sites with total disturbance of between one (1) and twenty (20) acres, the fee shall be \$3,000.
- (b) For sites with total disturbance equal to or greater than twenty (20) acres and less than fifty (50) acres, the fee shall be \$4,000.
- (c) For sites with total disturbance equal to or greater than fifty (50) acres, the fee shall be \$5,000.

The fees for municipalities shall be half of those indicated in subsections (a), (b) and (c) above pursuant to section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection.

(iii) Re-registration

- (a) For sites that registered under the previous version of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities prior to September 1, 2012 and for which no Notice of Termination has been submitted pursuant to the "Termination Requirements" section (Section 6), the re-registration fee shall be \$625 payable with submission of the re-registration form within one hundred twenty (120) days from the effective date of this general permit. If a Notice of Termination is submitted prior to that time, no registration or fee are required.
- (b) For sites that registered under the previous version of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities on or after September 1, 2012 and for which no Notice of Termination has been submitted pursuant to the "Termination Requirements" section (Section 6), the re-registration fee is waived.

(B) The registration fee shall be paid electronically or by check or money order payable to the Department of Energy & Environmental Protection.

(C) The registration fee is non-refundable.

(2) Registration Form

A registration shall be filed electronically on forms prescribed and provided by the commissioner (available at: www.ct.gov/deep/stormwater) and shall include, but not be limited to, the following:

- (A) Legal name, address, and telephone number of the registrant. If the registrant is a person (as defined in Section 2 of this permit) transacting business in Connecticut and is registered with the Connecticut Secretary of the State, provide the exact name as registered with the Connecticut Secretary of the State.
- (B) Legal name, address and telephone number of the owner of the property on which the construction activity will take place.

- (C) Legal name, address and telephone number of the primary contact for departmental correspondence and inquiries, if different from the registrant.
- (D) Legal name, address and telephone number of the developer of the property on which the construction activity is to take place.
- (E) Legal name, address and daytime and off-hours telephone numbers of the general contractor(s) or other representative(s), if different from the developer.
- (F) Legal name, address and telephone number of any consultant(s), engineer(s) or landscape architect(s) retained by the permittee to prepare the registration and Stormwater Pollution Control Plan.
- (G) Location address or description of the site for which the registration is filed.
- (H) The estimated duration of the construction activity.
- (I) Indication of the normal working hours of the site.
- (J) A brief description of the construction activity, including, but not limited to:
 - (i) Total number of acres to be disturbed, regardless of phasing.
 - (ii) Assurance that construction is in accordance with the Guidelines and local erosion and sediment control ordinances, where applicable.
 - (iii) For sites in the Coastal Boundary, documentation that the DEEP Office of Long Island Sound Programs or local governing authority has issued a coastal site plan approval or a determination that the project is exempt from coastal site plan review (see Appendix D) in accordance with section 22a-92 and 22a-93(15) of the Connecticut General Statutes.
 - (iv) Documentation that the construction activity will not threaten the continued existence of any species listed pursuant to section 26-306 of the Connecticut General Statutes as endangered or threatened and will not result in the destruction or adverse modification of habitat designated as essential to such species (see Appendix A).
 - (v) For sites discharging to certain impaired waters, as specified in Section 3(b)(12), documentation that the construction activity meets the requirements of that section and Section 5(b)(3) for authorization under this general permit.
 - (vi) Assurance that the construction activity is not located within an aquifer protection area (see Appendix C) as mapped under section 22a-354b of the Connecticut General Statutes or, if it is located within an aquifer protection area, that the construction activity will comply with regulations adopted pursuant to section 22a-354i of the Connecticut General Statutes.
 - (vii) For a proposed locally approvable project, a plan review certification from the appropriate District, qualified soil erosion and sediment control professional, and/or qualified professional engineer in accordance with Section 5(b)(10) or (11) or a notice from the District that they were unable to complete the Plan review within the time limits specified in the Memorandum of Agreement in Appendix F.

- (K) A brief description of the stormwater discharge, including:
- (i) The name of the municipal separate storm sewer system or immediate surface water body or wetland to which the stormwater runoff will discharge;
 - (ii) Verification of whether or not the site discharges to a tidal wetland (that is not a fresh-tidal wetland) within 500 feet of the discharge point, to a high quality water or to an impaired water with or without a TMDL;
 - (iii) The name of the watershed or nearest waterbody to which the site discharges.
 - (iv) Location of the stormwater discharge(s) including latitude and longitude.
- (L) The total effective impervious cover for the site before and after the proposed construction activity.
- (M) Documentation that the proposed construction activity has been reviewed for consistency with state Historic Preservation statutes, regulations, and policies including identification of any potential impacts on property listed or eligible for listing on the Connecticut Register of Historic Places. A review conducted for an Army Corps of Engineers Section 404 wetland permit would meet this qualification. Refer to Appendix G for guidance on conducting the required review.
- (N) Registrants for locally approvable projects may, if they choose, attach an electronic copy of their Plan to their registration or provide a web address where their Plan may be downloaded. If an electronic plan is not provided, the registrant is still subject to the requirements for submission of a Plan to the commissioner or a member of the public pursuant to the "Plan Availability" section (Section 4(e)(2)). An electronic Plan shall be in Adobe™ PDF format or similar publicly available format in common use. **DO NOT INCLUDE** in the Plan any pages or other material that do not pertain to stormwater management or erosion and sedimentation control (such as electrical and lighting plans, boundary or lot surveys, building plans, non-stormwater related detail sheets, etc.).
- (O) Registrants for all locally exempt projects must submit an electronic copy of their Plan or a web address where the electronic Plan can be downloaded. The electronic Plan shall be in Adobe™ PDF format or similar publicly available format in common use. **DO NOT INCLUDE** in this Plan any pages or other material that do not pertain to stormwater management or erosion and sedimentation control (such as electrical and lighting plans, boundary or lot surveys, building plans, non-stormwater related detail sheets, etc.).
- (P) The certification of the registrant and of the individual or individuals responsible for actually preparing the registration, in accordance with Section 3(b)(8).
- (Q) For all registrations, a design certification must be signed by a professional engineer in accordance with Section 3(b)(9):.
- (R) For registrations for locally approvable projects a review certification must be signed by either: (i) a District in accordance with Section 3(b)(10), or (ii) a qualified soil erosion and sediment control professional and/or qualified professional engineer in accordance with either Section 3(b)(11).

If the registrant is not capable of submitting electronically, a paper form may be submitted in accordance with Section 4(d).

(3) Re-Registration Form

For sites previously registered under any previous version of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and for which no Notice of Termination has been submitted pursuant to the “Termination Requirements” section (Section 6), a re-registration shall be filed electronically pursuant to Sections 3(c)(3) and 3(g) on forms prescribed and provided by the commissioner (available at: www.ct.gov/deep/stormwater) and shall include, but not be limited to, the following:

- (A) Legal name, address, and telephone number of the registrant. If the registrant is a person (as defined in Section 2 of this permit) transacting business in Connecticut and is registered with the Connecticut Secretary of the State, provide the exact name as registered with the Connecticut Secretary of the State.
- (B) The previously issued permit number (beginning with GSN).
- (C) Legal name, address and telephone number of the owner of the property on which the construction activity will take place.
- (D) Legal name, address and telephone number of the primary contact for departmental correspondence and inquiries, if different from the registrant.
- (E) Legal name, address and telephone number of the developer of the property on which the subject construction activity is to take place.
- (F) Legal name, address and daytime and off-hours telephone numbers of the general contractor(s) or other representative(s), if different from the developer.
- (G) Legal name, address and telephone number of any consultant(s) or engineer(s) retained by the permittee to prepare the registration and Stormwater Pollution Control Plan.
- (H) Location address or description of the site for which the re-registration is filed.
- (I) Indication of the normal working hours of the site.
- (J) The estimated duration of the construction activity.
- (K) The signature of the registrant and of the individual or individuals responsible for actually preparing the re-registration, each of who shall certify in writing as follows:

“I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY] and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that all designs and plans for such activity meet the current terms and conditions of the general permit in accordance with Section 5(b)(5)(C) of such general permit and that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section

3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law.”

If the registrant is not capable of submitting electronically, a paper form may be submitted in accordance with Section 4(d).

(d) *Where to File a Registration*

A registration (available at: www.ct.gov/deep/stormwater) shall be filed electronically with the commissioner in accordance with Section 3(c)(2) or (3). If the registrant does not have the capability to submit electronically, a paper registration may be filed at the following address:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

(e) *Availability of Registration and Plan*

By the fifteenth (15th) day of each month, the commissioner shall post on the DEEP website a list of registrations submitted in the previous month.

(1) Registration Availability

On or before fifteen (15) days from the date of posting by the commissioner, members of the public may review and comment on a registration. Any electronically available Plans will be posted with the corresponding registration.

(2) Plan Availability

(A) Electronic Plan Availability

For an electronically available Plan, on or before fifteen (15) days from the date of posting by the commissioner, members of the public may review and comment on a registrant’s Plan.

(B) Non-Electronic Plan Availability

For any Plan that is not electronically available, on or before fifteen (15) days from the date of a registration posting by the commissioner, members of the public may submit a written request to the commissioner to obtain a copy of a registrant’s Plan. The commissioner shall inform the registrant of the request and the name of the requesting party. If the commissioner does not already have access to a copy of the requested Plan, the registrant shall submit a copy of their Plan to the commissioner within seven (7) days of their receipt of such request. On or before fifteen (15) days from the date the commissioner makes a Plan available to the requesting party, they may submit written comments on the Plan to the commissioner.

(f) Additional Information

The commissioner may require a permittee to submit additional information that the commissioner reasonably deems necessary to evaluate the consistency of the subject construction activity with the requirements for authorization under this general permit.

(g) Additional Notification

For discharges authorized by this general permit to a regulated municipal separate storm sewer system, a copy of the registration and all attachments thereto shall also be submitted to the owner and operator of that system.

For discharges authorized by this general permit to a DOT separate storm sewer system, a copy of the registration and all attachments thereto shall also be submitted to the DOT upon request.

For discharges within a public drinking water supply watershed or aquifer area, a copy of the registration and the Plan described in subsection 5(b) of this general permit shall be submitted to the water company.

For discharges to river components and tributaries which have been designated as Wild and Scenic under the Wild and Scenic Rivers Act, a copy of the registration and the Plan described in 5(b) of this general permit shall be submitted to the applicable Wild and Scenic Coordinating Committee. Please refer to Appendix H for additional guidance

In addition, a copy of this registration and the Plan shall be available upon request to the local inland wetlands agency established pursuant to section 22a-42 of the Connecticut General Statutes, or its duly authorized agent.

(h) Action by Commissioner

- (1) The commissioner may reject without prejudice a registration if it does not satisfy the requirements of the “Contents of Registration” section (subsection 4(c)) of this general permit. Any registration refiled after such a rejection shall be accompanied by the fee specified in the “Fees” subsection (subsection 4(c)(1)) of this general permit.
- (2) The commissioner may disapprove a registration if is inconsistent with the requirements for authorization under the “Requirements for Registration” section (Section 3(b)) of this general permit, or for any other reason provided by law.
- (3) Disapproval of a registration under this subsection shall constitute notice to the registrant that the subject construction activity must be authorized under an individual permit.
- (4) Rejection or disapproval of a registration shall be in writing.

(i) Transition to New General Permit

On or after August 1, 2013, up until and including August 31, 2013, a person filing a new registration for a site may file such registration: (a) under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities that expires on September 30, 2013; or (b) this general permit. A person filing a new registration for a site shall not register under both the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities that expires on September 30, 2013 and this general permit. After August 31, 2013, a person filing a new registration for a site shall only register under this general permit and shall be authorized pursuant to Section 3(g) of this general permit.

(Note: Any person who, on or after August 1, 2013, up until and including August 31, 2013, files a new registration for a site under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities that expires on September 30, 2013 shall, after October 1, 2013, re-register such site pursuant to Section 3(c)(3) and Section 4(c)(3) of this general permit.)

A person re-registering a site pursuant to Section 3(c)(3) and Section 4(c)(3) of this general permit may submit the required re-registration information anytime on or after August 1, 2013.

(j) *Latest Date to Submit a Registration Under this General Permit*

No person shall submit a registration under this general permit after June 30, 2018.

Section 5. Conditions of this General Permit

The permittee shall meet all requirements of this general permit at all times. In addition, a permittee shall be responsible for conducting authorized construction activities in accordance with the following conditions:

(a) *Conditions Applicable to Certain Discharges*

(1) Structures and Dredging in Coastal and Tidal Areas

Any person who or municipality that discharges stormwater into coastal tidal waters for which a permit is required under section 22a-361 of the Connecticut General Statutes (structures and dredging) or section 22a-32 of the Connecticut General Statutes (Tidal Wetlands Act), shall obtain such permit(s) from the commissioner. A tidal wetland permit is required for the placement of any sediment upon a tidal wetland, whether it is deposited directly or indirectly.

(2) Discharges to Tidal Wetlands

Any site which has a post-construction stormwater discharge to a tidal wetland (that is not a fresh-tidal wetland) where such discharge is within 500 feet of the tidal wetland, shall discharge such stormwater through a system designed to retain and infiltrate the volume of stormwater runoff generated by 1 inch of rainfall on the site. If there are site constraints that would prevent retention of this volume on-site (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), documentation must be submitted, for the commissioner's review and written approval, which explains the site limitations and offers an alternative retention volume. In such cases, the portion of 1 inch that cannot be retained must be provided with additional stormwater treatment so as to protect water quality. Any such treatment shall be designed, installed and maintained in accordance with the Stormwater Quality Manual.

For sites unable to comply with this section, the commissioner, at the commissioner's sole discretion, may require the submission of an individual permit in lieu of authorization under this general permit.

(3) Toxicity to Aquatic and Marine Life

The discharge shall not cause pollution due to acute or chronic toxicity to aquatic and marine life, impair the biological integrity of aquatic or marine ecosystems, or result in an unacceptable risk to human health.

(4) Water Quality Standards

The stormwater discharge shall not cause or contribute to an exceedance of the applicable Water Quality Standards in the receiving water.

(5) High Quality Waters

Any new or increased stormwater discharge to high quality waters shall be discharged in accordance with the Connecticut Anti-Degradation Implementation Policy in the Water Quality Standards.

(b) Stormwater Pollution Control Plan

All registrants shall develop and maintain on-site a Stormwater Pollution Control Plan (Plan) for the construction activity authorized by this general permit. Once the construction activity begins, the permittee shall perform all actions required by such Plan and shall maintain compliance with the Plan thereafter. The Plan shall be designed to minimize (as defined in Section 2): (1) pollution caused by soil erosion and sedimentation during and after construction; and (2) stormwater pollution caused by use of the site after construction is completed.

(1) Development and Contents of Plan

(A) The Plan shall consist of site plan drawings and a narrative. The Plan shall be prepared in accordance with sound engineering practices, and shall be consistent with the Guidelines and the 2004 Connecticut Stormwater Quality Manual (available at <http://www.ct.gov/deep/stormwater>). The Plan shall also be consistent with any remedial action plan, closure plan or other plan required by any other DEEP permit.

(B) The Plan shall include, at a minimum, the following items:

(i) Site Plan

Site drawings indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, the location of major structural and non-structural controls (as specified in subsection 5(b)(2), below), the location of areas where stabilization practices are expected to occur, areas which will be vegetated following construction, monitored outfalls, surface waters, impaired waters (identifying those with and without a TMDL), high quality waters, inland wetlands, tidal wetlands, fresh-tidal wetlands, and locations where stormwater will be discharged to a surface water (both during and post-construction);

(ii) Site Description

(a) A narrative description of the nature of the construction activity;

(b) An estimate of the total area of the site and the total area of the site that is expected to be disturbed by construction activities;

(c) An estimate of the average runoff coefficient of the site after construction activities are completed;

(d) The name of the immediate receiving water(s) and the ultimate receiving water(s) of the discharges authorized by this general permit; and

(e) Extent of wetland acreage on the site.

(iii) Construction Sequencing

The Plan shall clearly identify the expected sequence of major construction activities on the site and corresponding erosion and sediment controls and shall include an estimated timetable for all construction activities, which shall be revised as necessary to keep the Plan current. Wherever possible, the site shall be phased to avoid the disturbance of over five acres at one time (or a lesser area of disturbance as required in the “Impaired Waters” section (Section 5(b)(3)). The Plan shall clearly show the limits of disturbance for the entire construction activity and for each phase.

(iv) Control Measures

The Plan shall include a description, in narrative and on the site plan drawings, of appropriate control measures that will be performed at the site to minimize the discharge of pollutants to waters of the state. Control measures shall be implemented in accordance with Section 5(b)(2) below. In addition, the following information shall be provided:

- (a) Calculations supporting the design of sediment and floatables removal controls pursuant to Section 5(b)(2)(C)(ii)(b).
- (b) Calculations supporting the design of velocity dissipation controls pursuant to Section 5(b)(2)(C)(ii)(c).

(v) Runoff Reduction and Low Impact Development (LID) Information

Where runoff reduction practices and/or LID measures are utilized, the following information shall be included in the site plan and narrative:

- (a) The location of the site’s streams, floodplains, all wetlands, riparian buffers, slopes 3:1 and steeper, and vegetation identified for preservation and non-disturbance during construction such as forested areas, hay fields, and old fields;
- (b) Natural drainage patterns, swales, and other drainage ways, that are not streams, floodplains, or wetland areas;
- (c) The location of all areas with soils suitable for infiltration¹ and areas of the site best suited for infiltration for the siting of runoff reduction practices and LID design measures;
- (d) The location of all areas unsuitable or least suitable for infiltration for the siting of areas of development/building;
- (e) The location of all post-construction stormwater management measures, runoff reduction practices and LID design measures developed pursuant to subsection 5(b)(2)(C)(i) below;
- (f) Identification of areas inappropriate for the infiltration of stormwater runoff from land uses with a significant potential for groundwater pollution;

¹ Infiltration rates must be measured by a field permeability test. The measured field design infiltration rate is equal to one-half the field-measured infiltration rate.

- (g) A narrative describing the nature, purpose, implementation and long-term maintenance of the post-construction measures, runoff reduction practices and LID design measures;
- (h) Calculations, for measures developed pursuant to Section 5(b)(2)(C)(i), illustrating the retention of the water quality volume or half the water quality volume for the site, as applicable, including a discussion of the impact of any runoff reduction and/or LID practices on these calculations.
- (i) A narrative describing any site constraints that prevent retention of the appropriate volume specified in Section 5(b)(2)(C)(i) including: an explanation of the site limitations; a description of the runoff reduction practices implemented; an explanation of why the amount retained constitutes the maximum extent achievable; an alternative retention volume; and a description of the measures used to provide additional stormwater treatment for sediment, floatables and nutrients above the alternate volume up to the water quality volume.
- (j) Calculations showing the proposed effective impervious cover for the site and, where necessary or appropriate for measures developed for linear projects pursuant to Section 5(b)(2)(C)(i), each outfall drainage area.

(vi) Inspections

The Plan shall include a narrative of all inspection personnel conducting the routine inspections, their responsibilities and procedures pursuant to subsection 5(b)(4)(B) below. The Plan shall also include documentation of the qualifications of the inspector(s) and the findings, actions and results of all inspections conducted at the site.

(vii) Monitoring

The Plan shall provide a narrative of the stormwater monitoring procedures pursuant to Section 5(c). This narrative shall include documentation of the monitoring frequency, personnel conducting monitoring, identification of monitored outfalls, methodology for monitoring, provisions for monitoring a linear project (if applicable), the site's normal working hours, the method for measuring turbidity and a copy of all monitoring records.

(viii) Contractors

- (a) The Plan shall clearly identify each contractor and subcontractor that will perform construction activities on the site that have the potential to cause pollution of the waters of the State. The Plan shall include a copy of the certification statement in the "Contractor Certification Statement" section, below, signed by each such contractor and subcontractor.

(b) Contractor Certification Statement

The Plan shall include the following certification signed by each contractor and subcontractor identified in the Plan as described above:

"I certify under penalty of the law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or

subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for the site.”

The certification shall include the name and title of the person providing the signature; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification is made.

(c) Subdivisions

Where individual lots in a subdivision or other common plan of development are conveyed or otherwise the responsibility of another person or municipality, those individual lot contractors shall be required to comply with the provisions of this general permit and the Stormwater Pollution Control Plan, and shall sign the certification statement in the “Contractor Certification Statement” section, above, regardless of lot size or disturbed area. In such cases, the permittee shall provide a copy of the Plan to each individual lot contractor, obtain signed certifications from such contractors and retain all signed certifications in the Plan.

(ix) Impaired Waters

For construction activities that discharge to impaired waters, as specified in “New Discharges to Impaired Waters” (Section 3(b)(12)), the Plan shall include a description of the provisions for controlling the construction and post-construction stormwater discharges to these waters pursuant to subsection 5(b)(3) below.

(2) Stormwater Control Measures

Control Measures are required Best Management Practices (BMPs) that the permittee must implement to minimize the discharge of pollutants from the permitted activity. The term “minimize” means reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

Control Measures shall be designed in accordance with the Guidelines, the Stormwater Quality Manual or the DOT Qualified Products List (http://www.ct.gov/dot/lib/dot/documents/dresearch/conndot_qpl.pdf). Use of controls to comply with the “Erosion and Sediment Controls” section (subsection (A) below) of this general permit that are not included in those resources must be approved by the commissioner or the commissioner’s designated agent. The narrative and drawings of controls shall address the following minimum components:

(A) Erosion and Sediment Controls

(i) Soil Stabilization and Protection

The Plan shall include a narrative and drawings of interim and permanent soil stabilization practices for managing disturbed areas and soil stockpiles, including a schedule for implementing the practices. The Permittee shall ensure that existing vegetation is preserved to the maximum extent practicable and that disturbed portions of the site are minimized and stabilized.

Where construction activities have permanently ceased or when final grades are reached in any portion of the site, stabilization and protection practices as specified in Chapter 5 of the Guidelines or as approved by the commissioner or his/ her designated agent shall be implemented within seven days. Areas that will remain disturbed but inactive for at least thirty days shall receive temporary seeding or soil protection within seven days in accordance with the Guidelines.

Areas that will remain disturbed beyond the seeding season as identified in the Guidelines, shall receive long-term, non-vegetative stabilization and protection sufficient to protect the site through the winter. In all cases, stabilization and protection measures shall be implemented as soon as possible in accordance with the Guidelines or as approved by the commissioner or his/ her designated agent.

A reverse slope bench is required for any slope steeper than 3:1 (horizontal: vertical) that exceeds 15 feet vertically, except when engineered slope stabilization structures or measures are included or a detailed soil mechanics analysis has been conducted to verify stability. Engineered analyses and measures must be designed by a CT licensed Professional Engineer with experience in geotechnical engineering or soil mechanics.

(ii) Structural Measures

The Plan shall include a narrative and drawings of structural measures to divert flows away from exposed soils, store flows or otherwise limit runoff and minimize the discharge of pollutants from the site. Unless otherwise specifically approved in writing by the commissioner or his/ her designated agent, or if otherwise authorized by another state or federal permit, structural measures shall be installed on upland soils.

For points of discharge from disturbed sites with a total contributing drainage area of between two to five acres, a temporary sediment trap must be installed in accordance with the Guidelines. For points of discharge from disturbed sites with a total contributing drainage area greater than five acres, a temporary basin must be designed and installed in accordance with the Guidelines. Such trap(s) or basin(s) must be maintained until final stabilization of the contributing area as defined in "Notice of Termination" (Section 6(a)).

The requirement for sediment traps or basins shall not apply to flows from off-site areas and flows from the site that are either undisturbed or have undergone final stabilization where such flows are diverted around the temporary sediment trap or basin. Any exceptions must be approved in writing by the commissioner or his/ her designated agent.

(iii) Maintenance

The Plan shall include a narrative of the procedures to maintain in good and effective operating conditions all erosion and sediment control measures, including vegetation, and all other protective measures identified in the site plan. Maintenance of all erosion and sediment controls shall be performed in accordance with the Guidelines, or more frequently as necessary, to protect the waters of the state from pollution.

(B) Dewatering Wastewaters

Dewatering wastewaters shall be managed in accordance with the Guidelines. Dewatering wastewaters discharged to surface waters shall be discharged in a manner that minimizes the discoloration of the receiving waters. The Plan shall include a narrative and drawings of the

operational and structural measures that will be used to ensure that all dewatering wastewaters will not cause scouring or erosion or contain suspended solids in amounts that could reasonably be expected to cause pollution of surface waters of the State. Unless otherwise specifically approved in writing by the commissioner or his/ her designated agent, or if otherwise authorized by another state or federal permit, dewatering measures shall be installed on upland soils.

No discharge of dewatering wastewater(s) shall contain or cause a visible oil sheen, floating solids, or foaming in the receiving water.

(C) Post-Construction Stormwater Management

The Plan shall include a narrative and drawings of measures that will be installed during the construction process to minimize the discharge of pollutants in stormwater discharges that will occur after construction operations have been completed. Post-construction stormwater management measures shall be designed and implemented in accordance with the Stormwater Quality Manual, the DOT Qualified Products List or as approved by the commissioner or his/ her designated agent in writing. Unless otherwise specifically provided by the commissioner in writing, or authorized by another state or federal permit, structural measures shall be placed on upland soils. The Plan shall include provisions to address the long-term maintenance of any post-construction stormwater management measure installed.

(i) Post-Construction Performance Standards

The permittee shall utilize runoff reduction practices (as defined in Section 2) to meet runoff volume requirements based on the conditions below. For sites unable to comply with these conditions, the commissioner, at the commissioner's sole discretion, may require the submission of an individual permit in lieu of authorization under this general permit.

(a) Redevelopment

For sites that are currently developed with an effective impervious cover of forty percent or more and for which the permittee is proposing redevelopment, the permittee shall design the site in such a manner as to retain on-site half the water quality volume (as defined in Section 2) for the site and provide additional stormwater treatment without retention for discharges up to the full water quality volume for sediment, floatables and nutrients to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice. In cases where the permittee is not able to retain half the water quality volume, the permittee shall design the redevelopment to retain runoff volume to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice. In such cases, additional stormwater treatment up to the full water quality volume is still required. Any such treatment shall be designed, installed and maintained in accordance with the Stormwater Quality Manual. If retention of the half the water quality volume is not achieved, the permittee shall submit a report to the commissioner describing: the measures taken to maximize runoff reduction practices on the site; the reasons why those practices constitute the maximum extent achievable; the alternative retention volume; and a description of the measures used to provide additional stormwater treatment above the alternate volume up to the water quality volume. In the case of linear redevelopment projects (e.g. roadway reconstruction or widening) for the developed portion of

the right of way: (1) for projects that may be unable to comply with the full retention standard, the alternate retention and treatment provisions may also be applied as specified above, or (2) for projects that will not increase the effective impervious cover within a given watershed, the permittee shall implement the additional stormwater treatment measures referenced above, but will not be required to retain half of the water quality volume.

(b) Other Development

The following performance standard applies to all sites that are currently undeveloped or are currently developed with less than forty percent effective impervious cover. For these sites, the permittee shall design the site to retain the water quality volume for the site. If there are site constraints that would prevent retention of this volume on-site (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), documentation must be submitted, for the commissioner's review and written approval, which: explains the site limitations; provides a description of the runoff reduction practices implemented; provides an explanation of why this constitutes the maximum extent achievable; offers an alternative retention volume; and provides a description of the measures used to provide additional stormwater treatment for sediment, floatables and nutrients above the alternate volume up to the water quality volume. Any such treatment shall be designed, installed and maintained in accordance with the Stormwater Quality Manual. In the case of linear projects that do not involve impervious surfaces (e.g. electrical transmission rights-of-way or natural gas pipelines), retention of the water quality volume is not required as long as the post-development runoff characteristics do not differ significantly from pre-development conditions.

(ii) Post-Construction Control Measures

(a) Runoff Reduction and Low Impact Development ("LID") Practices

The site design shall incorporate runoff reduction practices, low impact development ("LID") practices or other measures to meet the performance standards in subsection (i) above, promote groundwater recharge and minimize post-construction impacts to water quality. Please refer to Appendix B for additional guidance information.

(b) Suspended Solids and Floatables Removal

The permittee shall install post-construction stormwater management measures designed to minimize the discharge of suspended solids and floatables (e.g. oil and grease, other floatable liquids, floatable solids, trash, etc.) from stormwater. A goal of 80 percent removal of the annual sediment load from the stormwater discharge shall be used in designing and installing stormwater management measures. The Plan shall provide calculations supporting the capability of such measures in achieving this goal and any third-party verification, as applicable, of the sediment removal efficiencies of such measures. This goal is not intended to limit local approval authorities from requiring a higher standard pursuant to local requirements.

(c) Velocity Dissipation

Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow to the receiving watercourse so that the natural physical and biological characteristics and functions are maintained and protected.

(D) Other Controls

The following additional controls shall be implemented:

(i) Waste Disposal: Best management practices shall be implemented to minimize the discharge of litter, debris, building materials, hardened concrete waste, or similar materials to waters of the State. A narrative of these practices shall be provided in the Plan.

(ii) Washout Areas

Washout of applicators, containers, vehicles and equipment for concrete, paint and other materials shall be conducted in a designated washout area. There shall be no surface discharge of washout wastewaters from this area. Such washout shall be conducted: (1) outside of any buffers and at least 50 feet from any stream, wetland or other sensitive resource; or (2) in an entirely self-contained washout system. The permittee shall clearly flag off and designate areas to be used for washing and conduct such activities only in these areas. The permittee shall direct all washwater into a container or pit designed such that no overflows can occur during rainfall or after snowmelt.

In addition, dumping of liquid wastes in storm sewers is prohibited. The permittee shall remove and dispose of hardened concrete waste consistent with practices developed for the "Waste Disposal" section (subparagraph 5(b)(2)(D)(i), above). At least once per week, the permittee must inspect any containers or pits used for washout to ensure structural integrity, adequate holding capacity, and to check for leaks or overflows. If there are signs of leaks, holes or overflows in the containers or pits that could lead to a discharge, the permittee shall repair them prior to further use. For concrete washout areas, the permittee shall remove hardened concrete waste whenever the hardened concrete has accumulated to a height of ½ of the container or pit or as necessary to avoid overflows. A narrative of maintenance procedures and a record of maintenance and inspections shall be included in the Plan.

(iii) Off-site vehicle tracking of sediments and the generation of dust shall be minimized. Wet dust suppression shall be used, in accordance with section 22a-174-18(b) of the Connecticut General Statutes, for any construction activity that causes airborne particulates. The volume of water sprayed for controlling dust shall be minimized so as to prevent the runoff of water. No discharge of dust control water shall contain or cause a visible oil sheen, floating solids, visible discoloration, or foaming in the receiving stream.

(iv) All post-construction stormwater structures shall be cleaned of construction sediment and any remaining silt fence shall be removed upon stabilization of the site.

(v) All chemical and petroleum product containers stored on the site (excluding those contained within vehicles and equipment) shall be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or

10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment area. All chemicals and their containers shall be stored under a roofed area except for those chemicals stored in containers of 100 gallon capacity or more, in which case a roof is not required. Double-walled tanks satisfy this requirement.

(3) Additional Control Measures for Impaired Waters

For construction activities that discharge directly to impaired waters, as specified in “New Discharges to Impaired Waters” (Section 3(b)(12)), the Plan shall include the following provisions:

- (A) In lieu of the provisions of “Construction Sequencing” (Section 5(b)(1)(B)(iii)), no more than 3 acres may be disturbed at any one time. For those areas for which construction activity will be temporarily suspended for a period of greater than 14 days, temporary stabilization measures shall be implemented within 3 days of such suspension of activity. For all areas, permanent stabilization shall be implemented within 30 days of disturbance; *or*
- (B) The Plan shall document that measures are in place to ensure that there will be no discharge to the impaired water from rain events up to a 2-year, 24-hour rain event while construction activity is occurring; *or*
- (C) For discharges to impaired waters with an established TMDL:
 - (i) the Plan shall document that there is sufficient remaining Waste Load Allocation (WLA) in the TMDL to allow the discharge, *and*
 - (ii) measures shall be implemented to ensure the WLA will not be exceeded, *and*
 - (iii) stormwater discharges shall be monitored, if applicable, for any indicator pollutant identified in the TMDL for every rain event that produces a discharge to ensure compliance with the WLA. Such monitoring shall be in addition to the requirements specified in Section 5(c), *or*
 - (iv) the specific requirements for stormwater discharges specified in the TMDL are met.

Construction activities discharging to impaired waters that do not comply with this subsection are not authorized by this general permit.

(4) Inspections

All construction activities submitting a registration for this general permit shall be inspected initially for Plan implementation and then weekly for routine inspections.

(A) Plan Implementation Inspections

Within the first 30 days following commencement of the construction activity on the site, the permittee shall contact: (1) the appropriate District; or (2) a qualified soil erosion and sediment control professional or a qualified professional engineer to inspect the site. The site shall be inspected at least once and no more than three times during the first 90 days to confirm compliance with the general permit and proper initial implementation of all controls measures designated in the Plan for the site for the initial phase of construction. For sites not inspected by District personnel, the following conditions shall apply:

- (i) for projects disturbing more than one acre and less than fifteen (15) acres, the inspector shall be someone who:
 - (a) is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the registrant, and
 - (b) has no ownership interest of any kind in the project for which the registration is being submitted.
- (ii) for projects disturbing fifteen (15) acres or more, the inspector shall be someone who:
 - (a) is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the registrant, and
 - (b) has not engaged in any activities associated with the preparation, planning, designing or engineering of such plan for soil erosion and sediment control or plan for engineered stormwater management systems on behalf of such registrant, and
 - (c) is not under the same employ as any person who engaged in any activities associated with the preparation, planning, designing or engineering of such plans and specifications for soil erosion and sediment control or plans and specifications for engineered stormwater management systems on behalf of such registrant, and
 - (d) has no ownership interest of any kind in the project for which the registration is being submitted.

The permittee may use, if they wish, the same person(s) that provided the Plan Review Certification pursuant to Section 5(b)(11).

(B) Routine Inspections

The permittee shall routinely inspect the site for compliance with the general permit and the Plan for the site until a Notice of Termination has been submitted. Inspection procedures for these routine inspections shall be addressed and implemented in the following manner:

- (i) The permittee shall maintain a rain gauge on-site to document rainfall amounts. At least once a week and within 24 hours of the end of a storm that generates a discharge, a qualified inspector (provided by the permittee), as defined in the “Definitions” section (Section 2) of this general permit, shall inspect, at a minimum, the following: disturbed areas of the construction activity that have not been finally stabilized; all erosion and sedimentation control measures; all structural control measures; soil stockpile areas; washout areas and locations where vehicles enter or exit the site. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and impacts to the receiving waters. Locations where vehicles enter or exit the site shall also be inspected for evidence of off-site sediment tracking. For storms that end on a weekend, holiday or other time after which normal working hours will not commence within 24 hours, an inspection is required within 24 hours only for storms that equal or exceed 0.5 inches. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours. Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least once every month for three months.
- (ii) The qualified inspector(s) shall evaluate the effectiveness of erosion and sediment controls, structural controls, stabilization practices, and any other controls implemented

to prevent pollution and determine if it is necessary to install, maintain, or repair such controls and/or practices to improve the quality of stormwater discharge(s).

- (iii) A report shall be prepared and retained as part of the Plan. This report shall summarize: the scope of the inspection; name(s) and qualifications of personnel making the inspection; the date(s) of the inspection; weather conditions including precipitation information; major observations relating to erosion and sediment controls and the implementation of the Plan; a description of the stormwater discharge(s) from the site; and any water quality monitoring performed during the inspection. The report shall be signed by the permittee or his/her authorized representative in accordance with the "Certification of Documents" section (subsection 5(i)) of this general permit.

The report shall include a statement that, in the judgment of the qualified inspector(s) conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the Plan and permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance. Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised Plan within three (3) calendar days of the date of inspection unless another schedule is specified in the Guidelines. Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven (7) days and incorporated into a revised Plan within ten (10) days of the date of inspection, unless another schedule is specified in the Guidelines or is approved by the commissioner. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures shall be implemented to minimize the potential for the discharge of pollutants from the site.

- (iv) Inspectors from the DEEP and the appropriate District may inspect the site for compliance with this general permit at any time construction activities are ongoing and upon completion of construction activities to verify the final stabilization of the site and/or the installation of post-construction stormwater management measures pursuant to Section 6(a).
- (v) Additional inspections, reports and documentation may also be required to comply with the "Monitoring Requirements" section (Section 5(c)).

(5) Keeping Plans Current

The Permittee is responsible for keeping their Plan in compliance with this general permit at all times. This may involve any or all of the following:

- (A) The permittee shall amend the Plan if the actions required by the Plan fail to prevent pollution or fail to otherwise comply with any other provision of this general permit. The Plan shall also be amended whenever there is a change in contractors or subcontractors at the site, or a change in design, construction, operation, or maintenance at the site which has the potential for the discharge of pollutants to the waters of the state and which has not otherwise been addressed in the Plan.
- (B) The commissioner may notify the permittee at any time that the Plan and/or the site do not meet one or more of the minimum requirements of this general permit. Within 7 days of such notice, or such other time as the commissioner may allow, the permittee shall make the required changes to the Plan and perform all actions required by such revised Plan. Within 15 days of such notice, or such other time as the commissioner may allow, the permittee shall submit to the commissioner a written certification that the requested changes have been

made and implemented and such other information as the commissioner requires, in accordance with the ‘Duty to Provide Information’ and ‘Certification of Documents’ sections (subsections 5(h) and 5(i)) of this general permit.

- (C) For any stormwater discharges authorized under any previous version of this general permit, the existing Plan shall be updated by February 1, 2014, as applicable, in accordance with the ‘Development and Contents of the Plan’ (subsection 5(b)(1)), ‘Stormwater Control Measures’ (subsection 5(b)(2)), ‘Routine Inspections’ (subsection 5(b)(4)(B)), and ‘Monitoring’ (subsection 5(c)) sections of this general permit, except for the post-construction measures in subsection 5(b)(2)(C)(i)(a) & (b) and 5(b)(2)(C)(ii)(a). The permittee shall maintain compliance with such Plan thereafter. For previously authorized sites discharging to impaired waters or other sensitive areas, the commissioner may require additional control measures or provide authorization under an individual permit pursuant to Sections 4(h) and 3(i).

(6) Failure to Prepare, Maintain or Amend Plan

In no event shall failure to complete, maintain or update a Plan, in accordance with the ‘Development of Contents of the Plan’ and ‘Keeping Plans Current’ sections (subsections 5(b)(1) and 5(b)(5)) of this general permit, relieve a permittee of responsibility to implement any actions required to protect the waters of the state and to comply with all conditions of the permit.

(7) Plan Signature

The Plan shall be signed and certified as follows:

- (A) The Plan shall be signed by the permittee in accordance with the ‘Certification of Documents’ section (subsection 5(i)) of this general permit.
- (B) The Plan shall include certification by all contractors and subcontractors in accordance with the ‘Contractors’ section (subsection 5(b)(1)(B)(viii)) of this general permit.
- (C) The Plan shall include a copy of the certification by a professional engineer or landscape architect made in accordance with Section 3(b)(9) of this general permit.

(8) Plan Review Certification

For a locally approvable project pursuant to Section 3(c) of this general permit, a copy of the Plan review certification made in accordance with either Section 3(b)(10) or (11) shall be maintained with the Plan. Note that construction activities reviewed and certified pursuant to those sections are still subject to the local erosion and sediment control and stormwater management regulations of the municipality in which the activity is conducted.

(9) Plan Submittal

The Plan shall be submitted to the commissioner and other certain parties under the following conditions:

- (A) All Locally Exempt Projects with greater than one acre of soil disturbance shall submit an electronic copy of the Plan and a completed Registration Form to the commissioner.
- (B) For all other projects, the permittee shall provide a copy of the Plan, and a completed Registration Form for this general permit to the following persons immediately upon request:

- (i) The commissioner at his or her request or at the request of a member of the public during the registration and Plan availability period pursuant to Section 4(e);
- (ii) The municipal planning commission, zoning commission and/or inland wetlands agency, or its respective enforcement officer or designated agent;
- (iii) In the case of a stormwater discharge through a municipal separate storm sewer system, the municipal operator of the system;
- (iv) In the case of a stormwater discharge located within a public drinking water supply watershed or aquifer area, the water company responsible for that water supply.

DO NOT SUBMIT any pages or other material that do not pertain to stormwater management or erosion and sedimentation control (such as electrical and lighting plans, boundary or lot surveys, building plans, non-stormwater related detail sheets, etc.).

(c) Monitoring Requirements

The primary requirements for monitoring turbidity are summarized in the table below:

Table 1

<i>Area of Soil Disturbance</i>	<i>Monitoring Required?</i>	<i>Monitoring Frequency</i>	<i>Sample Method</i>
Sites which disturb 1 acre or more, but less than 5 acres	Only IF a Registration is required	Monthly IF a Registration is required	Procedure consistent with 40 CFR Part 136
Sites which disturb 5 acres or more	Yes	Monthly	Procedure consistent with 40 CFR Part 136

(1) Turbidity Monitoring Requirements

(A) Monitoring Frequency

- (i) Sampling shall be conducted in accordance with Table 1, above, at least once every month, when there is a discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall is achieved.
- (ii) The permittee is only required to take samples during normal working hours as defined in Section 2. The site’s normal working hours must be identified in the Plan pursuant to Section 5(b)(1)(B)(vii). If sampling is discontinued due to the end of normal working hours, the permittee shall resume sampling the following morning or the morning of the next working day following a weekend or holiday, as long as the discharge continues.
- (iii) Sampling may be temporarily suspended any time conditions exist that may reasonably pose a threat to the safety of the person taking the sample. Such conditions may include high winds, lightning, impinging wave or tidal activity, intense rainfall or other

hazardous condition. Once the unsafe condition is no longer present, sampling shall resume.

(iv) If there is no stormwater discharge during a month, sampling is not required.

(B) Sample Collection

(i) All samples shall be collected from discharges resulting from a storm event that occurs at least 24 hours after any previous storm event generating a stormwater discharge. Any sample containing snow or ice melt must be identified on the Stormwater Monitoring Report form. Sampling of snow or ice melt in the absence of a storm event is not a valid sample.

(ii) Samples shall be grab samples taken *at least* three separate times during a storm event and shall be *representative* of the flow and characteristics of the discharge(s). Samples may be taken manually or by an in-situ turbidity probe or other automatic sampling device equipped to take individual turbidity readings (i.e. not composite). The first sample shall be taken within the first hour of stormwater discharge from the site. In cases where samples are collected manually and the discharge begins outside of normal working hours, the first sample shall be taken at the start of normal working hours.

(C) Sampling Locations

(i) Sampling is required of all point source discharges of stormwater from disturbed areas except as may be modified for linear projects under subparagraph (ii) below. Where there are two or more discharge points that discharge substantially identical runoff, based on similarities of the exposed soils, slope, and type of stormwater controls used, a sample may be taken from just one of the discharge points. In such case, the permittee shall report that the results also apply to the substantially identical discharge point(s). No more than 5 substantially identical outfalls may be identified for one representative discharge. If such project is planned to continue for more than one year, the permittee shall rotate twice per year the location where samples are taken so that a different discharge point is sampled every six months. The Plan must identify each outfall authorized by this permit and describe the rationale for any substantially identical outfall determinations.

(ii) Linear Projects

For a linear project, as defined in Section 2, the protocols of subparagraph (i), above, shall apply except that up to 10 substantially identical outfalls may be identified for one representative discharge.

(iii) All sampling point(s) shall be identified in the Plan and be clearly marked in the field with a flag, stake, or other visible marker.

(D) Sampling and analysis shall be prescribed by 40 CFR Part 136.

(E) Turbidity Values

The stormwater discharge turbidity value for each sampling point shall be determined by taking the average of the turbidity values of all samples taken at that sampling point during a given storm.

(2) Stormwater Monitoring Reports

- (A) Within thirty (30) days following the end of each month, permittees shall enter the stormwater sampling result(s) on the Stormwater Monitoring Report (SMR) form (available at www.ct.gov/deep/stormwater) and submit it in accordance with the NetDMR provisions in subsection F, below, or, if the permittee has opted out of NetDMR, to the following address:

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

- (B) If there was no discharge during any given monitoring period, the permittee shall submit the form as required with the words “no discharge” entered in place of the monitoring results.
- (C) If the permittee monitors any discharge more frequently than required by this general permit, the results of this monitoring shall be included in additional SMRs for the month in which the samples were collected.
- (D) If sampling protocols are modified due to the limitations of normal working hours or unsafe conditions in accordance with Section 5(c)(1)(A)(ii) or (iii) above, a description of and reason for the modifications shall be included with the SMR.
- (E) If the permittee samples a discharge that is representative of two or more substantially identical discharge points, the permittee shall include the names or locations of the other discharge points.
- (F) NetDMR Reporting Requirements
- (i) Prior to one-hundred and eighty (180) days after the issuance of this permit, the Permittee may either submit monitoring data and other reports to the Department in hard copy form or electronically using NetDMR, a web-based tool that allows Permittees to electronically submit stormwater monitoring reports through a secure internet connection. Unless otherwise approved in writing by the commissioner, no later than one-hundred and eighty (180) days after the issuance of this permit the Permittee shall begin reporting electronically using NetDMR. Specific requirements regarding subscription to NetDMR and submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

(a) Submittal of NetDMR Subscriber Agreement

On or before fifteen (15) days after the issuance of this permit, the Permittee and/or the person authorized to sign the Permittee’s discharge monitoring reports (“Signatory Authority”) as described in RCSA Section 22a-430-3(b)(2) shall contact the Department at deep.netdmr@ct.gov and initiate the NetDMR subscription process for electronic submission of Stormwater Monitoring Report information. Information on NetDMR is available on the Department’s website at www.ct.gov/deep/netdmr. On or before ninety (90) days after issuance of this permit the Permittee shall submit a signed and notarized copy of the *Connecticut DEEP NetDMR Subscriber Agreement* to the Department.

(b) Submittal of Reports Using NetDMR

Unless otherwise approved by the commissioner, on or before one-hundred and eighty (180) days after issuance of this permit, the Permittee and/or the Signatory Authority shall electronically submit SMRs required under this permit to the Department using NetDMR in satisfaction of the SMR submission requirements of Sections 5(c)(2)(A) of this permit.

SMRs shall be submitted electronically to the Department no later than the 30th day of the month following the completed reporting period. Any additional monitoring conducted in accordance with 40 CFR 136 shall be submitted to the Department as an electronic attachment to the SMR in NetDMR. Once a Permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of SMRs to the Department. NetDMR is accessed from: <http://www.epa.gov/netdmr>.

(c) Submittal of NetDMR Opt-Out Requests

If the Permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for electronically submitting SMRs, the commissioner may approve the submission of SMRs in hard copy form (“opt-out request”). Opt-out requests must be submitted in writing to the Department for written approval on or before fifteen (15) days prior to the date a Permittee would be required under this permit to begin filing SMRs using NetDMR. This demonstration shall be valid for twelve (12) months from the date of the Department’s approval and shall thereupon expire. At such time, SMRs shall be submitted electronically to the Department using NetDMR unless the Permittee submits a renewed opt-out request and such request is approved by the Department.

All opt-out requests and requests for the NetDMR subscriber form should be sent to the following address or by email at deep.netdmr@ct.gov:

Attn: NetDMR Coordinator
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(d) Reporting and Record Keeping Requirements

- (1) For a period of at least five years from the date that construction is complete, the permittee shall retain copies of the Plan and all reports required by this general permit, and records of all data used to complete the registration for this general permit, unless the commissioner specifies another time period in writing. Inspection records must be retained as part of the Plan for a period of five (5) years after the date of inspection.
- (2) The permittee shall retain an updated copy of the Plan required by this general permit at the construction site from the date construction is initiated at the site until the date construction at the site is completed.

(e) *Regulations of Connecticut State Agencies Incorporated into this General Permit*

The permittee shall comply with sections 22a-430-3 and 22a-430-4 of the Regulations of Connecticut State Agencies which are hereby incorporated into this general permit, as if fully set forth herein.

(f) *Reliance on Registration*

In evaluating the registrant's registration, the commissioner has relied on information provided by the registrant. If such information proves to be false or incomplete, any authorization reliant on such information may be suspended or revoked in accordance with law, and the commissioner may take any other legal action provided by law.

(g) *Duty to Correct and Report Violations*

Upon learning of a violation of a condition of this general permit, unless otherwise specified in this general permit, a permittee shall immediately take all reasonable action to determine the cause of such violation, correct and mitigate the results of such violation, prevent further such violation, and report in writing such violation and such corrective action to the commissioner within five (5) days of the permittee's learning of such violation. Such information shall be filed in accordance with the "Certification of Documents" section (Section 5(i)) of this general permit.

(h) *Duty to Provide Information*

If the commissioner requests any information pertinent to the construction activity or to compliance with this general permit or with the permittee's authorization under this general permit, the permittee shall provide such information within fifteen (15) days of such request or other time period as may be specified in writing by the commissioner. Such information shall be filed in accordance with the "Certification of Documents" section (Section 5(i)) of this general permit.

(i) *Certification of Documents*

Unless otherwise specified in this general permit, any document, including but not limited to any notice, information or report, which is submitted to the commissioner under this general permit shall be signed by the permittee, or a duly authorized representative of the permittee, and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with section 22a-6 of the Connecticut General Statutes, pursuant to section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

(j) *Date of Filing*

For purposes of this general permit, the date of filing with the commissioner of any document is the date such document is received by the commissioner. The word "day" as used in this general permit means the calendar day; if any date specified in the general permit falls on a Saturday, Sunday, or legal holiday, such deadline shall be the next business day thereafter.

(k) *False Statements*

Any false statement in any information submitted pursuant to this general permit may be punishable as a criminal offense, in accordance with section 22a-6 of the Connecticut General Statutes, pursuant to section 53a-157b of the Connecticut General Statutes.

(l) *Correction of Inaccuracies*

Within fifteen (15) days after the date a permittee becomes aware of a change in any information in any material submitted pursuant to this general permit, or becomes aware that any such information is inaccurate or misleading or that any relevant information has been omitted, such permittee shall correct the inaccurate or misleading information or supply the omitted information in writing to the commissioner. Such information shall be filed in accordance with the certification requirements prescribed in Section 5(i) of this general permit.

(m) *Transfer of Authorization*

Any authorization issued by the commissioner under this general permit is transferable only in accordance with the provisions of section 22a-6o of the General Statutes. Any person or municipality proposing to transfer any such authorization shall submit a license transfer form to the commissioner. The transferee is not authorized to conduct any activities under this general permit until the transfer is approved by the commissioner (typically 30 days). The transferee may adopt by reference the Plan developed by the transferor. The transferee shall amend the Plan as required by the “Keeping Plans Current” Section 5(b)(5) of this general permit).

(n) *Reopener*

At such time as the USEPA may institute a new rule for post-construction stormwater management or modify the requirements for their National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activities (CGP) to institute a numeric Effluent Limitation Guideline (ELG) for turbidity in stormwater discharges from construction activities, the commissioner may reopen this general permit pursuant to the Section 40 Part 122.62(a) of the Code of Federal Regulations for implementation of these elements.

(o) *Other Applicable Law*

Nothing in this general permit shall relieve the permittee of the obligation to comply with any other applicable federal, state and local law, including but not limited to the obligation to obtain any other authorizations required by such law.

(p) *Other Rights*

This general permit is subject to and does not derogate any present or future rights or powers of the State of Connecticut and conveys no rights in real or personal property nor any exclusive privileges, and is subject to all public and private rights and to any federal, state, and local laws pertinent to the property or construction activity affected by such general permit. In conducting any construction activity authorized hereunder, the permittee may not cause pollution, impairment, or destruction of the air, water, or other natural resources of this state. The issuance of this general permit shall not create any presumption that this general permit should or will be renewed.

Section 6. Termination Requirements

(a) *Notice of Termination*

At the completion of a construction project registered pursuant to the “Registration Requirements” section (Section 4) of this general permit, a Notice of Termination must be filed with the commissioner. A project shall be considered complete after all post-construction measures are installed, cleaned and functioning and the site has been stabilized for at least three months following the cessation of construction activities. A site is considered stabilized when there is no active erosion or sedimentation present and no disturbed areas remain exposed **for all phases**.

(1) Post-Construction Inspection

For locally approvable projects, once all post-construction stormwater measures have been installed in accordance with the Post-Construction Stormwater Management section (subsection 5(b)(2)(C)) and cleaned of any construction sediment or debris, the registrant shall contact the appropriate Conservation District or a qualified soil erosion and sediment control professional and/or a qualified professional engineer, as appropriate, who will inspect the site to confirm compliance with these post-construction stormwater measures. This person(s) shall not be an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the permittee and shall have no ownership interest of any kind in the project for which the site’s registration was submitted.

(2) Final Stabilization Inspection

For all projects, once the site has been stabilized for at least three months, the registrant shall have the site inspected by a qualified inspector to confirm final stabilization. The registrant shall indicate compliance with this requirement on the Notice of Termination form.

(b) *Termination Form*

A termination notice shall be filed on forms prescribed and provided by the commissioner and shall include the following:

- (1) The permit number as provided to the permittee on the permit certificate.
- (2) The name of the registrant as reported on the general permit registration form (DEEP-PED-REG-015).
- (3) The address of the completed construction site.
- (4) The dates when:
 - (A) All storm drainage structures were cleaned of construction debris pursuant to the “Other Controls” section (subsection 5(b)(2)(D)) of this general permit; and
 - (B) The post-construction inspection was conducted pursuant to subsection 6(a)(1), above; and
 - (C) The date of completion of construction; and
 - (D) The date of the final stabilization inspection pursuant to subsection 6(a)(2), above.
- (5) A description of the post-construction activities at the site.

(6) Signatures of:

(A) The permittee; and

(B) The person certifying the post-construction inspection pursuant to subsection 6(a)(1), above.

(c) *Where to File a Termination Form*

A termination form shall be filed with the commissioner at the following address:

CENTRAL PERMITS PROCESSING UNIT
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Section 7. Commissioner's Powers

(a) *Abatement of Violations*

The commissioner may take any action provided by law to abate a violation of this general permit, including but not limited to penalties of up to \$25,000 per violation per day under Chapter 446k of the Connecticut General Statutes, for such violation. The commissioner may, by summary proceedings or otherwise and for any reason provided by law, including violation of this general permit, revoke a permittee's authorization hereunder in accordance with sections 22a-3a-2 through 22a-3a-6, inclusive, of the Regulations of Connecticut State Agencies. Nothing herein shall be construed to affect any remedy available to the commissioner by law.

(b) *General Permit Revocation, Suspension, or Modification*

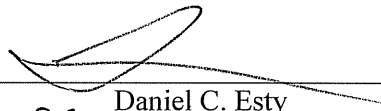
The commissioner may, for any reason provided by law, by summary proceedings or otherwise, revoke or suspend this general permit or modify to establish any appropriate conditions, schedules of compliance, or other provisions which may be necessary to protect human health or the environment.

(c) *Filing of an Individual Permit Application*

If the commissioner notifies a permittee in writing that such permittee must obtain an individual permit if he wishes to continue lawfully conducting the construction activity, the permittee shall file an application for an individual permit within thirty (30) days of receiving the commissioner's notice. While such application is pending before the commissioner, the permittee shall continue to comply with the terms and conditions of this general permit. Nothing herein shall affect the commissioner's power to revoke a permittee's authorization under this general permit at any time.

Issued:

August 21, 2013


Daniel C. Esty
Commissioner

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

APPENDIX A

Endangered and Threatened Species

In order to be eligible for coverage under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (“GP” or “the GP”), under section 3(b)(2) of the GP, a registrant must ensure that the construction activity, which includes, but is not limited to, excavation, site development or other ground disturbance activities, and stormwater flow, discharges and control measures (“construction activity”), does not threaten the continued existence of any state or federal species listed as endangered or threatened (“listed species”) or result in the destruction or adverse modification of any habitat associated with such species.

In order to prevent significant, unforeseen delays in the processing of a registration under the GP, registrants should assess compliance with section 3(b)(2) early in the planning stages of a project. The Department of Energy and Environmental Protection (“the Department”) strongly recommends that this assessment *be initiated up to one year, or more*, prior to the projected construction initiation date, and even before the purchase of the site of the construction activity. At a minimum, registrants must assess compliance with section 3(b)(2) prior to submission of the Registration Form for the GP.

This Appendix describes the ways that a registrant can comply with section 3(b)(2) of the GP. In connection with the filing of a registration a registrant can perform a self-assessment described in Section 1, seek a limited one-year determination or a safe harbor determination from the Department’s Wildlife Division under Sections 2 or 3, respectively, or stipulate in writing to the presence of listed species or any habitat associated with such species and develop a mitigation plan pursuant to Section 5 of this Appendix. While some means of compliance are more limited than others, the options set out in this Appendix are not mutually exclusive and all options remain available to a registrant. For example, a registrant may perform a self-assessment under Section 1 and seek a safe harbor determination under Section 3 of this Appendix. Provided the requirements of this Appendix are met, the choice of how to proceed is the registrant’s.

Section 1. Self Assessment through Natural Diversity Database Map Review and Screening

Before submission of a registration for coverage under this GP, a registrant must review the current versions of the Department’s Natural Diversity Data Base (“NDDB”) maps. Except as provided for in Sections 2, 3 or 5 of this Appendix, such review must occur no more than six months before such submission. Such review provides a method for screening whether the Department is already aware of listed species that may be present on the site of the construction activity. These maps can be viewed at the following locations:

1. Online at the following links:

[CT DEEP Natural Diversity Data Base Maps](#)
[CTECO Webpage](#) (in the interactive Simple Map Viewer)

2. At the DEEP Public File Room at 79 Elm Street in Hartford.

Screening

The site of the construction activity must be compared to the shaded areas depicted on the NDDDB map to determine if the site is entirely, partially, or within ¼ mile of a shaded area. If the site is entirely, partially or within a ¼ mile of a shaded area for a listed species a registrant can only achieve compliance with section 3(b)(2) of the GP by obtaining a limited one-year determination under Section 2, a safe harbor determination under Section 3, or an approved mitigation plan under Section 5 of this Appendix from the Department's Wildlife Division.

If the site of the construction activity is not entirely, partially or within ¼ mile of a shaded area, then the Department is not aware of any listed species at the site of the construction activity. Based upon this screening, and provided the registrant has no reasonably available verifiable, scientific or other credible information that the construction activity could reasonably be expected to violate section 3(b)(2) of the GP, when completing the Registration Form for this GP a registrant may check the box that indicates that the construction activity will not impact federal or state listed species.

A registrant using only self-assessment under this section may utilize the results of any such self assessment for up to, but no more than, six months from the date of such assessment. Note, however, that the NDDDB maps are not the result of comprehensive state-wide field investigations, but rather serve as a screening tool. Using such maps as a screening tool does not provide a registrant with an assurance that listed species or their associated habitat may not be encountered at the site of the construction activity. Notwithstanding the NDDDB screening results, if a listed species is encountered at the site of the construction activity, the registrant shall promptly contact the Department and may need to take additional action to ensure that the registrant does not violate section 3(b)(2) of the GP.

Section 2. Obtaining a Limited One-Year Determination

A registrant may seek a written determination from the Department's Wildlife Division, good for one-year, that the proposed construction activity complies with section 3(b)(2) of the GP. To obtain this limited one-year determination, a registrant must, in addition to conducting the NDDDB map review in Section 1 of this Appendix, provide the Department's Wildlife Division with (1) any reasonably available verifiable, scientific or other credible information about whether the construction activity could reasonably be expected to result in a violation of section 3(b)(2) of the GP, and (2) limited information about the site of the proposed construction activity, but less information than would be necessary for a safe harbor determination under Section 3 of this Appendix. The limited information necessary for a one-year determination is on the current "Request for Natural Diversity Database (NDDDB) State Listed Species Review" form on the Department's website. The form and instructions for seeking such a limited one-year determination are available at www.ct.gov/DEEP/nddbrequest.

Provided the registrant's information is accurate and the Department's Wildlife Division determines that the construction activity will not violate section 3(b)(2) of the GP, the registrant shall receive a limited one-year determination from the Department. Any such determination may indicate that the construction activity will not impact listed species or their associated habitat, or it may include specific conditions to be implemented to avoid or significantly minimize any impacts that may be encountered at the site of the construction activity. For purposes of submitting a registration for the GP, any such limited one-year determination can be relied upon by the person receiving such determination for one-year from the date of such determination. Like, however, the NDDDB screening procedure in Section 1 of this Appendix, a limited one-year determination does not provide a registrant with an assurance that listed species or their associated habitat may not be encountered at the site of the construction activity. If a listed species is encountered, the registrant shall promptly contact the Department

and may need to take additional action to ensure that the construction activity does not violate section 3(b)(2) of the GP.

If a registrant receives a limited one-year determination from the Department, the registrant should check the limited one-year determination box on the GP registration form and include the Department's one-year limited determination letter if requested on the GP Registration form. Checking the limited one-year determination box on the registration form and failing to provide the determination letter from the Department's Wildlife Division, if requested on the GP Registration form, will delay and may prevent processing of a registration.

If based upon the information provided by a registrant seeking a limited one-year determination the Department's Wildlife Division determines that the construction activity could impact listed species or their associated habitat, or that the Department needs additional information to make a limited one-year determination, the registrant may still achieve compliance with section 3(b)(2) of the GP through providing additional information pursuant to Section 4 or developing a mitigation plan pursuant to Section 5 of this Appendix.

A registrant may request one or more one-year extensions to a limited one-year determination under this section. If the Department's Wildlife Division has prescribed a form for requesting an extension, any such request shall be made using the prescribed form. There is a presumption that requests for a one-year extension of a limited one-year determination shall be granted. However, this presumption can be rebutted if the Department determines that a change in any of the following has occurred since an initial limited one-year determination or any extension was granted: the construction activity affecting or potentially affecting listed species or their associated habitat; the NDDB maps for the site of the construction activity; the limited information upon which a limited one-year determination or any extension was granted; or other information indicative of a change in circumstance affecting listed species or their associated habitat. Any one-year extension granted under this paragraph shall run from the date the Department's Wildlife Division issues its determination to grant an extension and shall be treated as a limited one-year determination as provided for in this section. Any letter granting a one-year extension shall be included with a registration along with the original limited one-year determination as provided for in this section.

Section 3. Obtaining a Safe Harbor Determination

A registrant may seek a written determination from the Department's Wildlife Division, good for three years, with the potential to be extended for an additional year, that proposed construction activity complies with section 3(b)(2) of the GP. Any such determination shall constitute a "safe harbor" for purposes of section 3(b)(2) of the GP.

To obtain a safe harbor determination, a registrant must, in addition to conducting the NDDB review in section 1 of this Appendix, provide the Department's Wildlife Division with any reasonably available verifiable, scientific or other credible information about whether the construction activity could reasonably be expected to result in a violation of section 3(b)(2) of the GP and specific information about the site of the construction activity. The specific information necessary for a safe harbor determination is listed in Attachment A to this Appendix. This information must be sufficient to allow the Wildlife Division to adequately assess the site for potential risks to listed species and their associated habitat. While the Department recognizes certain information is necessary to make a safe harbor determination, it also recognizes that a registrant may need to obtain a safe harbor determination early in its project's approval process in order to make prudent business decisions about purchasing a site or proceeding to final project designs. The form and instructions for seeking a safe harbor determination are available at www.ct.gov/DEEP/nddbrequest.

Provided the registrant's information is accurate and the Department's Wildlife Division determines that the construction activity will not violate section 3(b)(2) of the GP, the registrant shall receive a safe harbor determination from the Department. A safe harbor determination may indicate that the construction activity will not impact listed species or their associated habitat, or it may include specific conditions to be implemented to avoid or significantly minimize any impacts that may be encountered at the site of the construction activity. The Department shall honor the safe harbor determination for three years from the date it is issued, meaning that unlike the NDDDB review in Section 1 or the limited one-year determination in Section 2 of this Appendix, if the Department makes a safe harbor determination and a registrant remains in compliance with any conditions in any such determination, irrespective of what may be found at the site of the construction activity, a registrant shall be considered in compliance with section 3(b)(2) of the GP. However, a safe harbor determination shall not be effective if a construction activity may threaten the continued existence of any federally listed species or its critical habitat under federal law. If a federally listed species or its critical habitat is encountered on the site of the construction activity, the registrant shall promptly contact the Department and may need to take additional action to ensure that the construction activity does not violate federal law or section 3(b)(2) of the GP.

If a registrant receives a safe harbor determination from the Department, the registrant should check the safe harbor determination box on the GP registration form and include the Department's safe harbor determination if requested on the GP Registration form. Checking the safe harbor box on the registration form and failing to provide the safe harbor determination letter from the Department's Wildlife Division, if requested on the GP Registration form, will delay and may prevent processing of a registration.

If based upon the information provided by a registrant seeking a safe harbor determination the Department's Wildlife Division determines that the construction activity could impact listed species or their associated habitat, or that the Department needs additional information to make a safe harbor determination, the registrant may still achieve compliance with section 3(b)(2) of the GP through providing additional information pursuant to Section 4 or developing a mitigation plan pursuant to Section 5 of this Appendix.

If a registrant receives a safe harbor determination from the Department's Wildlife Division, anytime during the third year of such safe harbor, a registrant may request a one-year extension of that safe harbor. If the Department's Wildlife Division has prescribed a form for requesting an extension, any such request shall be made using the prescribed form. There is a presumption that a request for a one-year extension of a safe harbor shall be granted. However, this presumption can be rebutted if the Department determines that a change in any of the following has occurred since the safe harbor was granted: the construction activity affecting or potentially affecting listed species or their associated habitat; the NDDDB maps for the site of the construction activity; the information upon which the safe harbor was granted; or other information indicative of a change in circumstance affecting listed species or their associated habitat. A registrant may seek only one extension, for one-year, to a safe harbor determination. Any one-year extension granted under this paragraph shall run from the date of the Department's Wildlife Division issues its determination to grant an extension and shall be honored by the Department in the same manner as a safe harbor determination noted above. Any letter granting a one-year extension shall be included with a registration along with the original limited safe harbor determination as provided for in this section.

Section 4. Providing Additional Information

For the Department's Wildlife Division to make a limited one-year determination under Section 2 or a safe harbor determination under section 3 of this Appendix, limited additional information may be required to determine if the construction activity would impact listed species or their associated habitat. If the species in question is a state listed endangered or threatened species under section 26-306 of the general statutes, a registrant shall, in consultation with the Department's Wildlife Division, provide the limited additional

information requested by the Department's Wildlife Division. Such information may include, but is not limited to, a survey of specific listed species in question. If the species in question is a federally listed threatened or endangered species, in addition to the Department's Wildlife Division, a registrant shall also consult with the U.S. Fish and Wildlife Service and shall provide any additional information requested by that agency. A registrant that initially sought or obtained a limited one-year determination may, after providing the additional information required under this section request a safe harbor determination under Section 3 of this Appendix.

At any time, as an alternative to proceeding under Section 2, 3 or 4 of this Appendix, a registrant may stipulate, in writing, to the presence of one or more listed species or their associated habitat. A registrant choosing this alternative shall proceed to develop a mitigation plan under Section 5 of this Appendix.

If based upon any additional information provided to the Department's Wildlife Division, and as applicable, the U.S. Fish & Wildlife Service, the Department's Wildlife division determines that construction activity will be in compliance with section 3(b)(2) of the GP, a registrant shall receive a limited one-year determination under Section 2 or a safe harbor determination under Section 3 of this Appendix, as applicable.

If the Department's Wildlife Division determines that additional information is necessary to determine if the construction activity has the potential to impact listed species or their associated habitat, and a registrant chooses to not provide such information, a registrant shall proceed with the self assessment through an NDDB review under Section 1 of this Appendix, or stipulate to the existence of a listed species or associated habitat and develop a mitigation plan under Section 5 or such registrant shall not be eligible to register under the GP.

Section 5. Developing a Mitigation Plan

The Department's Wildlife Division may determine that the construction activity has the potential to adversely impact listed species or their associated habitat. However, it may be possible to modify the construction activity or undertake certain on-site measures to avoid or significantly minimize such impacts. If the species or associated habitat in question is a state listed endangered or threatened species under section 26-306 of the general statutes, a registrant shall consult with the Department's Wildlife Division to determine if an acceptable mitigation plan can be developed so impacts can be avoided or minimized such that a registrant remains in compliance with section 3(b)(2). If the species in question is a federally listed threatened or endangered species, any such consultation shall also include the U.S. Fish and Wildlife Service.

If a registrant in consultation with the Department's Wildlife Division, and as applicable, the U.S. Fish & Wildlife Service, develops a mitigation plan that is approved by the Department's Wildlife Division, or as applicable, the U.S. Fish & Wildlife Service, the registrant shall receive a limited one-year determination under Section 2 or a safe harbor determination under Section 3 of this Appendix. In this situation, in addition to checking the one-year determination box or the safe harbor determination box, as applicable, on the registration form, the registrant shall also check the box on the registration form indicating that it has an approved mitigation plan and provide a status update on the registration form as to whether it has completed or is still in the process of implementing the approved mitigation plan.

If an approved mitigation plan has not been fully implemented by the time a registration is submitted, completing all remaining tasks in the plan shall become an enforceable condition of any registration issued to the registrant.

If the Department determines that the construction activity has the potential to adversely impact listed species or their associated habitat and the registrant and the Department, and as applicable, the U.S. Fish & Wildlife Service, are not able to agree on an acceptable mitigation plan that is approved by the Department, and as applicable, the U.S. Fish & Wildlife Service, any such registrant shall not be eligible to register under the GP.

APPENDIX A
ATTACHMENT A

Specific Information Needed to Apply for a Safe Harbor Determination

A Safe Harbor Determination will be made upon the submission of a detailed report that fully addresses the matters noted below. For the Department's Wildlife Division to make a safe harbor determination, the report should synthesize and analyze this information, not simply compile information. Those providing synthesis and analysis need appropriate qualifications and experience. A request for a safe harbor determination shall include:

1) Habitat Information, including GIS mapping overlays, identifying:

- wetlands, including wetland cover types;
- plant community types;
- topography;
- soils;
- bedrock geology;
- floodplains, if any;
- land use history; and
- water quality classifications/criteria.

2) Photographs - The report should also include photographs of the site, including all reasonably available aerial or satellite photographs and an analysis of such photographs.

3) Inspection - The report should include a visual inspection(s) of the site, preferably when the ground is visible. This inspection can also be helpful in confirming or further evaluating the items noted above.

4) Biological Surveys - The report should include all biological surveys of the site where construction activity will take place that are reasonably available to a registrant. A registrant shall notify the Department's Wildlife Division of biological studies of the site where construction activity will take place that a registrant is aware of but are not reasonably available to the registrant.

5) Based on items #1 through 4 above, the report shall include a Natural Resources Inventory of the site of the construction activity. This inventory should also include a review of reasonably available scientific literature and any recommendations for minimizing adverse impacts from the proposed construction activity on listed species or their associated habitat.

6) In addition, to the extent the following is available at the time a safe harbor determination is requested, a request for a safe harbor determination shall include and assess:

- Information on Site Disturbance Estimates/Site Alteration information
- Vehicular Use
- Construction Activity Phasing Schedules, if any; and
- Alternation of Drainage Patterns

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

APPENDIX B

Connecticut Department of Energy & Environmental Protection Inland Water Resources Division Fact Sheet Considering Low Impact Development Principles in Site Design

In order to reduce the impact of development and address stormwater quality issues, the Department strongly encourages the use of Low Impact Development (LID) measures. LID is a site design strategy intended to maintain or replicate predevelopment hydrology through the use of small-scale controls, integrated throughout the site, to manage stormwater runoff as close to its source as possible. Infiltration of stormwater through LID helps to remove sediments, nutrients, heavy metals, and other types of pollutants from runoff.

Key Strategies for LID

Key strategies for effective LID include: infiltrating, filtering, and storing as much stormwater as feasible, managing stormwater close to where the rain/snow falls, managing stormwater at multiple locations throughout the landscape, conserving and restoring natural vegetation and soils, preserving open space and minimizing land disturbance, designing the site to minimize impervious surfaces, and providing for maintenance and education. Water quality and quantity benefits are maximized when multiple techniques are grouped together. In areas of compacted and/or possibly contaminated soils, soil suitability should be further investigated prior to selecting optimum treatment and/or remediation measures. Where soil conditions permit, the DEEP encourages the utilization of one, or a combination of, the following measures:

- the use of pervious pavement or grid pavers (which are very compatible for parking lot and fire lane applications), or impervious pavement without curbs or with notched curbs to direct runoff to properly designed and installed infiltration areas;
- the use of vegetated swales, tree box filters, and/or infiltration islands to infiltrate and treat stormwater runoff (from building roofs, roads, and parking lots);
- the minimization of access road widths and parking lot areas to the maximum extent possible to reduce the area of impervious surface;
- the use of dry wells to manage runoff from building roofs;
- incorporation of proper physical barriers or operational procedures for special activity areas where pollutants could potentially be released (e.g. loading docks, maintenance and service areas, dumpsters, etc.);
- the installation of rainwater harvesting systems to capture stormwater from building roofs for the purpose of reuse for irrigation (i.e. - rain barrels for residential use and cisterns for larger developments);
- the use of residential rain gardens to manage runoff from roofs and driveways;
- the use of vegetated roofs (green roofs) to detain, absorb, and reduce the volume of roof runoff; and
- providing for pollution prevention measures to reduce the introduction of pollutants to the environment.

The [2004 Stormwater Quality Manual LID Appendix](#) and the [2002 Erosion and Sediment Control Guidelines LID Appendix](#) both provide guidance on implementing LID measures. A guide to LID resources can also be found in the [DEEP Low Impact Development Resources Factsheet](#) (PDF).

LID in Urban Areas

If the proposed site is located in a highly urbanized area, it is likely underlain by urban land complex soils. The Natural Resources Conservation Service (NRCS) Soil Web Survey (<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>) provides information on soil textures, parent materials, slopes, height of seasonal high water table, depth to restrictive layer, and permeability. In highly developed areas, infiltration may be limited due to the high percentage of impervious cover. However, infiltration practices may be suitable at urban sites depending on:

- Potential contamination of soils in historically industrialized areas. The siting of areas for infiltration must consider any existing soil or groundwater contamination.
- Site specific soil conditions. NRCS mapping consists of a minimum 3 acres map unit and soils may vary substantially within each mapping unit. Test pits should be dug in areas
- planned for infiltration practices to verify soil suitability and/or limitations.
- Investigation of areas of compacted soils and the utilization of proper construction staging. Planning should insure that areas to be used for infiltration are not compacted during the construction process by vehicles or machinery.

Even if infiltration is limited at a site, it is still possible to implement LID practices. Specifically, potential exists for the installation of green roofs on buildings and/or the use of cisterns to capture and reuse rainwater.

LID in Areas with a High Seasonal Water Table or Hardpan Layer

- The impact of stormwater runoff to any streams and/or wetlands near the site should be considered. Water quality treatment is influenced by hydraulic conductivity and time of travel. If stormwater infiltration is limited by an impermeable layer close to the surface, the water may run laterally through the ground and discharge to the stream or wetlands, providing limited water quality treatment. However, a longer time of travel may provide sufficient treatment. Proper soil testing for infiltration potential will increase the likelihood of successful BMP design.
- In areas with a high seasonal water table, bioretention areas/rain gardens should be planted with water tolerant/wetland plants. The presence of a high seasonal water table suggests that water may drain slowly or not at all during certain parts of the year. Planting native wetland vegetation will help to ensure plant survival and increase the effectiveness of bioretention practices. Information on native plantings that are both drought tolerant and tolerant of wet conditions can be found in The UConn Cooperative Extension System’s guide to building a rain garden at http://nemo.uconn.edu/publications/rain_garden_broch.pdf. Native plant lists for Connecticut can also be found at <http://www.fhwa.dot.gov/environment/rdsduse/ct.htm>.

LID Guidance for Federal Projects

- LID techniques have been utilized by Department of Defense (DoD) agencies during the last several years. The effectiveness of these projects in managing runoff as well as reducing construction and maintenance costs has created significant interest in LID. The DoD has created a Unified Facilities Criteria document, Low Impact Development that provides guidelines for integrating LID planning and design into a facility’s regulatory and resource protection programs. It is available on-line at: http://www.wbdg.org/ccb/DOD/UFC/ufc_3_210_10.pdf.
- Section 438 of the Energy Independence and Security Act (EISA) of 2007 requires federal agencies to reduce stormwater runoff from federal development projects to protect water resources. In December 2009, the EPA developed a technical guidance document on implementing the stormwater runoff requirements for federal projects under Section 438 of EISA. The document contains guidance on how compliance with Section 438 can be achieved, measured and evaluated and can be found at: http://www.epa.gov/owow/NPS/lid/section438/pdf/final_sec438_eisa.pdf.

For more information contact the CT DEEP Watershed Management/Low Impact Development Program:

Name	Area	Telephone
MaryAnn Nusom Haverstock	Program Oversight/ Low Impact Development	(860) 424-3347
Chris Malik	Watershed Manager	(860) 424-3959
Susan Peterson	Watershed Manager	(860) 424-3854
Eric Thomas	Watershed Manager	(860) 424-3548

List of Runoff Reduction/LID Practices

Re-Forestation
Disconnection of Rooftop Runoff
Disconnection of Non-Rooftop Runoff
Sheetflow to Conservation Areas
Green Roof
Permeable Pavement
Rainwater Harvesting
Submerged Gravel Wetlands
Micro-Infiltration
Rain Gardens
Bioretention
Landscape Infiltration
Grass Swales
Bio-swales
Wet Swales
Stormwater Ponds
Stormwater Wetlands
Stormwater Filtering Systems
Stormwater Infiltration



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APPENDIX C

AQUIFER PROTECTION AREAS AND OTHER GROUNDWATER DRINKING SUPPLY AREAS GUIDANCE INFORMATION

The Pollution Control Plan (“the Plan”) should consider measures to reduce or mitigate potential impacts to both ground water (aquifers) and surface waters, taking into consideration both quantity and quality of the runoff. The emphasis should be to minimize, to the extent possible, changes between pre-development and post-development runoff rates and volumes.

The basic stormwater principals for Aquifer Protection Areas (and other groundwater drinking supply areas) are to prevent inadvertent pollution discharges/releases to the ground, while encouraging recharge of stormwater where it does not endanger groundwater quality. Measures include:

- prevent illicit discharges to storm water, including fuel/chemical pollution releases to the ground;
- minimize impervious coverage and disconnect large impervious areas with natural or landscape areas;
- direct paved surface runoff to aboveground type land treatment structures – sheet flow, surface swales, depressed grass islands, detention/retention and infiltration basins, and wet basins. These provide an opportunity for volatilization of volatile organic compounds to the extent possible before the stormwater can infiltrate into the ground;
- provide necessary impervious pavement in high potential pollutant release areas. These “storm water hot spots” include certain land use types or storage and loading areas, fueling areas, intensive parking areas and roadways (see table below);
- only use subsurface recharge structures such as dry wells, galleries, or leaching trenches, to directly infiltrate clean runoff such as rooftops, or other clean surfaces. These structures do not adequately allow for attenuation of salts, solvents, fuels or other soluble compounds in groundwater that may be contained in runoff; and
- restrict pavement deicing chemicals, or use an environmentally suitable substitute such as sand only, or alternative de-icing agents such as calcium chloride or calcium magnesium.

Infiltration of stormwater should be **restricted** under the following site conditions:

- **Land Uses or Activities with Potential for Higher Pollutant Loads:** Infiltration of stormwater from these land uses or activities (refer to Table 7-5 below), also referred to as stormwater “hotspots,” can contaminate public and private groundwater supplies. Infiltration of stormwater from these land uses or activities may be allowed by the review authority with appropriate pretreatment. Pretreatment could consist of one or a combination of the primary or secondary treatment practices described in the Stormwater Quality Manual provided that the treatment practice is designed to remove the stormwater contaminants of concern.
- **Subsurface Contamination:** Infiltration of stormwater in areas with soil or groundwater contamination such as brownfield sites and urban redevelopment areas can mobilize contaminants.
- **Groundwater Supply and Wellhead Areas:** Infiltration of stormwater can potentially contaminate groundwater drinking water supplies in immediate public drinking water wellhead areas.

Land Uses or Activities with Potential for Higher Pollutant Loads
 Table 7-5 of the 2004 Stormwater Quality Manual

<u>Land Use/Activities</u>	
<ul style="list-style-type: none"> • Industrial facilities subject to the DEEP Industrial Stormwater General Permit or the U.S. EPA National Pollution Discharge Elimination System (NPDES) Stormwater Permit Program • Vehicle salvage yards and recycling facilities • Vehicle fueling facilities (gas stations and other facilities with on-site vehicle fueling) • Vehicle service, maintenance, and equipment cleaning facilities • Fleet storage areas (cars, buses, trucks, public works) • Commercial parking lots with high intensity use (shopping malls, fast food restaurants, convenience stores, supermarkets, etc.) • Public works storage areas 	<ul style="list-style-type: none"> • Road salt storage facilities (if exposed to rainfall) • Commercial nurseries • Flat metal rooftops of industrial facilities • Facilities with outdoor storage and loading/unloading of hazardous substances or materials, regardless of the primary land use of the facility or development • Facilities subject to chemical inventory reporting under Section 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA), if materials or containers are exposed to rainfall • Marinas (service and maintenance) • Other land uses and activities as designated by the review authority

For further information regarding the design of stormwater collection systems in Aquifer Protection Areas, contact the Aquifer Protection Area Program at (860) 424-3020 or visit www.ct.gov/deep/aquiferprotection.



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from Construction Activities**

APPENDIX D

Coastal Management Act Determination Form

For sites within the Coastal Boundary, please attach this form and written approval from the local governing authority (or verification of exemption) to the Registration Form for the Discharge of Stormwater and Dewatering Wastewaters From Construction Activities.

SITE INFORMATION

Future Permittee _____
Mailing Address _____
Business Phone _____ ext.: _____ Fax: _____
Contact Person _____ Title: _____
Site Name _____
Site Address/ Location _____
Site Latitude and Longitude _____
Receiving Water (name, basin) _____
Project Description _____

STATEMENT OF REVIEW:

<p>The above referenced project is consistent with the goals and policies in section 22a-92 of the Connecticut General Statutes and will not cause adverse impacts to coastal resources as defined in section 22a-93(15) of the Connecticut General Statutes.</p> <p>Date of Coastal Site Plan Approval: _____</p> <p><input type="checkbox"/> Copy of written approval attached, or</p> <p><input type="checkbox"/> Verification of exemption attached</p>

APPENDIX E
(Exhibit 3 of District/DEEP Memorandum of Agreement)

Conservation Districts of Connecticut
Regional Delineations and Contact Information

Northwest Conservation District
1185 New Litchfield Street
Torrington, CT 06790
Ph: 860-626-7222
Fax: 860-626-7222
Email: ncd@conservect.org

Eastern Connecticut Conservation District
238 West Town Street
Norwich, CT 06360-2111
Ph: 860-887-4163 x 400 Fax: 860-887-4082
Email: kate.johnson.eccd@comcast.net

Connecticut River Coastal Conservation District, Inc.
deKoven House Community Center
27 Washington Street
Middletown, CT 06457
Ph: 860-346-3282 Fax: 860-346-3284
Email: ctrivercoastal@conservect.org

Southwest Conservation District
51 Mill Pond Road
Hamden, CT 06514
Ph: 203-287-8179 Fax: 203-288-5077
Email: swcd43@sbcglobal.net

North Central Conservation District
24 Hyde Avenue
Vernon, CT 06066
Ph: 860-875-3881 Fax: 860-870-8973
Email: tollandc@snet.net

NORTHWEST	SOUTHWEST	NORTH CENTRAL	CT RIVER COASTAL	EASTERN
Barkhamsted	Ansonia	Avon	Berlin	Andover
Bethel	Beacon Falls	Bloomfield	Chester	Ashford
Bethlehem	Bethany	Bolton	Clinton	Bozrah
Bridgewater	Branford	Bristol	Colchester	Brooklyn
Brookfield	Bridgeport	Burlington	Cromwell	Canterbury
Canaan	Cheshire	Canton	Deep River	Chaplin
Colebrook	Darien	Coventry	Durham	Columbia
Cornwall	Derby	East Granby	East Haddam	Eastford
Danbury	East Haven	East Hartford	East Hampton	East Lyme
Goshen	Easton	East Windsor	Essex	Franklin
Hartland	Fairfield	Ellington	Haddam	Griswold
Harwinton	Greenwich	Enfield	Hebron	Groton
Kent	Guilford	Farmington	Killingworth	Hampton
Litchfield	Hamden	Glastonbury	Lyme	Killingly
Morris	Meriden	Granby	Madison	Lebanon
New Fairfield	Middlebury	Hartford	Marlborough	Ledyard
New Hartford	Milford	Manchester	Middlefield	Lisbon
New Milford	Monroe	Plainville	Middletown	Mansfield
Newtown	Naugatuck	Simsbury	Newington	Montville
Norfolk	New Canaan	Somers	New Britain	New
North Canaan	New Haven	South Windsor	Old Lyme	London
Plymouth	North Branford	Stafford	Old Saybrook	North
Roxbury	North Haven	Suffield	Portland	Stonington
Salisbury	Norwalk	Tolland	Rocky Hill	Norwich
Sharon	Orange	Vernon	Salem	Plainfield
Sherman	Oxford	West Hartford	Westbrook	Pomfret
Southbury	Prospect	Wethersfield		Preston
Thomaston	Redding	Willington		Putnam
Torrington	Ridgefield	Windsor		Scotland
Warren	Seymour	Windsor Locks		Sprague
Washington	Shelton			Sterling
Watertown	Southington			Stonington
Winchester	Stamford			Thompson
Woodbury	Stratford			Union
	Trumbull			Voluntown
	Wallingford			Waterford
	Waterbury			Windham
	West Haven			Woodstock
	Weston			
	Westport			
	Wilton			
	Wolcott			
	Woodbridge			

APPENDIX F

Memorandum of Agreement Between The Connecticut Department of Energy & Environmental Protection and the Conservation Districts of Connecticut

WHEREAS, the Commissioner of the Department of Energy and Environmental Protection (“Department” or “DEEP”) is authorized by section 22a-6(2)(3) and (4) of the Connecticut General Statutes (“CGS”) to enter into this Agreement; and

WHEREAS, the five Conservation Districts of Connecticut (collectively, the “Districts”), are not-for-profit corporations duly authorized, organized and existing under the laws of the State of Connecticut and are authorized by section 22a-315 of the CGS and section 22a-315-14 of the Regulations of Connecticut State Agencies to enter into this Agreement; and

WHEREAS, section 22a-430b of the Connecticut General Statutes requires the Department to regulate stormwater discharges from construction activities under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (“the Construction General Permit” or “CGP”), which has been or shall be issued on October 1, 2013. The Construction General Permit requires the implementation of erosion and sedimentation controls to control the discharge of sediment from construction and post-construction discharges; and

WHEREAS, Construction General Permits require the preparation and implementation of a Stormwater Pollution Control Plan (“Plan” or “SWPCP”) to prevent erosion and the discharge of sediment to the waters of the state; and

WHEREAS, pursuant to section 22a-315 of the CGS, soil and water conservation districts and boards were established to advise the Commissioner on matters of soil and water conservation and erosion and sedimentation control and to assist the Commissioner in implementing programs related to soil and water conservation and erosion and sediment control; and

WHEREAS, pursuant to section 22a-315 of the CGS, the soil and water conservation districts and boards may receive funds from private sources for services provided to promote soil and water conservation and to assist the Commissioner in the implementation of related programs; and

WHEREAS, section 22a-326 of the CGS declares the policy of the state “to strengthen and extend its erosion and sediment control activities and programs and to establish and implement, through the Council on Soil and Water Conservation, soil and water conservation districts, the municipalities and the Commissioner of Energy and Environmental Protection, a state-wide coordinated erosion and sediment control program which shall reduce the danger from storm water runoff, minimize nonpoint sediment pollution from land being developed and conserve and protect the land, water, air and other environmental resources of the state;” and

WHEREAS, the Districts have understanding and experience in reviewing erosion and sediment control plans because of their longstanding participation in the municipal approval process, as required by section 22a-329 of the CGS; and

WHEREAS, DEEP and the Districts are jointly dedicated to protecting the waters of the state by controlling the discharge of sediment and the pollution resulting from stormwater runoff.

NOW, THEREFORE, in consideration of the mutual covenants and conditions hereinafter stated, the Parties agree as follows:

I. RESPONSIBILITIES OF THE CONSERVATION DISTRICTS.

For locally approvable projects, as defined in the Construction General Permit, with five (5) or more acres of soil disturbance, the appropriate District (as specified in Appendix E of the Construction General Permit, appended hereto as Exhibit 3) shall review Stormwater Pollution Control Plans submitted to the District in accordance with Section 3(b)(10) of the CGP, shall determine whether each such SWPCP is consistent with the requirements of the CGP, and shall advise the Commissioner in writing of its determination regarding the SWPCP's consistency.

A. Components of the SWPCP Review by the Districts

1. Requirements for Conducting a Review:

(a) SWPCP review shall be conducted by a District representative having one or more of the following minimum qualifications: (i) a bachelor's degree in hydrology, engineering (agricultural, civil, environmental, or chemical), landscape architecture, geology, soil science, environmental science, natural resources management, or a related field and two years of professional and field experience, or (ii) the EnviroCert International, Inc. designation as a Certified Professional in Erosion and Sediment Control, or a Certified Professional in Storm Water Quality.

(b) All SWPCP reviews undertaken by a District shall be conducted in accordance with the guidelines and procedures established by DEEP in consultation with the Districts, as further described below, and shall include at least one inspection, and no more than 3 inspections, of the project site.

(c) The District shall begin a SWPCP review upon the receipt of the all of following: the developer's request for review, two copies of the proposed SWPCP, the payment of required fee in the amount specified in Exhibit 1 and the written permission of the developer to enter onto and inspect the project site. Once the District is in receipt of all the documents and the fee as delineated above, the developer's SWPCP shall be considered submitted to the District.

2. Determinations of Consistency by the District after Review of the SWPCP and Subsequent Procedures

(a) If the District determines the developer's SWPCP is:

(i) Consistent with the requirements of the Construction General Permit, the District shall issue an affirmative determination notice to both the developer or such developer's designee and to DEEP in order to advise them of the adequacy of the SWPCP. The District shall also provide a copy of the SWPCP to DEEP if requested by the Commissioner.

(ii) Not consistent with the requirements of the Construction General Permit, the District shall provide a written notice of such inconsistency to the developer or such developer's designee; such notice shall include a list of the SWPCP's deficiencies and any appropriate explanatory comments.

(b) If the developer's SWPCP is found to be inconsistent with the CGP, the developer may revise the SWPCP (the "Revised SWPCP") to address any deficiencies noted by the District and resubmit its Revised SWPCP to the District for review.

(c) If the District receives a Revised SWPCP in accordance with subsection (b) above, the District shall perform a review of the Revised SWPCP. If the Revised SWPCP is deemed:

(i) Consistent with the requirements of the Construction General Permit, the District shall (1) issue an affirmative determination notice to both the project developer or such project developer's designee and to DEEP to advise them of the adequacy of the SWPCP and (2) provide a copy of the SWPCP to the DEEP if requested by the Commissioner; or

(ii) Not consistent with the requirements of the CGP after this review, the District shall provide a written notice of such inconsistency to the developer or such developer's designee. This notice shall include a list of all remaining SWPCP deficiencies and any explanatory comments as appropriate.

(d) In the event the District determines after review of the Revised SWPCP in accordance with subsection (c), above, that the Revised SWPCP remains inconsistent with the requirements of the Construction General Permit, and the developer resubmits its Revised SWPCP *within 180 calendar days* of the District's original determination of inconsistency, the resubmitted Revised SWPCP shall be considered a Resubmission. As such, the resubmitted Revised SWPCP shall be reviewed by the District in accordance with the timeframes set forth in Section I.B., and other applicable sections of this document, and the fee shall be in accordance with Section II, below, and the Resubmission Fee in Exhibit 1.

(e) In the event the District determines after review of the Revised SWPCP in accordance with subsection (c), above, that the Revised SWPCP remains inconsistent with the requirements of the Construction General Permit, and the developer resubmits its Revised SWPCP *more than 180 calendar days after* the District's original determination of inconsistency, the resubmitted Revised SWPCP shall be considered a new submission. The newly submitted Revised SWPCP shall be reviewed by the District in accordance with the timeframes set forth in Section I.B., and other applicable sections of this document, and the fee shall be in accordance with Section II, below, and the SWPCP Review Fee in Exhibit 1.

(f) Revisions to a SWPCP subsequent to the District's prior approval of developer's SWPCP

(i) In the event the developer revises a SWPCP after the District has determined that the developer's SWPCP, prior to this revision, was consistent with the requirements of the Construction General Permit, and the developer submits the revised SWPCP to the District for review *within 180 calendar days* of the District's original determination of consistency, the SWPCP shall be considered a Post-Approval Resubmission. As a Post-Approval Resubmission, the SWPCP shall be reviewed by the District in accordance with the timeframes set forth in Section I.B., and other applicable sections of this document, and the fee shall be in accordance with Section II, below, and the Post-Approval Resubmission Fee in Exhibit 1.

(ii) In the event the developer revises a SWPCP after the District has determined that the developer's SWPCP, prior to this revision, was consistent with the requirements of the Construction General Permit, and the developer submits the revised SWPCP to the District for review *more than 180 calendar days after* the District's original determination of consistency, the SWPCP shall be considered a new submission. The newly submitted SWPCP shall be reviewed by the District in accordance with the timeframes set forth in Section I.B., and other applicable sections of this document, and the fee shall be in accordance with Section II, below, and the SWPCP Review Fee in Exhibit 1.

B. Plan Review Timeframes

1. The District shall review a new submission of a SWPCP submitted by a developer or such developer's designee and provide review comments within thirty (30) calendar days of the date of a complete submission as specified in Section I.A.1.(c).
2. If the District identifies deficiencies in the SWPCP, the District shall allow the developer or such developer's designee the opportunity to revise their SWPCP and resubmit it to the District within fifteen (15) calendar days after the date of mailing or delivery of the District's written comments to the developer or such developer's designee.
3. The District shall review any SWPCP revised in accordance with subsection I.B.2., above, and provide a written determination of the SWPCP's consistency or inconsistency within fifteen (15) calendar days after the submission of the revised SWPCP.
4. At the request of the District or the developer and with the agreement of both the District and the developer, the deadlines stated in subsections 1. – 3., above, may be extended. However, any such extensions shall be limited to no more than double the original amount of time allowed above for the relevant action.
5. Express review of a SWPCP may be requested by a developer. However, the Districts shall have complete discretion to accept or decline such request for an express review based on the District's circumstances, including, but not limited to: their existing workload, vacation schedules and staffing. If a District grants an express review, the timeframe shall be reduced to no more than one third of the timeframes noted in subsection 1. – 3., above, and the fee shall be in accordance with the Express Reviews fee in Exhibit 1.
6. In the event a District does not complete the review of the SWPCP within sixty (60) days (or within the time allowed under any authorized extension pursuant to subsection B.4, above, but in no circumstance later than 120 days) of the date the SWPCP was initially submitted to the District, and provided such delay is not the result of the developer's or such developer's designee's failure to address SWPCP deficiencies as noted in subsection B.2, above, the District shall:
 - (a) not later than three (3) days after the District's deadline, notify the DEEP that the developer shall be initiating the registration process for the Construction General Permit in accordance with section I.B of this Agreement, for completion of the SWPCP review, and;
 - (b) provide to the DEEP, upon request, the District's complete file, including supporting documentation the developer's SWPCP consistency determination, including, but not limited to, the SWPCP, any other documentation submitted to the District by or on behalf of a developer, and any analysis already performed by the District; and
 - (c) not later than seven (7) days after the District's deadline, in accordance with section I.B of this Agreement, for completion of the SWPCP review, transfer to the DEEP, up to a maximum of \$4,500, the fees that were originally submitted by the developer.

C. Inspections of the Project Site

1. Prior to the commencement of project construction and during the course of the SWPCP review process, the District shall conduct at least one inspection of the project site.
2. Once the construction of the project has begun, a District shall make at least one, but not more than three, inspection(s) of the project site to verify that the developer's SWPCP is being

implemented as approved by the District. A District shall report the results of the inspection(s) to the developer or such developer's designee and to DEEP in a manner prescribed by the Commissioner.

3. Upon notification from the developer or developer's designee, in accordance with Section 6(a)(1) of the CGP, that construction of the stormwater collection and management system is complete, the District shall conduct one inspection of the project site to verify that the post-construction stormwater management measures were completed in accordance with the approved SWPCP. The District shall report the results of this inspection to DEEP in a manner prescribed by the Commissioner.

D. Audits

The District agrees that all records pertaining to this Agreement shall be maintained for a period of not less than five (5) years. Such records shall be made available to the DEEP and to the state auditors upon request. For the purposes of this Agreement, "Records" are all working papers and such information and materials as may have been accumulated by the District in performing the Agreement, including, but not limited to, documents, data, analysis, plans, books, computations, drawings, specifications, notes, reports, records, estimates, summaries and correspondence, kept or stored in any form.

II. FEE SCHEDULE.

A. A District may assess fees for the services it renders in conjunction with its SWPCP reviews. Such fees shall be paid as follows:

1. All fees, except those described in subsection II.A.2, below, shall be submitted by the developer to the District with the developer's request for review. These fees are non refundable.
2. The fee for Post-Approval Resubmission, as designated in Exhibit 1, shall be submitted by the developer to the District upon completion of the District's review, prior to release of the determination notice, and is non refundable.

B. The Fee Schedule shall be reviewed annually by the Parties. The Fee Schedule may be adjusted as warranted, without a formal amendment to this Agreement, by mutual agreement between the Districts and the Commissioner.

III. RESPONSIBILITIES OF DEEP.

A. In accordance with the Construction General Permit requirements for SWPCP reviews by a third party, DEEP shall conduct outreach to inform the development community that a District may review SWPCPs for consistency with the requirements of the Construction General Permit. DEEP shall also inform the development community that a registration form for authorization under the Construction General Permit may only be submitted to DEEP if: the District, or other third party in accordance with Section 3(b)(11) of the CGP, determines that the SWPCP is consistent with the requirements of the CGP, or in the event the time schedule is exceeded for a District review as described in section I.B.6, above.

B. In order to institute standard SWPCP review guidelines and procedures, DEEP shall coordinate with the Districts to prepare a SWPCP checklist. The standard review guidelines and procedures established shall be consistent with the requirements of the Construction General Permit, the 2002 CT Guidelines for Soil Erosion and Sedimentation Control, and the 2004 Stormwater Quality Manual. The Commissioner shall have final approval of the review guidelines and procedures.

C. DEEP shall provide initial training regarding SWPCP requirements for District staff involved in SWPCP reviews. The frequency of subsequent training shall be determined by the Commissioner.

D. DEEP shall retain final decision making authority regarding the determination that a SWPCP is or is not consistent with the requirements of the Construction General Permit and shall oversee the permitting process for Construction General Permit coverage.

E. Once a SWPCP has been approved, DEEP shall oversee any subsequent compliance and/or enforcement matters related to a developer's adherence to the requirements of the Construction General Permit.

F. DEEP shall have the discretion to review any of the Districts' records pertaining to any aspect this Agreement.

IV. POINTS OF CONTACT.

The following shall be points of contact for this Agreement unless otherwise agreed to by all Parties, notwithstanding section VI. All notices, demands, requests, consents, approvals or other communications required or permitted to be given or which are given with respect to this Agreement (for the purpose of this section collectively called "Notices") shall be deemed to have been effected at such time as the notice is placed in the U.S. mail, first class and postage prepaid, return receipt requested, or, placed with a recognized, overnight express delivery service that provides for a return receipt. All such Notices shall be in writing and shall be addressed as follows:

A. DEEP

Director
Water Permitting & Enforcement Division
Bureau of Material Management & Compliance Assurance
Department of Energy & Environmental Protection
79 Elm St.
Hartford, CT 06106
Phone: 860-424-3018
Fax: 860-424-4074

B. Conservation District

Board Chairperson
Address & Phone of appropriate District:

Northwest Conservation District
1185 New Litchfield Street
Torrington, CT 06790
Ph: 860-626-7222
Fax: 860-626-7222
Email: ncd@conservect.org

Eastern Connecticut Conservation District
238 West Town Street
Norwich, CT 06360-2111
Ph: 860-887-4163 x 400 Fax: 860-887-4082
Email: kate.johnson.eccd@comcast.net

Connecticut River Coastal Conservation District, Inc.
deKoven House Community Center
27 Washington Street
Middletown, CT 06457
Ph: 860-346-3282 Fax 860-346-3284
Email: ctrivercoastal@conservect.org

Southwest Conservation District
51 Mill Pond Road
Hamden, CT 06514
Ph: 203-287-8179 Fax: 203-288-5077
Email: swcd43@sbcglobal.net

North Central Conservation District
24 Hyde Avenue
Vernon, CT 06066
Ph: 860-875-3881 Fax: 860-870-8973
Email: tollandc@snet.net

V. EXECUTIVE ORDERS AND ANTI-DISCRIMINATION. The Districts shall comply with the additional terms and conditions hereto attached as Exhibit 2.

VI. AMENDMENTS. Either the DEEP or the Districts may recommend revisions to this Agreement as circumstances may warrant; however, any revisions must be upon mutual agreement of DEEP and all five Conservation Districts. Unless otherwise stated in this Agreement, formal written amendment is required for changes to any of the terms and conditions specifically stated in the Agreement, including Exhibit 2 of the Agreement, any prior amendments to the Agreement, and any other Agreement revisions determined material by the Department.

VII. SEVERABILITY. The provisions of this Agreement are severable. If any part of it is found unenforceable, all other provisions shall remain fully valid and enforceable, unless the unenforceable provision is an essential element of the bargain.

VIII. SOVEREIGN IMMUNITY. The Parties acknowledge and agree that nothing in the Agreement shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by federal law or the laws of the State of Connecticut to the State or any of the State's, which they may have had, now have or shall have with respect to all matters arising out of the Agreement. To the extent that this section conflicts with any other section, this section shall govern.

IX. FORUM AND CHOICE OF LAW. The Agreement shall be deemed to have been made in the City of Hartford, State of Connecticut. Both Parties agree that it is fair and reasonable for the validity and construction of the Agreement to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by federal law or the laws of the State of Connecticut do not bar an action against the State or the Districts, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Districts waive any objection which they may now have or shall have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

X. TERMINATION. Notwithstanding any provisions in this Agreement, DEEP, through a duly

authorized employee, may terminate the Agreement whenever the Agency makes a written determination that such Termination is in the best interests of the State. The Agency shall notify the Districts in writing sent by certified mail, return receipt requested, which notice shall specify the effective date of Termination and the extent to which the Districts must complete its Performance under the Agreement prior to such date; or (b) The Districts may terminate the Agreement for good cause. The Districts shall notify DEEP by written notice at least one hundred eighty (180) days prior to the effective date of termination. In order for the Districts to terminate this Agreement, (1) there must be a consensus between all five Conservation Districts that each District shall be terminating this Agreement with the DEEP; (2) such proof of consensus shall be submitted to the DEEP in the form of a letter signed by the duly authorized agent for each District by certified mail, return receipt requested, at least one hundred eighty (180) days prior to the Districts' intention to cancel or terminate. Upon the Termination of this Agreement by either Party, the Districts shall deliver to the Agency copies of all Records no later than thirty (30) days after the Termination of the Agreement, or fifteen (15) days after the Non-terminating Party receives a written request from the Terminating Party for the Records. The Districts shall deliver those Records that exist in electronic, magnetic or other intangible form in a non-proprietary format, such as, but not limited to, PDF, ASCII or .TXT. Upon receipt of a written notice of Termination from the Agency, the Districts shall cease operations as the Agency directs in the notice, and take all actions that are necessary or appropriate, or that the Agency may reasonably direct, for the protection, and preservation of records. Except for any work which the Agency directs the Districts to Perform in the notice prior to the effective date of Termination, and except as otherwise provided in the notice, the Districts shall terminate or conclude all existing subcontracts and purchase orders and shall not enter into any further subcontracts, purchase orders or commitments. Upon Termination of the Agreement, all rights and obligations shall be null and void, so that no Party shall have any further rights or obligations to any other Party, except with respect to the sections which survive Termination. All representations, warranties, agreements and rights of the Parties under the Agreement shall survive such Termination to the extent not otherwise limited in the Agreement and without each one of them having to be specifically mentioned in the Agreement. Termination of the Agreement pursuant to this section shall not be deemed to be a breach of Agreement by the Agency.

XI. DURATION OF AGREEMENT. This Agreement shall be effective on July 1, 2013 or on the date of the last signature below, whichever is later, and shall continue in force unless canceled or terminated by either party in accordance with paragraph X above.

XII. VOID AB INITIO. Notwithstanding paragraphs X and XI, the Agreement shall be void *ab initio* if the Construction General Permit is reissued, revoked or modified to eliminate the need for the Districts to review the SWPCP pursuant to such general permit's terms and conditions or if the Construction General Permit expires and is not reissued.

XIII. INTERPRETATION. The Agreement contains numerous references to statutes and regulations. For purposes of interpretation, conflict resolution and otherwise, the content of those statutes and regulations shall govern over the content of the reference in the Agreement to those statutes and regulations.

XIV. ENTIRETY OF AGREEMENT. This Agreement is the entire agreement between the Parties with respect to its subject matter, and supersedes all prior agreements, proposals, offers, counteroffers and understandings of the Parties, whether written or oral. The Agreement has been entered into after full investigation, neither Party relying upon any statement or representation by the other unless such statement or representation is specifically embodied in the Agreement.

XV. PROTECTION OF STATE CONFIDENTIAL INFORMATION. (*mandatory language required for all PSAs effective 12/1/11*)

A. The Districts or District Parties, at their own expense, have a duty to and shall protect from a

Confidential Information Breach any and all Confidential Information which they come to possess or control, wherever and however stored or maintained, in a commercially reasonable manner in accordance with current industry standards.

B. Each District or District Party shall develop, implement and maintain a comprehensive data-security program for the protection of Confidential Information. The safeguards contained in such program shall be consistent with and comply with the safeguards for protection of Confidential Information, and information of a similar character, as set forth in all applicable federal and state law and written policy of the Department or State concerning the confidentiality of Confidential Information. Such data-security program shall include, but not be limited to, the following:

1. A security policy for employees related to the storage, access and transportation of data containing Confidential Information;
2. Reasonable restrictions on access to records containing Confidential Information, including access to any locked storage where such records are kept;
3. A process for reviewing policies and security measures at least annually;
4. Creating secure access controls to Confidential Information, including but not limited to passwords; and
5. Encrypting of Confidential Information that is stored on laptops, portable devices or being transmitted electronically.

C. The District and District Parties shall notify the Department and the Connecticut Office of the Attorney General as soon as practical, but no later than twenty-four (24) hours, after they become aware of or suspect that any Confidential Information which Parties have come to possess or control has been subject to a Confidential Information Breach. If a Confidential Information Breach has occurred, the District shall, within three (3) business days after the notification, present a credit monitoring and protection plan to the Commissioner of Administrative Services, the Department and the Connecticut Office of the Attorney General, for review and approval. Such credit monitoring or protection plan shall be made available by the District at its own cost and expense to all individuals affected by the Confidential Information Breach. Such credit monitoring or protection plan shall include, but is not limited to, reimbursement for the cost of placing and lifting one (1) security freeze per credit file pursuant to Connecticut General Statutes §36a-701a. Such credit monitoring or protection plans shall be approved by the State in accordance with this Section and shall cover a length of time commensurate with the circumstances of the Confidential Information Breach. The District's costs and expenses for the credit monitoring and protection plan shall not be recoverable from the Department, any State of Connecticut entity or any affected individuals.

D. The District shall incorporate the requirements of this Section in all subAgreements requiring each District Party to safeguard Confidential Information in the same manner as provided for in this Section.

E. Nothing in this Section shall supersede in any manner the District's and/ or the District Parties' obligations pursuant to HIPAA or the provisions of this Agreement concerning the obligations of the District as a Business Associate of the Department.

XVI. AMERICANS WITH DISABILITIES ACT (*Mandatory*). The Districts shall be and remain in compliance with the Americans with Disabilities Act of 1990 ("Act"), to the extent applicable, during the term of the Agreement. The DEEP may cancel the Agreement if the District and District Parties fail to comply with the Act.

XVII. ADA PUBLICATION STATEMENT. The following statement shall be incorporated into all **publications** prepared under the terms of this Agreement:

“The Department of Energy and Environmental Protection is an affirmative action/equal opportunity employer and service provider. In conformance with the Americans with Disabilities Act, DEEP makes every effort to provide equally effective services for persons with disabilities. Individuals with disabilities who need this information in an alternative format, to allow them to benefit and/or participate in the agency’s programs and services, should call DEEP’s Human Resources Office at (860) 424-3006, send a fax to (860) 424-3896, or email DEEP.MedRecs@ct.gov. Persons who are hearing impaired should call the State of Connecticut relay number 711.”

When advertising any **public meetings** conducted under the terms of this Agreement, the above publications language should be used as well as the following statement:

“Requests for accommodations must be made at least two weeks prior to the program date.”

All **videos** produced under the terms of this Agreement must be made available with closed captioning.

XVIII. PUBLICATION OF MATERIALS. The District must obtain written approval from the State of Connecticut prior to distribution or publication of any printed material prepared under the terms of this Agreement. Unless specifically authorized in writing by the State, on a case by case basis, the District shall have no right to use, and shall not use, the name of the State of Connecticut, its officials, agencies, or employees or the seal of the State of Connecticut or its agencies: (1) in any advertising, publicity, promotion; or (2) to express or to imply any endorsement of District’s products or services; or (3) to use the name of the State of Connecticut, its officials agencies, or employees or the seal of the State of Connecticut or its agencies in any other manner (whether or not similar to uses prohibited by (1) and (2) above), except only to manufacture and deliver in accordance with this Agreement such items as are hereby contracted for by the State. In no event may the Districts use the State Seal in any way without the express written consent of the Secretary of State.

XIX. CHANGES IN PRINCIPAL PROJECT STAFF. Any changes in the principal project staff must be requested in writing and approved in writing by the Commissioner at the Commissioner’s sole discretion. In the event of any unapproved change in principal project staff, the Commissioner may, in the Commissioner’s sole discretion, terminate this Agreement.

XX. FURTHER ASSURANCES. The Parties shall provide such information, execute and deliver any instruments and documents and take such other actions as may be necessary or reasonably requested by the other Party which are not inconsistent with the provisions of this Agreement and which do not involve the vesting of rights or assumption of obligations other than those provided for in the Agreement, in order to give full effect to the Agreement and to carry out the intent of the Agreement.

XXI. ASSIGNMENT. The Districts shall not assign any of their rights or obligations under the Agreement, voluntarily or otherwise, in any manner without the prior written consent of the Agency. The Agency may void any purported assignment in violation of this section and declare the District in breach of this Agreement. Any termination by the Agency for a breach is without prejudice to the Agency’s or the State’s rights or possible Claims.

XXII. EXHIBITS. All exhibits referred to in, and attached to, this Agreement are incorporated in this Agreement by such reference and shall be deemed to be a part of it as if they had been fully set forth in it.

XXIII. FORCE MAJEUR. Events that materially affect the cost of the Goods or Services or the time schedule within which to Perform and are outside the control of the party asserting that such an event has

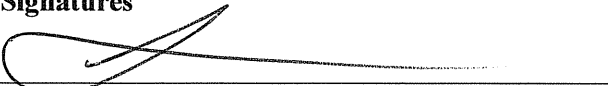
occurred, including, but not limited to, labor troubles unrelated to District(s), failure of or inadequate permanent power, unavoidable casualties, fire not caused by a District, extraordinary weather conditions, disasters, riots, acts of God, insurrection or war.

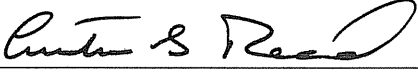
XXIV. INDEMNIFICATION. The Districts shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Agreement, including the acts of commission or omission (collectively, the "Acts") of the District or District Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Agreement. The Districts obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Districts' Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance. The Districts shall not be responsible for indemnifying or holding the State harmless from any liability arising due to the negligence of the State or any other person or entity acting under the direct control or supervision of the State. The Districts shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Districts or any District Parties. The State shall give the Districts reasonable notice of any such Claims. The Districts shall carry and maintain at all times during the term of the Agreement, and during the time that any provisions survive the term of the Agreement, sufficient general liability insurance to satisfy its obligations under this Agreement. The Districts shall name the State as an additional insured on the policy and shall provide a copy of the policy to the Agency prior to the effective date of the Agreement. The Districts shall not begin Performance until the delivery of the policy to the Agency. The Agency shall be entitled to recover under the insurance policy even if a body of competent jurisdiction determines that the Agency or the State is contributorily negligent. This section shall survive the Termination of the Agreement and shall not be limited by reason of any insurance coverage.

XXV. DISTRICT PARTIES. A District's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the District is in privity of oral or written contract and the District intends for such other person or entity to Perform under the Agreement in any capacity

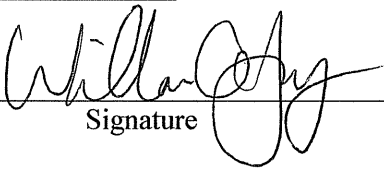
XXVI. CAMPAIGN CONTRIBUTION RESTRICTION. For all State contracts as defined in P.A. 07-1 having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this Agreement expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See SEEC Form 11.

Authorizing Signatures

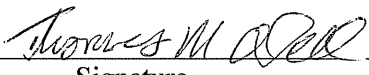
For DEEP:  8/21/13
Commissioner Date

For Northwest Conservation District:  6/5/13
Signature Date

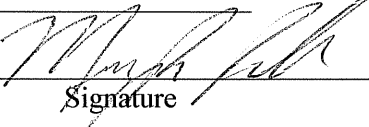
Chairman
Title

For Eastern Connecticut Conservation District:  6/12/13
Signature Date

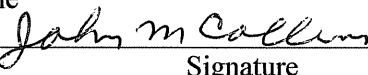
Chair
Title

For Connecticut River Coastal Conservation District, Inc.:  5/22/13
Signature Date

Chair
Title

For Southwest Conservation District:  5/13/13
Signature Date

Vice-chairperson SWCD
Title

For North Central Conservation District:  5/23/13
Signature Date

Chairman
Title

EXHIBIT 1

**Connecticut Conservation District
Stormwater Pollution Control Plan Review Fee Schedule**

Single Family Residential Developments Disturbing 5 or more Acres

Number of Lots	Standard Fee	Number of Lots	Standard Fee
1	\$1,500	26	\$5,625
2	\$1,665	27	\$5,790
3	\$1,830	28	\$5,955
4	\$1,995	29	\$6,120
5	\$2,160	30	\$6,285
6	\$2,325	31	\$6,450
7	\$2,490	32	\$6,615
8	\$2,655	33	\$6,780
9	\$2,820	34	\$6,945
10	\$2,985	35	\$7,110
11	\$3,150	36	\$7,275
12	\$3,315	37	\$7,440
13	\$3,480	38	\$7,605
14	\$3,645	39	\$7,770
15	\$3,810	40	\$7,935
16	\$3,975	41	\$8,100
17	\$4,140	42	\$8,265
18	\$4,305	43	\$8,430
19	\$4,470	44	\$8,595
20	\$4,635	45	\$8,760
21	\$4,800	46	\$8,925
22	\$4,965	47	\$9,090
23	\$5,130	48	\$9,255
24	\$5,295	49	\$9,420
25	\$5,460	50	\$9,585

Over 50 lots:

\$9,585 + \$20 x number of lots over 50

SW PCP Review: Standard Fee (as shown above)

Resubmission: Standard Fee minus 50%

Post-Approval Resubmission: \$85 per hour, up to a maximum of the Standard Fee minus 50%

Express Reviews: The specified fee for an SW PCP Review, a Resubmission, or a Post-Approval Resubmission; plus 50% of the applicable fee and/or limit

Policies:

1. Payment due upon submission of SW PCP, with the exception of Post-Approval Resubmissions.
2. Payment for Post-Approval Resubmission review is due upon completion of review.
3. Written permission to enter onto and inspect the site: Due upon submission of SW PCP.

EXHIBIT 1

**Connecticut Conservation District
Stormwater Pollution Control Plan Review Fee Schedule**

Commercial and Multi Family Developments

Number of Disturbed Standard Acres Fee		Number of Disturbed Standard Acres Fee	
5	\$2,200	28	\$5,995
6	\$2,365	29	\$6,160
7	\$2,530	30	\$6,325
8	\$2,695	31	\$6,490
9	\$2,860	32	\$6,655
10	\$3,025	33	\$6,820
11	\$3,190	34	\$6,985
12	\$3,355	35	\$7,150
13	\$3,520	36	\$7,315
14	\$3,685	37	\$7,480
15	\$3,850	38	\$7,645
16	\$4,015	39	\$7,810
17	\$4,180	40	\$7,975
18	\$4,345	41	\$8,140
19	\$4,510	42	\$8,305
20	\$4,675	43	\$8,470
21	\$4,840	44	\$8,635
22	\$5,005	45	\$8,800
23	\$5,170	46	\$8,965
24	\$5,335	47	\$9,130
25	\$5,500	48	\$9,295
26	\$5,665	49	\$9,460
27	\$5,830	50	\$9,625

Over 50 acres:

\$9,625 + \$25 x number of disturbed acres over 50

SW PCP Review: Standard Fee (as shown above)

Resubmission: Standard Fee minus 50%

Post-Approval Resubmission: \$85 per hour, up to a maximum of the Standard Fee minus 50%

Express Reviews: The specified fee for an SW PCP Review, a Resubmission, or a Post-Approval Resubmission; plus 50% of the applicable fee and/or limit

Policies:

1. Payment due upon submission of SW PCP, with the exception of Post-Approval Resubmissions.
2. Payment for Post-Approval Resubmission review is due upon completion of review.
3. Written permission to enter onto and inspect the site: Due upon submission of SW PCP.

EXHIBIT 2

EXECUTIVE ORDERS

The Agreement is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Districts' request, the Client Agency shall provide a copy of these orders to the Districts. The Agreement may also be subject to Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms and Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services, in accordance with their respective terms and conditions.

NONDISCRIMINATION

(a) For purposes of this Section, the following terms are defined as follows:

- i. "Commission" means the Commission on Human Rights and Opportunities;
- ii. "Contract" and "contract" include any extension or modification of this Agreement or contract;
- iii. "Districts" and "districts" include the Districts and any successors or assigns of the Districts or districts;
- iv. "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose.
- v. "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;
- vi. "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;
- vii. "marital status" means being single, married as recognized by the State of Connecticut, widowed, separated or divorced;
- viii. "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;
- ix. "minority business enterprise" means any small contractor, District or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and
- x. "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each District is (1) a political subdivision of the state, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

(b) (1) The Districts agree and warrant that in the performance of the Agreement such Districts will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Districts that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Districts further agree to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Districts that such disability prevents performance of the work involved; (2) the Districts agree, in all solicitations or advertisements for employees placed by or on behalf of the Districts, to state that it is

an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission; (3) the Districts agree to provide each labor union or representative of workers with which the Districts have a collective bargaining Agreement or other contract or understanding and each vendor with which the Districts have a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Districts' commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Districts agree to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and (5) the Districts agree to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Districts as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Districts agree and warrant that they will make good faith efforts to employ minority business enterprises as Districts and suppliers of materials on such public works projects.

(c) Determination of the Districts' good faith efforts shall include, but shall not be limited to, the following factors: The Districts' employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(d) The Districts shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

(e) The Districts shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on the Districts, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Districts shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes §46a-56; provided if such Districts become involved in, or is threatened with, litigation with the Districts or vendor as a result of such direction by the Commission, the Districts may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(f) The Districts agree to comply with the regulations referred to in this Section as they exist on the date of this Agreement and as they may be adopted or amended from time to time during the term of this Agreement and any amendments thereto.

(g) (1) The Districts agree and warrant that in the performance of the Agreement such Districts will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Districts agree to provide each labor union or representative of workers with which such Districts have a collective bargaining Agreement or other contract or understanding and each vendor with which such Districts have a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Districts' commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the Districts agree to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56; and (4) the Districts agree to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Districts which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.

(h) The Districts shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on the Districts, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Districts shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Districts become involved in, or is threatened with, litigation with the Districts or vendor as a result of such direction by the Commission, the Districts may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to the Connecticut Department of Energy and Environmental Protection (DEEP)."

Note: Place on official Letterhead. Need to document registered name with CT Secretary of State C.O.N.C.O.R.D.

CERTIFICATION

I, **XXXXXXXXXXXXXXXXXX**, Chair of the **XXXXXXXXXXXXXXXXXX** an entity lawfully organized and existing under the laws of Connecticut, do hereby certify that the following is a true and correct copy of a resolution adopted on the **>>>>**day of **>>>>**, 2011, by the governing body of the **XXXXXX** in accordance with all of its documents of governance and management and the laws of Connecticut and further certify that such resolution has not been modified, rescinded or revoked, and is a present in full force and effect.

RESOLVED: That the **XXXXXXXXXXXXXXXXXX** hereby adopts as its policy to support the nondiscrimination agreements and warranties required under Conn. Gen. Stat. § 4a-60(a)(1) and § 4a-60a(a)(1), as amended in State of Connecticut Public Act 07-245 and sections 9(a)(1) and 10(a)(1) of Public Act 07-142, as those statutes may be amended from time to time.

IN WITNESS WHEREOF, the undersigned has executed this certificate **this >>>>day of **>>>>**, 2013.**

Signature

Date

CONSERVATION DISTRICT PLAN REVIEW CERTIFICATION

Registrations submitted to DEEP for which a Conservation District has performed the Plan review pursuant to Section 3(b)(10) of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities shall include the following certification:

"I hereby certify that I am an employee of the [INSERT NAME OF DISTRICT] Conservation District and that I meet the qualifications to review Stormwater Pollution Control Plans as specified in the Memorandum of Agreement between the Connecticut Department of Energy & Environmental Protection and the Connecticut Conservation Districts. I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY]. I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify, based on my review of the requirements of such general permit and on the standard of care for such projects, that the Plan is in compliance with the requirements of the general permit. I understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

Registrations submitted to DEEP for which the District review was begun but ***could not be completed*** within the time limits specified in the Memorandum of Agreement shall include the following statement:

"I hereby certify that I am an employee of the [INSERT NAME OF DISTRICT] Conservation District and that I meet the qualifications to review Stormwater Pollution Control Plans as specified in the Memorandum of Agreement between the Connecticut Department of Energy & Environmental Protection and the Connecticut Conservation Districts. I am making this statement in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY]. I hereby state that the review of the Stormwater Pollution Control Plan (Plan) for such registration was not completed within the time frames specified in the Memorandum of Agreement. Consequently, I cannot certify that the Plan is in compliance with the requirements of the general permit."



General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities

APPENDIX G

Historic Preservation Review

Pursuant to Chapter 184a, Section 10-387 of the Connecticut General Statutes, the Department of Energy & Environmental Protection (DEEP) shall review, in consultation with the Connecticut Commission on Culture and Tourism, its policies and practices for consistency with the preservation and study of CT's archaeological and historical sites. Pursuant to this requirement, DEEP has outlined the following process for assessing the potential for and the presence of historic and/or archaeological resources at a proposed development site. DEEP advises a review for the resources identified below *be initiated up to one year* prior to registration for this permit (*or prior to property purchase if possible*) and in conjunction with the local project approval process. However, a review conducted for an Army Corps of Engineers Section 404 wetland permit would meet this requirement.

Step 1: Determine if the proposed site is within an area of significance by consulting the following resources:

1. CT Register of Historic Places found at the link below:
<http://www.nationalregisterofhistoricplaces.com/CT/state.html#pickem>
2. The municipality of the proposed development site for its designations of local historic districts, including but not limited to, local Historic District and/or Property Statutes.

Step 2: Assess site characteristics to determine the presence of a potential archaeological site, sacred site, and/ or sacred object as described below:

Definitions:

1. "Archaeological site" means a location where there exists material evidence that is not less than fifty years old of the past life and culture of human beings in the state.
2. "Sacred site" or "sacred land" means any space, including an archaeological site, of ritual or traditional significance in the culture and religion of Native Americans that is listed or eligible for listing on the National Register of Historic Places (16 USC 470a, as amended) or the state register of historic places defined in section 10-410, including, but not limited to, marked and unmarked human burials, burial areas and cemeteries, monumental geological or natural features with sacred meaning or a meaning central to a group's oral traditions; sites of ceremonial structures, including sweat lodges; rock art sites, and sites of great historical significance to a tribe native to this state.
3. "Sacred object" means any archaeological artifact or other object associated with a sacred site.

Site Prescreening Criteria:

1. Does the proposed development site include lands within 300 feet of surface water features, such as streams, brooks, lakes, or marshes?

If "yes", proceed to Criterion 2. If the answer to Criterion 1 is "no", then there is a low potential for prehistoric period archaeological resources - Proceed to Criterion 3.

2. Does the area of anticipated construction or ground disturbance include soils classified by the Natural Resource Conservation Service as "Sandy Loam/ Loamy sand" or "Sandy Gravel Loam" not including "Fine Sandy Loam/ Loamy sand" with slopes less than or equal to 15%? (Soil mapping information is available for free from:
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>)

If the answer to Criterion 2 is no, then there is a low potential for prehistoric period archaeological resources - Proceed to Criterion 3. If yes, the project site may contain significant prehistoric period archaeological resources

– assess all other criteria and proceed to Step 3.

3. Are there buildings or structures over 150 years in age with the project site?

If no, proceed to Criterion 4. If yes, the project site may contain significant historic period archaeological resources – assess all other criteria and proceed to Step 3.

4. Are there buildings or structures shown within or immediately adjacent to the project site on the 1850's Connecticut County maps?

Historic County maps are here:

Fairfield - <http://www.flickr.com/photos/uconnlibrariesmagic/3387034755/>

Hartford - <http://www.flickr.com/photos/uconnlibrariesmagic/3386955421/>

Litchfield - <http://www.flickr.com/photos/uconnlibrariesmagic/3387765290/>

Middlesex - <http://www.flickr.com/photos/uconnlibrariesmagic/3386956185/>

New Haven - <http://www.flickr.com/photos/uconnlibrariesmagic/3386956345/>

New London - <http://www.flickr.com/photos/uconnlibrariesmagic/3387766080/>

Tolland - <http://www.flickr.com/photos/uconnlibrariesmagic/3386957013/>

Windham - <http://www.flickr.com/photos/uconnlibrariesmagic/3387766950/>

To look for buildings and structures click on the appropriate county map link. From the “Actions” drop-down menu choose “View all sizes”. On the “Photo/All sizes” page, choose “Original” to view the county map at an enlarged scale.

If no, there is a low potential for significant historic period archaeological resources. If yes, the site may contain significant historic period archaeological resources- assess all other criteria and proceed to Step 3.

Step 3: If you answered yes to Criterion 2, 3, or 4, please contact Daniel Forrest (860-256-2761 or daniel.forrest@ct.gov) or the current environmental review coordinator at the State Historic Preservation Office, Department of Economic and Community Development for additional guidance.

Step 4: Report in the Registration Form for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities that a review has been conducted and the results of the review (i.e. the proposed site does not have the potential for historic/ archaeological resources, or that such potential exists and is being or has been reviewed by the Connecticut Commission on Culture and Tourism).

Please note that DEEP will refer all proposed sites with a historic/ archaeological resource potential (as identified in Steps 1 & 2 above) to the State Historic Preservation Office at the Department of Economic and Community Development..

Appendix H

Wild & Scenic Rivers Guidance

Overview: Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (WSRA) charges administration of rivers in the National Wild and Scenic Rivers System (National System) to four federal land management agencies (Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and U.S. Forest Service). However, to protect and enhance river values as directed in the WSRA, it is essential to use the authorities of a number of other federal agencies in administering the water column, river bed/bank, and upland river corridor.

Congress declared a policy to protect selected rivers in the nation through the WSRA. The river-administering agencies are to protect the river's identified values, free-flowing condition, and associated water quality. Specifically, each component is to be "administered in such manner as to protect and enhance the (outstandingly remarkable) values (**ORVs**) which caused it to be included in said system. . . ."

The WSRA also directs other federal agencies to protect river values. It explicitly recognizes the Federal Energy Regulatory Commission, Environmental Protection Agency, Army Corps of Engineers and any other federal department or agency with lands on or adjacent to designated (or congressionally authorized study) rivers or that permit or assist in the construction of water resources projects.

Pertinent Sections of the Wild and Scenic Rivers Act

The full Wild and Scenic Rivers Act can be found at the website: www.rivers.gov

Pertinent Sections related to the mandate to protect river values through coordinated federal actions is found in several sections of the WSRA:

Section 1(b)	Section 7(a)	Section 10(a)
Section 12(a)	Section 12(c)	

Designated Rivers under the Wild and Scenic Rivers Act and Contact Information

The full listing of designated rivers can be found on the website www.rivers.gov

As of the date of this publication, there are two designated rivers in Connecticut, both of which are managed under the Partnership Wild and Scenic Rivers Program, through a Coordinating Committee consisting of representatives from local communities and organizations, state government and the National Park Service. More information about these rivers, their watersheds, approved management plans, the Wild and Scenic Coordinating Committees and specific contact information can be found on the websites.

1. West Branch of the Farmington River: www.farmingtonriver.org
2. Eightmile River: www.eightmileriver.org



**Connecticut Department of
Energy & Environmental Protection**
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

**General Permit for the Discharge of Stormwater and Dewatering Wastewaters from
Construction Activities, issued 8/21/13, effective 10/1/13**
Stormwater Monitoring Report

SITE INFORMATION

Permittee: _____
 Mailing Address: _____
 Business Phone: _____ ext.: _____ Fax: _____
 Contact Person: _____ Title: _____
 Site Name: _____
 Site Address: _____
 Receiving Water (name, basin): _____
 Stormwater Permit No. GSN _____

SAMPLING INFORMATION (Submit a separate form for each outfall)

Outfall Designation: _____ Date/Time Collected: _____
 Outfall Location(s) (lat/lon or map link): _____
 Person Collecting Sample: _____
 Storm Magnitude (inches): _____ Storm Duration (hours): _____
 Size of Disturbed Area at any time: _____

MONITORING RESULTS

Sample #	Parameter	Method	Results (units)	Laboratory (if applicable)
1	Turbidity			
2	Turbidity			
3	Turbidity			
4	Turbidity			

(provide an attachment if more than 4 samples were taken for this outfall)

Avg = _____

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: _____
 Signature: _____ Date: _____

Please send completed form to:

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
 BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
 79 ELM STREET
 HARTFORD, CT 06106-5127
 ATTN: NEAL WILLIAMS

	Methodology	EPA	Std	ASTM	USGS/OTHER
		200.8, Rev. 5.4 (1994)		D5673-05	
72. Titanium-Total, ⁴ mg/L	Digestion ⁴ followed by any of the following:				
	AA direct aspiration		3111 D-1999		
	AA furnace	283.2 ¹ (Issued 1978)			
	ICP/AES	200.7, Rev. 4.4 (1994)			
	ICP/MS	200.8, Rev. 5.4 (1994)	3125 B-2009	D5673-05	993.14. ³
	DCP				See footnote. ³⁴
73. Turbidity, NTU ⁵³	Nephelometric	180.1, Rev. 2.0 (1993)	2130 B-2001	D1889-00	I-3860-85. ² See footnote. ⁶⁵ See footnote. ⁶⁶ See footnote. ⁶⁷
74. Vanadium-Total, ⁴ mg/L	Digestion ⁴ , followed by any of the following:				
	AA direct aspiration		3111 D-1999		
	AA furnace		3113 B-2004	D3373-03(07)	
	ICP/AES	200.5, Rev 4.2 (2003) ⁶⁸ ; 200.7, Rev. 4.4 (1994)	3120 B-1999	D1976-07	I-4471-97. ⁵⁰
	ICP/MS	200.8, Rev. 5.4 (1994)	3125 B-2009	D5673-05	993.14 ³ , I-4020-05. ⁷⁰
	DCP			D4190-08	See footnote. ³⁴
	Colorimetric (Gallic Acid)		3500-V B-1997		
75. Zinc-Total ⁴ , mg/L	Digestion ⁴ , followed by any of the following:				
	AA direct aspiration ³⁶		3111 B-1999 or 3111 C-1999	D1691-02(07) (A or B)	974.27 ³ , p. 37 ⁹ , I-3900-85. ²
	AA furnace	289.2 ¹ (Issued 1978)			
	ICP/AES ³⁶	200.5, Rev 4.2 (2003) ⁶⁸ ; 200.7, Rev. 4.4 (1994)	3120 B-1999	D1976-07	I-4471-97. ⁵⁰
	ICP/MS	200.8, Rev. 5.4 (1994)	3125 B-2009	D5673-05	993.14 ³ , I-4020-05. ⁷⁰
	DCP ³⁶			D4190-08	See footnote. ³⁴
	Colorimetric (Zincon)		3500 Zn B-1997		See footnote. ³³
76. Acid Mine Drainage		1627 ⁶⁹			

Table IB Notes:

METHOD 180.1

DETERMINATION OF TURBIDITY BY NEPHELOMETRY

Edited by James W. O'Dell
Inorganic Chemistry Branch
Chemistry Research Division

Revision 2.0
August 1993

**ENVIRONMENTAL MONITORING SYSTEMS LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY
CINCINNATI, OHIO 45268**

180.1-1

METHOD 180.1

DETERMINATION OF TURBIDITY BY NEPHELOMETRY

1.0 SCOPE AND APPLICATION

- 1.1 This method covers the determination of turbidity in drinking, ground, surface, and saline waters, domestic and industrial wastes.
- 1.2 The applicable range is 0-40 nephelometric turbidity units (NTU). Higher values may be obtained with dilution of the sample.

2.0 SUMMARY OF METHOD

- 2.1 The method is based upon a comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension. The higher the intensity of scattered light, the higher the turbidity. Readings, in NTU's, are made in a nephelometer designed according to specifications given in Sections 6.1 and 6.2. A primary standard suspension is used to calibrate the instrument. A secondary standard suspension is used as a daily calibration check and is monitored periodically for deterioration using one of the primary standards.
 - 2.1.1 Formazin polymer is used as a primary turbidity suspension for water because it is more reproducible than other types of standards previously used for turbidity analysis.
 - 2.1.2 A commercially available polymer primary standard is also approved for use for the National Interim Primary Drinking Water Regulations. This standard is identified as AMCO-AEPA-1, available from Advanced Polymer Systems.

3.0 DEFINITIONS

- 3.1 **Calibration Blank (CB)** -- A volume of reagent water fortified with the same matrix as the calibration standards, but without the analytes, internal standards, or surrogates analytes.
- 3.2 **Instrument Performance Check Solution (IPC)** -- A solution of one or more method analytes, surrogates, internal standards, or other test substances used to evaluate the performance of the instrument system with respect to a defined set of criteria.
- 3.3 **Laboratory Reagent Blank (LRB)** -- An aliquot of reagent water or other blank matrices that are treated exactly as a sample including exposure to all glassware, equipment, solvents, reagents, internal standards, and surrogates that are used with other samples. The LRB is used to determine if method

analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

- 3.4 **Linear Calibration Range (LCR)** -- The concentration range over which the instrument response is linear.
- 3.5 **Material Safety Data Sheet (MSDS)** -- Written information provided by vendors concerning a chemical's toxicity, health hazards, physical properties, fire, and reactivity data including storage, spill, and handling precautions.
- 3.6 **Primary Calibration Standard (PCAL)** -- A suspension prepared from the primary dilution stock standard suspension. The PCAL suspensions are used to calibrate the instrument response with respect to analyte concentration.
- 3.7 **Quality Control Sample (QCS)** -- A solution of the method analyte of known concentrations that is used to fortify an aliquot of LRB matrix. The QCS is obtained from a source external to the laboratory, and is used to check laboratory performance.
- 3.8 **Secondary Calibration Standards (SCAL)** -- Commercially prepared, stabilized sealed liquid or gel turbidity standards calibrated against properly prepared and diluted formazin or styrene divinylbenzene polymers.
- 3.9 **Stock Standard Suspension (SSS)** -- A concentrated suspension containing the analyte prepared in the laboratory using assayed reference materials or purchased from a reputable commercial source. Stock standard suspension is used to prepare calibration suspensions and other needed suspensions.

4.0 INTERFERENCES

- 4.1 The presence of floating debris and coarse sediments which settle out rapidly will give low readings. Finely divided air bubbles can cause high readings.
- 4.2 The presence of true color, that is the color of water which is due to dissolved substances that absorb light, will cause turbidities to be low, although this effect is generally not significant with drinking waters.
- 4.3 Light absorbing materials such as activated carbon in significant concentrations can cause low readings.

5.0 SAFETY

- 5.1 The toxicity or carcinogenicity of each reagent used in this method has not been fully established. Each chemical should be regarded as a potential health hazard and exposure should be as low as reasonably achievable.
- 5.2 Each laboratory is responsible for maintaining a current awareness file of OSHA regulations regarding the safe handling of the chemicals specified in

this method. A reference file of Material Safety Data Sheets (MSDS) should be made available to all personnel involved in the chemical analysis. The preparation of a formal safety plan is also advisable.

- 5.3 Hydrazine Sulfate (Section 7.2.1) is a carcinogen. It is highly toxic and may be fatal if inhaled, swallowed, or absorbed through the skin. Formazin can contain residual hydrazine sulfate. Proper protection should be employed.

6.0 EQUIPMENT AND SUPPLIES

- 6.1 The turbidimeter shall consist of a nephelometer, with light source for illuminating the sample, and one or more photo-electric detectors with a readout device to indicate the intensity of light scattered at right angles to the path of the incident light. The turbidimeter should be designed so that little stray light reaches the detector in the absence of turbidity and should be free from significant drift after a short warm-up period.
- 6.2 Differences in physical design of turbidimeters will cause differences in measured values for turbidity, even though the same suspension is used for calibration. To minimize such differences, the following design criteria should be observed:
 - 6.2.1 Light source: Tungsten lamp operated at a color temperature between 2200-3000°K.
 - 6.2.2 Distance traversed by incident light and scattered light within the sample tube: Total not to exceed 10 cm.
 - 6.2.3 Detector: Centered at 90° to the incident light path and not to exceed $\pm 30^\circ$ from 90°. The detector, and filter system if used, shall have a spectral peak response between 400 nm and 600 nm.
- 6.3 The sensitivity of the instrument should permit detection of a turbidity difference of 0.02 NTU or less in waters having turbidities less than 1 unit. The instrument should measure from 0-40 units turbidity. Several ranges may be necessary to obtain both adequate coverage and sufficient sensitivity for low turbidities.
- 6.4 The sample tubes to be used with the available instrument must be of clear, colorless glass or plastic. They should be kept scrupulously clean, both inside and out, and discarded when they become scratched or etched. A light coating of silicon oil may be used to mask minor imperfections in glass tubes. They must not be handled at all where the light strikes them, but should be provided with sufficient extra length, or with a protective case, so that they may be handled. Tubes should be checked, indexed and read at the orientation that produces the lowest background blank value.
- 6.5 Balance -- Analytical, capable of accurately weighing to the nearest 0.0001 g.

6.6 Glassware -- Class A volumetric flasks and pipets as required.

7.0 REAGENTS AND STANDARDS

7.1 Reagent water, turbidity-free: Pass deionized distilled water through a 0.45 μ pore size membrane filter, if such filtered water shows a lower turbidity than unfiltered distilled water.

7.2 Stock standard suspension (Formazin):

7.2.1 Dissolve 1.00 g hydrazine sulfate, $(\text{NH}_2)_2\text{H}_2\text{SO}_4$ (CASRN 10034-93-2) in reagent water and dilute to 100 mL in a volumetric flask. CAUTION--carcinogen.

7.2.2 Dissolve 10.00 g hexamethylenetetramine (CASRN 100-97-0) in reagent water and dilute to 100 mL in a volumetric flask. In a 100 mL volumetric flask, mix 5.0 mL of each solution (Sections 7.2.1 and 7.2.2). Allow to stand 24 hours at $25 \pm 3^\circ\text{C}$, then dilute to the mark with reagent water.

7.3 Primary calibration standards: Mix and dilute 10.00 mL of stock standard suspension (Section 7.2) to 100 mL with reagent water. The turbidity of this suspension is defined as 40 NTU. For other values, mix and dilute portions of this suspension as required.

7.3.1 A new stock standard suspension (Section 7.2) should be prepared each month. Primary calibration standards (Section 7.3) should be prepared daily by dilution of the stock standard suspension.

7.4 Formazin in commercially prepared primary concentrated stock standard suspension (SSS) may be diluted and used as required. Dilute turbidity standards should be prepared daily.

7.5 AMCO-AEPA-1 Styrene Divinylbenzene polymer primary standards are available for specific instruments and require no preparation or dilution prior to use.

7.6 Secondary standards may be acceptable as a daily calibration check, but must be monitored on a routine basis for deterioration and replaced as required.

8.0 SAMPLE COLLECTION, PRESERVATION AND STORAGE

8.1 Samples should be collected in plastic or glass bottles. All bottles must be thoroughly cleaned and rinsed with turbidity free water. Volume collected should be sufficient to insure a representative sample, allow for replicate analysis (if required), and minimize waste disposal.

8.2 No chemical preservation is required. Cool sample to 4°C .

- 8.3 Samples should be analyzed as soon as possible after collection. If storage is required, samples maintained at 4°C may be held for up to 48 hours.

9.0 QUALITY CONTROL

- 9.1 Each laboratory using this method is required to operate a formal quality control (QC) program. The minimum requirements of this program consist of an initial demonstration of laboratory capability and analysis of laboratory reagent blanks and other solutions as a continuing check on performance. The laboratory is required to maintain performance records that define the quality of data generated.

9.2 INITIAL DEMONSTRATION OF PERFORMANCE.

- 9.2.1 The initial demonstration of performance is used to characterize instrument performance (determination of LCRs and analysis of QCS).
- 9.2.2 Linear Calibration Range (LCR) -- The LCR must be determined initially and verified every six months or whenever a significant change in instrument response is observed or expected. The initial demonstration of linearity must use sufficient standards to insure that the resulting curve is linear. The verification of linearity must use a minimum of a blank and three standards. If any verification data exceeds the initial values by $\pm 10\%$, linearity must be reestablished. If any portion of the range is shown to be nonlinear, sufficient standards must be used to clearly define the nonlinear portion.
- 9.2.3 Quality Control Sample (QCS) -- When beginning the use of this method, on a quarterly basis or as required to meet data-quality needs, verify the calibration standards and acceptable instrument performance with the preparation and analysis of a QCS. If the determined concentrations are not within $\pm 10\%$ of the stated values, performance of the determinative step of the method is unacceptable. The source of the problem must be identified and corrected before continuing with on-going analyses.

9.3 ASSESSING LABORATORY PERFORMANCE

- 9.3.1 Laboratory Reagent Blank (LRB) -- The laboratory must analyze at least one LRB with each batch of samples. Data produced are used to assess contamination from the laboratory environment.
- 9.3.2 Instrument Performance Check Solution (IPC) -- For all determinations, the laboratory must analyze the IPC (a mid-range check standard) and a calibration blank immediately following daily calibration, after every tenth sample (or more frequently, if required) and at the end of the sample run. Analysis of the IPC solution and calibration blank immediately following calibration must verify that the instrument is

within $\pm 10\%$ of calibration. Subsequent analyses of the IPC solution must verify the calibration is still within $\pm 10\%$. If the calibration cannot be verified within the specified limits, reanalyze the IPC solution. If the second analysis of the IPC solution confirms calibration to be outside the limits, sample analysis must be discontinued, the cause determined and/or in the case of drift the instrument recalibrated. All samples following the last acceptable IPC solution must be reanalyzed. The analysis data of the calibration blank and IPC solution must be kept on file with the sample analyses data. NOTE: Secondary calibration standards (SS) may also be used as the IPC.

- 9.3.3 Where additional reference materials such as Performance Evaluation samples are available, they should be analyzed to provide additional performance data. The analysis of reference samples is a valuable tool for demonstrating the ability to perform the method acceptably.

10.0 CALIBRATION AND STANDARDIZATION

- 10.1 Turbidimeter calibration: The manufacturer's operating instructions should be followed. Measure standards on the turbidimeter covering the range of interest. If the instrument is already calibrated in standard turbidity units, this procedure will check the accuracy of the calibration scales. At least one standard should be run in each instrument range to be used. Some instruments permit adjustments of sensitivity so that scale values will correspond to turbidities. Solid standards, such as those made of lucite blocks, should never be used due to potential calibration changes caused by surface scratches. If a pre-calibrated scale is not supplied, calibration curves should be prepared for each range of the instrument.

11.0 PROCEDURE

- 11.1 Turbidities less than 40 units: If possible, allow samples to come to room temperature before analysis. Mix the sample to thoroughly disperse the solids. Wait until air bubbles disappear then pour the sample into the turbidimeter tube. Read the turbidity directly from the instrument scale or from the appropriate calibration curve.
- 11.2 Turbidities exceeding 40 units: Dilute the sample with one or more volumes of turbidity-free water until the turbidity falls below 40 units. The turbidity of the original sample is then computed from the turbidity of the diluted sample and the dilution factor. For example, if 5 volumes of turbidity-free water were added to 1 volume of sample, and the diluted sample showed a turbidity of 30 units, then the turbidity of the original sample was 180 units.
- 11.2.1 Some turbidimeters are equipped with several separate scales. The higher scales are to be used only as indicators of required dilution volumes to reduce readings to less than 40 NTU.

Note: Comparative work performed in the Environmental Monitoring Systems Laboratory - Cincinnati (EMSL-Cincinnati) indicates a progressive error on sample turbidities in excess of 40 units.

12.0 DATA ANALYSIS AND CALCULATIONS

- 12.1 Multiply sample readings by appropriate dilution to obtain final reading.
- 12.2 Report results as follows:

<u>NTU</u>	<u>Record to Nearest:</u>
0.0 - 1.0	0.05
1 - 10	0.1
10 - 40	1
40 - 100	5
100 - 400	10
400 - 1000	50
>1000	100

13.0 METHOD PERFORMANCE

- 13.1 In a single laboratory (EMSL-Cincinnati), using surface water samples at levels of 26, 41, 75, and 180 NTU, the standard deviations were ± 0.60 , ± 0.94 , ± 1.2 , and ± 4.7 units, respectively.
- 13.2 The interlaboratory precision and accuracy data in Table 1 were developed using a reagent water matrix. Values are in NTU.

14.0 POLLUTION PREVENTION

- 14.1 Pollution prevention encompasses any technique that reduces or eliminates the quantity or toxicity of waste at the point of generation. Numerous opportunities for pollution prevention exist in laboratory operation. The EPA has established a preferred hierarchy of environmental management techniques that places pollution prevention as the management option of first choice. Whenever feasible, laboratory personnel should use pollution prevention techniques to address their waste generation. When wastes cannot be feasibly reduced at the source, the Agency recommends recycling as the next best option.
- 14.2 The quantity of chemicals purchased should be based on expected usage during its shelf life and disposal cost of unused material. Actual reagent preparation volumes should reflect anticipated usage and reagent stability.
- 14.3 For information about pollution prevention that may be applicable to laboratories and research institutions, consult "Less is Better: Laboratory Chemical Management for Waste Reduction," available from the American

Chemical Society's Department of Government Regulations and Science Policy,
1155 16th Street N.W., Washington D.C. 20036, (202)872-4477.

15.0 WASTE MANAGEMENT

- 15.1 The U.S. Environmental Protection Agency requires that laboratory waste management practices be conducted consistent with all applicable rules and regulations. Excess reagents, samples and method process wastes should be characterized and disposed of in an acceptable manner. The Agency urges laboratories to protect the air, water and land by minimizing and controlling all releases from hoods, and bench operations, complying with the letter and spirit of any waste discharge permit and regulations, and by complying with all solid and hazardous waste regulations, particularly the hazardous waste identification rules and land disposal restrictions. For further information on waste management consult the "Waste Management Manual for Laboratory Personnel," available from the American Chemical Society at the address listed in Section 14.3.

16.0 REFERENCES

1. Annual Book of ASTM Standards, Volume 11.01 Water (1), Standard D1889-88A, p. 359, (1993).
2. Standard Methods for the Examination of Water and Wastewater, 18th Edition, pp. 2-9, Method 2130B, (1992).

17.0 TABLES, DIAGRAMS, FLOWCHARTS AND VALIDATION DATA

TABLE 1. INTERLABORATORY PRECISION AND ACCURACY DATA

Number of Values Reported	True Value (T)	Mean (X)	Residual for X	Standard Deviation (S)	Residual for S
373	0.450	0.4864	0.0027	0.1071	-0.0078
374	0.600	0.6026	-0.0244	0.1048	-0.0211
289	0.65	0.6931	0.0183	0.1301	0.0005
482	0.910	0.9244	0.0013	0.2512	0.1024
484	0.910	0.9919	0.0688	0.1486	-0.0002
489	1.00	0.9405	-0.0686	0.1318	-0.0236
640	1.36	1.3456	-0.0074	0.1894	0.0075
487	3.40	3.2616	-0.0401	0.3219	-0.0103
288	4.8	4.5684	-0.0706	0.3776	-0.0577
714	5.60	5.6984	0.2952	0.4411	-0.0531
641	5.95	5.6026	-0.1350	0.4122	-0.1078

REGRESSIONS: $X = 0.955T + 0.54$, $S = 0.074T + 0.082$

How to do Stormwater Monitoring: A guide for construction sites



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If you need this publication in an alternate format, please call the Water Quality Program at 360-4067-6401. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

1. Introduction

Federal and state law requires construction site operators to manage their stormwater on sites one acre and larger. The Department of Ecology (Ecology) administers these laws through the Construction Stormwater General Permit. For details on who needs a permit, see Ecology's publication: "How to Meet Ecology's Construction Stormwater General Permit Requirements: A Guide for Construction Sites." The permit requires you, as a construction site operator, to develop, use, and amend a Stormwater Pollution Prevention Plan (SWPPP). The purpose of the SWPPP is to reduce and prevent soil, dirt, and other common construction pollutants from washing off the site and reaching streams, rivers, and other local water bodies.

The specific permit requirements vary depending on the size of the construction site, but include performing site inspections and sampling stormwater leaving your site (see permit section *S4. MONITORING REQUIREMENTS*). You must record and report your monitoring results to Ecology. This guide is to help construction site operators conduct site inspections and stormwater sampling. As a result, you will be able to monitor your site in a way that will provide you and Ecology with meaningful results.

By visually inspecting the site and by sampling stormwater discharges, you can identify sources of pollutants that may enter surface waters. Your inspection and monitoring results will help you determine (1) if your SWPPP is adequate and (2) whether best management practices (BMPs) are working correctly, or if additional BMP maintenance or installation is necessary.

Your inspections and sampling must produce meaningful results to meet permit requirements. This requires some effort. This guide will take you step-by-step through the process of gathering and reporting inspection and water sampling data to accurately represent the quality of stormwater leaving your site.

GLOSSARY

Discharge point is the location where stormwater runs off the construction site.

Stormwater is rain, snow, or other precipitation that flows overland, through pipes, or into a stormwater drainage system and into a surface water body or infiltration facility. Other terms for stormwater include **stormwater runoff or runoff**.

Stormwater Pollution Prevention Plan (SWPPP) is a document that reflects the specific measures on the construction site to identify, prevent, and control the contamination of stormwater.

Surface waters of the state include rivers, lakes, ponds, streams, salt water, and wetlands in Washington.

Best management practices (BMPs) are the specific practices and physical structures used on the construction site to prevent pollution of stormwater.

2. Site Inspections

A. What to inspect and where

The permit requires physical inspections of the construction site. The inspector must visually inspect all:

- Areas disturbed by construction activities.
- Best management practices (BMPs).
- Stormwater discharge points-where stormwater runs off or leaves the site, including points where stormwater runs off into surface waters (streams, wetlands, etc.) within the property.

At these locations, inspectors must look for signs of soil erosion and any discharging stormwater for the presence of:

- suspended sediment
- turbidity
- discoloration
- oil sheen



The photos show examples of discolored and turbid stormwater discharges. Site inspections include looking for these types of discharges and correcting any problems.

Inspectors must evaluate the effectiveness of BMPs and **determine whether it is necessary to repair or maintain these BMPs, or install new BMPs to improve the quality of stormwater discharges.**

Based on inspection results, the permittee must correct any identified problems by:

- Reviewing the SWPPP to make sure it fulfills the SWPPP requirements in the permit (see Permit Section S9).
- Revising or updating the SWPPP within 7 days of the inspection.
- Doing SWPPP revisions related to common erosion and sediment control problems on-site.

Examples include:

- covering exposed soils with mulch, nets, blankets or plastic
- installing and maintaining silt fence
- check dams, or straw wattles.
- If the SWPPP revision involves new or modified structures that involve engineering designs, you must have the new or modified designs stamped by a Registered Professional Engineer.

Examples include:

- stormwater ponds
- sand filters
- chemical treatment systems
- Implementing and maintaining appropriate source control and/or treatment BMPs, as soon as possible, but no later than 10 days after the inspection. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when a permittee requests an extension within the initial 10-day response period.
- Documenting any BMP installation or maintenance in the site log book.

What does this mean in practice?

The following are a few examples of correcting problems identified during site inspections. These are only hypothetical scenarios to give you a sense of how to comply with the permit.

Scenario 1: Mud track-out

During site inspections, you notice mud tracked out onto an adjacent road by construction vehicles leaving the site.

Action: Assign someone on site to shovel and sweep the mud off the road one or more times per day to prevent further track out. If necessary, follow with street sweeping. Inspect the site entrance to ensure the rock pad is sufficient to prevent further mud track out onto the road. If the entrance pad needs additional rock, order the necessary materials and indicate the date the entrance will be fixed on the inspection checklist (site log book). Note the original condition of the road and action taken in your site inspection checklist. You must update the SWPPP within 7 days and complete repairs within 10 days.

Scenario 2: Silt fence

During site inspections, you notice a silt fence that is sagging and ripped. This has caused mud and muddy water to discharge off site.

Action: Assign someone to fix the fence as soon as possible. Obtain the necessary materials to fix the fence appropriately as soon as possible (within

10 days). Note the action taken and indicate date the fence will be fixed on the inspection checklist (site log book). You do not need to update the SWPPP, because the SWPPP already addressed the silt fence BMP, and you have identified no other BMP failures.

Scenario 3: Muddy water in stormwater pond

During a winter inspection, you notice the stormwater retention pond on site is almost full of cloudy, muddy water. The clay soil has not settled out. The weather forecast calls for rain for the next several days. This pond will likely release muddy stormwater off site and into a nearby stream without further treatment.

Action: Consider the following two options:

Option 1: Contact appropriate stormwater management company and order a portable settling tank to store or treat the muddy stormwater until it can be discharged.

Option 2: Pump the turbid stormwater to an upland undisturbed area with native soils and vegetation. Release the stormwater with perforated pipe at a controlled rate so that it can infiltrate into on-site soils.

The Certified Erosion and Sediment Control Lead (CESCL) should also investigate whether the site needs additional BMPs to prevent more muddy water from reaching the pond. Note the corrective actions taken on the inspection checklist. In both options, you must update the SWPPP within 7 days and have BMPs completed within 10 days.

B. When to conduct inspections

Inspectors must conduct site inspections once a week and within 24 hours of any stormwater discharge from the site. During periods of continuous discharge, the permit requires one inspection per week. On a site that is temporarily stabilized and inactive you only need to do site inspections once a month.

C. Who inspects?

The operator (permittee) must designate a person to conduct site inspections in the Stormwater Pollution Prevention Plan (SWPPP). The person inspecting the site must be knowledgeable in the principles and practices of erosion and sediment control. The permit requires certified inspection personnel to conduct inspections. (see below).

Certified Erosion and Sediment Control Lead (CESCL)

Construction sites that disturb one acre or more must have site inspections conducted by a *Certified Erosion and Sediment Control Lead* (CESCL). The CESCL must obtain certification through an Ecology-approved course. The CESCL must be on site or on call at all times. The following web page contains an updated list of Ecology-approved certification courses offered: <http://www.ecy.wa.gov/programs/wq/stormwater/cescl.htm>

D. Site inspection checklist

Ecology used the permit inspection requirements to develop a site checklist. The operator's inspector (CESCL) may use the checklist on the next two pages when conducting site inspections. You may also develop your own inspection checklist, but it must include all items specified on pages 11-12 of the Construction Stormwater General Permit. Keep completed checklists on site in your site log book and make them available to Ecology or local governments upon request. Do not mail them to Ecology unless requested.

**Construction Stormwater
SITE INSPECTION CHECKLIST**

Project _____ Permit No. _____ Inspector _____ Date _____ Time _____

Site BMPs	Overall Condition			Need Repair?		Comments/Observations
	G	F	P	Y	N	
Clearing Limits						
• <i>Buffer Zones around sensitive areas</i>	G	F	P	Y	N	
•	G	F	P	Y	N	
•	G	F	P	Y	N	
Construction Access/Roads						
• <i>Stabilized site entrance</i>	G	F	P	Y	N	
• <i>Stabilized roads/parking area</i>	G	F	P	Y	N	
•	G	F	P	Y	N	
Control Flow Rates						
• <i>Swale</i>	G	F	P	Y	N	
• <i>Dike</i>	G	F	P	Y	N	
• <i>Sediment pond</i>	G	F	P	Y	N	
• <i>Sediment trap</i>	G	F	P	Y	N	
•	G	F	P	Y	N	
•	G	F	P	Y	N	
Install Sediment Controls						
• <i>Sediment pond/trap</i>	G	F	P	Y	N	
• <i>Silt fence</i>	G	F	P	Y	N	
• <i>Straw bale barriers</i>	G	F	P	Y	N	
•	G	F	P	Y	N	
•	G	F	P	Y	N	
•	G	F	P	Y	N	
Preserve Vegetation/Stabilize Soils						
• <i>Nets and blankets</i>	G	F	P	Y	N	
• <i>Mulch</i>	G	F	P	Y	N	
• <i>Seeding</i>	G	F	P	Y	N	
•	G	F	P	Y	N	
•	G	F	P	Y	N	
Protect Slopes						
• <i>Terrace</i>	G	F	P	Y	N	
• <i>Pipe slope drains</i>	G	F	P	Y	N	
•	G	F	P	Y	N	
•	G	F	P	Y	N	
Protect Drain Inlets						
• <i>Inserts</i>	G	F	P	Y	N	
•	G	F	P	Y	N	
•	G	F	P	Y	N	
Stabilize Channels and Outlets						
• <i>Conveyance channels</i>	G	F	P	Y	N	
• <i>Energy dissipators</i>	G	F	P	Y	N	
•	G	F	P	Y	N	
Control Pollutants						
• <i>Chemical Storage Area covered</i>	G	F	P	Y	N	
• <i>Concrete handling</i>	G	F	P	Y	N	
•	G	F	P	Y	N	
Control De-watering						
•	G	F	P	Y	N	

G=Good F=Fair P=Poor Y=Yes N=No

**Construction Stormwater
SITE INSPECTION CHECKLIST**

Project _____ Permit No. _____ Inspector _____ Date _____ Time _____

Will existing BMPs need to be modified or removed, or other BMPs installed? YES NO
IF YES, list the action items to be completed on the following table:

Actions to be Completed	Date Completed/ Initials
1.	
2.	
3.	
4.	
5.	
6.	

Describe current weather conditions.

Approximate amount of precipitation since last inspection: _____ inches
and precipitation in the past 24 hours*: _____ inches
**based on an on-site rain gauge or local weather data.*

Describe discharging stormwater, if present. Note the presence of suspended sediment, "cloudiness", discoloration, or oil sheen.

Was water quality sampling part of this inspection? YES NO
If yes, record results below (attach separate sheet, if necessary):

Parameter:	Method (circle one)	Result	Units
Turbidity	tube, meter, laboratory		NTU (cm, if tube used)
pH	paper, kit, meter		pH standard units

Is the site in compliance with the SWPPP and the permit requirements? YES NO
If no, indicate tasks necessary to bring site into compliance on the "Actions to be Completed" table above, and include dates each job WILL BE COMPLETED.
If no, has the non-compliance been reported to Dept. of Ecology? YES NO
If no, should the SWPPP be modified: YES NO

Sign the following certification:
"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief."

Inspection completed on: _____ by: (print+signature) _____

Title/Qualification of
Inspector: _____

3. Stormwater Sampling

A. Advance planning for stormwater sampling

Deciding what to sample

Before you begin your sampling, you'll need to determine the specific pollutants you are required to sample and test. Depending on the size and activities on your site, the Construction Stormwater General Permit requires testing water clarity (transparency or turbidity) and pH.

The two ways to measure water clarity are (1) using a transparency tube or (2) using a turbidity meter. Construction sites which disturb 1 or more acres, but less than 5 acres, can choose either one of these methods. **Note: Sites less than 5 acres are not required to sample stormwater until October 1, 2008, unless specifically directed by Ecology.** Sites which disturb more than 5 acres must use a turbidity meter (also called a turbidimeter).

If your site is doing **significant concrete work** or is using **engineered soils** such as Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash, then you must sample for pH during this work. Significant concrete work means pouring 1000 cubic yards of concrete or using 1000 cubic yards of recycled concrete.

Table 1. Construction Stormwater Sampling Requirements*

Size of Soil Disturbance	Sampling w/ Turbidity Meter	Sampling w/ Transparency Tube	pH sampling
Less than 1 acre	No	No	No
1 to 5 acres	Beginning October 1, 2008 Yes, either meter or tube	Beginning October 1, 2008 Yes, either meter or tube	Beginning October 1, 2006 Yes
5 acres or more	Beginning October 1, 2006 Yes	No	Beginning October 1, 2006 Yes

*see information below for when and where to monitor turbidity, transparency and/or pH.

Ecology may require additional monitoring for construction sites that discharge to certain types of impaired (polluted) waterways, also known as 303(d) listed waterways, and/or with a Total Maximum Daily Load (TMDL). Refer to pages 24-26 for more information.

Where to sample

Take **turbidity and transparency** samples at *all* points where stormwater or non-stormwater (dewatering, etc.) is discharged from the construction site. If discharging to waterways (streams, wetlands, etc.) within the construction site limits, collect and sample the water before it enters the waterway. Common examples of sampling locations include: stormwater pond spillways or outfalls; ditches or storm drains carrying stormwater off site; and runoff from disturbed or exposed soil areas into adjacent ditches or streams. You must mark all discharge points in the field (flag, tape, stake, etc.) and show them on the Stormwater Pollution Prevention Plan site map.

It is not necessary to sample stormwater:

- If soil disturbing activities have not begun yet (e.g., prior to breaking ground).
- On portions of the site undisturbed by construction activity (e.g., areas of native vegetation that will not be disturbed).

Take **pH** samples in the sediment trap, stormwater retention pond or other suitable collection waters *prior to discharge from the site*. You must sample pH only if the stormwater is from an area with significant concrete work or engineered soil (CKD, CTD, etc.). Again, you must mark these sampling sites in the field and show them on the Stormwater Pollution Prevention Plan site map

Take sample as close to discharge point as is safe and reasonable. Use a pole or find a safe route to sample discharges. Contact your Ecology stormwater inspector if you have a question about sampling locations. Make sure you know the location of all your sampling points.

Typical stormwater sampling locations



Examples of typical stormwater discharge locations where the person monitoring would potentially take stormwater samples. **Top left:** Stormwater discharging from a pipe outlet. **Top right:** Stormwater drain outlet. **Bottom left:** Stormwater retention pond. **Bottom right:** Stormwater discharging in a ditch.

When to sample

Conduct sampling weekly and within 24 hours of a discharge:

- Turbidity/Transparency- Once a week when there is a discharge from the site. No discharge means no sampling. Be sure to record “No Discharge” on your monitoring records. You must still submit a DMR to Ecology even when there is no discharge to sample.
- pH - Once per week during pH sampling period.
 - For sites with **significant concrete** work (1000 cubic yards or more), the sampling period starts when concrete is first poured and exposed to precipitation and continues throughout and after the concrete pour and curing period until stormwater pH is 8.5 or less.
 - For sites with **engineered soils**, the sampling period begins when the area treated with soil amendments is first exposed to rain or precipitation and continues until the engineered soils are fully stabilized.

GLOSSARY

Significant concrete work is 1000 cubic yards or more of poured or recycled concrete.

Recycled concrete material is concrete that has been crushed and reused on-site as fill or aggregate material.

Engineered soils use amendments such as Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash to achieve certain desirable soil characteristics.

Deciding how you will take the sample

The permit requires you to collect samples that are representative of the discharge from the construction site. A **representative sample** means the sample is similar in flow and characteristics (such as color, clarity, etc.) to the stormwater running off the site. The *Construction Stormwater General Permit* allows you to choose how to take the representative sample. You can choose to take (1) a single grab, (2) a time-proportionate, or (3) a flow-proportionate sample.

A grab sample is a single sample “grabbed” by filling up a container either by hand or with the container attached to a pole. A grab sample is the simplest type of sample to collect. **Ecology expects that most permit holders will choose to collect grab samples.**

Time-proportionate composite samples or flow-proportionate samples consist of taking several subsamples at intervals rather than a single grab sample. A time-proportionate sample is one made up of a number of small samples (subsamples) of equal volume collected at regular intervals and combined into a single large sample. A flow-proportionate sample is one made up of a number of subsamples where

each subsample collected represents an amount of stormwater that is proportional to the total flow.

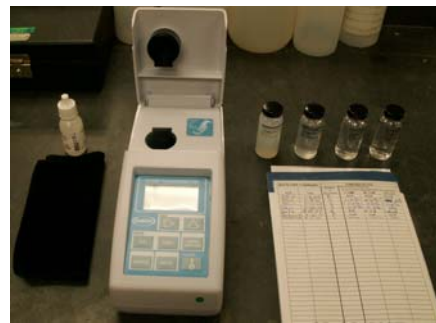
Time- proportionate and flow- proportionate samples provide the advantage of including a number of smaller samples (subsamples) in the single large sample. As a result, these samples represent the stormwater discharge better than with a grab sample.

Time- proportionate and flow- proportionate samples can be collected either by hand or automated equipment. Collecting them by hand is somewhat difficult and collecting them with automated equipment involves additional expenses. Flow- proportionate sampling also requires some knowledge of how to measure fluid flow. A reference for automatic stormwater sampling is the book *Automatic Stormwater Sampling Made Easy* (Thrush and De Leon, 1993) published by the Water Environment Federation. You can purchase a copy at: www.wef.org.

Obtaining supplies for sampling

Turbidity Meters (Turbidimeters)

You can purchase a turbidity meter at a scientific or laboratory supply store, or online catalogue for around \$800. Some equipment suppliers are listed on page 35. Most turbidity meters come with calibration samples.



Turbidity meter with calibration samples and notebook

Transparency Tubes

Transparency tubes are relatively inexpensive (about \$40) and can be purchased at laboratory or field supply stores or online at: <http://watermonitoringequip.com/pages/stream.html>

The permit requires use of a 1 3/4 inch diameter, 60 centimeter long transparency tube.



Transparency tube

pH meters

pH meters can be purchased from scientific or lab supply stores or online. Some equipment suppliers are listed on page 35.



pH meter with calibration samples

pH strips

pH strips are much less expensive than a meter and can be purchased from a local pet store or online. Some equipment suppliers are listed on page 35. Ecology recommends using one with a tighter range from 5.5 to 9.0, which is more typical of pH values found around construction sites.

pH test kits

pH test kits involve performing a test with chemicals provided to determine the pH. You can purchase pH test kits online, at pet stores, or laboratory supply stores. Some equipment suppliers are listed on page 35. You may choose either a kit that covers the range 5.5 to 9.0 or a wide-range test kit.

Gloves

You should wear disposable non-powdered gloves in order to avoid contaminating your samples and protect yourself from potential hazards in the water. Either latex or nitrile gloves will work. You can purchase gloves at grocery stores, pharmacies, or laboratory or medical supply stores.

Collection bottles

Use clean collection bottles with a screw-tight lid to capture the discharge. Large plastic bottles work well.

Scoops

In areas with low flow or shallow runoff, you may want to use a scoop to grab the sample. You can find scoops and dustpans with cleaning supplies at general stores and at many hardware or pet stores. Make sure you use a clean scoop for taking the sample. **Do not disturb sediment lying on the bottom with the scoop while taking the sample.**



Use scoops for sampling shallow flows

Pole

To reach difficult discharge points, you may want to attach your sample bottle to a pole with a grappling hook or some automobile hose clamps. Make sure you attach the bottle securely.

Clean rinse water

Use clean rinse water such as distilled water to wash sampling bottles between each use. You can purchase distilled water at most grocery or convenience stores.

Rite-in-the-Rain notebook or site inspection log book and pen

Make sure you bring an appropriate notebook or site inspection log book to record your results. You can purchase Rite-in-the-Rain notebooks and pens that are waterproof at <http://www.riteintherain.com/>. These products are also carried by many scientific equipment suppliers.

B. Conducting sampling at your site

Checklist for sampling

Keep all your sampling gear together in a field kit, so it is ready to go when you need to sample. You will need the following tools to conduct construction stormwater sampling:

- ✓ For turbidity sampling: turbidity meter (turbidimeter).
- ✓ For transparency sampling: transparency tube (1¾ inch diameter, 60 centimeters long).
- ✓ For pH sampling: pH strips, pH test kit, or pH meter.
- ✓ Clean collection or sample bottles.
- ✓ Distilled water for rinsing collection bottles.
- ✓ Non-powdered nitrile or latex gloves.
- ✓ Site log book to record measurements.
- ✓ Pole or scoop, if needed, for sampling difficult discharges.

If you plan to have a lab analyze your samples:

- ✓ Order clean sample jars from the lab. Be sure to have enough for all your sampling locations.
- ✓ Make sure you have ice and a cooler to store samples and can get them to the lab in time. See the section on using a lab (pgs.27-28) for more information on how soon to deliver samples to the lab.

How to fill sample bottles

This section provides some tips on collecting a sample properly. Collecting a grab sample can be as simple as holding a bottle under the stormwater falling from a pipe and filling the bottle properly. However, there are a few principles to follow to make sure you collect samples correctly.

Simple principles of good sample collection:

- **Wear clean powder-free gloves** when sampling
- **Use clean collection bottles**
- **Keep your hands away from the bottle opening.** This will prevent you from contaminating the sample with dirt or other particulates.
- **Always hold the bottle with its opening facing upstream** (into the flow of water) so that the water enters directly into the bottle. Make sure the water going into the bottle does not first flow over the top of the bottle or your hands.
- **Stand downstream.** If you need to step in the flow to sample the water, make sure the area is safe first. Next, make sure you sample upstream of your body including your feet. This will make sure any soil disturbed by stepping in the water does not influence your results.
- **Do not set container lids on the ground.** This may introduce dirt into your sample causing a higher result.
- **Label samples for labs immediately.** Make sure you cap the bottle or container and label the sample correctly. Place samples headed for a lab in a cooler filled with ice until the samples arrive at the lab.

Sampling as stormwater discharges from a pipe or in a ditch

If stormwater discharges from your site through a pipe or ditch, you can sample the water before it reaches the receiving water (creek, stream, lake, etc.) or storm drain. When sampling in a ditch, hold the bottle with the opening facing upstream and be sure not to overfill the bottle. Be sure you do not disturb sediment at the bottom of the ditch with your feet or the collection bottle. You may need to fasten the collection bottle to a pole to reach the pipe or ditch.



Sampling in a ditch with a collection bottle attached to a pole



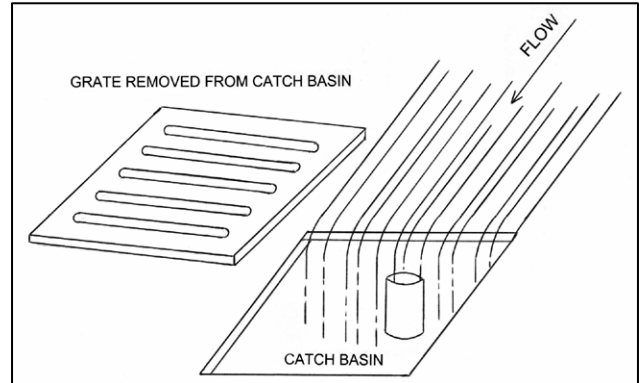
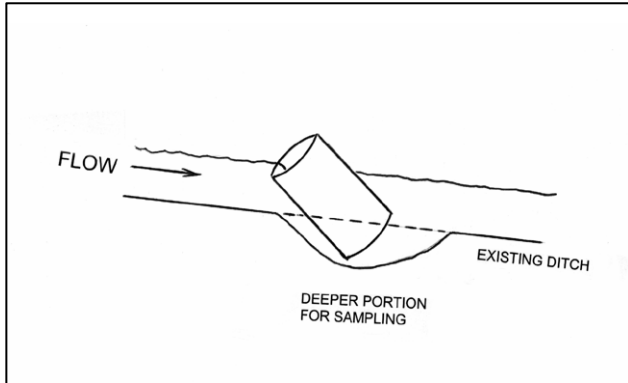
Sampling from a pipe discharge

Sampling from a stormwater detention pond or other BMP

For a detention pond or other treatment system, sample the stormwater flow discharge point after flowing through the pond or other treatment system (e.g., spillway). Keep in mind, ponds may hold stormwater for a time before discharge begins. The permit requires sampling from detention ponds only if stormwater discharges from the pond.

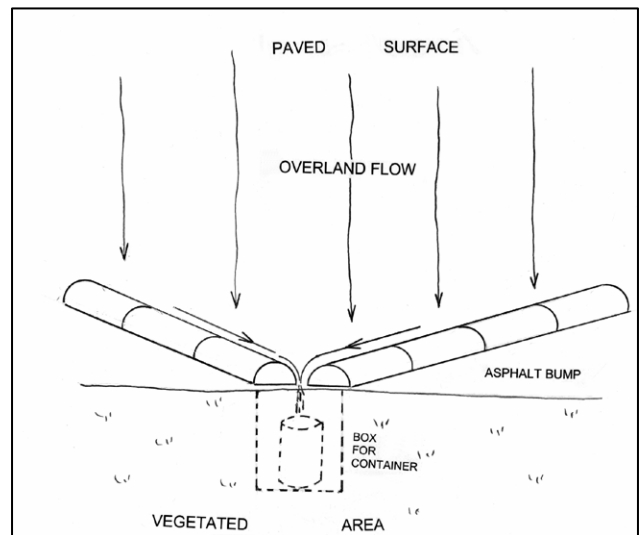
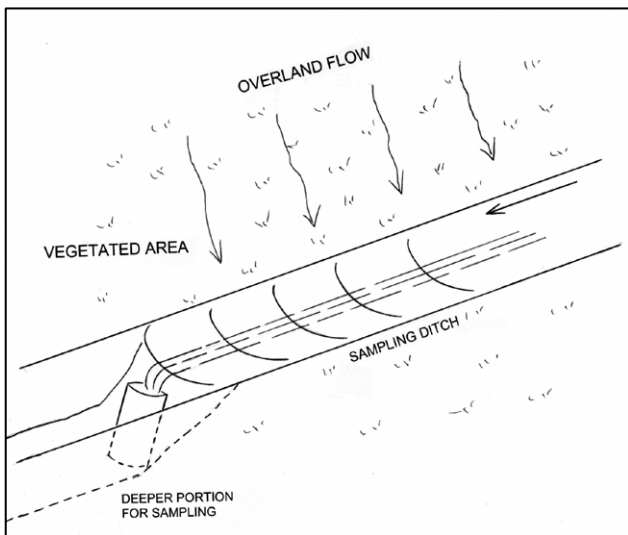
Sampling shallow stormwater discharges

Shallow stormwater runoff can present a challenge for collecting samples. As mentioned previously, you can use a scoop to grab these samples. The following illustrations also provide ways to sample shallow flows:



Above: Deepening an existing ditch before a rain event can allow samples to be collected directly into bottles in some cases. Be careful not to stir up solids from the sides or bottom of the ditch.

Above: Runoff entering a catch basin can sometimes be collected directly into bottles by removing the grate and allowing the runoff to fall into the bottles.



Above: Overland flow from vegetated areas can be sampled by constructing a shallow ditch to intercept the runoff and a deepened area to place bottles to catch the runoff. This construction should be performed before a rain event.

Above: Overland flow on paved areas can be sampled by constructing asphalt or concrete bumps to collect and concentrate the flow. A box positioned below ground surface in the paved area or the edge of an unpaved area can provide a place to collect samples directly into bottles.

Turbidity

Turbidity is one way to measure water clarity. A field turbidity meter measures the reflection of light off particles in the water column. The unit of measurement from a field turbidity meter is called a Nephelometric Turbidity Unit or NTU. Higher values indicate more turbid, or muddier water. Low values indicate less turbid, or clearer water.

Turbidity meters can provide a very accurate measure of turbidity. **You must calibrate the meter before you use it in the field.** Calibration samples come with the turbidity meter. There are several brands of meters. Follow the instructions provided with your turbidity meter to calibrate it and use it in the field. The manufacturer's instructions will also indicate how often you should calibrate your meter. Clean the sample vials and thoroughly rinse with distilled water in the lab and allow to air dry before taking them into the field. Some meters supply a dust free cloth that can be used to wipe excess water from the vial prior to measurement in the meter. **Do not use paper towels. Fibers or other materials on these vials can bias the results.**

To take the sample:

1. Make sure you put on gloves to prevent contamination of the sample.
2. Using a large mouth bottle, collect a sample and cap it. Do not stir up sediment at the bottom of the water column. Stand downstream of the collection bottle and point the mouth of the bottle into the flow.
3. Gently mix the collection bottle without adding air bubbles.
4. Fill the sample vial.
5. Hold up the sample vial to insure that it is free of scratches and materials. Handling the vial can introduce material to the outside of the vial. Be sure to hold the vial only at the very top to keep it clean. Use a few drops of silicone oil on the outside to eliminate microscopic scratches and condensation. Wipe gently with a velvet cloth, which won't leave lint.
6. Set up the meter on a level surface and turn it on.
7. Follow the directions to line up the vial correctly for the meter you are using. Insert the vial in the meter. Close the lid and press read. Be careful not to bump or move the turbidity meter while it is taking its reading.
8. Record the value in the site log book.
9. Quickly rinse the glass vial with distilled water. If you choose, you may take another sample. Remix the remaining sample and fill the vial as before. Average the results. Averaging is an option, not a requirement.
10. Record all values in your field notebook.

Transparency

Transparency uses visual means to determine the clarity of the water. Less light can penetrate through cloudier water. One way to measure transparency is with a transparency tube, which operates on this same principle. At the bottom of the tube is a black and white disk called a secchi disk.

Sample water from the site will be put into the tube and released through the exit tube until the pattern of the secchi disk is clearly visible. At this point, the release will be closed and the measurement taken in centimeters of the depth of the water in the tube.

To take the sample:

1. Put on protective gloves before sampling.
2. Capture the stormwater discharge using clean collection bottle and capped with a lid. While collecting the sample, do not disturb sediment lying at the bottom of the water column. Avoid capturing large objects such as sticks, leaves and floating debris.
3. Check to make sure the exit tube is closed on the transparency tube.
4. Gently shake the sample bottle without adding air bubbles.
5. Fill the tube with the sample. While holding the tube upright, look down into the tube.
6. Sunlight can influence your ability to see the secchi disk. If it is a bright day, stand out of direct sunlight. Use a shady area or the shade of your body to cast a shadow on the tube.
7. Begin to slowly release water using the exit tube clamp until the secchi disk design (a black and white disk at the bottom) is visible. When the design is visible, stop releasing the water.
8. Record the height of the water in the tube in centimeters. Empty the tube contents and rinse it. If you choose, repeat the measurement and average the two readings. Again, the permit does not require multiple samples at each location.



The secchi disk is the black and white disk located at the bottom of the transparency tube. Photo courtesy of: http://www.wildco.com/ow_prdct_mdl.asp?prdct_mdl_cd=58T

pH

pH is the second parameter the construction stormwater permit requires you to measure. pH measures how acidic or basic a solution is. The pH scale goes from 1.0 to 14.0 standard units. A value of 7.0 is neutral. You can measure pH in three ways (1) with a pH meter, (2) with pH strips, or (3) with a pH test kit. If you choose or are required to use a pH meter, be sure to calibrate it before using it in the field. pH meters come with a set of standards used for calibration. Follow the directions to calibrate your pH meter as often as recommended.

Using a pH meter

To take the sample:

1. Follow the manufacturer's directions (see also Ecology's video: *How to Sample Stormwater*).
2. Turn on the pH meter. pH meters or pens have a probe or sensor on the end.
3. Put the probe or sensor directly in the stormwater flow. Alternatively, use a clean, large-mouthed bottle to capture a sample.
4. Leave the probe in the water for 5-10 seconds and allow it to register the final reading.
5. Record the digital reading of the pH. Do not move the probe or the sample bottle while the probe is registering.

Using pH strips

To take the sample:

1. Be careful to touch only the plain-colored tip of the pH paper with your finger. Wear gloves to protect your skin from potentially high pH water (very alkaline).
2. Dip the pH strip into the middle of the stormwater flow for a few seconds.
3. Remove the strip.
4. The color will appear on the strip almost immediately.
5. Find the best match of the sample strip to the color chart included with the strips.
6. This will be the pH reading you record.



A pH strip matched to the color chart provided in the pH kit.

Using a pH Test Kit

pH test kits vary depending on manufacturer, but most follow a few simple steps. Make sure you consult the instructions for your pH test kit before you sample.


To take the sample:

1. Collect a sample from the appropriate discharge area such as the stormwater retention pond.
2. Pour the sample into the clean tube provided.
3. Add several drops of the pH indicator chemical provided with the kit.
4. Compare the color of the resulting water to the chart provided with the kit.
5. This color will match a pH on the chart; record this value.

Benchmark values

The *Construction Stormwater General Permit* sets **benchmark values** for turbidity/transparency and pH. A benchmark is **not** a numerical water quality standard. Instead, a benchmark gives an indication of whether your BMPs are working to prevent pollutants from contaminating stormwater on site. If sampling indicates stormwater leaving your site is above a benchmark, then you are required to take additional steps to prevent polluted runoff from leaving your site. Failure to take such action(s) violates the permit.

What are benchmarks?



25_{NTU} Benchmark *Increasing turbidity* → 250_{NTU} Benchmark

- Benchmark values are not water quality standards and are not permit limits. They are indicator values.
- Comparing your water sample results to benchmarks indicates how BMPs are performing. They indicate the risk of stormwater leaving your site has to violate water quality standards.
- Failure to complete the corrective actions required when your samples are at or above the 25 or 250 NTU benchmarks violates your permit.
- Values at or below the 25 NTU benchmark are *unlikely* to cause a water quality violation (Green).
- Values at or above the 250 NTU benchmark are *likely* to cause a water quality violation (Red).

Benchmark Exceeded and Turbidity is 26-249 NTU or Transparency 7-32 cm

If your turbidity or transparency samples are in these ranges, the Certified Erosion and Sediment Control Lead (CESCL) for the site must take all of the actions listed:

1. Review the SWPPP to make sure it fulfills the SWPPP requirements in the permit (see Permit Section S9).
2. Revise or update the SWPPP within 7 days of the sample that exceeded the benchmark, if necessary.
 - a. The CESCL can perform SWPPP revisions related to common erosion and sediment control problems on site. Examples include: covering exposed soils with plastic, mulch, nets, or blankets; inserting and maintaining check dams and straw wattles.

- b. If the SWPPP revision involves new or modified engineering designs, you must have the new or modified designs stamped by a Registered Professional Engineer. Examples include: stormwater ponds, sand filters, and chemical treatment systems.
3. Implement and maintain appropriate source control or treatment BMPs fully as soon as possible, but no later than 10 days after the discharge that exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when a permittee requests an extension within the initial 10-day response period.
4. Document any BMP maintenance or added BMPs in the site log book.

Benchmark Exceeded and Turbidity is 250 NTU or greater or Transparency 6 cm or less

If sampling indicates a turbidity of 250 NTU or higher, or transparency is 6 cm or less, then you must notify the appropriate Ecology regional office by phone within 24 hours of analysis. The CESCL must also take all of the actions listed:

1. Review and change the SWPPP within 7 days of the sampling that exceeded the benchmark.
2. Implement and maintain appropriate source control or treatment BMPs fully as soon as possible, but no later than 10 days after the discharge that exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a permittee within the initial 10-day response period.
3. Document any BMP maintenance or added BMPs in the site log book.
4. Sample the discharge daily until one of the following conditions is met:
 - a. Turbidity is 25 NTU or below.
 - b. Transparency is 31 cm or greater.
 - c. The CESCL demonstrates the site meets the water quality standard for turbidity.
 - d. The discharge stops or is eliminated.

Benchmark for pH 8.5 or above

If the stormwater pH values are 8.5 or above, you must:

1. Prevent high pH (alkaline) water from entering storm sewer systems or surface waters.
2. Adjust, or neutralize high pH with treatment such as CO₂ sparging or dry ice, if necessary. Any other treatment requires prior approval from Ecology.

What to look for when a sample exceeds the benchmark:

If you have a sample that exceeds the benchmarks mentioned above, the construction stormwater permit requires you to review the SWPPP and change practices on your site. How does this work in practice? What do you look for and change? Think about the list of SWPPP elements and the potential sources of turbidity and high pH. The following list provides questions to ask yourself as you attempt to uncover the source of pollution:

- Are there uncovered soils or stock piles?

- Are silt fences ripped or sagging? Do silt fences need repair?
- Is mud tracking out onto roads?
- Is excessive sediment built up behind check dams?
- Do you need to limit the number of access points to the construction site?
- Are slopes protected from erosion?
- Is concrete truck wash water being controlled to prevent stormwater contamination?
- Are on-site ditches and waterways stabilized and protected from erosion?
- Do you need to divert runoff around uncovered areas or slopes?
- Are all storm drain catchments protected? Do they need to be cleaned out?
- Do stormwater outlets need additional armoring with quarry spalls?
- How full are your stormwater retention or detention ponds?
- Are your ponds providing adequate treatment? Or do you need to implement sand filtration or chemical treatment?

303(d) water bodies

The 303(d) list contains water bodies designated as impaired (polluted) by the state and federal government. These water bodies do not meet Washington State water quality standards. If your site discharges to a waterway on the 303(d) list for turbidity, fine sediment, phosphorous, or high pH, some additional sampling requirements apply to your site. To check if your site discharges to an impaired waterway on the 303(d) list, visit the following web site:

<http://www.ecy.wa.gov/programs/wq/stormwater/construction/impaired.html>

303(d) listing for turbidity, fine sediment, or phosphorus

If you discharge to a waterway which is on the 303(d) list for turbidity, fine sediment, or phosphorus, you must measure both the background turbidity **and** the turbidity of your site's stormwater discharge. In addition, all sites discharging to these impaired waters must measure using a turbidity meter, regardless of the size of the site.

Where is background turbidity measured?

You must measure background turbidity in the waterway that receives runoff from your site at a location up-gradient (upstream) or outside of the area of influence of the discharge from the construction site. Background turbidity may change from day to day. As a result, **you must measure background turbidity each time you measure discharge turbidity.**

If your site discharges to a wetland, lake, or estuary, you must measure background turbidity at a location that is not affected by the stormwater discharge. When you cannot find a location unaffected by the stormwater discharge (i.e., the entire wetland appears uniformly muddy from the stormwater discharge), you may need to measure the background turbidity in a nearby, similar waterway or watershed. Contact a stormwater inspector in the Ecology regional office, if you have questions about where to sample.

Where is your site's discharge turbidity measured?

You must measure the turbidity of your site's stormwater discharge at one of the following two locations.

Option 1: Measure turbidity of the discharge at the point where your discharge enters the 303(d) listed waterway, inside the area of influence of the discharge.

Option 2: Measure turbidity of the discharge at the point where your discharge leaves the construction site. This is typically the stormwater outfall from a pond, culvert, or other drainage feature. In some cases, it will be the location where stormwater from the construction site leaves the property boundary and enters a roadside ditch or municipal storm drain.

Contact a stormwater inspector in the Ecology regional office, if you have questions about where to sample.

What is the water quality standard for turbidity, phosphorous, and fine sediment?

If your site discharges to a waterway on the 303(d) list for turbidity, phosphorous, or fine sediment, your site must meet the turbidity water quality standard. The standard applies as follows:

1. If background water turbidity is *50 NTU or less*, your discharge turbidity cannot be greater than 5 NTU over background turbidity.
2. If background water turbidity is *greater than 50 NTU*, your discharge turbidity cannot cause more than a 10 percent increase in turbidity, over the background turbidity.
3. If your discharge is less than 5 NTU as it leaves the site, you do not need to sample the receiving water to determine background turbidity.

If you exceed the 303d turbidity standard, you must take all of the following actions:

1. Notify the appropriate Ecology regional office by phone within 24 hours of the analysis.
2. Review the SWPPP to make sure it fulfills the SWPPP requirements in the permit (see Permit Section S9).
3. Revise the SWPPP within 7 days of the sample that exceeded the standard.
4. Implement and maintain appropriate source control or treatment BMPs fully, as soon as possible, but no later than 10 days after the sample that exceeded the standard.
5. Document BMP maintenance or added BMPs in the site log book.
6. Sample daily until discharge meets water quality standard for turbidity.

303(d) listing for pH

If your site discharges to a waterway listed for pH, you must measure pH with a pH meter to ensure that it is within the range of 6.5 to 8.5 standard units. You may measure at either of the following locations:

Option 1: Measure pH at the point of discharge into the waterway, inside the area of influence of the discharge.

Option 2: Measure pH at the point where the discharge leaves the site. This is typically the stormwater outfall from a pond, culvert, or other drainage feature. In some cases, it will be the location where stormwater from the construction site leaves the property boundary and enters a roadside ditch or municipal storm sewer system (drain).

Contact a stormwater inspector in the Ecology regional office, if you have questions about where to sample.

If pH is below 6.5 or above 8.5, you must take all of the following actions:

- Notify the appropriate Ecology regional office by phone within 24 hours of the analysis.
- Review the SWPPP to make sure it fulfills the SWPPP requirements in the permit (see Permit Section S9).
- Revise the SWPPP within 7 days of the sample that exceeded the standard.
- Implement and maintain appropriate source control or treatment BMPs fully, as soon as possible, but no later than 10 days after the sample that exceeded the standard.
- Document BMP maintenance or added BMPs in the site log book.
- Sample daily until discharge meets water quality standard for pH (in the range of 6.5 to 8.5) or the discharge stops or is eliminated.

Total Maximum Daily Load (TMDL)

Some impaired waters have a Total Maximum Daily Load (TMDL)-a water cleanup plan. To improve water quality, a TMDL sets allowable levels of discharges called **waste load allocations (WLAs)**. These allocations usually identify sources or types of dischargers and establish limits on the amount of pollution a waterway with a TMDL can receive. If your site discharges to a **TMDL for turbidity, fine sediment, high pH, or phosphorous that is approved before you submit a permit application, your monitoring conditions may be different.** The following are some potential conditions, you may face:

If the TMDL has **specific waste load allocations** or other requirements for construction stormwater discharges and other discharges covered by the construction stormwater permit, the discharges must be consistent with the established WLA or other requirements. In addition, you must:

- Sample discharges weekly, or as specified by the TMDL.
- Use analytical methods set out in the latest *Guidelines Establishing Test Procedures for the Analysis of Pollutants* (40 CFR Part 136). The permit does not require turbidity and pH methods to be accredited or registered.

If the TMDL does not have a specific WLA for construction stormwater, then follow the Construction General Permit's regular monitoring and SWPPP conditions.

To determine if your site discharges to a waterway with a TMDL, you may contact Ecology at (360) 407-6600 and ask to speak with a construction stormwater permit manager.

Keeping records

Record your results

Keep a field notebook to record results of stormwater sampling. For each measurement or sample taken, you must record the following information:

1. Date, place, method, and time of sampling or measurement.
2. The individual who performed the sampling or measurement.
3. The dates the analyses were performed.
4. The individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

General requirements

As the operator, you must keep all monitoring information including site inspection reports, calibration and sampling results, the SWPPP and any other relevant documents during the life of the construction project and for 3 years following the end of permit coverage.

Report high turbidity by phone

Remember, if you get a high result, call the Ecology regional office within 24 hours stating, "I'm reporting a high turbidity construction stormwater discharge of (your sample result) NTUs." Include the following information:

1. Your Name / Phone Number
2. Permit Number
3. City / County of Project
4. Date / Time of Call
5. Date / Time of Sample
6. Project Name

Ecology regional offices and phone numbers

Central Region (Okanogan, Chelan, Douglas, Kittitas, Yakima, Klickitat, Benton):
509-575-2490

Eastern Region (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): 509-329-3400

Northwest Region (Kitsap, Snohomish, Island, King, San Juan, Skagit, Whatcom):
425-649-7000

Southwest Region (Grays Harbor, Lewis, Mason, Thurston, Pierce, Clark, Cowlitz, Skamania, Wahkiakum, Clallam, Jefferson, Pacific): 360-407-6300

Discharge Monitoring Reports

Those sites that conduct water quality sampling for turbidity, transparency, pH or 303(d) and TMDL listed water bodies must submit the results monthly on a Discharge Monitoring Report (DMR) form to Ecology.

C. Using a lab to analyze samples

Contact the lab in advance

The field sampling in the *Construction Stormwater General Permit* is easy to conduct. However, some sites may choose to have a lab analyze their turbidity samples. You must conduct pH testing in the field, because pH samples do not hold for more than 15 minutes. As a result, labs cannot accurately analyze pH samples within such a short time frame.

If you choose to use a lab to analyze your turbidity samples, you should contact the lab well ahead of time. They will provide you with the clean sampling bottles you will need. The lab can provide you with helpful information specific to their needs. Issues you may want to discuss with the lab include:

- The **type and size of bottle** that the lab will supply for each type of sample they test.
- **How full** to fill the bottle.
- **Any safety concerns** with materials supplied by the lab.
- **What you need to know about preserving your samples:** Make a note of the preservation method. For turbidity, chilling is required with ice.
- **The kind of labels** the lab will supply for the bottles and will they instruct you about how to fill out the labels. The labels or tags you use to identify the samples you take must be waterproof, and the ink you use to write on them must be waterproof.
- **A description of forms** or other paperwork to submit to the lab with the samples and how to fill them out.
- **Whether the lab will supply pH paper** as well as sample bottles, tags, or labels for the bottles, and blank forms.
- **How the lab will deliver bottles** and other supplies to you. You may need to pick them up from the lab.
- **The holding times** for each water quality parameter to be sampled and tested. A holding time is the maximum time allowed between taking the sample and doing the lab analysis. If you exceed holding time, the sample analysis is not acceptable.
- **How and when you will deliver samples to the lab.** Plan with the lab how you will get the samples to them in time to begin analysis before the parameter with the shortest holding time reaches that holding time. The fastest way to deliver samples to the lab may be to do so in person, but it may be possible to ship samples (iced in coolers) and still meet holding times. If you deliver samples in person, you can pick up bottles and supplies for the next quarter at the same time.

Table 2. Holding times and preservation for turbidity samples

Parameter	Bottle Type	Minimum Sample Required	Holding Time	Preservation
Turbidity	500 mL wide-mouthed poly	100 mL	48 hours	Cool to 4° C

The table shows sampling information for turbidity under the *Construction Stormwater General Permit*.

Sampling requirements tend to use scientific words and units of measure. Temperature is measured in degrees Celsius, "C." Thermometers that we typically use in the United States measure in Fahrenheit, "F" and 4° C is about 39° F. For your purposes, "Cooling to 4° C" means putting the samples on crushed ice or packed with blue ice in an ice chest, so they will be kept just above freezing. Be sure to have the lab explain any words or expressions that you do not understand.

Select a laboratory to test your sample

Select a laboratory that will be able to analyze your samples within the holding time required (see section above).

Appendices

Proper and Improper Methods of Sampling

DO



Do attach a bottle to a pole for sampling hard-to-reach places such as ditches. This example shows a boathook with the bottle attached to it with filament strapping tape.

DO



If the water is too shallow to sample with the bottle upright, try taping it on sideways, but tilted up slightly.

DON'T



Do not touch the openings of bottles. Keep bottles clean to prevent contamination.

DON'T



Do not allow bottle lids to touch ground. Keep lids clean to prevent contamination.

DO



Do sample with the opening of the bottle facing upstream, into the flow, so the water will enter directly into the bottle. This is true when sampling either by hand or with a pole. **Do** sample water that is rapidly flowing rather than stagnant.

DON'T



Do not sample with the opening of the bottle facing downstream, when using a pole or sampling by hand. Water flowing past your container, pole, or hand and into the container can be contaminated by such contact.

Equipment suppliers

This is a partial list of scientific equipment supply companies from which to purchase stormwater sampling equipment. For additional supply companies, see the EPA web page at:

<http://www.epa.gov/owow/monitoring/volunteer/stream/appendb.html>

Aquatic Research Instruments

P.O. Box 2214
Seattle, WA 98111
206-789-0138
water samplers

Cole-Parmer Instruments, Inc.

625 East Bunker Court
Vernon Hills, IL 60061
800-323-4340
http://www.coleparmer.com/index_enviro.asp
pH strips and meters, turbidimeters

Instrumentation Northwest

8902 122nd Ave NE
Kirkland, WA 98033-5827
425-822-4434
<http://www.inwusa.com/products.htm>
pH meters, turbidimeters, and rentals of equipment

Pollardwater.com

17515 NE 67th Court

Redmond, WA 98052

800-437-1146 x209

425-861-8755 x209 Local WA

425-861-7235 Fax

<http://www.Pollardwater.com/>

Water Monitoring Equipment & Supply

P.O. Box 344

Seal Harbor, ME 04675

207-276-5746

<http://www.watermonitoringequip.com/pages/home.html>

Transparency tubes, turbidity meters

Ecology Regional Contacts

If you have questions or need to report a high turbidity sample, contact the construction stormwater inspector in the regional office for your county.

Central Regional Office **509-575-2490**

Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima

Eastern Regional Office **509-329-3400**

Adams, Asotin, Benton, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Spokane, Walla Walla, Whitman

Northwest Regional Office **425-649-7000**

Island, King, Kitsap, Snohomish

Southwest Regional Office **360- 407-6300**

Clallam, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Thurston

Bellingham Field Office **360- 715-5200**

Whatcom, Skagit, San Juan

Vancouver Field Office **360-690-7171**

Clark, Skamania, Wahkiakum

References

Manchester Environmental Laboratory. 2005. "Lab Users Manual." 8th Edition. Washington State Department of Ecology.

Thrush, C. and D.B. DeLeon. 1993. Automatic stormwater sampling made easy. Alexandria, VA. Water Environment Federation.

U.S. Environmental Protection Agency. November 1997. Appendix B: Scientific Supply Houses in "Monitoring Water Quality." Publication # EPA 841-B-97-003.



Construction Effluent Monitoring Kit

Product #: 2527100

USD Price: \$1,198.00

Kit for monitoring pH and turbidity of construction site stormwater effluent. Ideal for compliance monitoring in states, such as California and Washington, with numeric limits included in the Construction General Permit.

Easy on-screen assisted turbidity calibration and verification

Save time and get accurate results with the 2100Q's easy-to-follow interface that eliminates the need for complicated manuals to perform routine calibrations.

Accurate for rapidly settling turbidity samples

The 2100Q's innovative Rapidly Settling Turbidity™ mode provides accurate measurements for difficult to measure, rapidly settling samples. An exclusive algorithm that calculates turbidity based on a series of automatic readings eliminates redundant measurements and estimating.

Longer pH electrode life

The unique double junction electrode design and increased reference gel volume give you significantly longer electrode life. Replaceable electrode lets you reuse the tester body many times over, which saves you money.

Convenient testing in the field

Kit includes all the equipment you need to easily calibrate the instruments and measure samples in the field. Just supply your own distilled water for rinsing.

Optical system for precision in the field

The two-detector optical system compensates for color in the sample, light fluctuation, and stray light, enabling analysts to achieve laboratory-grade performance on a wide range of samples, even under difficult site conditions.

What's in the box

2100Q Portable Turbidimeter (2100Q01), Oakton pH TESTR 10 (2956100), SINGLET pH buffer combination pack (pH 4.01 & 7.00) (2769920), 2 x 120 mL sample containers (2552200), 250 mL wash bottle (62031) for rinse water, box of disposable wipers (2097000), and a hard-sided carrying case (4660500).

2100Q & 2100Qis PORTABLE TURBIDIMETER

Applications

- Drinking Water
- Wastewater
- Beverage
- Field Use
- Food QC Lab
- Industrial Water
- Power



Easiest calibration and verification with accurate results every time.

The Hach 2100Q and 2100Qis Portable Turbidimeters offer unsurpassed ease of use and accuracy in turbidity measurement. Only Hach offers this combination of advanced features including assisted calibration, simplified data transfer, and innovative measurement techniques that give you accurate results every time.

Easy On-Screen Assisted Calibration and Verification

The 2100Q Portable Turbidimeter provides confidence your measurements are right every time. On-screen assisted calibration and verification save you time and ensure accuracy. With an easy-to-follow interface, complicated manuals are not needed to perform routine calibrations. Single-standard RapidCal™ calibration offers a simplified solution for low level measurements.

Simple Data Transfer

Customizable power and connectivity modules provide smooth data transfer and flexibility. Optional USB+Power Module allows data download to any computer via USB port, providing superior data integrity and availability.

Accuracy for Rapidly Settling Samples

The innovative Rapidly Settling Turbidity™ mode provides accurate, repeatable measurements for difficult to measure, rapidly settling samples. An exclusive algorithm that calculates turbidity based on a series of automatic readings eliminates redundant measurements and estimating.

Convenient Data Logging

Up to 500 measurements are automatically stored in the instrument for easy access and backup. Stored information includes: date and time, operator ID, reading mode, sample ID, sample number, units, calibration time, calibration status, error messages and the result.

Optical System for Precision in the Field

The two-detector optical system compensates for color in the sample, light fluctuation, and stray light, allowing you to achieve laboratory-grade performance on a wide range of samples, even under difficult site conditions.

Two Models for Specific USEPA Requirements

The 2100Q Turbidimeter is compliant with USEPA Method 180.1 design criteria. The 2100Qis Turbidimeter is compliant with ISO 7027 design criteria.



Key Features

On-Screen Assisted Calibration and Verification

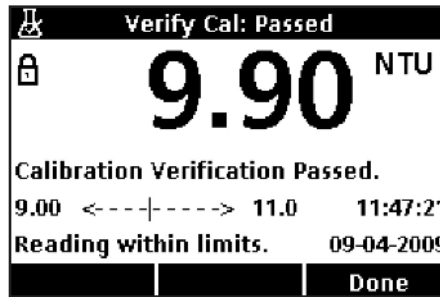
The 2100Q gives you confidence that your results are accurate, without having to read long manuals for calibration and verification instructions. All the core measurement information is on a single screen.

On-Screen Assisted Calibration



In the full calibration mode (0 to 1000 NTU), the text-based, assisted calibration feature walks you through clear and easy steps, and verifies the accuracy of your calibration automatically. This on-screen assistance eliminates the need for a manual and provides assurance that your calibration is complete and valid.

Verification with the Push of a Button



Be confident in your measurement by running the quick and easy Verify Cal function using the included 10 NTU StablCal primary standard.

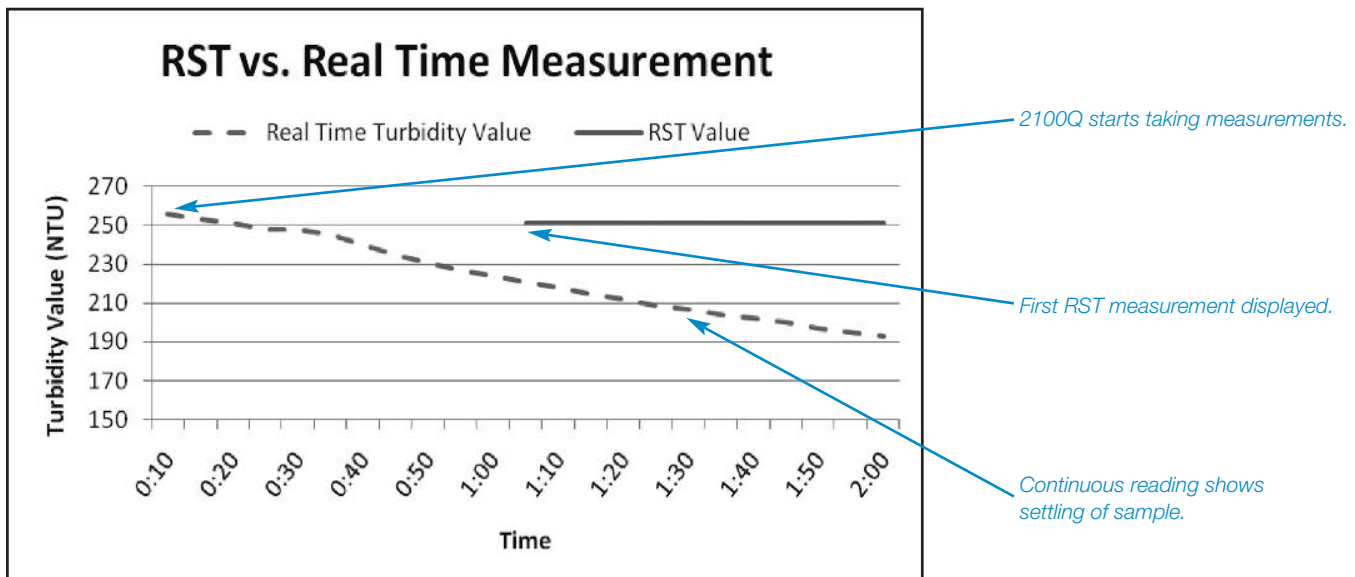
RapidCal Single Standard Calibration



In the range up to 40 NTU, the single standard RapidCal calibration mode reduces calibration complexity by eliminating multiple standard full calibrations. You save time and ensure you meet reporting requirements.

Rapidly Settling Turbidity™ (RST) Mode

At the request of our customers, Hach has developed an innovative solution to alleviate the uncertainty caused by changing turbidity readings in samples that quickly settle. The 2100Q's RST reading mode uses an exclusive algorithm that reverse calculates and continuously updates a calculated value of turbidity to a point in time when the sample begins to settle out of solution based upon the accumulated trend of the measured values. This results in values that are more accurate and repeatable than those obtained using traditional smoothing techniques, such as averaging.



Although the sample continuously settles out of solution, the RST calculated value does not change. No more guessing and no more replicate runs—you get the right answer every time.

Customize Power and Connectivity with Flexible Modules

USB+Power Module (Prod. No. LZV813)

- Line power: 110 - 230Vac, 50/60 Hz
- Charges NiMH batteries
- Transfers data to computer or printer
- Enables firmware updates

Power Only Module (Prod. No. LZV804)

- Line power: 110 - 230Vac, 50/60 Hz

Key Features



Specifications*

Measurement Method	Ratio turbidimetric determination using a primary nephelometric light scatter signal (90°) to the transmitted light scatter signal.	Operating Conditions	Temperature: 0 to 50°C (32 to 122°F) Relative Humidity: 0 to 90% @ 30°C, 0 to 80% @ 40°C, 0 to 70% @ 50°C, noncondensing
Regulatory	2100Q: Meets EPA Method 180.1 2100Qis: Meets ISO 7027	Storage Conditions	-40 to 60°C (-40 to 140°F), instrument only
Light Source	2100Q: Tungsten filament lamp 2100Qis: Light-emitting diode (LED) @ 860 nm	Languages	English, French, German, Italian, Spanish, Portuguese (BR), Portuguese (PT), Bulgarian, Chinese, Czech, Danish, Dutch, Finnish, Greek, Hungarian, Japanese, Korean, Polish, Romanian, Russian, Slovenian, Swedish, Turkish
Range	0 to 1000 NTU (FNU)	Interface	Optional USB
Accuracy	±2% of reading plus stray light from 0 to 1000 NTU	Instrument Enclosure Rating	IP67 (closed lid, battery compartment excluded)
Repeatability	±1% of reading, or 0.01 NTU (FNU), whichever is greater	Protection Class	Power Supply: Class II
Resolution	0.01 NTU on lowest range	Certification	CE certified
Stray Light	<0.02 NTU (FNU)	Sample Required	15 mL (0.3 oz.)
Signal Averaging	Selectable on/off	Sample Cells	60 x 25 mm (2.36 x 1 in.) borosilicate glass with screw cap
Detector	Silicon photovoltaic	Dimensions	22.9 x 10.7 x 7.7 cm (9.0 x 4.2 x 3.0 in.)
Reading Modes (user selectable)	Normal (Push to Read) Signal Averaging Rapidly Settling Turbidity	Weight	527 g (1.16 lb) without batteries 618 g (1.36 lb) with four AA alkaline batteries
Data Logger	500 records	Warranty	1
Power Requirement	110-230 Vac, 50/60 Hz (with Power or USB+Power Module) 4 AA alkaline batteries Rechargeable NiMH (for use with USB+Power Module)		

*Subject to change without notice.

Ordering Information

Hach portable turbidimeters are supplied with four AA alkaline batteries, a carrying case with insert, StablCal primary calibration standards in 1" sealed vials (20, 100, 800 NTU), 10 NTU primary verification standard, 6 sample cells with screw-tops, instrument manual (printed and on CD-ROM), quick start guide, silicone oil and oiling cloth.

2100Q-01 2100Q Portable Turbidimeter (meets EPA method 180.1)

2100QIS-01 2100Qis Portable Turbidimeter (meets ISO 7027)

Optional Accessories

LZV813 USB+Power Module
(includes: universal power supply, USB cables, instruction sheet)

LZV804 Power Module
(includes: universal power supply, instruction sheet)

2960100 Citizen PD-24 Printer Package

2971304 Battery, NiMH AA, pk/4

4397500 Degassing Kit

4397510 Sample Filtration and Degassing Kit

2971210 StablCal 100 mL calibration kit, 2100Q

2971200 StablCal 500 mL calibration kit, 2100Q

2464105 Gelex Secondary Standard Set

Replacement Parts

2971205 StablCal ampule calibration kit, 2100Q

2961701 10 NTU Verification Standard

126936 Silicone Oil, 15 mL

2971507 Insert, molded bottom, 2100Q carrying case

4707600 Sample Cell Oiling Cloth

2434706 1" glass sample cell (10ml) w/cap (Turb) pkg/6

2971500 Carrying case for 2100Q (includes insert)

4653900 Lamp assembly

1938004 Battery set, 4x AA alkaline batteries



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In the interest of improving and updating its equipment,

Hach Company reserves the right to alter specifications to equipment at any time.



Be Right™

13PSX0173	DRINKING WATER INORGANIC/ WET CHEM TESTS			
Exhibit B - 1				
Item	ANALYTE/ METHOD	Description	Unit Price Per Sample	5 day
DWI-52	Turbidity			
DWI-52a	EPA 180.1 rev 2.0	Nephelometer		\$
DWI-52b	SM2130B	Nephelometer		\$4.00