

**NASA Langley Research Center
Municipal Separate Storm Sewer System (MS4)
Annual Report**

Covering the period of July 1, 2013 – June 30, 2014



NASA LaRC MS4 Annual Report

The following provides a summary of permit year (PY) one MS4 activities showcasing LaRC's compliance with the MS4 General Permit (VAR040092) and the currently approved MS4 Program Plan. The Annual Report is supplemented with attachments for supporting documentation. LaRC obtained coverage under the new MS4 General Permit on July 1, 2013; however, this Annual Report supplies information in regards to LaRC's continued MS4 Program Plan from the last permit cycle. An updated Program Plan, which will drive the Year 2 Annual Report, has been completed and signed by the Center Director. The Program Plan updates are discussed in Section E of this submittal.

Section A: Background Information

- (1) NASA Langley Research Center
General Permit Registration Number VAR040092

- (2) Annual Report for PY 1 covering the period of July 1, 2013 – June 30, 2014.

- (3) To fulfill its mission, LaRC employs approximately 3,300 individuals including civil servants, researchers, technicians, maintenance staff, and on-site contractors. The Center is organized into groups and divisions based on current research and development areas. There have been no major modifications to any operator roles and responsibilities. In the current MS4 Program Plan the Standard Practice and Environmental Engineering Branch (SPEEB) is responsible for ensuring implementation of the MS4 Program Plan.

- (4) A total of 15 outfalls exist (shown in Figure 1). Five new MS4 outfalls have been added during the PY.

- (5) The signed Certification Statement can be found on the last page of this Annual Report prior to the attachments.

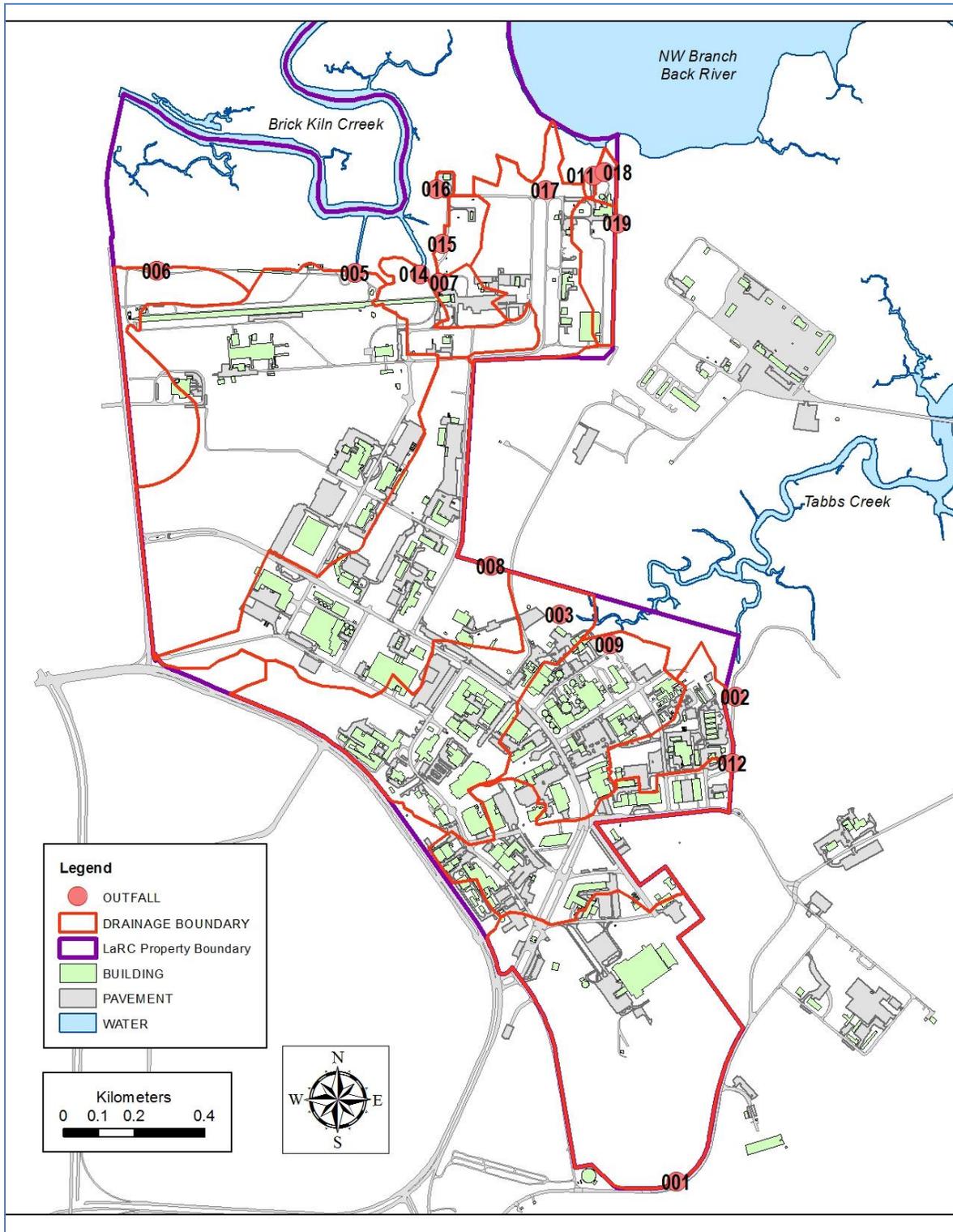


FIGURE 1 - LaRC OUTFALL AND OUTFALL DRAINAGE BASIN MAP

Section B: Permit and Program Plan Compliance

1. Public Education and Outreach

BMP ID #	Brief BMP Description	Measurable Goals	Progress - Permit Year 1
1.A	Quarterly Newsletter Articles	Four articles (quarterly) will be posted each year. Copies of the articles will be maintained on the Center’s Water Management Program website and in MS4 program files. The number of hits on the website will be documented and reported to determine the number of employees educated.	<p>Four quarterly articles were posted on LaRC’s intranet home page (known as @LaRC) and the LaRC Environmental Water Program webpage. Below are the titles and dates of publication:</p> <ol style="list-style-type: none"> 1. “Spill Response Procedures at NASA Langley,” Published on 9/23/2013, 9/27/2013, and 9/30/2013 with 4024, 3982, and 3483 visitors (“hits”) respectively. 2. “Clean Water for the Holidays,” Published on 12/13/2013 and 12/16/2013 with 3445 and 3496, visitors (“hits”) respectively. 3. “Spring Greening: Protecting Water Quality at Home,” Published on 3/27/2014, 3/28/2014, and 3/31/2014 with 1224, 1182, and 1187 visitors (“hits”) respectively. 4. “I.D.D.E.,” Published on 6/23/2014 and 6/27/2014 with 583 and 529 visitors (“hits”) respectively. <p>All of the quarterly stormwater articles were posted and made available for viewing and comment on the @LaRC site. The website had a total of 23,145 viewers (“hits”).</p> <p><i>Please see Attachment A for copies of the quarterly articles, copies of the postings, and other supporting documentation for the number of views.</i></p> <p>Goal Status: Attained</p>
1.B	Environmental Training Classes	LaRC will document and report the number of training sessions and the number of attendees. The training material will be updated annually to address feedback received from previous year training to ensure	Stormwater-related training classes were given to LaRC employees and contractors. All training materials were updated for this year’s various training sessions. Training courses were also updated with examples of high priority stormwater-related concerns including erosion and sediment control issues and illicit discharge detection and elimination. Many of the training sessions were videotaped for use by personnel as “make-up” training sessions.

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		<p>effectiveness. Training class attendance will be tracked and reported through sign-in sheets as well as through a web-based attendance database to ensure appropriate employees receive training each year.</p>	<ul style="list-style-type: none"> • Stormwater Management and ESC Training: Trainings on the basics of stormwater management and erosion and sediment control were delivered on June 10th and June 18th, 2014. A total of 17 employees were trained. • Waste Training (covering spill response stormwater issues, proper waste disposal, etc.): Session was held on 6/23/2014. A total of 83 employees and contractors (“businesses”) were trained. Several classes were held in July (outside of this annual reporting year and will be reported next year). • Hazardous Materials Management – Sessions were held on 6/10/2014 and 6/25/2014. A total of 16 employees were trained. <p><i>Please see Attachment B for training records.</i></p> <p>Goal Status: Attained</p>
1.C	<p>SPEEB Website and @LaRC (intranet) Homepage</p>	<p>For PY1 through PY5, the website will be reviewed every six months and updates made as needed. The website will be maintained and updated in accordance with NASA’s IT policies and the effectiveness will be tracked through the use of a visitor counting mechanism as well as receiving feedback from LaRC employees.</p>	<p>The web page for LaRC’s Water Program was completely revamped, updated and made public. There are now additional subpages for MS4, IDDE, TMDLs, and ESC.</p> <p>You may visit the new revamped webpage by visiting the following URL: https://sites-e.larc.nasa.gov/environmental/water/</p> <p>The following links are subpages off the main water pages: https://sites-e.larc.nasa.gov/environmental/water/ms4/ https://sites-e.larc.nasa.gov/environmental/water/tmdl/ https://sites-e.larc.nasa.gov/environmental/water/idde/ https://sites-e.larc.nasa.gov/environmental/water/esc/</p> <p>Goal Status: Attained</p>

2. Public Participation and Involvement

BMP ID #	Brief BMP Description	Measurable Goals	Progress - Permit Year 1
2.A	MS4 Program Plan Review and Comment	Comments and suggestions received from Center employees regarding the MS4 Program Plan will be documented and maintained by the LaRC Water Program Manager. NASA LaRC will continue to assess additional ways to increase employee involvement and participation in the reduction of stormwater pollutant discharges from the Center. LaRC will document and report the number of comments received each year.	<p>The MS4 Program Plan was posted on SPEEB’s webpage throughout the permit year. No (zero) comments were submitted to SPEEB regarding the MS4 Program Plan.</p> <p>The MS4 Program Plan was posted at the following URL: https://sites-e.larc.nasa.gov/environmental/water/ms4/</p> <p>Goal Status: Attained</p>
2.B	Environmental Audits of Facilities	NASA LaRC will perform forty (40) multi-media environmental audits of Center facilities annually for PY1 through PY5. The number of audits performed and closed findings will be included in the Annual Report.	<p>All media areas (air, stormwater, hazardous materials/waste, pollution prevention, etc.) are evaluated during environmental facility audits. Personnel from each building (“public participation”) accompany environmental staff on multimedia audits. This PY, 41 multi-media environmental audits were performed. The audits resulted in 37 environmental findings of which 37 have been closed. Results and responses are maintained on file with SPEEB. To facilitate closure of audit findings, LaRC utilizes an Environmental Finding Tracking Sheet (Langley Form 342) which documents actions taken to close a finding and address the root cause of the problem to prevent reoccurrence.</p> <p><i>Please see Attachment C for an example audit checklist, a completed audit report, and a copy of the Langley Form 342.</i></p> <p>Goal Status: Attained</p>
2.C	Pollution Prevention Projects (P2)	Implementation of any P2 projects will be included in the Annual Report. LaRC will	SPEEB routinely looks for opportunities to implement P2 projects and recycling revenues are earmarked for P2 projects. Also, personnel are encouraged to submit P2 ideas and/or implement P2 projects on their own. During training sessions (see 1.B) and environmental audits (see 2.B) SPEEB staff discusses stormwater P2, explains the

BMP ID #	Brief BMP Description	Measurable Goals	Progress - Permit Year 1
		<p>document and report the number and frequency of pollution prevention type projects that involve the public.</p>	<p>benefits of pollution reduction on the natural environment and offers assistance for P2 endeavors. Below is a summary of this year’s stormwater-related P2 activities.</p> <ul style="list-style-type: none"> • Ultra Drain Seals – With recycling funds, the Center bought 12 silicone drain seals that can be used to seal off high risk floor drains. High risk floor drains can be drains near oil storage, hydraulic lines, labs, etc. During facility audits, FECs are told about the drain seals and offered some if they have the need. To date, 8 drain seals have been issued to FECs for installation. • Riparian Buffer Expansion – During the Earth Day/Arbor Day celebration, SPEEB planted 150 tree and shrub seedlings near Tabbs Creek and Brick Kiln Creek as riparian buffer expansion projects. The seedlings included Eastern Redbud, Bald Cypress, Silky Dogwood, American Elderberry, BiColor Lespedeza, Black Locust, and Willow Oak. <p><i>Please see Attachment D for documentation of this permit year’s P2 efforts.</i></p> <p>Goal Status: Attained</p>
2.D	<p>Promote local programs and events. Also, LaRC participates in a myriad of events such as an annual Earth Day and Take Your Children to Work Day event. Stormwater-related educational information will be disseminated at these types of events.</p>	<p>During PY2 – PY5 a minimum of two announcements will be posted on the @LaRC site. Copies of the announcements will be kept on file. The number of hits to the announcements will be documented and reported.</p> <p>LaRC will also document and report the number of on-Center and local area events that LaRC participates in and the estimated number of</p>	<p><u>Local Event Promotion:</u> LaRC promoted five local programs/events during the PY. This year a significant emphasis was placed on trying to help promote local green initiatives and stormwater programs. The promotions included:</p> <p>Annual Clean the Bay Day - Clean the Bay Day is CBF's annual stream and shoreline cleanup during which citizen volunteers come out to remove litter and debris from Virginia creeks, streams, rivers, and the Chesapeake Bay. The event, sponsored by CBF in partnership with local governments and corporate sponsors, is held the first Saturday in June. The event draws thousands of individual volunteers, families, clubs, businesses, non-profits, conservation groups, and military personnel to cleanup shorelines across the Commonwealth, from Hampton Roads to Northern Virginia, the Eastern Shore to the Shenandoah Valley. LaRC promoted this event via the @LaRC announcement page. The announcements were posted on 5/16/2014, 5/23/2014, 5/30/2014, and 6/6/2014 receiving</p>

BMP ID #	Brief BMP Description	Measurable Goals	Progress - Permit Year 1
		<p>attendees where stormwater-related information is disseminated.</p>	<p>1096, 945, 793, and 746 “hits” (visitors) respectively.</p> <p>Rain Barrel Workshops - Newport News Waterworks, in partnership with the Virginia Cooperative Extension and Newport News Master Gardeners, hosted several rain barrel making workshops. They provide the materials and instructions and homeowners construct the rain barrel for home use. LaRC got positive feedback from these events and LaRC looks to continue to support and promote these workshops. LaRC promoted this event via posting to the @LaRC site. The announcements were posted on 2/18/2014, 2/20/214, 2/24/2014, 2/25/14, 2/26/2014, and 3/4/2014 receiving 1573, 1598, 1613, 1553, 1538, and 1423 “hits” (visitors) respectively.</p> <p>2014 VPPSA Household Chemical Collection - York County, Hampton and Newport News hold household chemical, computer and electronics collections throughout the year. LaRC promoted some of the collection events via the @LaRC announcement page and encouraged employees to attend their local municipality’s event. Many of LaRC’s employees live in these areas. LaRC promoted this event via posting to the @LaRC site. The announcements were posted on 2/10/2014, 2/12/2014, and 2/15/2014 receiving 2566, 2490, and 1502 “hits” (visitors) respectively.</p> <p>America Recycles Day Events – LaRC promoted local government initiatives for America Recycles Day that were held on November 15 and 16 around Hampton Roads. LaRC promoted this event via posting to the @LaRC site. The announcements were posted on 10/28/2013, 11/1/2013, 11/4/2013, 11/8/2013, 11/11/2013, and 11/14/2013 receiving 4208, 4025, 3967, 3900, 3829, and 3504 “hits” (visitors) respectively.</p> <p>Spring Native Plant Sales – Native plants are adapted for the local climate and soils, reducing the need for excess fertilizer and watering and providing natural habitat for wildlife. There were several upcoming native plant sales in the area including the Hampton Master Gardeners plant sale and the York County Master Gardeners plant sale. LaRC promoted this event via posting to the @LaRC site. The announcements were posted on 3/18/2014, 3/28/2014, 4/11/2014, 4/25/2014 and 5/2/2014 receiving 1525, 1336, 1907, 1622, and 1445 “hits” (visitors) respectively.</p>

BMP ID #	Brief BMP Description	Measurable Goals	Progress - Permit Year 1
			<p><u>On-Center and Local Area Events LaRC Attended:</u> LaRC held an on-Center Earth Day/Arbor Day event on 4/22/2014. Earth Day featured environmental education exhibits and displays included LaRC Environmental programs, Peninsula Master Naturalists, Hampton Roads Solar Group, Newport News Waterworks, Virginia EnergySENSE, and others. Exhibits featured information on Center programs for energy and water conservation, sustainable design including LaRC’s Integrated Engineering Services Building, recycling, hazardous materials and waste management, stormwater pollution prevention, water and air quality, green purchasing, and cultural resources. Other topics included home solar installations, pet waste and household environmental stewardship, and water quality.</p> <p>Promotion of this event was done on the @LaRC page. The announcements were posted on 4/11/2014, 4/12/2014, 4/15/2014, 4/18/2014, 4/21/2014, and 4/22/2014 receiving 1793, 1714, 1725, 1653, 1642, and 1639 “hits” (visitors) respectively</p> <p><i>Please see Attachment E for documentation on local event promotion.</i></p> <p>Goal Status: Attained</p>

3. Illicit Discharge Detection and Elimination

BMP ID #	Brief BMP Description	Measurable Goals	Progress - Permit Year 1
3.A	NASA LaRC Policy - Prohibit Illicit Discharges	LaRC will annually review the policies and procedures to ensure effectiveness. Updates and revisions will be included in the Annual Report.	<p>Illicit discharges are prohibited via Langley Procedural Requirements (LPR) 8500.1, also known as the “Environmental Program Manual.” These policies are made available to Center personnel through the Langley Management System (LMS), the SPEEB web site, and are also included in various environmental training events. The IDDE policy was reviewed this year and there was no need for an update this past year. The following statement is now the Center’s policy in LPR 8500.1 Section 5.2.3.1:</p> <p><i>“5.2.3.1 The “Illicit Discharge Detection and Elimination” minimum control measure of the State’s General MS4 Permit requires the Center to effectively prohibit non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions. LaRC defines an illicit discharge as any discharge to the MS4 that is not composed entirely of stormwater, except for discharges allowed under the Center’s VPDES permit, a discharge approved by DEQ in writing as a de minimis discharge that does not contain a significant amount of pollutants, waters used for firefighting operations/line flushing, and A/C condensate. Illicit discharges are not allowed on the Center and are subject to an array of enforcement actions.”</i></p> <p>During illicit discharge detection and elimination inspections, grass clippings were readily seen at some of the Center’s outfalls after mowing activities. To help address this issue the Center updated LPR8500.1 to better address grass clippings. It now reads:</p> <p><i>“13.2.5.8 Grass clippings shall not be blown or swept into the street and into storm drains. This would constitute an illicit discharge to the stormwater system per Section 5.2.3.1 of this document.”</i></p> <p>The required Outfall Map under this minimum control measure is shown in Figure 1. Also, LaRC has a much more detailed GIS-based map of the entire stormwater system that includes topography, outfall drainage basins, flow directions, piping, ditch elevation, pipe inverts, etc.</p>

BMP ID #	Brief BMP Description	Measurable Goals	Progress - Permit Year 1
			<p><i>Please see Attachment F for the Water Section of LPR8500.1. The IDDE policy is highlighted.</i></p> <p>Goal Status: Attained</p>
3.B	Dry Weather Outfall Inspections	<p>For PY1 through PY5, outfall inspections will be performed weekly by the LaRC Water Program Manager. LaRC will document and report inspections conducted.</p>	<p>LaRC completed 550 outfall inspections during the PY. Inspections of the outfalls are done weekly if safe work conditions are present. A record notebook is used to document inspections on a weekly basis.</p> <p><i>Please see Attachment G for sample pages from the Dry Weather Inspection Record Book.</i></p> <p>Goal Status: Attained</p>
3.C	Center-wide Illicit Discharge Inspections and Assessments	<p>LaRC will document and report the inspections/assessments conducted each year and the illicit discharges identified and eliminated.</p>	<p>This BMP is accomplished in three ways:</p> <ol style="list-style-type: none"> 1) Environmental staff (among others) works in the field daily looking for environmental issues including illicit discharges and illicit connections to the MS4. This is a fairly informal approach, but is an effective way to examine stormwater issues. 2) During dry weather outfall inspections (BMP 3.B) observations are made for illicit discharge and illegal dumping activities as well. During the outfall inspections, inspectors walk the ditch line looking for illicit connections, evidence of pollution, illegal dumping activities, flows when the ditch should be dry, etc. A total of 550 outfall inspections were completed. 3) Staff look for illicit discharges during the 40+ multi-media environmental audits performed each year (BMP 2.B). This provides inspections inside and around facilities for illicit discharges and illicit connections.

BMP ID #	Brief BMP Description	Measurable Goals	Progress - Permit Year 1
			<p>One (1) illicit discharge was detected and eliminated during the PY. NASA Environmental staff observed a milky, whitish flow at Outfall 008. Following our MS4 IDDE program, staff immediately began looking for the source of the abnormal flow. A staff member found maintenance personnel power washing the roof of B1189. This is a metal-framed building that is painted white. Environmental staff observed an identical milky, whitish flow coming from the roof drain gutter system of this building. This wastewater was able to enter the MS4 via a parking lot storm drain inlet and flow to Outfall 008. Environmental staff halted the operation immediately, notified DEQ, and took the necessary corrective actions. Power washing operations now require a mandatory Environmental review before they can proceed.</p> <p>Goal Status: Attained</p> 

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
4.A	LaRC MS4 Construction Program	<p>LaRC will document and report the number of construction site projects (over 2,500 square feet) in each Permit Year and the number of disturbed acres. LaRC will also document and report the number of comments (public and employee) received regarding construction sites and how LaRC addresses those comments.</p>	<p>LaRC uses contractors for construction, deconstruction/demolition, and renovation projects. Therefore, the most effective policy tool (“regulatory mechanism”) for LaRC is contract and specification language requiring compliance with our MS4 program, the VSMP construction general permit, and Virginia ESC and SWM regulations. The specification language was significantly updated during the PY. The updated specification language more adequately addresses the new SWM and ESC regulatory requirements (effective July 1), and also updated all the VAC reference numbers (due to program move to DEQ).</p> <p>The contract language requires construction site operators (typically contractors) with sites over 2,500 square feet to submit an ESC Plan, P2 Plan, SWM Plan, and a SWPPP to SPEEB prior to land disturbances. The contract language also requires projects over 1 acre to obtain VSMP CGP coverage. SPEEB reviews, comments on, and approves all Plan submittals. LaRC has two ESC Combined Administrators on staff for this process and those personnel are also attending the new SWM training courses. Throughout construction, SPEEB performs stormwater-related construction site inspections (see BMP 4.B).</p> <p>Nine permitted land disturbing activities occurred at some point during PY 1. Total land disturbance permitted was 12.24 acres. However, many of these projects stretch across multiple PYs and not all land disturbing activity occurred this year. Only two permits are still open at this time. These projects included:</p> <ol style="list-style-type: none"> 1. New Town Phase II Construction - VAR10-12-103624 – 6.6 acres of disturbance (Open permit – reapplied for CGP coverage) 2. Stratton Road Substation – VAR10-13-100158 – .28 acres of disturbance (Terminated CGP coverage 3/4/2013) 3. 1195 Steam Line work – VAR10-13-101677 - .10 acres of disturbance (Terminated CGP coverage 10/17/2013) 4. Fire Station Upgrade – VAR10-14-100253 - .10 acres of disturbance (Allowed CGP coverage to expire 1 July, site under 1 acre) 5. 1201 Steam Line Work – VAR10C315 - .10 acres of disturbance

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
			<p>(Terminated CGP coverage)</p> <ol style="list-style-type: none"> 6. 1229/LTPT Demolition – VAR10C696 – 3.2 acres of disturbance (Open permit – reapplied for CGP coverage) 7. Sanitary Upgrades – VAR10C750 - .90 acres of disturbance (Allowed CGP coverage to expire 1 July, site under 1 acre) 8. Potable Water Upgrades – VAR10D018 - .50 acres of disturbance (Allowed CGP coverage to expire 1 July, site under 1 acre) 9. Triad Demolition – VAR10-12-103734 – .64 acres of disturbance (Terminated CGP Coverage) <p>No public comments were received on construction projects during the permit year.</p> <p>Note: This Annual Report covers actions associated with PY 1. However, LaRC recently obtained approval for NASA LaRC Annual Standards and Specifications for ESC and SWM. This document provides the structure for a comprehensive construction and post-construction stormwater management program. This new document is discussed and referenced in detail in the new updated MS4 Program Plan.</p> <p><i>Please see Attachment H for a copy of LaRC’s stormwater requirements contract language (“regulatory mechanism”) and copies of VSMP permit coverage letters for sites that were active at some point during the PY.</i></p> <p>Goal Status: Attained</p>
4.B	Construction Site Inspection Program	Inspection reports will be kept on file. LaRC will document and report the number of stormwater construction site inspections conducted and any noteworthy findings in future annual reports.	<p>A total of 86 MS4 oversight stormwater construction site inspections were conducted during the PY. These inspections focused on compliance with the VSMP General Construction permit regulations and various Center policies. The vast majority of issues noted included improperly installed/maintained silt fences, dirt on roadways from vehicle tracking, and poorly managed dewatering operations. The 86 inspections were done by SPEEB staff as MS4 oversight inspections. LaRC requires the contractor who pulls the state permit to comply with the inspection frequency requirements of the CGP permit. The construction contractors have their own set of inspection records as well.</p> <p><i>Please see Attachment I for examples of completed construction site inspection reports.</i></p>

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
			<p><i>All inspection reports for this PY are kept on file with SPEEB in addition to any email or other correspondence regarding finding closure.</i></p> <p>Goal Status: Attained</p>
4.C	Appropriate Certifications as Required Under the Erosion and Sediment Control Law	Document and report the number of relevant training courses attended and the number of applicable certifications held by LaRC staff in future annual reports.	<p>LaRC has three personnel with relevant certifications on staff:</p> <p>ESC Combined Administrator(s):</p> <ul style="list-style-type: none"> • Peter Van Dyke, Certification # 6059 (Expires 5/31/2017) • Todd Herbert, Certification # 6146 (Expires 11/30/2015) <p>ESC Inspector</p> <ul style="list-style-type: none"> • Tony Mettert, Certification #5482. (Expires 11/30/2014). <p>Provisional SWM Combined Administrator Certification</p> <p>Peter Van Dyke,</p> <ul style="list-style-type: none"> • Attended Basic Stormwater Management on 6/10/2013 • Attended Inspector Stormwater Management on 2/19/2014 • Registered for Plan Reviewer Stormwater Management in September 2014 <p>Todd Herbert, <i>Provisional SWM Certification</i></p> <ul style="list-style-type: none"> • Attended Basic Stormwater Management on 7/30 – 7/30/13 • Attended Inspector Stormwater Management on 3/21/2014 • Registered for Plan Reviewer Stormwater Management in September 2014 <p><i>Please see Attachment J for copies of certification forms.</i></p> <p>Goal Status: Attained</p>

5. Post-Construction Runoff Control

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
5.A	Implement Post-construction Runoff Control Program	LaRC will document and report the number of projects over 2,500 square feet and how post-construction stormwater was addressed. NASA LaRC will evaluate the effectiveness of any post-construction stormwater management activities and provide a summary of the evaluation in the Annual Report.	<p>LaRC must comply with federal EISA Section 438 requirements, which are a significant driver of post-construction stormwater planning. EISA Section 438 requires facilities to preserve the existing site hydrology for any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet.</p> <p>New Environmental Design Standards were developed (an additional “regulatory mechanism”) requiring projects to design for and show adequate proof of compliance with EISA Section 438 and VSMP design requirements (Technical Criteria Part II B).</p> <p>Lastly, LaRC recently obtained DEQ approval for NASA LaRC Annual Standards and Specifications for ESC and SWM. This document provides the structure for a comprehensive construction and post-construction stormwater management program. This new document is discussed and referenced in detail in the new updated MS4 Program Plan.</p> <p>Nine projects held VSMP permit coverage and stormwater post construction was handled on a case-by-case basis. All of these projects were subject to the older VSMP regulations (started well before the July 1, 2014). Below is a summary of each permitted site.</p> <ol style="list-style-type: none"> 1. New Town Phase II Construction - VAR10-12-103624: Post-construction stormwater management for this project consists of green space designed to remain wildflower areas, significant tree plantings, large sections of pervious pavers, and two bio-retention cells with underdrain systems. This will be a LEED-Gold building once commissioned. The parking areas for this new facility feature pavers and bio-retention swales between parking aisles. The project met both EISA Section 438 requirements and Virginia stormwater design requirements. 2. Stratton Road Substation – VAR10-13-100158: This was a small building renovation and addition to an existing substation on the Center. Due to the nature of the area (high voltage danger zones), the project was limited in stormwater

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
			<p>management options. Vegetation can't be planted in the immediate radius of this facility and water can't be stored in the substation footprint. No permanent structures were incorporated into this project.</p> <ol style="list-style-type: none"> 3. 1195 Steam Line work – VAR10-13-101677: This project was an in-kind steam line replacement project. The hole dug eclipsed the 2,500 square feet of land disturbance requiring permit coverage. However, the opportunity for stormwater management infrastructure was non-existent. Once the pipe was replaced the hole was backfilled and permanently stabilized with grass. 4. Fire Station Upgrade – VAR10-14-100253: This was a small addition to an existing structure. The project was less than 5,000 square feet and did not trigger EISA Section 438 requirements. There are no permanent SWM facilities associated with this project. 5. 1201 Steam Line Work – VAR10C315: This project was an in-kind steam line replacement project. The hole dug eclipsed the 2,500 square feet of land disturbance requiring permit coverage. However, the opportunity for stormwater management infrastructure was non-existent. Once the pipe was replaced the hole was backfilled and stabilized 6. 1229/LTPT Demolition – VAR10C696: By nature this project had post construction stormwater management benefits. Two buildings were demolished and are being returned to green space. There was a removal of 2.88 acres of impervious surfaces. The runoff coefficient changed from 0.9 to 0.2 at the sites. The project met both EISA Section 438 requirements and Virginia stormwater design requirements. 7. Sanitary Upgrades – VAR10C750: This project was mostly in-kind sanitary line work to eliminate inflow and infiltration. No permanent SWM facilities were associated with this work. 8. Potable Water Upgrades – VAR10D018: This project was mostly in-kind potable line work to replace aging piping and valves. No permanent SWM facilities

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
			<p>were associated with this work.</p> <p>9. Triad Demolition – VAR10-12-103734 – By nature this project had stormwater management benefits. Several small structures and buildings were demolished and were returned to green space. In total, 1.4 acres of impervious surfaces were replaced and transitioned to green space. The project met both EISA Section 438 requirements and Virginia stormwater design requirements.</p> <p>Goal Status: Attained</p>
5.B	Stormwater Management Facilities Management	Track all known permanent stormwater management facilities and report the impaired surface water that the stormwater management facility is discharging into and number of acres treated in future Annual Reports.	<p>To date, five permanent structures have been installed. More information on the impaired surface water that the facility discharges into and the number of acres treated can be found in Section G of this annual report.</p> <p>There are several SWM facilities currently being designed or constructed including six bio-swales, two bio-retention gardens, and ~six pre-manufactured tree box filters. These will all be reported on in the next Annual Report.</p> <p>Goal Status: Attained</p>

6. Good Housekeeping and Pollution Prevention

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
6.A	Street Sweeping	LaRC will document and report the number of street sweeping activities that occur and the estimated amount (Cubic Yards) of debris collected and properly disposed of in future Annual Reports.	<p>Below is a summary of the street sweeping operations over the last permit year:</p> <ul style="list-style-type: none"> • Quarter One (July '13 – September '13) = 11 cubic yards collected • Quarter Two (October '13 – December '13) = 51 cubic yards collected • Quarter Three (January '14 – March '14) = 79 cubic yards collected • Quarter Four (April '14 – June '14) = 55 cubic yards collected <p>Total amount of debris collected during the PY equals 196 cubic yards.</p> <p><i>Please see Attachment K for street sweeping records.</i></p> <p>Goal Status: Attained</p>
6.B	Pollution Prevention Training	Training class attendance will be tracked through sign-in sheets as well as through a web-based attendance database to ensure appropriate employees receive training. The training material will be updated annually to address feedback received from previous year training to ensure effectiveness.	<p>Pollution Prevention training was provided during Stormwater Management and ESC Training and Waste Management Spill Response Training courses.</p> <ul style="list-style-type: none"> • Stormwater Management and ESC Training: Trainings on the basics of stormwater management and erosion and sediment control were delivered on June 10th and June 18th, 2014. A total of 17 employees were trained. • Waste Management Spill Response Training (covering spill response, pollution prevention stormwater issues, proper waste disposal, etc.): A session was held on 6/23/2014. A total of 83 employees and contractors (“businesses”) were trained. Several classes were held in July (outside of this annual reporting year and will be reported next year). <p><i>Please refer back to Attachment B for these records.</i></p> <p>Goal Status: Attained</p>

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
6.C	Illicit Discharge Detection Program at Storage Yards, the Fleet Maintenance Yard, the Hazardous Waste Facility and Other Facilities	A minimum of 4 inspections will be performed each PY. Inspection reports will be kept on file.	<p>Four yard inspections were completed during the PY. No significant issues or illicit discharges were noted during inspections.</p> <p><i>Please see Attachment L for copies of Yard inspection reports.</i></p> <p>Goal Status: Attained</p>

LaRC is subject to the TMDL Special Conditions section of the MS4 General Permit. However, the Back River TMDL has been revised (new TMDL approved June 30, 2014) and LaRC has not been assigned a bacteria load reduction because of a lack of sources other than wildlife within Center boundaries. The new Program Plan addresses the Chesapeake Bay TMDL and this section will be expanded in future Annual Reports. LaRC is currently developing a Chesapeake Bay TMDL Action Plan in compliance with current MS4 permit requirements.

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
1	LaRC will develop a list of its current legal authorities, BMPs, policies, plans, procedures, etc. LaRC will also evaluate the existing policies, plans, and procedures to determine the effectiveness of the MS4 Program in addressing reductions of TMDL pollutants.	A list of applicable policies will be submitted in the Year 3 Annual Report and along with a summary of changes to these policies to better address TMDLs (if needed). During PY 4 through PY 5, the MS4 Program Plan will be updated when program weaknesses are identified.	<p>As required in the measurable goals, LaRC evaluated its current legal authorities, BMPs, policies, plans, procedures and contracts that could be applicable to reducing TMDL pollutants. The following were identified as regulatory mechanisms that could be utilized to reduce bacteria (fecal) pollutants to the Back River:</p> <ol style="list-style-type: none"> 1. LaRC’s Environmental Management System (EMS); 2. LaRC’s Annual Environmental Management and Sustainability Plan; and 3. LPR 8500.1. <p>During the PY significant updates were made to LPR 8500.1 to address TMDLs in general (also planning for upcoming Chesapeake Bay TMDL requirements). The LPR was strengthened to ensure that TMDL planning and implementation has sufficient backing in LaRC’s regulatory framework. A new section was added to the LPR, “5.2.4 Total Maximum Daily Loads (TMDLs) and the Chesapeake Bay.”</p> <p><i>Please see Attachment N for copies of the new LPR 8500.1 regulatory language.</i></p> <p>Goal Status: Attained</p>
2	NASA LaRC will create, maintain and update a comprehensive section on the SPEEB web site that includes current information about TMDLs. The	LaRC will document and report the number of updates to the TMDL website and summarize any changes made during the PY.	LaRC completely revamped and updated the TMDL websites during the PY. There are now two TMDL websites - one for the Back River TMDL and one for the Chesapeake Bay TMDL. The new websites provide more background information, are more visually appealing, and incorporate updated information about LaRC’s participation in the TMDL process. The websites have been made public so that anyone may visit the site. In the past, only people behind the LaRC firewall could view the website.

BMP ID #	BMP Description	Measurable Goals	Progress - Permit Year 1
	goal of having the web site is to provide Center personnel with up-to-date information on TMDLs and to provide employees with links to other educational TMDL web sites.		The website addresses are: https://sites-e.larc.nasa.gov/environmental/water/tmdl/ https://sites-e.larc.nasa.gov/environmental/water/back-river-tmdl/ Goal Status: Attained
3	LaRC will conduct outfall reconnaissance for bacteria weekly during the already established outfall dry weather inspection program (see BMP 3.B). Evidence of bacterial contamination will be added as part of the current inspection procedure. Indicators such as water color, odor, excessive algae blooms, etc. will be part of the inspection procedure.	Throughout PY1 through PY5, the inspections will be performed at least weekly by the LaRC Water Program Manager. LaRC will document and report the number of inspections conducted in future Annual Reports.	LaRC completed 550 dry weather outfall inspections during the reporting period. During these outfall inspections evidence of bacterial pollution (such as odors, excess algae growth, waste material, etc.) was evaluated. Currently, a record notebook is used to document inspections on a weekly basis. No significant or unusual conditions were noted. No corrective actions were taken in regards to bacteria-related issues. Goal Status: Attained

Section C: Results of Information Collected/Monitoring Data:

LaRC has no water quality monitoring data requirements associated with this permit. However, LaRC's VPDES permit has required monitoring and that data has been submitted to the eDMR system.

Section D: Summary of Stormwater Related Activities During Next Reporting Cycle

The new MS4 Program Plan submittal clearly documents plans for Year 2 and beyond. In particular, LaRC is going to put significant effort into developing the Chesapeake Bay Action Plan which will be submitted with the Year 2 annual report and MS4 Program Plan submittal. LaRC has some exciting stormwater infrastructure projects in the works as well. During the PY, six bio-swales, two bio-retention gardens, and ~six pre-manufactured tree box filters will be operational.

Section E: Program Plan Modifications:

LaRC has completely updated the MS4 Program Plan in compliance with the new MS4 Permit requirements. All of the necessary 12-month updates listed in Table 1 of the General Permit have been addressed. The intention is for this new Program Plan to completely replace the current Plan on file. Implementation of the new Program Plan began on July 1, 2014. Below is a snapshot of Program Plan updates:

MCM 1 - The Program Plan now addresses three high priorities and has an associated education and training plan. The three priorities for Year 2 are: (1) Construction Stormwater Management (SWM) and Erosion and Sediment Control (ESC); (2) Illicit Discharge Detection and Elimination; and (3) the Chesapeake Bay TMDL

MCM 2 - This section was updated to better address posting the Program Plan and Annual Reports on LaRC's new public website. Also, the Program Plan provides more information on getting public feedback on Program Plan updates and Annual Reporting.

MCM 3 - LaRC developed an IDDE Handbook that covers everything from inspection protocols to corrective actions. This MCM adequately addresses the Center's procedures for IDDE.

MCM 4 - This section of the Program Plan now incorporates and emphasizes LaRC's approved Annual Standards and Specifications for SWM and ESC.

MCM 5 - This section Program Plan now incorporates LaRC's approved Annual Standards and Specifications for SWM and ESC. Specifically, this section discusses inspection procedures for permanent SWM facilities.

MCM 6 - A new training plan and schedule was incorporated into the Program Plan. This section was updated to address ditch maintenance, catch basin maintenance, street sweeping, and leaf collection. Lastly, the section now addresses nutrient management and LaRC's program for minimizing the use of fertilizer, pesticides and herbicides.

Section F:

LaRC does not rely on any other government entity to satisfy permit obligations. LaRC utilizes a MS4 Program Plan to address the requirements of the Permit and therefore does not seek approval for another program for program compliance.

Section G: Section II C

No signed agreements between the operator (NASA LaRC) and any third parties exist in order to implement any portions of the minimum control measures.

Section H: TMDL Special Condition

A final TMDL report for Fecal Coliform titled "Back River in York County and Cities of Hampton, Poquoson, and Newport News" was approved by the State Water Control Board on June 30, 2014. (the

last day of this annual reporting period). This final TMDL for Fecal Coliform replaces the previous TMDL for Fecal Coliform and Enterococci titled “Back River Watershed (freshwater and shellfish)” that was approved on 03/23/2007. The new TMDL states that “based on model simulation results of the current condition and data analysis, load reduction is not required for federal facilities including NASA Langley Research Center...the dominant pollutant sources is wildlife and the discharge from these facilities do not cause downstream impairments.”

However, LaRC does promote best management practices for controlling bacteria sources through its outreach program to employees that are residents of localities with local Bacteria and Chesapeake Bay TMDLs. BMPs such as cleaning up pet waste are a part of outreach education on stormwater pollution prevention for homeowners. This outreach is part of the Center’s outreach plan to educate our non-residential population and expand the reach of our education to beyond the Center’s boundaries. LaRC also looks for signs of bacteria-related water quality issues during outfall inspections.

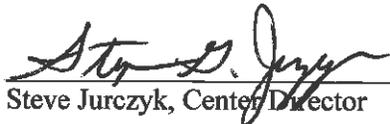
Section I: Permanent Stormwater Management Facility Data

MS4 Permit Year 1	Permit No. VAR040092	NASA LaRC	
<u>BMP Type</u>	<u>HUC</u>	<u>Impaired Water</u>	<u>No. of Acres Treated</u>
Bio-retention Area (B2101)	CB21	Tabbs Creek to Northwest Branch of Back River to Bay	0.3 acres
Bio-retention Area (B2101)	CB21	Tabbs Creek to Northwest Branch of Back River to Bay	0.3 acres
Other - Pervious Pavers	CB21	Tabbs Creek to Northwest Branch of Back River to Bay	0.62 acres
Other - Green Roof	CB21	Tabbs Creek to Northwest Branch of Back River to Bay	0.21 acres
Bio-retention Area (B1229)	CB21	Tabbs Creek to Northwest Branch of Back River to Bay	0.29 acres

The Center is in the process of implementing a comprehensive 20-Year Revitalization Plan that includes constructing six (6) new, state-of-the-art facilities, renovation of critical infrastructure, and demolition of non-essential assets. For the new construction, all designs will take post-construction stormwater management, LEED, and low impact design (LID) criteria into consideration. Also, the new buildings will be subject to compliance with EISA Section 438’s stormwater requirements for maintaining predevelopment hydrology and the state’s stormwater design requirements (Technical Criteria Part IIB).

Signed Certification Statement as required by 9VAC25-870-370 B

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

 9/11/14
Steve Jurczyk, Center Director Date

VAR040092 NASA Langley Research Center
Permit Number MS4 Name

APPENDIX A:
Quarterly Outreach Articles



Spill Response at NASA Langley

A quarterly outreach article from the LaRC Environmental Office, September 2013

On August 1st of this year, all westbound travel lanes on Interstate 64 in Newport News were blocked for seven hours while crews worked to clean up an asphalt sealer spill on the roadway. According to the Virginia Department of Transportation, a tanker truck overturned at J. Clyde Morris Boulevard (Exit 258-B), and the impact of the crash ruptured the tank, causing it to leak 1,000 gallons of the liquid, hot-mix asphalt sealer onto the road. Aside from the headaches of snarled traffic and travel delays, incidents like these remind us of the need for contingency plans for emergency response to chemical and hazardous material spills. Contingency plans for emergency response to chemical and hazardous material spills are not confined to large industrial complexes; they are also necessary for public roads and facilities like LaRC as well. Although LaRC does not have massive chemical storage tanks like a large industrial

complex, there are plenty of opportunities for spills on Center. Immediate response to spills is essential to protecting employee safety and minimizing the damage done to the environment. If spills can be kept from entering the storm sewer system and the ground, then damage to the environment is significantly diminished. Numerous chemicals and hazardous materials are stored and used throughout the laboratories and shop areas on Center. In addition, over 400,000 gallons of oil is stored in various containers such as aboveground and underground storage tanks, mobile tank trucks, hydraulic/lube oil reservoirs and tanks, oil-filled electrical equipment, and drums. LaRC is also considered a large quantity generator of hazardous waste, which means that the Center has the potential to generate over 2,200 pounds of hazardous waste per month. Looking at the Center from this perspective shows that the potential for spills at LaRC is ever present. As required by several major regulations, LaRC has an Integrated Spill Contingency Plan (ISCP) that contains emergency procedures to be followed in the event of a spill or release of hazardous materials or oil to the environment. The plan contains steps necessary for responders to initiate, conduct, and terminate a spill response action. The plan also contains a facility diagram which shows the location, contents, and capacity of the regulated oil containers at the Center.

Spill Response

If you discover a chemical or oil spill at LaRC that poses a danger to human health or is released to the environment, immediately notify the NASA LaRC Emergency Dispatcher at 911 (from a land line phone on Center) or at 864-2222 (cell phone) or 864-5500 (business number).

ISCP

The Integrated Spill and Contingency Plan can also be found in the LMS system as LPR 8715.12.

Ask for Help

If you need help with a spill, ask for it. Notify the LaRC Emergency Dispatcher if spill response is needed. Don't try to tackle a spill that you can't handle.

Copies of the ISCP are maintained by the LaRC Standard Practice and Environmental Engineering Branch (SPEEB), the LaRC Fire Department, the LaRC Duty Officer, and the LaRC Hazardous Waste Storage Facility. The ISCP can also be found in the LMS system as LPR 8715.12.

Wherever chemicals, fuels, or other hazardous materials are stored, processed, or consumed, there is a risk of release to the environment. In the event of a spill or release, it is critical that the emergency responders have all the information they need to safely control the release and to prevent injuries to the public and damage to the environment. It is crucial that the first person to discover a spill knows what he/she can do and whom to contact. The key to a fast response is a fast notification.

What to do if you discover a spill

If an employee discovers a chemical or oil spill at LaRC that poses a danger to human health or is released to the environment, they should warn others



in the area and immediately notify the NASA LaRC Emergency Dispatcher at 911 (from a land line phone on Center) or at 864-2222 (cell phone) or 864-5500 (business number). The dispatcher will initiate emergency response action with the LaRC Fire Department. The LaRC Fire Department provides initial HAZMAT response to Center emergencies. In addition, the Center has an on-site contractor that provides spill response and

cleanup services. For large spills or releases, the Center has agreements in place with the local HAZMAT response team, as well as a prominent spill response and cleanup contractor to provide prompt response to Center emergency situations. Spill responders will try to minimize the impact of the spill utilizing a variety of containment and clean up techniques

including spill berms, storm inlet protection, absorbent pads, granular absorbents, and vacuum equipment.

What about minor spills that don't pose a risk to human health?

Small spills that do not present a danger to human health and are not released into the environment can be cleaned up by facility personnel. These are typically spills of nontoxic chemicals or small quantities of oils. If a small spill occurs in your building, and it is safe to do so, try to contain the spill to prevent it from entering floor drains, sump pits, or other

avenues of escape to the environment. Make sure to wear proper personal protective equipment (PPE) if cleaning up a spill. To contain spills, use absorbent materials such as pads, booms, or socks. Barriers such as silicone drain covers can be used to prevent spilled materials from entering a drain. Quick response to a spill makes



clean-up easier and minimizes spill impact. If you have liquid hazardous materials (oils, paints, solvents, lab chemicals, fuels, etc.) in your building or work area, then you should also have spill kits nearby. Spill kits should be sized and selected for the appropriate chemicals and risks that the chemicals in your building present. For example, there are specific spill kits made for acids, bases, and oils. Spill kits should be readily available and accessible.

Always remember – if you need help with a spill, ask for it. Notify the LaRC Emergency Dispatcher if spill response is needed. Don't try to tackle a spill that you can't handle.

Environment

Spill Response Procedures at NASA Langley

Immediate response to spills is essential to minimizing the damage done to the environment. If spills can be kept from entering the storm sewer system and the ground, then damage to the environment is significantly diminished. LaRC has an Integrated Spill Contingency Plan (ISCP) that contains emergency procedures to be followed in the event of a spill or release of hazardous materials or oil to the environment. A new quarterly article reviews spill response procedures at LaRC and should be on everyone's fall reading list. Read the article here:

<http://environmental.larc.nasa.gov/spill-response-at-nasa-langley/>

Keywords: [spills](#), [iscp](#), [hazardous oil](#), [response](#), [emergency](#)

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Approved by [Kenneth M Proctor](#).

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Clean Water for the Holidays

Resources and Simple Steps to Protect Water Quality and Our Environment This Holiday Season

NASA LaRC Standard Practice and Environmental Engineering Branch, December 2013

RECYCLE THOSE SHOPPING BAGS AND PLASTIC FILMS FROM GIFTS

Recycling those plastic bags and films keeps them out of the landfill and out of our waterways while also providing material for a new generation of products. Recycling rates for plastic bags and film are very low, only about 12% according to the EPA. However, the demand for plastic is very high, and recycling is the best way to help meet that demand. Remember plastic bags and film cannot be recycled in curbside programs. They must be taken to a designated plastic bag and film recycling location. Visit [ABagsLife.com](http://www.abagslife.com) for the nearest location to you. <http://www.abagslife.com/find-a-recycle-center/>

Recycle These Plastic Items:

Shopping bags
Vegetable bags
Dry cleaning bags
Shipping bags
Newspaper bags
Plastic film from paper towels and toilet paper.



reduce.
recycle.
reuse.

FOR A
Clog-Free Season...
GIVE YOUR *disposal a holiday!*



Don't Use the Garbage Disposal!

Wipe pans & utensils with a paper towel prior to washing.

Never pour oil, drippings, batters, sauces, or dressings down the drain. Absorb these substances with a paper towel and toss into the trash.

Pour used cooking grease into an empty, heat safe container like a soup can; let it cool and harden, then toss it out with the garbage.

FATS, OILS, AND GREASE ARE NOT WELCOME AT THE HOLIDAY PARTY!

When wastewater enters your drain it flows through a pipe system that's usually only about 4 inches in diameter. Once the water begins to cool the grease begins to harden and stick to pipe walls closing off the flow of water. Food scraps chopped up by your garbage disposal just add to this problem. Clogged up sanitary pipes are one of the reasons for sewer overflows that are a major concern for our local waters.

Clean Water for the Holidays

Resources and Simple Steps to Protect Water Quality and Our Environment This Holiday Season



Smartphone App for Finding Recycling and Disposal Drop Off Locations

The holidays for some means new consumer electronics and lots of batteries! Wondering where to take those used batteries, old electronics, compact fluorescent bulbs, paint, automotive oil, etc.? Find locations for recycling or disposing of household waste that should not go into our landfills or waterways with this free app for Android or IOS. iRecycle features access to more than 800,000 recycling and disposal resources for more than 240 materials.

<https://play.google.com/store/apps/details?id=com.earth911.android>

<https://itunes.apple.com/us/app/irecycle/id312708176?mt=8>

Fall Leaves Can Impact Water Quality

In Hampton Roads, many of us are still raking leaves in December. How we manage those leaves can affect water quality. When leaves enter storm drains, they clog the pipes and cause street flooding. And if they aren't removed, the leaves will start to decay, which sends excess nutrients into our waterways. So when you are raking up those final leaves of Fall, remember not to rake or blow them into storm drains or gutters.



- **Never rake or blow leaves into ditches, storm drains, or gutters***
- **Check with your locality to find out how leaves will be collected (bagging, curbside leaf vacuuming, etc.).**
- **Mow over your leaves to create finely chopped mulch and then leave them in place. You'll love how easy it is and your lawn will love the mulch!**
- **Put your fallen leaves into your compost bin. Come spring, your garden will be thankful for the fertile soil.**

* Although Newport News conducts curbside leaf collection, the instructions clearly state that leaves should NOT be placed in the gutter or drainage ditches

Environment

Clean Water for the Holidays

In this season of holidays and celebrations, there are steps we can all take to help protect water quality and our environment. [This article](#) from the Standard Practice and Environmental Engineering Branch provides information on resources and simple tips to do just that.

Have a safe and happy holiday season!

Keywords: [recycling](#), [fall leaves](#), [fats](#), [oils](#), [grease](#), [plastic bags](#)

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Approved by [Kristen Killough Poulney](#).

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Approved by [Kristen Killough Poulitney](#).

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Spring Greening: Protecting Water Quality at Home

Spring is just around the corner. Soon it will be time to sharpen those garden tools and make plans for our home landscapes. Spring is also a time for radio commercials from fertilizer companies urging us to “feed your lawn” and put down the latest lawn makeover products. But there is something else to think about in this busy time, and that is the impact our manicured lawns might have on our local waterways. There are many ways homeowners can help protect our local waters and the Chesapeake Bay. The following sections highlight some easy tips for improving our landscapes while protecting water quality.

Soil Testing

Before you can even think about changes to your lawn treatment or landscaping, you need to get your soil tested to find out what type of soil you have and whether you even need to add fertilizer. There are several options for soil testing, and there are easy instructions for how to sample your soil and send for testing. The following link provides useful information on how to collect soil samples.

Recommended Soil Testing Frequency:

New lawns: test after grading, before seeding
Vegetable gardens: test every three years
Established lawns, landscape plants, and perennial gardens: test every three years

Virginia Cooperative Extension, Soil Sampling for the Home Gardener:
<http://pubs.ext.vt.edu/452/452-129/452-129.html>

Understanding Fertilizers

All fertilizer products are labeled with three numbers indicating the percentage of nitrogen, phosphorus and potassium (N, P, K), the three main plant nutrients. Nitrogen promotes grass shoot growth and leafy top growth; phosphorus encourages root, flower and fruit production; and potassium fosters hardiness, disease resistance and durability. A fertilizer is referred to as “complete” when it contains all three plant nutrients. A bag of 15-10-10 fertilizer, for example, contains 15 percent nitrogen, 10 percent phosphorus and 10 percent potassium. In terms of weight, a 10-pound bag of 15-10-10 fertilizer contains 1.5 pounds of nitrogen. Some plants require more of some nutrients than others. Root crops, such as carrots, garlic and radishes require less nitrogen than leafy crops such as



Spring Greening: Protecting Water Quality at Home



lettuce or spinach. Fertilizer should always be applied in accordance with soil test results. Remember, too much fertilizer may burn your lawn or landscape plants. Lime may be applied to acidic soils based on soil test results. Limestone does not pollute water if it is used and handled according to the manufacturer's instructions. Most soils in our area provide all the phosphorus that established lawns need. When fertilizing lawns or home landscapes, look for products that contain Water Insoluble Nitrogen, abbreviated "WIN." This means that the nitrogen will release slowly over time. Products labeled with the terms controlled release nitrogen, sulfur coated urea, IBDU, urea formaldehyde or resin coated urea also indicate slow release forms of nitrogen. Cottonseed meal, blood meal, bone meal, fish emulsion, compost and manures are examples of natural fertilizers. Compost and manures also add valuable organic matter to the soil.

Mow to the Right Height

Mowing lawns to the proper height can reduce weeds by as much as 80 percent. Low and infrequent mowing can damage your lawn as well. Remove no more than 1/3 of the grass height each time you mow. For example, to maintain a 3-inch height, do not let the grass get much taller than 4 ½ inches. Sharpen lawn mower blades in the spring. A dull blade can damage grass.

Select the Right Grass

Select grasses that do not require substantial fertilizer applications. Check out new, improved varieties of tall fescue and bluegrass. Ask for certified seed—it's worth the extra effort and cost. If you don't see a tag indicating certification you may be getting too many weeds with your seeds.



Fertilize at the Right Time, Not When Fertilizer Companies Advertise

Cool season grasses (fescue, bluegrass, ryegrass) should be fertilized in late summer or early fall to help the grass recover from summer stresses. Nitrogen uptake in the fall is at its peak for cool season grasses. Zoysia grass and Bermuda grass are warm season grasses that should be fertilized in early summer when they are growing most actively.

It's The Law

Former VA Gov. Bob McDonnell signed into law a bill that prohibits the sale, use and distribution of lawn fertilizer containing phosphorus. The legislation went into effect on Dec. 31, 2013. The law also prohibits the sale of deicers containing urea, nitrogen or phosphorus. Additionally, golf courses must implement nutrient management plans by 2017. The law will prevent an estimated 230,000 pounds of phosphorus pollution from reaching the Chesapeake Bay and Virginia rivers each year. This is 22 percent of Virginia's 2017 phosphorus reduction goal.

The law also requires lawn service companies to apply fertilizer according to nutrient management standards. It requires that lawn fertilizer packages are clearly labeled with information on how to properly fertilize and reduce polluted runoff.



Recycle Grass Clippings

Grass clippings are a free source of nutrients and will not cause thatch problems. "Grasscycling" can reduce your lawn's nitrogen requirement by 50 percent. If clippings are too long, they may clump. Rake up excessive clippings for mulch or compost and mow more frequently. Sweep or blow grass clippings and other lawn debris away from street gutters.

Aerate the Soil

Aerate the soil to reduce compaction. Lawn care professionals can provide this service or you can rent an aerator from a lawn and garden supplier.

Let Lawns Go Dormant

Some grass species have natural dormancy periods and will turn brown. Applying fertilizer to force a lawn to turn green during its dormancy period can damage the grass. It is safe to let an established lawn go dormant in summer. Dormancy is a natural survival mechanism and lawns usually recover when the rains return. Dormant lawns continue to protect water quality by holding the soil and nutrients in place.

Fertilizing Trees and Shrubs

Try to use native plants which require less fertilizer and often have a better survival rate. Healthy trees do not need fertilizer. Undersized leaves and short new twig growth could indicate a need for fertilizer. If a fertilizer is needed, choose one with a slow release form of nitrogen. Apply fertilizer to the area under the tree, beginning at the midpoint between the trunk and the drip line and extending approximately 8 feet beyond. The recommended rate is no more than 1 pound of nitrogen per 1,000 square feet. Do not use fertilizer spikes which can burn tree roots.

Fertilizing Gardens

Choose a level site for a garden to help avoid fertilizer runoff after heavy rains. Use organic mulches to improve water infiltration and keep rainwater from splashing. Use compost to add valuable organic matter, improve soil structure, and enhance the effectiveness of fertilizers. Maintain a grassed area around gardens to trap sediment runoff, which can carry nutrients to nearby waterways. Plant crops with similar fertilizer needs together to help prevent over-fertilization. Do not broadcast fertilizer over the entire garden. Instead, apply fertilizer along rows of seeded vegetables or in a circle around each plant to reduce the amount of fertilizer used. Substitute local sources of composted manure for manufactured fertilizers.



Environment

Spring Greening: Protecting Water Quality at Home

Spring is just around the corner. Soon it will be time to sharpen those garden tools and make plans for our home landscapes. Spring is also a time for radio commercials from fertilizer companies urging us to “feed our lawn” and put down the latest lawn makeover products. But there is something else to think about in this busy time, and that is the impact our manicured lawns might have on our local waterways. There are many ways homeowners can help protect our local waters and the Chesapeake Bay. [This article](#) highlights some easy tips for improving our landscapes while protecting water quality.

Keywords: [spring](#), [fertilizer](#), [water quality](#), [landscaping](#), [lawn](#)

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Keywords: [spring](#), [fertilizer](#), [water quality](#), [landscaping](#), [lawn](#)

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Keywords: [spring](#), [fertilizer](#), [water quality](#), [landscaping](#), [lawn](#)

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I. D. D. E.

(ILLICIT DISCHARGE DETECTION AND ELIMINATION)

It comes from the sewer. It comes from the street. It's not just staying down there anymore. It eventually makes it to our outfalls and discharges into our local waterways, affecting water quality and wildlife. Illicit discharge is a big problem in some areas because it is not always easy to detect and often goes unnoticed. It is also a large source of pollution from uncontrolled sources in the urban landscape. LaRC has worked diligently to develop an effective illicit discharge detection and elimination program over the last decade. Part of the solution to this problem comes from LaRC employees looking out for these discharges and helping the Center address these issues by reporting what they see.

What Is An "Illicit Discharge"?

Federal regulations define an illicit discharge as "...any discharge to a municipal separate storm sewer system (MS4) that is not composed entirely of stormwater..." with some exceptions. These exceptions include discharges from National Pollutant Discharge Elimination System (NPDES)-permitted industrial sources and discharges from fire-fighting activities. Illicit discharges are considered "illicit" because MS4s are not designed to accept, process, or discharge such non-stormwater wastes. LaRC also defines an illicit discharge as any discharge to the MS4 that is not composed entirely of stormwater. Illicit discharges are prohibited via Langley Procedural Requirements (LPR) 8500.1, also known as the "Environmental and Energy Program Manual."

Illicit discharges can be from:

- Disposal of vehicle maintenance fluids into a storm drain;
- Hosing or washing loading areas in the vicinity of storm drain inlets;
- Leaking dumpsters flowing into a storm drain inlet;
- Old and damaged sanitary sewer line leaking fluids into a cracked or damaged storm sewer line;
- Illegal dumping;
- Allowing unauthorized wash water with soaps or detergents into a storm drain inlet;
- Washing silt, sediment, concrete, cement or gravel into a storm drain;
- Dewatering of trenches or excavations for utility maintenance or construction; and/or
- A measurable flow during dry weather that contains pollutants or pathogens

Dry weather discharges are composed of one or more possible flow types:

- Sewage flows produced from sewer pipes;
- Wash water flows from a wide variety of activities and operations;
- Liquid wastes refer to a wide variety of flows, such as oil, paint, and process water;
- Tap water flows are derived from leaks and losses that occur during the distribution of drinking water in the water supply system; and

Illicit connections can also be considered illicit discharges.

Examples of illicit connections include, but are not limited to:

Sanitary sewer piping that is connected directly from a building to a stormwater system;



Or a basement or shop floor drain that is connected to the stormwater system



- Groundwater and spring water flows occur when the local water table rises above the bottom elevation of the storm drain and enters through cracks or joints.

What Does an Illicit Discharge Look Like Anyway?

Illicit discharges can come in and from a seemingly endless amount of places and take many forms. There are three primary classifications of illicit discharge as defined by the EPA:

Continuous discharges occur most or all of the time, are usually easier to detect, and typically produce the greatest pollutant load.

Intermittent discharges occur over a shorter period of time (e.g., a few hours per day or a few days per year). Because they are infrequent, intermittent discharges are hard to detect, but can still represent a serious water quality problem, depending on their flow type.

Transitory discharges are extremely hard to detect with routine monitoring, but under the right conditions, can exert severe water quality problems on downstream receiving waters. These discharges occur rarely, usually in response to a singular event such as an industrial spill, ruptured tank, sewer break, transport accident, or illegal dumping episode.



Why Are Illicit Discharge Detection and Elimination Efforts Necessary?

Discharges from MS4s often include wastes and wastewater from non-stormwater sources. A study conducted in 1987 in Sacramento, California, found that almost one-half of the water discharged from a local MS4 was not directly attributable to precipitation runoff. A significant portion of these dry weather flows were from illicit and/or inappropriate discharges and connections to the MS4. Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high

Environment

Identifying Illicit Discharges at LaRC

It comes from the sewer. It comes from the street. It's not just staying down there anymore. It eventually makes it to our outfalls and discharges into our local waterways, affecting water quality and wildlife. Illicit discharge is a big problem in some areas because it is not always easy to detect and can often go unnoticed. It is also a large source of pollution from uncontrolled sources in the urban landscape. LaRC has worked diligently to develop an effective illicit discharge detection and elimination program over the last decade. Part of the solution to this problem comes from LaRC employees looking out for these discharges and helping the Center address these issues by reporting what they see. Find out more here:

<http://environmental.larc.nasa.gov/identifying-iddel/>

Keywords: [illicit discharge](#), [stormwater](#), [sanitary](#), [sewer](#)

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Identifying Illicit Discharges at LaRC

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APPENDIX B:
Training Records

SATERN Class Roster Verification

Schedule

Scheduled Offering ID 74017

Title WASTE MANAGEMENT/SPILL RESPONSE TRAINING

Item COURSE LARC-WMSR (Rev 3/3/2009 10:14 AM America/Indianapolis)

Segment	Start Date/Time	End Date/Time	Instructor	Location
1 Morning	6/23/2014 02:00 PM	6/23/2014 03:30 PM	America/New York	LARC-Pearl Young Theater-Rm 160-Main Aud

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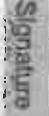
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SATERN Class Roster Verification

Schedule

Scheduled Offering ID 74017

Title WASTE MANAGEMENT/SPILL RESPONSE TRAINING

Item COURSE LARC-WMSR (Rev 3/3/2009 10:14 AM America/Indianapolis)

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1 Morning	6/23/2014 02:00 PM	6/23/2014 03:30 PM		LARC-Pearl Young Theater-Rm 160-Main Aud

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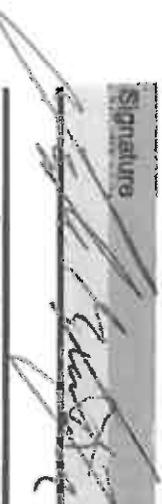
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	SMITH, JOSEPH G	joseph.g.smith@nasa.gov	(757) 864-4287	LARC-D307
	THOMPSON, CRAIG M	craig.m.thompson@nasa.gov	7578644298	LARC-D307
	TOWNSEND, JOHN E	john.e.townsend@nasa.gov	(757) 864-4926	LARC-D403
	TUCKER, PAUL A	paul.a.tucker@nasa.gov	(757) 864-3426	LARC-D328B
	WAGNER, WALTER O	walter.o.wagner@nasa.gov	(757) 864-5225	LARC-D403
	WALKER, THOMAS M	thomas.m.walker@nasa.gov	(757) 864-3088	LARC-D325
	WALTON-BASNIGHT, MYRA L	myra.l.walton-basnight@nasa.gov	(757) 864-9254	LARC-C202
	WARMAN, TY L	ty.l.warman@nasa.gov	864-8976	LARC-D403
	WATKINS, ANTHONY N	anthony.n.watkins@nasa.gov	(757) 864-4741	LARC-D304
	WHITEHEAD, FRED M	fred.m.whitehead@nasa.gov	(757) 864-4288	LARC-D325
	WILLEY, NORMAN F	norman.f.willey@nasa.gov	757-771-1272	LARC-C202
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	WILLS, ROBERT W	robert.w.wills@nasa.gov	(757) 864-1710	LARC-D320
	WRIGHT, CHRISTOPHER W	christopher.w.wright@nasa.gov	(757) 864-6614	LARC-D325

Waste Management/Spill Response Training

NAME (PLEASE PRINT LEGIBLY) If name cannot be read, credit cannot be guaranteed	SIGNATURE	BLDG	NASA ORG/Contractor
Cassandra Stevens	<i>[Signature]</i>	1212c	NASA
Leann Adams	<i>[Signature]</i>	1212c	Jacobs
Bernard Paulini	<i>[Signature]</i>	1242	Dynacorp
HDA LUONG	<i>[Signature]</i>	1267A	NASA
BONITA BRAZIL	<i>[Signature]</i>	648	JACOBS
Mc LUMWA	<i>[Signature]</i>	648	JACOBS
William LIPFORD	<i>[Signature]</i>	1200	NASA
Christel Bellam	<i>[Signature]</i>	1247D	NASA
Sam POLARIS	<i>[Signature]</i>	1225	"
Matthew Medrana	<i>[Signature]</i>	1246	JACOBS
RICHARD CAERO	<i>[Signature]</i>	1202	NASA
<i>[Signature]</i>	<i>[Signature]</i>	1189	JACOBS
Jess Winkler	<i>[Signature]</i>	1293	NASA
Alton COFFEY	<i>[Signature]</i>	1832	STC
CHRIS WRIGHT	<i>[Signature]</i>	1205	NASA
Donald Reich	<i>[Signature]</i>	1202	NASA
Lonnie Combs	<i>[Signature]</i>	1225	NASA

Name	BID#	NASA ORG/ contractor
Michael Carr	1218	NASA
STAN RENO	12113	NASA
Robert Edith	1148	NASA
Clifford Obama	1242	NASA
DAVID RAKLNER	1205	Aynna, Inc.
Chick Zeigler	1204 AD	NASA
David Stevan	1205	NASA
Cassandra Spinks	1212e	NASA
Dipsey Cole	1221	NASA
Barry Brauner	1292	JACOBS (EMO)

Environmental Training Sign-In Sheet

Date: 10-Jun-14

Class Title/Subject: Hazardous Materials Inventory Management

Name (Print)

Signature

BLDG.

NASA ORG/Contractor

TERESA CHRISTIAN

TERESA CHRISTIAN

D1204

D327/0

DEBORAH CASHMAN STEWIS

DEBORAH CASHMAN STEWIS

1212c

D313

ROY FOLLO

ROY FOLLO

122B

D313

JOSEPH BURTON SR

JOSEPH BURTON SR

1212c

D327

JAMES WARD

JAMES WARD

12A3C

D307 SAHA

CLINTON DUNCAN

CLINTON DUNCAN

645A

D317

APPENDIX C:
Multimedia Audit Program

Facility Multi-Media Environmental Audit Report

Building:		FEC Name (Org):	
Branch Head:		EMC Member:	
Inspection Date:		Audit Number:	
Auditor(s):			

General Facility Information			
	Yes	No	Comments
Did the FEC attend mandatory annual training?	<input type="checkbox"/>	<input type="checkbox"/>	
Any questions about the FEC Responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	
Is the FEC familiar with the LF 461, (web form)?	<input type="checkbox"/>	<input type="checkbox"/>	
Are there any upcoming projects, construction, demolition, rehab, modify, new equipment, personnel moves, facility changes?	<input type="checkbox"/>	<input type="checkbox"/>	
Are there any upcoming retirements, personnel changes? May trigger lab cleanout, excess chemicals, review of historical files/documents/models, etc...	<input type="checkbox"/>	<input type="checkbox"/>	
General Comments: The LF 461 (Environmental Project Planning Form) is used by the SPEEB to evaluate potential environmental impacts of proposed projects at the Center (projects include construction, rehab, R+D activities, facility closure, etc...). The form is available at: https://gis-dbweb.larc.nasa.gov/gisprod/htmldb/f?p=122:1:3279355248432747 .			

Green Purchasing			
	Yes	No	Comments
Is the FEC a P-Card holder or purchaser for the facility? If yes, answer a-d.	<input type="checkbox"/>	<input type="checkbox"/>	
Is the FEC aware of Green Purchasing Requirements?	<input type="checkbox"/>	<input type="checkbox"/>	

Recycling Program			
Does the Facility Recycle...	Yes	No	Comments
White / Mixed Paper	<input type="checkbox"/>	<input type="checkbox"/>	
Cardboard	<input type="checkbox"/>	<input type="checkbox"/>	
Toner Cartridges	<input type="checkbox"/>	<input type="checkbox"/>	
Mixed Metals	<input type="checkbox"/>	<input type="checkbox"/>	
Aluminum	<input type="checkbox"/>	<input type="checkbox"/>	
Copper	<input type="checkbox"/>	<input type="checkbox"/>	
Plastic Bottles and Aluminum Cans	<input type="checkbox"/>	<input type="checkbox"/>	
What can be done to expand recycling in this facility? (New bins, signage, outreach, etc.)			

Building:
 Inspection Date:

Environmental Management System (EMS)			
The EMS FY'14 High Priorities are: ✓ Energy/Water Conservation – Reduce energy in goal-subject facilities 3% annually and water consumption by 2% annually ✓ Natural Resources – Expand and improve LaRC's natural resource management program ✓ Regulated Waste – Improve awareness of and conformity with LaRC Waste Mgmt. policies ✓ Water Quality – Improve water quality and reduce quantity of water discharged			
	Yes	No	Comments
Is the FEC aware of annual EMS High Priorities?	<input type="checkbox"/>	<input type="checkbox"/>	
Do you think facility personnel are aware of the EMS and the Center's environmental policy?	<input type="checkbox"/>	<input type="checkbox"/>	
What is the primary environmental challenge/issue that this facility faces?			

Chemical Material Tracking System (CMTS)			
List CMTS users:			
Form 44	Yes	No	Comments
Is the facility using the Form 44?	<input type="checkbox"/>	<input type="checkbox"/>	
Are items transferred to current inventory?	<input type="checkbox"/>	<input type="checkbox"/>	
1.			
2.			
3.			
CMTS Inventory	Yes	No	Comments
How many items are listed in the inventory?			
Number of items in last 2 year's inventory (for comparison):			
Are inventories updated and reconciled quarterly?	<input type="checkbox"/>	<input type="checkbox"/>	
Is their inventory current?	<input type="checkbox"/>	<input type="checkbox"/>	
The date of the last CMTS log-in			
Top Materials Used in the Last Year			
Used Material According to CMTS Inventory	Amount	Process Using Material	
1.			
2.			
3.			
4.			
5.			
Pollution Prevention (P2) Opportunities			
Does the FEC have any P2 ideas for the facility?			
CMTS Comments:			

Building:
 Inspection Date:

Waste Management			
	Yes	No	Comments
Are there any SAAs that the FEC wants to add or remove?	<input type="checkbox"/>	<input type="checkbox"/>	
Have all of the waste handlers been trained?	<input type="checkbox"/>	<input type="checkbox"/>	
Is the hazardous waste at the SAAs only generated by this facility?	<input type="checkbox"/>	<input type="checkbox"/>	

Waste Management P2 Program			
	Yes	No	Comments
Are there active waste P2 projects in the facility?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the FEC have any ideas/suggestions for waste reduction P2 projects?	<input type="checkbox"/>	<input type="checkbox"/>	

Top 3 Hazardous and Non-Hazardous Waste		
Hazardous Waste	Approx. Amount	Process Generating Waste
1.		
2.		
3.		
Non-Hazardous Waste	Approx. Amount	Process Generating Waste
1.		
2.		
3.		

Additional Comments:

Building:
 Inspection Date:

Air Program				
	Yes	No	Comments	
Have any new air emission sources been installed at the facility since the last audit?				
Are there plans to add, change, modify, or move equipment that would be a potential air emissions source?				
Are there permitted air emission sources located at the facility? If yes:				
a.	Are facility personnel aware of air permit conditions and limits applicable to the permitted air source?	<input type="checkbox"/>	<input type="checkbox"/>	
b.	Are good written operating procedures for the permitted air source and air pollution control equipment maintained and available to all operators (if required by air permit)?	<input type="checkbox"/>	<input type="checkbox"/>	
c.	Are maintenance schedules established for the permitted air source and air pollution control equipment (if required by air permit)?	<input type="checkbox"/>	<input type="checkbox"/>	
d.	Are air emission sources in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	

Air P2 Program			
	Yes	No	Comments
Are there active air program P2 projects in the facility?			
Does the FEC have any ideas/suggestions for air program P2 projects?			

Energy/Water Conservation			
	Yes	No	Comments
Does the FEC have any ideas/suggestions for Water conservation projects at the facility?			
Does the FEC have any ideas for Energy conservation at the facility?			
Does the FEC know about the Energy Management System website? http://ems/index.cfm			

Underground/Aboveground Storage Tank (UST/AST) Program				
	Yes	No	Comments	
Are there any large oil reservoirs (ex. gearboxes, crankcases) or other oil filled equipment at facility with oil capacity 55 gallons or greater?				
Are there any USTs/ASTs at facility that store petroleum and/or petroleum based products? If yes, answer a & b:				
a.	Are you aware of any problems, leaks or repairs that have been done in the last year?	<input type="checkbox"/>	<input type="checkbox"/>	
b.	Are there plans to add, change, modify, or move any tanks in the future?	<input type="checkbox"/>	<input type="checkbox"/>	

Building:
 Inspection Date:

UST/AST Program Comments:

Water Program			
Sanitary System	Yes	No	Comments
Are there any processes that discharge to the sanitary sewer (excluding standard sinks and toilets)?	<input type="checkbox"/>	<input type="checkbox"/>	
Describe the discharge to the sanitary system (include process, volume, and frequency if known).			
Storm Sewer System	Yes	No	Comments
Are there any processes that discharge to the storm sewer?	<input type="checkbox"/>	<input type="checkbox"/>	
Describe the discharge to the storm sewer (include process, volume, and frequency if known).			
Is the FEC aware of any illicit discharges to the storm system (improperly plumbed sinks, dumping, improper chemical disposal, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	
Are there any drains or sump pumps in the facility that pose a risk to the system?	<input type="checkbox"/>	<input type="checkbox"/>	
General	Yes	No	Comments
Are there plans to add, change, modify, or move equipment or processes that would have a wastewater discharge?	<input type="checkbox"/>	<input type="checkbox"/>	
Would the FEC like SPEEB to evaluate any water-related connections, discharges, or concerns in the facility?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the FEC have any ideas/suggestions for eliminating any discharges or minimizing any risks to water systems?	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Comments:			

Building:
 Inspection Date:

Waste Management			
	Yes	No	Comments
Are the SAAs at or near the point of generation?	<input type="checkbox"/>	<input type="checkbox"/>	
Are the SAAs clean?	<input type="checkbox"/>	<input type="checkbox"/>	
Is all non-hazardous waste managed properly?	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Comments:			

SAA Inspection								Comments
Location	Waste Stream	Containers Closed?	Labeled Properly?	Below 55 gallons?	Spill Material Present?	Spill Plan Present?	Weekly Inspection?	

Comments:

Chemical Material Tracking System (CMTS)			
Container Identification	Yes	No	Comments
Are the majority of product containers identified with CMTS labels?	<input type="checkbox"/>	<input type="checkbox"/>	
Inventory Spot Check - Log container ID# and check CMTS inventory for accuracy			
In CMTS?	Yes	No	Comments
1.	<input type="checkbox"/>	<input type="checkbox"/>	
2.	<input type="checkbox"/>	<input type="checkbox"/>	
3.	<input type="checkbox"/>	<input type="checkbox"/>	
4.	<input type="checkbox"/>	<input type="checkbox"/>	
5.	<input type="checkbox"/>	<input type="checkbox"/>	
Inventory Spot Check - Log items with no label and check CMTS inventory for accuracy			
In CMTS?	Yes	No	Comments
1.	<input type="checkbox"/>	<input type="checkbox"/>	
2.	<input type="checkbox"/>	<input type="checkbox"/>	
3.	<input type="checkbox"/>	<input type="checkbox"/>	
4.	<input type="checkbox"/>	<input type="checkbox"/>	
5.	<input type="checkbox"/>	<input type="checkbox"/>	

Recycling/Green Purchasing			
Is the facility using 30% recycled content paper?	<input type="checkbox"/>	<input type="checkbox"/>	
During the walk around were recyclables seen in	<input type="checkbox"/>	<input type="checkbox"/>	

Building:
Inspection Date:

dumpsters?			
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SUMMARY: The Standard Practices and Environmental Engineering Branch (SPEEB) has reviewed the audit and the findings and recommendations are summarized below.

Non-Compliance Findings

Recommendations:

Sustainable Acquisition/Green Purchasing:

- NASA's sustainability policy is to execute its mission without compromising our planet's resources, so that future generations can meet their needs. (<http://www.nasa.gov/agency/sustainability/index.html>). This policy is in accordance with Executive Orders (EO) 13514 and 13423, as well as NASA directives, procedural requirements, and guidance documents. Federal green purchasing procedural requirements, including NPR 8530.1, emphasize that the government and its contractors shall give preference in their procurement and acquisition programs to the purchase of products and services that contain recycled-content, contain bio-based content, are energy and water efficient, use non-ozone depleting substances, and are environmentally preferable.
- NPR 8530.1 requires LaRC to purchase certain items containing bio-based content as designated by the US Department of Agriculture (USDA). The USDA established this requirement under the Farm Security and Rural Investment Act (2002 Farm Bill), Section 9002. Information can be found on the USDA BioPreferred web site at <http://www.biopreferred.gov>. The catalog can be accessed at the following link: <http://www.biopreferred.gov/bioPreferredCatalog/faces/jsp/catalogLanding.jsp>

Some potential products with bio-based product alternatives include: penetrating lubricants, multi-purpose cleaners, general purpose cleaners, and multi-purpose lubricants. To find these products you can browse the catalog or search the catalog with keywords. These types of products may be a good start to introducing bio-based products to the facility

Environmental Finding Corrective Action Plan

Instructions: Please complete and return this form to the Standard Practice and Environmental Engineering Branch (SPEEB) within 30 days. Subject to review and approval by SPEEB.

AUDIT DATE:		FEC	
BUILDING #		BRANCH HEAD	
AUDIT NO.		OUM	
Section I COMPLETED BY SPEEB			
Finding:			Repeat finding from last audit?
Section II COMPLETED BY ASSIGNEE OR DESIGNATE			
Please contact the Auditor if you need assistance completing this section.			
Proposed Correction: (Please document the activity, responsible party, and deadline for initial action to correct the finding.)			
Root Cause Analysis: (Please document the root cause(s) of this finding.)			
Proposed CORRECTIVE ACTION PLAN (CAP): (Please identify actions that will correct the root cause(s) and prevent recurrence of this finding. Document the activity, responsible party, and deadline for <u>each</u> action.)			
Activity or Task	Responsible Party	Deadline	Verification Date (to be completed by SPEEB)
1.			
2.			
3.			
4.			
5.			
Section III COMPLETED BY SPEEB			
Date Plan Received:		Date Plan Approved:	
SPEEB Comments: Document confirmation of Corrective Action Plan Implementation and Effectiveness			
Finding Closure Date:			

Facility Multi-Media Environmental Audit Report

Building:	B1215, LaRC Steam Plant	FEC Name (Org):	Tony Mettert (D403)
Branch Head:	Diana Kerns (D403)	EMC Member:	Tony Mettert, Steve Bollman
Inspection Date:	12/18/2013	Audit Number:	14_10
Auditor(s):	Todd Herbert, Jim McGrath, David Thorne		

General Facility Information			
	Yes	No	Comments
Did the FEC attend mandatory annual training?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	05/07/2013
Any questions about the FEC Responsibilities	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the FEC familiar with the LF 461, (web form)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are there any upcoming projects, construction, demolition, rehab, modify, new equipment, personnel moves, facility changes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	In Progress: Steam Plant Upgrade. Upcoming: potable water project, sanitary sewer project.
Are there any upcoming retirements, personnel changes? May trigger lab cleanout, excess chemicals, review of historical files/documents/models, etc...	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Does the FEC have any Pollution Prevention ideas for the facility? (Waste, Air, Water, Energy?) ¹	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<p>General Comments: The LF 461 (Environmental Project Planning Form) is used by the SPEEB to evaluate potential environmental impacts of proposed projects at the Center (projects include construction, rehab, R+D activities, facility closure, etc...). The form is available at: https://gis-dbweb.larc.nasa.gov/gisprod/htmldb/f?p=122:1:3279355248432747.</p> <p>¹Additional P2 comments: Solid Waste Reduction: Air-dryer dessicant used to be changed out on a scheduled basis (approximately every 5 years) resulting in waste dessicant for disposal. Facility is now taking samples and analyzing dessicant to determine when dessicant needs to be replaced. Expect that this will decrease the frequency of dessicant replacement (may last 10 years now between replacement).</p>			

Environmental Management System (EMS)			
<p>The EMS FY'14 High Priorities are:</p> <ul style="list-style-type: none"> ✓ Energy/Water Conservation – Reduce energy in goal-subject facilities 3% annually and water consumption by 2% annually ✓ Natural Resources – Expand and improve LaRC's natural resource management program ✓ Regulated Waste – Improve awareness of and conformity with LaRC Waste Mgmt. policies ✓ Water Quality – Improve water quality and reduce quantity of water discharged 			
	Yes	No	Comments
Is the FEC aware of annual EMS High Priorities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reviewed FY'14 priorities w/FEC
Do you think facility personnel are aware of the EMS and the Center's environmental policy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
What is the primary environmental challenge/issue that this facility faces?	Awareness training for new employees. Communication consistency.		

Chemical Material Tracking System (CMTS)			
List CMTS users:	Walt Wagner, Steve Bollman, Mike Croft, Tony Mettert, Emmett Hall, Annette Wineman. Note: Facility plans to add Raynard Vinson as CMTS user.		
Form 44	Yes	No	Comments
Is the facility using the Form 44?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are items transferred to current inventory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.			
2.			
CMTS Inventory	Yes	No	Comments
How many items are listed in the inventory? 488 items			
Number of items in last 2 year's inventory (for comparison):	2011 - 324 items; 2010 - 315 items		
Are inventories updated and reconciled quarterly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is their inventory current?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
The date of the last CMTS log-in	Consume: 12/4/13; Edit: 10/25/13		
Top Materials Used in the Last Year			
Used Material According to CMTS Inventory	Amount	Process Using Material	
1. Salt	5,900 lb.	Boiler Water Treatment	
2. NALCO 1824, 1720, Nexguard 22310	~2,300 lb.	Boiler Water Treatment	
3. Mobil DTE Oil (Light and Extra Heavy)	1,100 lb.	Maintenance	
4. Propane	800 lb.	Boiler Operations	
5. Various Paints	Various	Painting	
CMTS Comments:			

Waste Management			
	Yes	No	Comments
Are there any SAAs that the FEC wants to add or remove?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	There is a SAA for paint waste located outside by oil storage area. Added to SAA Master List.
Have all of the waste handlers been trained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the hazardous waste at the SAAs only generated by this facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Top 3 Hazardous and Non-Hazardous Waste			
Hazardous Waste	Approx. Amount	Process Generating Waste	
1. Paint Debris	2 x 30 gal.	Facility Painting	
2. Flooring Adhesive	Various	Flooring (contract specific)	
3. Lead paint abatement debris	1 x 30 gal. 1 x 55 gal	Lead abatement (contract specific)	
Non-Hazardous Waste	Approx. Amount	Process Generating Waste	
1. Oily Debris	1 x 55 gal.	Facility Maintenance	
2. Used Batteries	1 x 5 gal.	Facility Maintenance	

Air Program				
		Yes	No	Comments
Have any new air emission sources been installed at the facility since the last audit?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Nebraska Boiler
Are there plans to add, change, modify, or move equipment that would be a potential air emissions source?		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are there permitted air emission sources located at the facility? If yes:		<input checked="" type="checkbox"/>	<input type="checkbox"/>	B&W Boilers, Nebraska Boiler, CAT Generator
a.	Are facility personnel aware of air permit conditions and limits applicable to the permitted air source?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b.	Are good written operating procedures for the permitted air source and air pollution control equipment maintained and available to all operators (if required by air permit)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
c.	Are maintenance schedules established for the permitted air source and air pollution control equipment (if required by air permit)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
d.	Are air emission sources in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Air Program Comments: English Boiler was removed in January 2013. Nebraska Boiler arrived on site in April 2013.				

Underground/Aboveground Storage Tank (UST/AST) Program				
		Yes	No	Comments
Are there any large oil reservoirs (ex. gearboxes, crankcases) or other oil filled equipment at facility with oil capacity 55 gallons or greater?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Diesel generator crankcase holds 85 gallons of oil
Are there any USTs/ASTs at facility that store petroleum and/or petroleum based products? If yes, answer a & b:		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
a.	Are you aware of any problems, leaks or repairs that have been done in the last year?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	#3 UST was drained, cleaned, and refilled with ULSD fuel.
b.	Are there plans to add, change, modify, or move any tanks in the future?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Connecting #3 UST to new diesel generator at IESB.
UST/AST Program Comments: UST's: (3) 50,000 gallon UST's; (2) closed concrete UST's AST's: 1,000 gallon Convault AST; 100 gal. day tank (inside building)				

Water Program				
Sanitary System		Yes	No	Comments
Are there any processes that discharge to the sanitary sewer (excluding standard sinks and toilets)?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Describe the discharge to the sanitary system (include process, volume, and frequency if known).		Boiler blowdown and boiler water test samples. Note: Plan to install flowmeter on boiler blowdown line.		
Storm Sewer System		Yes	No	Comments
Are there any processes that discharge to the storm sewer?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Building: B1215, LaRC Steam Plant
 Inspection Date: 12/18/2013

Describe the discharge to the storm sewer (include process, volume, and frequency if known).	Cooling tower blowdown (permitted)		
Is the FEC aware of any illicit discharges to the storm system (improperly plumbed sinks, dumping, improper chemical disposal, etc.)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are there any drains or sump pumps in the facility that pose a risk to the system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
General	Yes	No	Comments
Are there plans to add, change, modify, or move equipment or processes that would have a wastewater discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Would the FEC like SPEEB to evaluate any water-related connections, discharges, or concerns in the facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Does the FEC have any ideas/suggestions for eliminating any discharges or minimizing any risks to water systems?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Backflow preventer was installed for process water.
Additional Comments:			

Recycling Program			
Does the Facility Recycle:	Yes	No	Comments
White / Mixed Paper	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Cardboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Toner Cartridges	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Mixed Metals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Aluminum	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Combined with Mixed Metals
Copper	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Plastic Bottles and Aluminum Cans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
What can be done to expand recycling in this facility? (New bins, signage, outreach, etc.)	Need a small blue bin in Rm. 116 (copier area). Lid on large blue bin to prevent contamination with trash.		

Energy/Water Conservation			
	Yes	No	Comments
Does the FEC have any ideas/suggestions for Water conservation projects at the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Recently installed 5 new condensate flowmeters for better condensate management.
Does the FEC have any ideas for Energy conservation at the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Motion sensors for 3 rd floor lights
Does the FEC know about the Energy Management System website? http://ems/index.cfm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional comments: Facility personnel are talking with Joan Hughes and Chris Hudgins regarding a new way to operate air dryer. May look at steam heating versus electric heating. New Nebraska boiler has a VFD on the FD Fan motor for energy efficiency. Facility uses the steam-driven feedwater pumps as much as possible rather than operating electric-driven feedwater pumps. Hallways in new building addition are equipped with motion sensors.			

Green Purchasing Program			
	Yes	No	Comments
Is the FEC a P-Card holder or purchaser for the facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the FEC aware of Green Purchasing Requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Waste Management			
	Yes	No	Comments
Are the SAAs at or near the point of generation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are the SAAs clean?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is all non-hazardous waste managed properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments:			

SAA Inspection								
Location	Waste Stream	Containers Closed?	Labeled Properly?	Below 55 gallons?	Spill Material Present?	Spill Plan Present?	Weekly Inspection?	Comments
Rm. 106	Aerosol Cans	Yes	Yes	Yes	N/A	N/A	Yes	
Outside by oil storage	Paint waste	Yes	Yes	Yes	Yes	Yes	Yes	
Comments:								

Chemical Material Tracking System (CMTS)			
Container Identification	Yes	No	Comments
Are the majority of product containers identified with CMTS labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Inventory Spot Check - Log container ID# and check CMTS inventory for accuracy			
In CMTS?	Yes	No	Comments
1. 22813011 (Anti-seize)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Building: B1215, LaRC Steam Plant
 Inspection Date: 12/18/2013

Chemical Material Tracking System (CMTS)				
2.	22962986 (Loctite Anti-seize)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Consumed in May 2011.
3.	22970806 (Industrial Gloss Paint 7-815)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.	2254986 (Super Clean 55-gal. drum)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.	2294947 (Master Mechanical)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Inventory Spot Check - Log items with no label and check CMTS inventory for accuracy				
	In CMTS?	Yes	No	Comments
1.	N/A	<input type="checkbox"/>	<input type="checkbox"/>	No unlabeled containers were observed during the audit.
2.		<input type="checkbox"/>	<input type="checkbox"/>	
3.		<input type="checkbox"/>	<input type="checkbox"/>	
4.		<input type="checkbox"/>	<input type="checkbox"/>	
Recycling/Green Purchasing				
	Is the facility using 30% recycled content paper?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	During the walk around were recyclables seen in dumpsters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

SUMMARY: The Standard Practice and Environmental Engineering Branch (SPEEB) has reviewed the audit and the findings and recommendations are summarized below.

Non-Compliance Findings:

- No compliance issues were identified during the audit.

Recommendations:

CMTS:

- Facility manager indicated that they want to add Raynard Vinson as a CMTS User. Mr. Vinson can contact Ms. Tonya Kiefer (4-8757) to establish a CMTS account, and to receive introductory training.

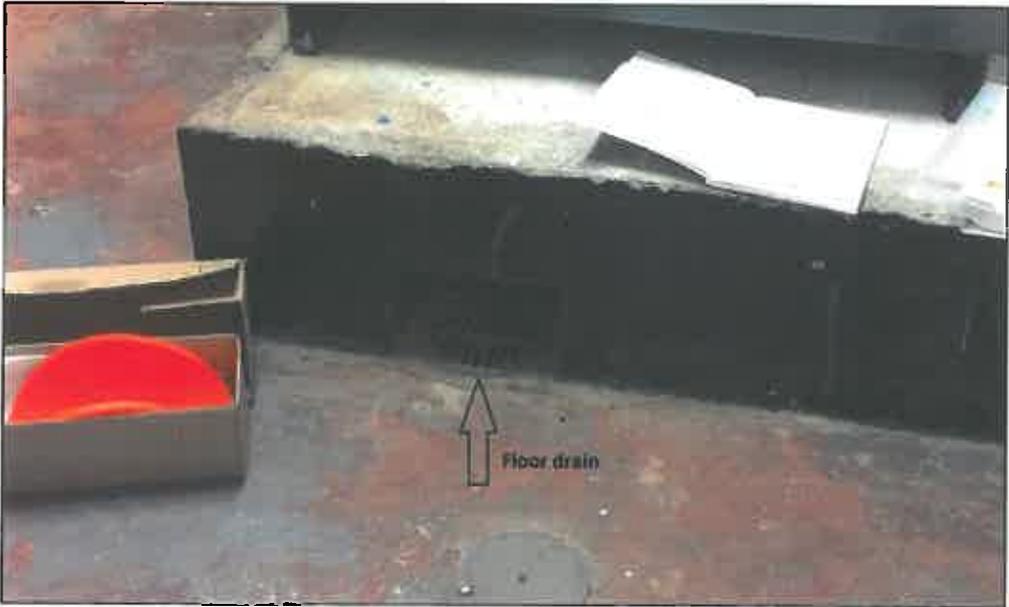
Sustainable Acquisition/Green Purchasing:

- NASA's sustainability policy is to execute its mission without compromising our planet's resources, so that future generations can meet their needs. This policy is in accordance with Executive Orders 13514 and 13423, as well as NASA directives, procedural requirements, and guidance documents. Federal green purchasing procedural requirements, including NPR 8530.1, emphasize that the government and its contractors shall give preference in their procurement and acquisition programs to the purchase of products and services that contain recycled-content, contain bio-based content, are energy and water efficient, use non-ozone depleting substances, and are environmentally preferable.
- NPR 8530.1 requires LaRC to purchase certain items containing bio-based content as designated by the US Department of Agriculture (USDA). The USDA established this requirement under the Farm Security and Rural Investment Act (2002 Farm Bill), Section 9002. Information can be found on the USDA BioPreferred web site at <http://www.biopreferred.gov>. The catalog can be accessed at the following link: <http://www.biopreferred.gov/bioPreferredCatalog/faces/jsp/catalogLanding.jsp>

Potential products with bio-based product alternatives include: penetrating lubricants, multi-purpose cleaners, general purpose cleaners, and multi-purpose lubricants. To find these products you can browse the catalog or search the catalog with keywords. These types of products may be a good start to introducing bio-based products to the facility.

APPENDIX D:
Stormwater P2 Projects

Floor Drain Seals – Spill Prevention



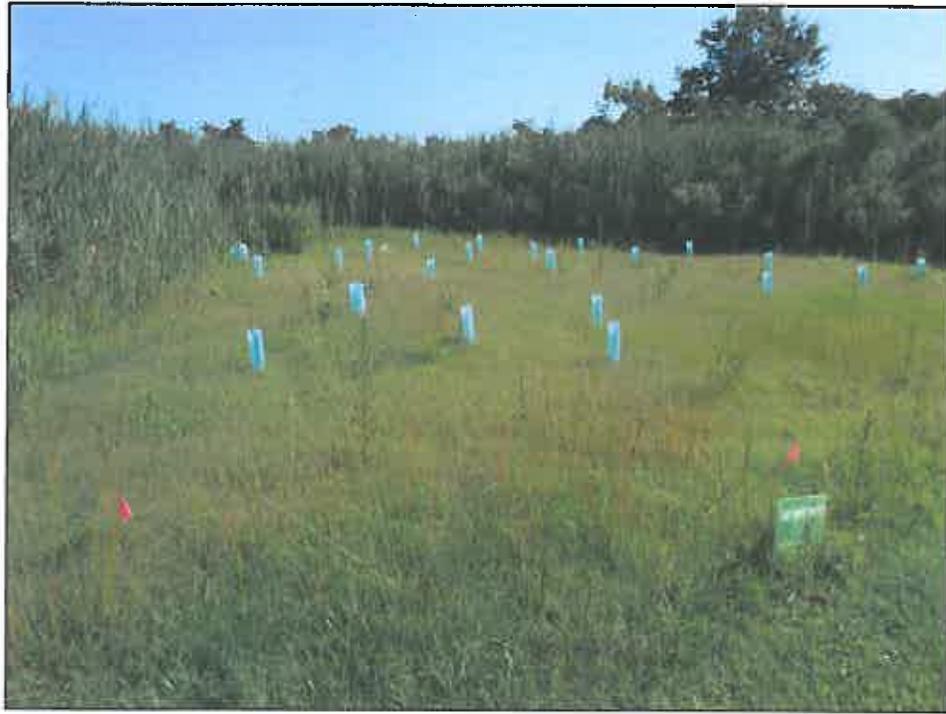
Riparian Buffer Expansion at Outfall 009





Riparian Buffer Expansion behind B1159





APPENDIX E:
Local Event Promotion

Environment

America Recycles Day Events Nov. 15,16

Electronics Recycling Events planned for Nov. 15, 16 in Hampton Roads

Recycle your electronics!

(Hampton Roads, Oct. 11, 2013) — It's October, and you know what that means—holiday promotions are well underway with ads touting the newest phones, the latest gadgets and shiny PCs all aglow. If an upgrade is on your wish list—and you seek a second life for your old devices—join askHRgreen.org for two free electronics recycling and paper shredding events to be held:

Friday, Nov. 15, 2013 | 10 a.m. – 2 p.m.

Lowe's Parking Lot, 4040 Victory Blvd, Portsmouth, VA 23701

Saturday, Nov. 16, 2013 | 10 a.m. – 2 p.m.

York County Sports Complex, 4311 George Washington Memorial Highway, Yorktown, VA 23692

The events will be held in conjunction with America Recycles Day, a national initiative by Keep America Beautiful, and co-presented by VersAbility Resources. Residents and businesses may bring up to one pickup truck full of electronic devices to be recycled. In addition, safe and secure free document shredding will be available courtesy of Stealth Shredding.

The following items will be accepted:

Cell phones

Circuit Boards

Computers/CPUs

Computer monitors

Computer peripherals (mouse, speakers, etc.)

Consumer electronics (DVD players, alarm clocks, etc.)

Documents

Electric cords and wiring

Fax machines

Home and office phones

Household appliances

Keyboards

Printers
Stereos
Telephone equipment
Televisions
VCRs

The following items will not be accepted:

Any unit with sludge or liquids
Cassette tapes
Compact fluorescent light bulbs
Household hazardous waste
Large appliances (refrigerators, stoves, washer dryers, etc.)
Smoke alarms and detectors
VHS tapes

Electronics from the events will be taken to VersAbility (formerly The Arc of the Virginia Peninsula), where employees with disabilities will disassemble the equipment into various parts. From there, the equipment will be shipped to manufacturers that will re-use the working parts and repurpose the recycled goods into new products. For more information about all things green in Hampton Roads, visit askHRgreen.org.

Good to Do: Don't throw your electronics in the trash!

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Keywords: [e-cycling](#), [electronics recycling](#), [household electronics](#)

Posted by [Brandon Todd Herbert](#) on 10-28-2013 at 12:00 AM.

Edited by [Brandon Todd Herbert](#) on 10-25-2013 at 8:08 AM.

Approved by [Kenneth M Proctor](#).

http://blogs.larc.nasa.gov/cgi-bin/blog_show.cgi?style=default;blog_id=3;id=38443

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Posted by [Brandon Todd Herbert](#) on 11-1-2013 at 12:00 AM.

Edited by [Brandon Todd Herbert](#) on 10-25-2013 at 8:09 AM.

Approved by Kenneth M Proctor.

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Posted by [Brandon Todd Herbert](#) on 11-4-2013 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 10-25-2013 at 8:09 AM

Approved by Kenneth M Proctor.

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Posted by [Brandon Todd Herbert](#) on 11-8-2013 at 12:00 AM.

Edited by [Brandon Todd Herbert](#) on 10-25-2013 at 8:10 AM.

Approved by [Kenneth M Proctor](#).

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Posted by [Brandon Todd Herbert](#) on 11-11-2013 at 12:00 AM.

Edited by [Brandon Todd Herbert](#) on 10-25-2013 at 8:10 AM.

Approved by [Kenneth M Proctor](#).

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Posted by [Brandon Todd Herbert](#) on 11-14-2013 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 10-25-2013 at 8:10 AM

Approved by Kenneth M Proctor.

http://blogs.larc.nasa.gov/cgi-bin/blog_show.cgi?style=default;blog_id=3;id=38448

Environment

2014 VPPSA Household Chemical Collection

Properly getting rid of old household chemicals and products is a great way to protect the environment. Many of these products end up in our landfills, dumped into storm sewers, or dumped on the ground. There is a better way to get rid of these products and its free! All collections are open to the residents of Williamsburg, James City County, York County, Hampton and Poquoson. Proof of residency may be required.

Please visit, <http://www.vppsa.org/hc.htm> , to get full program information and dates/times/locations.

Acceptable Materials are those typically found in a home environment, and include products such as the following:

- **Household Maintenance:** Oil paint, Latex paint, Stains, Solvents, Glue, Varnishes, and Adhesives
- **Automotive:** Gasoline and other fuels, Waxes, Gas/oil mixtures, Brake fluid, Engine cleaner
- **Lawn & Garden:** Insecticides, Weed killers, Pesticides, Fertilizers, Pest Strips
- **Household Cleaning:** Oven cleaners, Drain cleaners, Floor waxes and cleaners, Metal polishes or jewelry cleaners, Bleach, Degreasers, Septic tank cleaners, toilet cleaners
- **Miscellaneous:** Charcoal fluids, Dyes, Kerosene, Swimming pool chemicals, Photo finishing chemicals, Rechargeable Batteries, Fluorescent Light Bulbs (including CFL's)

Unacceptable Materials:

TVs
Alkaline Batteries
Medications
Business or Medical Waste
Explosives, compressed gas cylinders
Shock sensitive materials
Radioactive products
Large quantities of unknown materials
Ammunition
Gun Powder
Household Trash

What to do with Latex Paint

If the paint is old and dry, you can leave the lid off and dispose of in your regular trash. If the paint is still a liquid, you can add kitty litter or other absorbent material such as sawdust or mulch, and stir it well until it becomes very thick and will not drip or run. Once you've done this, you can leave the lid off and dispose of it in your regular trash. Please note: this ONLY APPLIES to latex (water based) paint.

Keywords: [recycle](#), [dumping](#)

Posted by [Peter Ryan Van Dyke](#) on 2-10-2014 at 12:00 AM.

Edited by [Peter Ryan Van Dyke](#) on 2-7-2014 at 10:17 AM

Approved by [Kenneth M Proctor](#).

View ed 2566 times.

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Posted by [Peter Ryan Van Dyke](#) on 2-12-2014 at 12:00 AM

Edited by [Peter Ryan Van Dyke](#) on 2-7-2014 at 10:18 AM

Approved by [Kenneth M Proctor](#).

Viewed 2490 times.

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Keywords: [recycle](#), [dumping](#)

Posted by [Peter Ryan Van Dyke](#) on 2-15-2014 at 12:00 AM.

Edited by [Peter Ryan Van Dyke](#) on 2-7-2014 at 10:18 AM

Approved by [Kenneth M Proctor](#).

View ed 1502 times.

Environment

2014 Rain Barrel Workshop Schedule

Newport News Waterworks is again partnering with Newport News Public Works and the Virginia Extension Office to offer rain barrel making workshops in 2014. This is open to anyone. For \$50 you can attend a workshop and assemble a 55-gallon rain barrel to take home. Advance registration is required. You sign up and show up, they provide the materials, then you make it and take it home!

Rain barrels are a great way to reduce stormwater runoff by capturing water from your roof drains. Rain barrels also reduce your potable water usage and can save you money over the years. You can use the water from your rain barrel(s) to water plants and your yard.

Call the Virginia Extension Office at (757) 591-4838 for details and to register for a workshop or visit the website at <http://www.nmgov.com/waterworks/resources/rainbarrel>

The events are:

- March 8th - Extension office, 739 Thimble Shoals Blvd, Suite 1009, NN
- April 12th (2 workshops) 11 a.m. & 1 p.m. - CNU Garden Symposium, Christopher Newport University, NN
- May 24th - Extension office, 739 Thimble Shoals Blvd, Suite 1009, NN
- September 13th (2 workshops) 11 a.m. & 2 p.m. - Go Green Expo, Brittingham Mid-town Community Center, 570 Mc Lawhorne Drive, NN

Keywords: [stormwater](#), [rain barrels](#)

Posted by [Peter Ryan Van Dyke](#) on 2-18-2014 at 12:00 AM

Edited by [Peter Ryan Van Dyke](#) on 2-14-2014 at 9:39 AM.

Approved by Kristan Killough Poulitney.

View ed 1573 times.

Environment

2014 Rain Barrel Workshop Schedule

Newport News Waterworks is again partnering with Newport News Public Works and the Virginia Extension Office to offer rain barrel making workshops in 2014. This is open to anyone. For \$50 you can attend a workshop and assemble a 55-gallon rain barrel to take home. Advance registration is required. You sign up and show up, they provide the materials, then you make it and take it home!

Rain barrels are a great way to reduce stormwater runoff by capturing water from your roof drains. Rain barrels also reduce your potable water usage and can save you money over the years. You can use the water from your rain barrel(s) to water plants and your yard.

Call the Virginia Extension Office at (757) 591-4838 for details and to register for a workshop or visit the website at <http://www.nmgov.com/waterworks/resources/rainbarrel>

The events are:

- March 8th - Extension office, 739 Thimble Shoals Blvd, Suite 1009, NN
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Keywords: [stormwater](#), [rain barrels](#)

Posted by [Peter Ryan Van Dyke](#) on 2-20-2014 at 12:00 AM

Edited by [Peter Ryan Van Dyke](#) on 2-14-2014 at 9:39 AM

Approved by Kristen Killough Poulitney.

View ed 1598 times.

Environment

Hampton Rain Barrel Workshop - March 1st

Make and carry home your own rain barrel

Sign up now for a hands-on rain barrel workshop that will provide everything you need to make your own rain barrel! Join us on March 1st from 9 a.m. - 11 a.m. and take home a completed rain barrel. Pay \$40 at the door. You must register in advance.

Did you know that a one-inch rain over a one-story/2,000 square foot house will result in about 1,200 gallons of water flowing off your roof? Capture that water and use it for landscaping, car washing, and other outdoor projects. Why pay for watering your plants when you can rainwater them?

Sign up now and get a head start on the long, dry summer with your rain barrel!

Questions? Contact Cris Ausink at causink@hampton.gov or 727-1158.

You can register here: <http://www.hampton.gov/CivicAlerts.aspx?AID=611>

Keywords: [rain barrel](#)

Posted by [Peter Ryan Van Dyke](#) on 2-24-2014 at 12:00 AM

Edited by [Peter Ryan Van Dyke](#) on 2-21-2014 at 2:22 PM

Approved by [Kenneth M Proctor](#).

Viewed 1613 times.

Environment

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Keywords: [rain barrel](#)

Posted by [Peter Ryan Van Dyke](#) on 2-25-2014 at 12:00 AM

Edited by [Peter Ryan Van Dyke](#) on 2-21-2014 at 2:21 PM.

Approved by Kenneth M Proctor.

Viewed 1553 times.

Environment

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Keywords: [rain barrel](#)

Posted by [Peter Ryan Van Dyke](#) on 2-26-2014 at 12:00 AM

Edited by [Peter Ryan Van Dyke](#) on 2-21-2014 at 2:21 PM

Approved by Kenneth M Proctor.

Viewed 1538 times.

Environment

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Keywords: [stormwater](#), [rain barrels](#)

Posted by [Peter Ryan Van Dyke](#) on 3-4-2014 at 12:00 AM

Edited by [Peter Ryan Van Dyke](#) on 2-14-2014 at 9:40 AM

Approved by Kristen Killough Poulitney.

View ed 1423 times.

Environment

Earth Day/Arbor Day April 22nd 2014

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Please visit our display area to learn about:

NASA ERA (Environmentally Responsible Aviation)

Peninsula Master Naturalists

Hampton Roads Solar Group

Newport News Waterworks

Virginia Energysense

Other Participants TBA

In observation of Arbor Day, Standard Practice and Environmental Engineering Branch (SPEEB) staff will also be planting over a 100 seedlings as part of a vegetative buffer restoration project on our shoreline near B1247E.

Keywords: [earth](#), [arbor](#), [environment](#), [solar](#), [earth day](#), [trees](#)

Posted by [Brandon Todd Herbert](#) on 4-11-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 4-9-2014 at 11:42 AM

Approved by [Kenneth M Proctor](#).

View ed 1793 times.

Environment

Earth Day/Arbor Day April 22nd 2014

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Posted by [Brandon Todd Herbert](#) on 4-12-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 4-9-2014 at 11:41 AM

Approved by Kenneth M Proctor.

View ed 1714 times.

Environment

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Keywords: [earth](#), [arbor](#), [environment](#), [solar](#), [earth day](#), [trees](#)

Posted by [Brandon Todd Herbert](#) on 4-15-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 4-9-2014 at 11:41 AM

Approved by [Kenneth M Proctor](#).

View ed 1725 times.

Environment

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Keywords: [earth](#), [arbor](#), [environment](#), [solar](#), [earth day](#), [trees](#)

Posted by [Brandon Todd Herbert](#) on 4-18-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 4-9-2014 at 11:42 AM

Approved by [Kenneth M Proctor](#).

Viewed 1653 times.

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Keywords: [earth](#), [arbor](#), [environment](#), [solar](#), [earth day](#), [trees](#)

Posted by [Brandon Todd Herbert](#) on 4-21-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 4-9-2014 at 11:42 AM

Approved by [Kenneth M Proctor](#).

View ed 1642 times.

Environment

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Keywords : [earth](#), [arbor](#), [environment](#), [solar](#), [earth day](#), [trees](#)

Posted by [Brandon Todd Herbert](#) on 4-22-2014 at 12:00 AM.

Edited by [Brandon Todd Herbert](#) on 4-9-2014 at 11:43 AM.

Approved by [Kenneth M Proctor](#).

View ed 1639 times.

Environment

26th Annual Clean the Bay Day on June 7th

Clean the Bay Day is CBF's annual stream and shoreline cleanup, during which citizen volunteers come out to remove litter and debris from Virginia creeks, streams, rivers, and the Chesapeake Bay. The event, sponsored by CBF in partnership with local governments and corporate sponsors, is held the first Saturday in June. The event draws thousands of individual volunteers, families, clubs, businesses, non-profits, conservation groups, and military personnel to cleanup shorelines [across the Commonwealth](#), from Hampton Roads to Northern Virginia, the Eastern Shore to the Shenandoah Valley.

Check the website for locations and registration:

<http://www.cbf.org/clean-the-bay-day/locations-registration>

Keywords: [chESApeake bay](#), [clean the bay day](#)

Posted by [Brandon Todd Herbert](#) on 5-16-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 5-12-2014 at 10:03 AM

Approved by [Kenneth M Proctor](#).

View ed 1096 times.

Environment

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<http://www.cbf.org/clean-the-bay-day/locations-registration>

Keywords : [chesapeake bay](#), [clean the bay day](#)

Posted by [Brandon Todd Herbert](#) on 5-23-2014 at 12:00 AM.

Edited by [Brandon Todd Herbert](#) on 5-12-2014 at 10:03 AM.

Approved by [Kenneth M Proctor](#).

View ed 945 times.

Environment

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<http://www.cbf.org/clean-the-bay-day/locations-registration>

Keywords: [chesapeake bay](#), [clean the bay day](#)

Posted by [Brandon Todd Herbert](#) on 5-30-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 5-12-2014 at 10:04 AM

Approved by [Kenneth M Proctor](#).

Viewed 793 times.

Environment

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<http://www.cbf.org/clean-the-bay-day/locations-registration>

Keywords: [chesapeake bay](#), [clean the bay day](#)

Posted by [Brandon Todd Herbert](#) on 6-6-2014 at 12:00 AM.

Edited by [Brandon Todd Herbert](#) on 5-12-2014 at 10:04 AM.

Approved by Kenneth M Proctor.

Viewed 746 times.

Environment

Upcoming Spring Native Plant Sales

Gear up for spring and make plans to plant native vegetation as part of your garden landscape. Native plants are adapted for the local climate and soils, reducing the need for excess fertilizer and watering and providing natural habitat for wildlife. There are several upcoming native plant sales in the area:

April 19 and 26-27. Spring Plant Sale at Virginia Living Museum in Newport News. 9am-4pm Saturday and Noon-4pm Sunday

April 26. Plant Sale at Jamestown Beach Park. 2205 Jamestown Road, Williamsburg. 9am-2pm

May 3. Hampton Master Gardeners Plant Sale, Bluebird Gap Farm, Hampton. 9am-2pm

May 3. York County Master Gardeners Plant Sale at the Learning Garden, Goodwin Neck Road, York County. 9am-Noon

Other Regional Plant Sales:

SHR Chapter VNPS Plant Sale. Saturday, April 5, 2014. 9:00 AM - 3 PM. Frances Land House, 3131 Virginia Beach Blvd. Virginia Beach, VA 23454

Heritage Museum and Gardens Spring Plant Sale, Friday, Saturday, April 18th & 19th. Friday from 10 AM – 3 PM & Saturday 9 AM to 2 PM. 7637 North Shore Road, Norfolk.

Norfolk Botanical Garden. Friday & Saturday, May 9 & 10, 2014. 10:00 a.m. - 4:00 p.m. Norfolk Botanical Garden (regular admission rates apply). 6700 Azalea Garden Road, Norfolk, VA 23518

Keywords: [native](#), [plants](#), [sales](#), [spring](#)

Posted by [Brandon Todd Herbert](#) on 3-18-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 3-17-2014 at 10:52 AM

Approved by [Kristen Killough Poulney](#).

View ed 1525 times.

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Keywords: [native](#), [plants](#), [sales](#), [spring](#)

Posted by [Brandon Todd Herbert](#) on 3-28-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 3-17-2014 at 10:53 AM

Approved by [Kristen Killough Poulitney](#).

Viewed 1336 times.

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Keywords: [native](#), [plants](#), [sales](#), [spring](#)

Posted by [Brandon Todd Herbert](#) on 4-11-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 3-17-2014 at 10:54 AM

Approved by [Kristen Killough Poultney](#).

Viewed 1907 times.

Environment

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Keywords: [native](#), [plants](#), [sales](#), [spring](#)

Posted by [Brandon Todd Herbert](#) on 4-25-2014 at 12:00 AM

Edited by [Brandon Todd Herbert](#) on 3-17-2014 at 10:54 AM.

Approved by [Kristen Killough Poutney](#).

Viewed 1622 times.

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Keywords: [native](#), [plants](#), [sales](#), [spring](#)

Posted by [Brandon Todd Herbert](#) on 5-2-2014 at 12:00 AM.

Edited by [Kristen Killough Poulthney](#) on 3-17-2014 at 1:11 PM.

Approved by [Kristen Killough Poulthney](#).

View ed 1445 times.

APPENDIX F:
IDDE Policy

5 WATER QUALITY

5.1 GENERAL

5.1.1 The purpose of this chapter is to provide information on applicable regulatory requirements and procedures related to water quality standards and permitted water discharges at LaRC.

5.1.2 The Clean Water Act is the primary federal law in the United States governing water pollution. The principal body of law currently in effect is based on the Federal Water Pollution Control Amendments of 1972 and was significantly expanded from the Federal Water Pollution Control Amendments of 1948. Major amendments were enacted in the Clean Water Act of 1977 and the Water Quality Act of 1987. The 1972 amendments prohibit the discharge of any pollutant to U.S. waters from a point source discharge unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit.

5.1.3 Under section 303(d) of the Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop Total Maximum Daily Loads (TMDLs) for these waters. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that load among the various sources of that pollutant. Permitted point sources can receive a waste load allocation to meet an established TMDL.

5.1.4 The Federal Water Pollution Control Act and its amendments were passed requiring a uniform permit program nationwide, allowing all states to uniformly control industrial and municipal wastewater discharges. In 1975, Virginia was delegated the authority to administer the Virginia Pollutant Discharge Elimination System (VPDES) permit program. The VPDES permit program was designed in conformance with the applicable NPDES regulations (40 CFR Section 122.26(d)(2) and 40 CFR Section 122.34(b)(5)). The VPDES Permit Regulation, 9 VAC 25-31, establishes the procedures and requirements for this Program to manage industrial and municipal wastewater discharges. The Virginia Department of Environmental Quality (DEQ) is responsible for the VPDES permitting program.

5.1.5 The Virginia DEQ implements the *Virginia Erosion and Sediment Regulations*. Regulations are found at Section 9 VAC 25-840, and certification regulations are found at Section 9 VAC 25-850 of the Virginia Administrative Code. The Erosion and Sediment Control Program's goal is to control soil erosion, sedimentation, and nonagricultural runoff from regulated "land-disturbing activities" to prevent degradation of property and natural resources. The regulations specify "Minimum Standards," which include criteria, techniques and policies that must be followed on all regulated activities.

5.1.6 DEQ is responsible for the issuance, denial, revocation, termination, and enforcement of individual and general Virginia Stormwater Management Program (VSMP) permits for the control of stormwater discharges from municipal separate storm sewer systems (MS4) and construction activities. DEQ administers these programs through Virginia Stormwater Management Program (VSMP) Regulation (9 VAC 25-870), authorized by the Virginia Stormwater Management Act (62.1-44.15:24 of the Code of Virginia).

5.1.7 The Hampton Roads Sanitation District (HRSD), a political subdivision of the Commonwealth of Virginia, was created by public referendum in 1940 to eliminate sewage pollution in the tidal waters of the Chesapeake Bay. LaRC's sanitary wastes are treated by HRSD. This is a permitted, fee-based service.

5.2 REQUIREMENTS

5.2.1 Center Discharge Permits

5.2.1.1 NASA LaRC operates under three water discharge permits which limit the types and quantities of pollutants discharged, and establish monitoring and recordkeeping requirements. Any discharge not allowed under these permits is a violation. To assess compliance with permit conditions, the regulatory agencies conduct periodic inspections at the Center. Copies of LaRC's water discharge permits can be viewed on the LaRC Environmental and Energy Management website at <http://emis/water.htm>. The three permits are:

- a. *VPDES Permit No. 0024741*, which is administered by DEQ, allows LaRC to discharge effluent to surface waters and specifies the allowable discharges, the pollutant limitations, and the monitoring requirements. NASA LaRC has 10 outfalls that are permitted to discharge industrial process wastewater and stormwater runoff. Information regarding monitoring locations and the permit-authorized discharges can be obtained by contacting the SPEEB Environmental staff.
- b. *Virginia Stormwater Management Program MS4 Permit No. VAR040092*, which is administered by DEQ, requires that NASA LaRC develop, implement and enforce a stormwater management program to reduce the discharge of pollutants from the Center to the maximum extent practicable. LaRC's stormwater management program must include minimum control measures as specified in the permit, and best management practices must be implemented to meet the control measures. This permit is also used to address any applicable TMDLs.
- c. *Hampton Roads Sanitation District (HRSD) Permit 0085*, which is administered by HRSD, allows LaRC to discharge nonhazardous industrial wastewater and sanitary sewage to the HRSD sanitary sewer system. HRSD does not provide treatment for hazardous wastes. The HRSD Permit specifies the allowable discharges, pollutant limitations, and monitoring requirements.

5.2.2 Construction/Land Disturbing/Demolition Activities

5.2.2.1 *General Permits for Discharges of Stormwater from Construction Activities* are required for any construction activities or projects on LaRC property resulting in land disturbance equal to or greater than 2,500 square feet. Operators of such activities are required to apply for permit coverage from DEQ for the discharge of stormwater from construction. To obtain a permit, the operator must submit a registration statement as well as the appropriate fee based on the size and location of the activity. Detailed information as well as the appropriate forms can be found at the following link: <http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPPermits/ConstructionGeneralPermit.aspx>

5.2.2.2 The construction general permit requires the construction site operator to develop and implement a site specific Stormwater Pollution Prevention Plan (SWPPP). LaRC requires that the SWPPP be submitted to the SPEEB for review and approval prior to applying for permit coverage with DEQ. Once approved, the contractor shall submit a registration statement to DEQ for permit coverage prior to commencing any land disturbing, demolition, or construction activity.

5.2.2.3 Land-disturbing activities (as defined in 62.1-44.15:51 of the Code of Virginia) over 2,500 square feet require an erosion and sediment control plan and are subject to permitting. However, it is LaRC's policy that all land disturbing activities apply erosion and sediment control practices and stormwater best management practices, regardless of the size of disturbance. These practices must ensure that there is no discharge of sediment from a project and that a project does not adversely affect water quality. Projects not in compliance with these requirements are subject to enforcement action.

5.2.3 Additional Stormwater Management

5.2.3.1 The "Illicit Discharge Detection and Elimination" minimum control measure of the State's General MS4 Permit requires the Center to effectively prohibit non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions. LaRC defines an illicit discharge as any discharge to the MS4 that is not composed entirely of stormwater, except for discharges allowed under the Center's VPDES permit, a discharge approved by DEQ in writing as a de minimis discharge that does not contain a significant amount of pollutants, waters used for firefighting operations/line flushing, and A/C condensate. Illicit discharges are not allowed on the Center and are subject to an array of enforcement actions.

5.2.3.2 Executive Order 13514, "*Federal Leadership in Environmental, Energy, and Economic Performance*," requires that each agency implement and achieve objectives identified in the EPA Stormwater Management Guidance.

5.2.3.3 42 U.S.C. § 17094 requires facilities to preserve the existing site hydrology for any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet.

5.2.3.4 The Virginia Stormwater Management Handbook (*Volumes 1 and 2, First Edition, 1999, and 2nd Edition, 2013*) is the primary guidance for basic hydrology and hydraulics, stormwater best management practice design, and efficiency. This shall be used when designing projects that affect stormwater runoff, especially projects that feature permanent stormwater management facilities such as grass swales, bio-retention, sand filters, etc.

5.2.3.5 LaRC COD Facilities Engineering Standards – Environmental and Energy shall be incorporated to meet stormwater design requirements where applicable

5.2.4 Total Maximum Daily Loads (TMDLs) and the Chesapeake Bay

5.2.4.1 VPDES and MS4 permit requirements require LaRC to comply with all applicable TMDLs approved by the State Water Control Board for waterways into which LaRC discharges. Currently, LaRC is subject to the Chesapeake Bay TMDL with a waste load allocation (WLA). LaRC is also referenced in the Back River TMDL, but is not subject to a WLA.

5.2.4.2 The Clean Water Act requires Federal agencies that own or operate a facility in the Chesapeake Bay watershed to participate in regional and sub-watershed planning and restoration programs (section 117(f)(1)). It also requires Federal agencies that own or occupy real property in the Chesapeake Bay watershed to ensure that the property, and actions taken by the agency with respect to the property, comply with the Chesapeake Bay Agreement and any subsequent agreements and plans (section 117(f)(2)). It is LaRC policy to participate in TMDL-related planning efforts and ensure that actions taken on Center comply with all agreements and plans, including LaRC's Chesapeake Bay Action Plan as required by the MS4 permit.

5.2.4.3 Section 10.4 of the Chesapeake Bay TMDL states that "the federal sector is like other sectors in that the EPA expects federal land owners to be responsible for achieving load allocations (LAs) and WLAs through actions, programs, and policies that will reduce the release of nitrogen, phosphorus, and sediment (CWA Section 313, 33 U.S.C. 1323)." LaRC is subject to Level 3 scoping run reductions for implementation as defined in the Chesapeake Bay TMDL Watershed Implementation Plans.

5.2.4.4 Executive Order 13508, "*Strategy for Restoring and Protecting the Chesapeake Bay Watershed*," directs federal agencies with property in the watershed to reduce loadings of nitrogen, phosphorus, and sediment from federal lands and facilities and to contribute to the jurisdictions' watershed implementation plans.

5.2.4.5 It is LaRC's policy to reduce pollutant loadings to meet the WLA to the maximum extent practicable.

5.3 RESPONSIBILITIES

5.3.1 Facility Environmental Coordinators (FECs) shall:

- a. Have knowledge of facility operations under their control that may result in potential release of water pollutants.
- b. Be aware of applicable permit requirements and act to prevent unpermitted discharges.
- c. Assist the SPEEB Environmental staff by providing information and data required to comply with water permit requirements and compliance inspections.
- d. Contact the SPEEB Environmental staff to determine alternative disposal options in situations where surface water or sanitary discharge is not permissible. If unsure of whether discharge is covered under LaRC water permit, contact the SPEEB Environmental staff for guidance.
- e. In the event of a permit violation or spill, participate in the investigation to determine the cause of the discharge and recommend remedial action to prevent reoccurrence.
- f. Proactively seek out illicit discharges to the stormwater system and notify the SPEEB Environmental staff if any are found and/or eliminated.
- g. Proactively seek out any pollutant discharges to the stormwater system, including nitrogen, phosphorous, sediment, and bacterial loadings. Notify the SPEEB Environmental staff if any are found and/or eliminated.
- h. Participate with the SPEEB Environmental staff in conducting water quality and water quantity pollution prevention (P2) opportunity assessments.
- i. Identify, develop and implement P2 projects.

5.3.2 The Standard Practice and Environmental Engineering Branch (SPEEB) shall:

- a. Monitor and report as required by the permits, maintain all related files, and prepare permit applications.
- b. Serve as the point of contact for LaRC with regulatory agencies. In the event of a permit violation, coordinate the investigation and submit findings to the permitting agency, as necessary.
- c. Approve or disapprove discharges from operations not included on the Center's water discharge permits (ex. decontamination shower water, closed-loop cooling systems, water tanks), to include on-site contractor operations. Determine what

analytical testing, if any, is required for the water discharge to ensure compliance with environmental regulations.

- d. Perform outfall reconnaissance and MS4 illicit discharge inspections as outlined in the MS4 Program Plan.
- e. Serve as the lead on developing programs and procedures necessary to address any TMDLs.
- f. Monitor implementation of TMDL Action Plans for effectiveness in reducing WLA pollutants, and assess and update plans annually.
- g. Manage and update the Center's MS4 Program Plan to ensure General Permit requirements are met and to ensure BMP implementation on existing developed regulated lands to achieve pollutant reductions equivalent to Chesapeake Bay TMDL Level 3 scoping run reductions by 2025.
- h. Oversee appropriate permitting of land disturbing activities, including review of projects, permit determinations, permit submittals (SWPPPs, Plans), and inspections.
- i. Ensure that stormwater best management practices are included in new construction designs and that these designs follow the guidance of the Virginia Stormwater Management Handbook and satisfy the requirements of EISA Section 438, if applicable.

5.3.3 Program Managers/Project Initiators shall:

- a. Ensure that LaRC Environmental and Energy Design Standards are incorporated in projects and contracts where applicable.
- b. Obtain approval from the SPEEB prior to beginning any projects or operations that have water discharges not covered under the Center's water permits. If unsure of whether a discharge is covered under a water permit, contact the SPEEB Environmental staff for guidance. Staff will determine what analytical testing, if any, is required for the water discharge to ensure compliance with environmental regulations.
- c. Work closely with SPEEB if permitting is involved on a project to ensure compliance with that permit at all times.

5.3.4 Contracting Officer's Representatives (CORs) shall:

Ensure that contractors:

- a. Comply with Center's water discharge permit requirements.

- b. Perform operations in a manner that prevents unpermitted water discharges.
- c. Comply with applicable State and Federal laws, regulations, permits, SPEEB policies, procedures, and inspection findings related to land-disturbing activities.

5.3.5 Center Personnel and On-site Contractors shall:

- a. Perform operations in a manner that prevents unpermitted water discharges.
- b. Obtain approval from the SPEEB before the start of any operations that have discharges not covered under the Center's water permits. If unsure whether a discharge is covered under a LaRC water permit, contact the SPEEB Environmental staff for guidance.
- c. In the event of an illicit discharge, immediately contact the LaRC Emergency Dispatcher at 911 (from land line on Center) or at 864-5500 (business phone) or 864-2222 (cell phone). Provide as much information as possible to the dispatcher regarding the nature of the discharge.

13 NATURAL RESOURCES MANAGEMENT

13.1 GENERAL

The purpose of this chapter is to provide information on applicable regulatory requirements and procedures related to natural resources management at NASA LaRC. Natural resource management refers to the management of resources such as land, water, soil, wetlands, plants and animals, with a particular focus on how management affects the quality of life for both present and future generations. Natural resource management is congruent with the concept of sustainable development, a scientific principle that forms a basis for sustainable land management and environmental governance to conserve and preserve natural resources.

13.2 REQUIREMENTS

13.2.1 Endangered Species

13.2.1.1 The Endangered Species Act of 1973 (ESA) was enacted "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved and to provide a program for the conservation of such endangered species and threatened species." The Act states, "All Federal departments and agencies shall seek to conserve endangered species and threatened species and utilize their authorities in furtherance of this Act." In addition, 50 CFR 17.11-12, which was implemented in 1983, addresses endangered and threatened wildlife and plants and provides a listing by species name.

13.2.1.2 Section 7 of the ESA requires all Federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) on all actions that may affect a threatened and endangered species or its habitat.

13.2.1.3 The Act also requires the implementation of steps to protect migratory birds and restore or enhance their habitat whenever possible. This includes preventing or abating pollution or detrimental alteration of the environment, as practicable, and incorporating migratory bird conservation into planning processes whenever possible.

13.2.2 Migratory Birds

13.2.2.1 The Migratory Bird Treaty Act (MBTA), 16 U.S.C. § 703, makes it illegal for people to "take" migratory birds, their eggs, feathers, or nests. "Take" is defined in the MBTA to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof. The statute does not discriminate between live or dead birds and also grants full protection to any bird parts, including feathers.

13.2.2.2 Executive Order 13186 "*Responsibilities of Federal Agencies To Protect Migratory Birds*" requires that each Federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations, develops and

implements a Memorandum of Understanding with the USFWS that shall promote the conservation of migratory bird populations.

13.2.3 Other Wildlife

13.2.3.1 The Marine Mammal Protection Act of 1972 requires protection of marine animals, their critical habitat, and migratory routes. Any action taken on NASA property or utilizing NASA funds, including activities that generate noise or release objects into the air, must assess impacts on marine animals prior to project startup.

13.2.3.2 For issues associated with nuisance and emergency wildlife control, the following guidelines shall be observed:

- a. Minks, muskrats, opossums, raccoons, skunks, weasels, snakes, otters, or mice, and other rodents can be trapped without coordination with SPEEB Environmental staff.
- b. The capture of beavers, bobcats, coyotes, foxes, nutrias, and birds requires SPEEB coordination.
- c. The SPEEB Environmental staff shall be responsible for contacting the appropriate agencies as soon as practicable and coordinating responses.

13.2.4 Wetlands

13.2.4.1 Wetlands Management in Virginia consists of a comprehensive set of laws and regulations, including permit requirements from the Federal Clean Water Act, Virginia Tidal Wetlands Act (1972), and Non-Tidal Wetlands Act (2000). The State Water Control Law provides statutory authority for the Virginia Water Protection (VWP) Permit Program (DEQ), which serves as §401 certification for federal §404 permits and as a state permit regardless of federal permit requirements in both tidal and nontidal wetlands.

13.2.4.2 The VWP Permit Program serves as Virginia's certification program in compliance with 33 U.S.C. § 1341 for permits issued under the authority of the Clean Water Act. Generally, activities requiring a permit include dredging, filling, or discharging any pollutant into or adjacent to surface waters, or otherwise altering the physical, chemical, or biological properties of surface waters, excavating in wetlands, or conducting the following activities in a wetland:

- a. Filling or dumping.
- b. Permanent flooding or impounding.
- c. New activities that cause significant alteration or degradation of existing wetland acreage or functions.

13.2.4.3 A permit from the Virginia Marine Resources Commission, Clean Water Act Section 404 permit, a Rivers and Harbors Act Section 10 permit, and/or a Federal Energy Regulatory Commission license or license re-issuance may be required in addition to a VWP permit.

13.2.4.4 U.S.C. § 1344 requires a permit from the U.S. Army Corps of Engineers (ACOE) for all activities involving dredging or filling of U.S. waters, including wetlands. The EPA is the permitting authority and the USFWS is a reviewing agency.

13.2.4.5 Executive Order 11990, "*Protection of Wetlands*," requires each Federal agency to "take action to minimize the destruction, loss, or degradation of wetlands, unless there is no practicable alternative, and then the proposed action must include all practicable measures to minimize harm to wetlands." Federal agencies must provide an opportunity for early public review of any plans or proposals for new construction in wetlands.

13.2.4.6 NASA regulations on wetlands management specified in 14 CFR 1216.2 require NASA Centers to include wetland protection in their master planning activities and consult with the ACOE, USFWS and the Federal Emergency Management Agency (FEMA).

13.2.4.7 The Virginia Tidal Wetlands Act requires a permit from the Virginia Marine Resources Commission (VMRC) for any activity that would use or develop a tidal wetland.

13.2.5 Coastal Zone Management

13.2.5.1 The Coastal Zone Management Act of 1972 requires that federal actions that will have reasonably foreseeable effects on the land or water uses or natural resources of a state's coastal zone must be consistent with federally approved state coastal management programs. These "coastal effects" include direct effects, as well as cumulative and secondary effects, resulting from the federal actions.

13.2.5.2 Virginia has an approved Coastal Zone Management (CZM) Program which is administered by the DEQ. Virginia's program includes the following core programs: Coastal Land Management, Dunes Management, Fisheries Management, Non-point Source Water Pollution Control, Point Source Water Pollution Control, Shoreline Management, Subaqueous Lands Management, and Wetlands Management. Since LaRC is located within the coastal zone, activities and projects must be carried out in a manner consistent to the maximum extent practicable with Virginia's applicable enforceable policies. All Federal actions are subject to this consistency requirement if they could affect natural resources, land uses, or water uses in the coastal zone.

13.2.6 Chesapeake Bay Preservation Act

13.2.6.1 The Chesapeake Bay Preservation Act (Bay Act) was enacted by the Virginia General Assembly in 1988 as a critical element of Virginia's non-point source management program. The program is designed to improve water quality in the Chesapeake Bay and other waters of the State by requiring the use of effective land management and land use planning, but still allow reasonable development to continue.

13.2.6.2 The Bay Act establishes authority for the oversight of activities in the Chesapeake Bay Resource Protection Areas (RPAs) and Resource Management Areas (RMAs). RPAs include tidal shores, tidal wetlands, and non-tidal wetlands that are contiguous to and connected by surface flow to tidal wetlands and perennial streams, and a 30-meter (100-foot) buffer located landward of these features. RMAs include floodplains, highly erodible soils, highly permeable soils, steep slopes, and areas 30 meters (100 feet) landward of an RPA. Certain development activities within these zones are restricted to protect the quality of state waters.

13.2.7 Vegetation and Landscaping

13.2.7.1 Vegetation, particularly trees, plays a major role in habitat and structure temperatures; reducing excess amounts of sediments, nutrients, and chemical surface runoff; providing flood protection; and increasing carbon storage.

13.2.7.2 LaRC is dedicated to the preservation and management of its natural resources. Projects shall adhere to Hampton's City Code and Zoning Ordinance Section 9-168 as much as practical, including replacement of trees, installation of new trees, and screening and protection of features such as storage areas and parking.

13.2.7.3 LaRC has a Tree City USA designation. Construction and demolition projects shall include landscape plans that will meet guidelines for retaining this designation.

13.2.7.4 The SPEEB Environmental staff shall be consulted on planting, pruning (other than regular maintenance), and removing trees within LaRC as may be necessary to ensure safety or to preserve or enhance the natural environment. Pruning shall adhere to the most current versions of ANSI A300 and ANSI Z133.

13.2.7.5 New landscaping shall include low impact design and xeriscape principles and shall be designed to minimize adverse effects on natural habitats and reduce maintenance in terms of energy, water, manpower, and equipment. Plant materials shall be chosen that are adapted to local environmental conditions to reduce the need for irrigation, fertilization, or pesticides to maintain a healthy condition.

13.2.7.6 Where practical, small islands of undeveloped property, such as those bordered by a building and sidewalk, shall be planted with perennial groundcover and not grass to minimize mowing.

13.2.7.7 A minimum of 14 percent of the total area of new or reconfigured parking areas shall be vegetated while ensuring compliance with EISA Section 438, if applicable.

13.2.7.8 Grass clippings shall not be blown or swept into the street and into storm drains. This would constitute an illicit discharge to the stormwater system, per Section 5.2.3.1 of this document.

13.2.7.9 Executive Order 13112, "*Invasive Species*," requires all federal agencies to prevent the introduction of invasive species, provide for their control, and minimize their economic, ecological, and human health impacts. Projects shall be reviewed for the introduction or spread of invasive species. Invasive species management goals are to control invasive species whenever practicable, and promote the restoration of native species.

13.2.7.10 All trees within, or with a dripline within, an excavation or construction site shall be properly guarded. Protection shall extend 10 feet beyond the dripline. All building materials, equipment, dirt, or other debris shall be kept outside the protection zone.

13.2.7.11 During the period of an emergency, appropriate measures may be taken to restore lost or damaged utilities or damage to structures that can adversely impact the safety and health of personnel. The SPEEB Environmental staff shall be notified of actions as soon as practicable.

13.3 RESPONSIBILITIES

13.3.1 Facility Environmental Coordinators shall:

- a. Be familiar with the natural resources around their facility and understand how the facility's actions can affect those natural resources.
- b. Notify the SPEEB Environmental staff of potential threats or projects that may adversely affect natural resources, such as birds and other wildlife and trees.

13.3.2 The Standard Practice and Environmental Engineering Branch (SPEEB) shall:

- a. Review projects for adverse impacts to natural resources and to ensure that proper management is coordinated.
- b. Validate the need for permit applications.
- c. For work occurring in wetlands, complete a Joint Permit Application and submit to the VMRC. Maintain permit files.

- d. Determine if work is planned within a RPA and notify appropriate regulatory agencies.
- e. Monitor projects for environmental compliance.
- f. Ensure that sustainable design and building practices are utilized to minimize impacts on natural resources.
- g. Monitor updates and/or changes to endangered and threatened wildlife and plant listings to determine if LaRC is impacted and update findings in the LaRC Environmental Resources Document.
- h. Serve as the point of contact with external regulatory agencies regarding natural resource issues at LaRC.
- i. Make final decisions on the care, preservation, replanting, or removal of trees and shrubs on Center.
- j. Maintain an accurate inventory of all Center natural resources, including Geographic Information System (GIS) maps and appropriate descriptions.
- k. Ensure natural resources are included in the Center Master Plan.

13.3.3 Program Managers/Project Initiators shall:

- a. Complete an LF 461 for each proposed action that may affect natural resources.
- b. Coordinate with the SPEEB Environmental staff for wetland permit applications, if applicable.
- c. Coordinate with the SPEEB Environmental staff early in the project development for activities that could potentially affect natural resources.
- d. Notify the SPEEB Environmental staff if tree protection, removal, or alteration is anticipated in a project design.
- e. Notify the SPEEB Environmental staff if work is within an RPA.

13.3.4 Grounds Maintenance Personnel shall:

- a. Protect and minimize the disturbance of natural resources and ecosystems while performing grounds maintenance work.
- b. Minimize the use of pesticides, herbicides, and fertilizers to the maximum extent practicable and use only EPA approved products. Pesticide applications shall be done by a certified pesticide applicator and in accordance with the law.

- c. Notify the SPEEB Environmental staff if trees or shrubs need to be significantly pruned, removed, or altered.
- d. Follow manufacturer's application guidelines for pesticides, herbicides, and fertilizers to ensure that there are no adverse effects on to natural resources.
- e. Notify the SPEEB Environmental staff if any disease or other general health problems are observed related to LaRC's natural resources.
- f. Provide data to SPEEB related to the maintenance of the storm sewer system (amounts of leaf collection, ditch maintenance, sediment removal from catch basins, street sweeping, etc.) as required by the contract.

APPENDIX G:
Outfall Inspection Record Samples

12/27/12 @ 1-2 pm Inspected by: Peter VanDyke Rained on 12/26 (heavy).

Car Wash Area: No operations. No issues noted.

009: New pads in unit. Heavy leaf debris, but no sheens.

003: Pads ok. No issues noted. Heavy scum layer in OWS (from tide)

008: Heavy, clear flow. No issues.

011: Dry. No flow.

007: Light flow, mostly stagnant @ outfall point. Clear, no issues

005: Med. flow out, very low tide. Minnows present, no issues.

006: No issues, stagnant flow.

012: Super clear water in ditch and very low tide. Minnows present @ outfall point. No issues

002: Light flow, low tide. No issues

001: Crystal clear water in ditch, light flow. Minnows and turtle present. No issues

01/04/13 @ 10 am Inspected by: Todd Herbert no recent rain, 39°, Clear

Car Wash area: No operations. No issues, discharge

007: no flow, ^{-natural} iron precip, otherwise clear

011: clear pool of ^(high water table) water present at outfall, no sheens, no flow

006: clear water, tide up, no sheens, no issues

005: Moderate flow, clear, no sheens, ^{no} issues

008: Moderate flow, clear, lots of minnows

003: no issues, no sheens

009: fish observed at outfall apron, no issues, sheens in OWS

012: moderate flow, clear, no pollution observed

002: flow clear, tons of minnows, no issues

001: flight ops

01/11/13 12:55 pm Insp.: Todd Herbert 55°F ^{light} Rain w/in last 2 hours

009: Water in creek very low, no flow, organic sheen in first compartment of OWS, no sheens past first baffle, no issues, pads have been replaced

003
~~008~~: low flow, water clear, no issues, pollution observed

008: moderate to low flow, very clear, minnows, no sheens

011: outfall dry, no issues

006: stagnant, water clear

005: low to moderate flow, clear, no pollution observed

007: stagnant, water clear, iron precip and organic sheen observed

012: low flow, clear discharge

002: low flow, clear, no issues

001: no flow, no issues at outfall discharge point

cur wash: no operations

Clear 01/14/13, Monday Inspector: Peter VanDyke, 58°F No rain, but expected all week

Cur Wash: No operations. * See new inspection check in O/M manual. *

009: Heavy sheen in first baffle. Pads were in place. Light sheen in second baffle and none @ discharge point.

003: No sheen, some leafy/grass debris from landscape ops. Pads in place.

008: Decent clear flow. No issues. Boom in place.

011: Dry.

007: Stagnant, no flow. Standing water @ outfall.

005: Moderate flow, tide going out. Peak high tide just switched. Murky water, but no signs of pollution.

006: Stagnant, no flow.

002: High tide, starting to head out. Lot of minnows present. No sheens

2/14/13 Insp: Todd Herbert

clear, 46° rain within last 24 hrs

001: no flow, water clear

012: high water table / tide, high organics (recent rain)

002: high ^{natural} organics, high water, no apparent pollution

009: outfall clear, high organics from marsh

003: no issues observed, high organics in adjacent marsh ^{water}

008: water clear, low flow, no issues

011: water stagnant but clear

007: discharge clear, low flow

006: no flow, water clear, no pollution, fish present ^{on other side of area}

005: no flow, water clear, no issues

2/21/13 Insp: Peter VanDyke

Clear, cold 45°F 2:00 - 3:15 PM

Rain within last 24 hours

009: Low tide in Creek. Low flow and volume in OWS unit. Slight sheen in first baffle section. None in 2nd and none @ discharge point.

Pads are present in unit. No issues.

003: Low volume and flow @ OWS unit. No sheens.

Water very clear in Creek. No issues. (Pads in place.)

008: Light, low flow. Crystal clear water. No issues.

002: Low flow. No issues. Minnow present; crabs present.

012: Low flow. No issues. Minnows present.

011: Dry, no discharge.

007: Stagnant, no discharge.

005: Light flow (low tide in Creek) Minnows present. No issues to note.

2/21/13 - Continued

006: Stagnant; no discharge.

001: Light, clear flow. No sheen or other signs of pollution.

No issues.

* No outfalls showed signs of any bacterial contamination / issues *

2/27/13 Inspector: Peter VanDyke Clady, 47°F

* Heavy rain yesterday 1/2" +

009: High peak tide. Sheen in 2nd baffle of OWS. None discharging and pads are in place. Some trash debris (bottle, etc.) in OWS unit. from storm. Needs to be skimmed (noticed ROME). (PR)

003: High tide, but water clear in OWS. No sheen. No issues noted. Minnows present.

008: Very clear water @ discharge point. High flow from rain event - nothing abnormal.

011: No discharge. Some standing pools in grassy area in front of outfall.

007: Stagnant water, clear. No issues.

005: High tide. Creek water not very clear, but not from any sediment discharge. Violent storm stirred up a lot of mud, debris, scum, etc. Minnows still present.

006: Stagnant, no flow. No issues.

002: No issues. Minnows present.

012: No issues. Minnows present.

001: Flight operation this week. No accen.

5/3/13 60° clear, sunny, windy Insp: Todd Herbert

009: minor sheen before first baffle of OWS, clear at discharge point / pipe, pads have just been replaced

003: organics from marsh, no pollutants observed

008: large amount of pollen behind boom, clear discharge after boom, frogs & fish observed

012: clear flow

002: no issues observed

001: outfall discharge clean, clear water in ditch

011: no discharge, pooled water clear

006: no problems observed

005: no apparent pollution

007: water clear, no issues

5/9/13 80° sunny Insp: Todd H.

008: moderate flow, clear, frogs observed

003: water slightly murky, possible minor sediment release ^{found no evidence on site}

009: no sheens, clear

001: flight ops, no access

012: clear

002: no issues

011: water high but clear, no discharge

007: clear

005: no issues

006: no issues observed

5/14/13 Inspector: Peter VanDyke

Clear, 64°F

009: Light flow, no screen. Pads in place. Minnows and frogs in OWS unit.

003: Light flow, no screen, fairly clear. No issues.

008: Clear, light flow. No issues.

006: No flow.

005: Light flow. Tide going out. No issues.

007: No flow.

011: AM.

002: Light flow, clear. No issues. Tons of minnows present.

012: Light flow. No issues.

001: Clear, mostly stagnant in ditch. No issues. Munkrat seen.

• No bacteria-related issues noted at outfalls. No signs of illicit discharge.

5/23/13 Inspector: Peter VanDyke

Chance of rain, Cloudy 70°F
→ rained yesterday night

009: No issues noted. Pads in place. High tide.

003: No issues to note. Pads in place. High tide.

006: Med. flow, very clear. No issues.

011: No flow.

007: Light flow, still fairly stagnant. No issues.

005: Tide is high. No issues. * Road fixed *

006: No flow.

5/23/13 cont.

002: No issues. Minnows in ditch and @ outfall points. Good flow.

012: High flow. Water very clear, no signs of any issues.

001: No issues. Fish in ditch, turtles too.

* No signs of any bacteria-related issues @ any outfall point.

5/24/13 Inspector: Peter VanDyke 80°F, sunny, Dry.

009: Ponds in visit. Very low flow (low tide as well). Water in ditches clearer than normal. No issues.

003: Ponds ok. Water in visit very clear. Can see bottom. No issues.
Lots of minnows in visit.

008: Crystal clear, low flow @ outfall. No issues.

011: Dry. No discharge.

007: No discharge.

005: No issues.

006: No discharge.

002: Clear, light flow. Some trash (bottles, bags) seen in ditch.
Notified Grandy to collect & dispose.

012: Same as 002. No issues.

001: Clear, light flow. Minnows present. No issues.

* No bacteria-related issues noted at any outfalls. (PK)

APPENDIX H:
Stormwater Construction Program Requirements

ROME-01 35 23.00 41 (MAY 2012)
RESEARCH OPERATIONS, MAINTENANCE,
ENGINEERING (ROME)

NOTE: This guide specification covers the requirements for section scope.

SECTION 01 35 40.00 41

NASA LANGLEY ENVIRONMENTAL REQUIREMENTS
05/14

NOTE: Section updated, P. Van Dyke 5-27-14

Section updated, Mason Proctor 5-8-14

Section updated 4-10-14, Mason Proctor

Section updated 3-10-14 (P. Van Dyke)

Section updated, per Mason Proctor, 8-6-13.

NOTE: The requirements defined herein are job related environmental requirements and can be selected by the engineer in accordance with the contract's requirements. Specific deviations, deletions, or modifications of the requirements relative to a given subheading are not permitted without concurrence of the LaRC Environmental Office.

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of these specifications to the extent referenced. The publications are referred to in the text by the basic designation only.

The listed versions of the following references were used during the development of this design and are the Government approved versions to be used herein. There may be newer versions of certain references that have been released since the commencement and/or approval of the design effort. However, in order to comply with the Government technical requirements, not all of the latest versions of the listed references were adopted and the versions listed herein shall be utilized.

AMERICAN NURSERY & LANDSCAPE ASSOCIATION (ANLA)

ANSI/ANLA S50.1

(2004) American Standard for Nursery Stock

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA SW-846 (Third Edition; Update IV) Test Methods
for Evaluating Solid Waste:
Physical/Chemical Methods

LANGLEY RESEARCH CENTER (LaRC)

LRC 8500.1 (May 2013) Environmental and Energy
Program Manual

STATE OF VIRGINIA ADMINISTRATIVE CODE (VAC)

9 VAC 5-40-20 Standard for Fugitive Dust/Emissions

9 VAC 20-60 Title 9, Agency 20, Chapter 60: Hazardous
Waste Management Regulations

9 VAC 25-840 Title 9, Agency 25, Chapter 840: Erosion
And Sediment Control Regulations

9 VAC 25-870 Title 9, Agency 25, Chapter 870: Virginia
Stormwater Management Program (Vsmp)
Regulation

9 VAC 25-880 General Permit for Discharges of
Stormwater from Construction Activities

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 112 Oil Pollution Prevention

40 CFR 262 Standards Applicable to Generators of
Hazardous Waste

40 CFR 265 Interim Status Standards for Owners and
Operators of Hazardous Waste Treatment,
Storage, and Disposal Facilities

40 CFR 272 Standards For Universal Waste Management

40 CFR 279 Standards for the Management of Used Oil

40 CFR 61 National Emission Standards for Hazardous
Air Pollutants

40 CFR 761 Polychlorinated Biphenyls (PCBs)
Manufacturing, Processing, Distribution in
Commerce, and Use Prohibitions

49 CFR 172 Hazardous Materials Table, Special
Provisions, Hazardous Materials
Communications, Emergency Response
Information, and Training Requirements

49 CFR 173 Shippers - General Requirements for
Shipments and Packagings

49 CFR 178 Specifications for Packagings

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)

DEQ-VSWCD-013

(2011) Virginia Erosion and Sediment
Control Handbook, Third Edition

1.2 SUBMITTALS

The Contractor shall submit documents to LaRC Environmental as required in the Section(s) of these specifications that are applicable to the project. The following provides a complete list of document submittals included in these specifications with a reference to the applicable Section(s):

SD-01 Preconstruction Submittals

LF 461, Environmental Project Planning Form (Submitted by Program Manager/Project Initiator prior to project initiation)

Waste Management Plan

Stormwater Pollution Prevention Plan (SWPPP)

DEQ Construction General Permit Registration Statement

DEQ Construction General Permit Coverage Letter - Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Construction Activities

Emergency Spill Plan

SD-02 Shop Drawings

SWM Plan as-builts

SD-06 Test Reports

Waste Sampling Analytical Reports

SD-07 Certificates

Hazardous Waste Manifest and Land Ban Forms

Asbestos Manifest

PCB Manifest

Shipping Document

SD-11 Closeout Submittals

DEQ Construction General Permit Notice of Termination Letter

Project Materials Usage Spreadsheet and MSDS's

Lead and Chromium Waste Generation Report

Construction and Demolition Debris Recycling/Diversion Report

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 PROJECT REVIEWS AND AUDITS

3.1.1 Environmental Project Planning Form - LF 461

LaRC Environmental requires the completion of a LF 461, Environmental Project Planning Form, for all projects except for those activities listed on the "LF 461 Excluded Activities List". This list is available on the LaRC Environmental website. The Project Manager/Project Initiator is responsible for completing and submitting the LF 461 to LaRC Environmental at the earliest planning stages of the project. No on-site work shall begin until there is confirmation that a LF 461 has been submitted and the Program Manager/Project Initiator has received comments and project requirements from LaRC Environmental.

The Project Manager/Project Initiator is responsible for ensuring that the Contractor is provided, in writing, all comments and environmental requirements associated with the LF 461, and any updates, and the Contractor is responsible for complying with such, as well as the requirements included in these specifications.

NOTE: An LF 461 is required for any project or activity requiring a digging permit.

3.1.2 Environmental Audits

LaRC Environmental will perform periodic audits of project sites to ensure that the Contractor is complying with all environmental requirements throughout the duration of the project.

3.2 AIR QUALITY

3.2.1 Emissions Controls

Fugitive Dust Emissions - The Contractor shall control fugitive dust emissions in accordance with Virginia Regulation 9 VAC 5-40-90 (Standard for Fugitive Dust/Emissions). The Contractor shall take reasonable precautions to prevent particulate matter from becoming airborne during the project. Examples of such reasonable precautions include:

- o Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land;
- o Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which may create airborne dust; the paving of roadways and the maintaining of them in a clean condition;
- o Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations;
- o Open equipment for conveying or transporting materials likely to

create objectionable air pollution when airborne shall be covered or treated in an equally effective manner at all times when in motion; and

- o The prompt removal of spilled or tracked dirt or other materials from paved streets and of dried sediments resulting from soil erosion.

Volatile Organic Compounds (VOCs) - The Contractor shall store volatile organic liquids, including fuels and solvents, in closed, labeled containers. Volatile organic liquids shall not be stored with materials that have a high capacity to adsorb VOC emissions or in occupied spaces.

3.3 WATER QUALITY

3.3.1 Stormwater Pollution Prevention Plan (SWPPP)

For Land Disturbing Activities (LDAs) over 2,500 square feet, a SWPPP shall be developed in accordance with 9 VAC 25-870 and 9 VAC 25-880. All SWPPPs must contain the following:

- o Erosion and Sediment Control Plan (See Section 3.3.2);
- o Stormwater Management Plan (See Section 3.3.3);
- o Pollution Prevention Plan (See Section 3.3.4); and
- o Information specifying any additional control measures to meet the requirements of existing Total Maximum Daily Loads (TMDL).

The SWPPP must address the following requirements to the extent otherwise required by state law or regulations and any applicable requirements of a state permit: (1) Control stormwater volume and velocity within the site to minimize soil erosion; (2) Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion; (3) Minimize the amount of soil exposed during construction activity; (4) Minimize the disturbance of steep slopes; (5) Minimize sediment discharges from the site - erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site; (6) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible; (7) Minimize soil compaction and, unless infeasible, preserve topsoil; (8) Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days; and (9) Utilize outlet structures that withdraw water from the surface, unless infeasible, when discharging from basins and impoundments.

The Contractor shall submit the SWPPP to the Contracting Officer for LaRC Environmental review and approval. The SWPPP will be approved or disapproved by the Contracting Officer within 15 days of submittal. If the plan is determined to be inadequate, LaRC Environmental will specify such modifications and/or terms and conditions that will allow approval of the SWPPP plan and notify the Contracting Officer of changes needed. The Plan shall be resubmitted until approval is granted. No LDAs may commence without an approved SWPPP.

3.3.2 Erosion and Sediment Control (ESC)

Regardless of project size or amount of land disturbance, the Contractor shall be responsible for ensuring that adequate erosion and sediment controls are utilized on site to prevent sediment from leaving the activity. ESC controls should be properly installed and maintained throughout the project.

LDAs greater than or equal to 2,500 square feet require the Contractor to develop a site specific Erosion and Sediment Control Plan that complies with Virginia Erosion and Sediment Control Law and Regulations (§ VAC 25-840) and meets the state's 19 minimum standards outlined in § VAC 25-840-40 (as applicable). The Contractor shall utilize the standards and specifications of the Third Edition of the Virginia Erosion and Sediment Control Handbook as minimum standards. The Contractor shall submit the ESC Plan to the Contracting Officer as part of the SWPPP (Section 3.3.1) submittal for review and approval.

The Contractor shall have certified Virginia Responsible Land Disturber (RLD) on staff and associated with the project. The certification shall be included in the ESC Plan/SWPPP submittal.

3.3.3 Stormwater Management Plan (SWM Plan)

For LDAs disturbing over 2,500 square feet, project designs will have complied with VSMP Regulations Part II B - Technical Criteria for Regulated Land-Disturbing Activities (§ VAC 25-870-32 through § VAC 25-870-92). Should an approved SWM Plan be associated with this project and its design, it is the construction Contractor's responsibility to implement the Plan and its design features. An approved SWM Plan (if applicable) shall be incorporated into the Contractor's SWPPP submittal. A copy of the approved SWM Plan can be obtained through the Contracting Officer.

At the completion of the project, a construction record drawing(s) ("as-built") for permanent stormwater management facilities shall be provided bearing the seal and signature of a Virginia registered professional, certifying that the stormwater management facilities have been constructed in accordance with the approved SWM plan. SWM Plan as-builts shall be submitted to the Contracting Officer.

3.3.4 Pollution Prevention Plan (P2 Plan)

LDAs greater than or equal to 2,500 square feet require the Contractor to develop a site specific P2 Plan in accordance with § VAC 25-870-56. The P2 Plan must identify potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site and describe control measures that will be used to minimize pollutants in stormwater discharges from the construction site must be developed before land disturbance. This Plan shall be included in the Contractor's SWPPP submittal.

At a minimum, the P2 Plan must be designed, installed, implemented, and maintained to: (1) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge; (2) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to

precipitation and to stormwater; and (3) Minimize the discharge of pollutants from spills and leaks.

3.3.5 Construction General Permit (CGP) Coverage

LDAs greater than or equal to one (1) acre require Construction General Permit coverage under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Construction Activities from the Department of Environmental Quality (DEQ). The Virginia Stormwater Management Program Permit Regulations can be found in 9 VAC 25-070 and the General Permit for Discharges of Stormwater from Construction Activities can be found in 9 VAC 25-030.

Upon SWPPP approval, the Contractor shall register for CGP coverage from DEQ in accordance with 9 VAC 25-030-50. The Contractor is considered the Permit Operator and is responsible for all CGP registration fees. The Contractor shall submit a copy of the DEQ Construction General Permit Registration Statement to the Contracting Officer for review and approval prior to submittal to DEQ. LaRC Environmental will ensure correct information is presented on the Contractor's Registration Statement.

The Contractor may begin LDAs once a DEQ Construction General Permit coverage letter has been received. No LDAs shall commence without an approved SWPPP and CGP coverage. The Contractor shall submit a copy of the permit coverage letter to the Contracting Officer once received.

The Contractor shall be responsible for terminating permit coverage once the project site has been permanently stabilized and verified by the Contracting Officer. The Contractor shall provide the Contracting Officer with a copy of the DEQ Construction General Permit Notice of Termination Letter.

3.4 PROJECT MATERIAL AND CHEMICAL STORAGE, USE, AND REPORTING REQUIREMENTS

3.4.1 Storage Requirements

The Contractor shall ensure that all project materials and chemicals required to perform work are:

- o Stored in an isolated and secure area at the project site to prevent release to the environment.
- o Labeled properly and used according to the manufacturer's guidelines, and that containers are kept closed except for when in use.
- o Removed from NASA LaRC after project completion, unless prior approval is granted by LaRC Environmental for materials to remain.

3.4.2 Use and Tracking Requirements

 NOTE: The requirements below are primarily targeted to the materials conveyed and used on-site by the Contractors/Subcontractors without access to the LaRC's Chemical Material Tracking System (CMTS).

The Contractor shall track the usage of certain project materials/chemicals brought on the Center. Project materials the Contractor shall track

include, but are not limited to:

1. Metals. Metals used in construction, rehab, or other project activities shall be tracked in pounds by alloy such as stainless steel, copper, brass, lead, carbon steel, etc.
2. Asphalt. Paving material shall be tracked in total tons of new asphalt laid and total tons of old asphalt removed. Exception: asphalt material used for or removed from parking lots.
3. Lead-Acid Batteries. The installation, maintenance, or removal of lead-acid batteries shall be tracked by number of batteries installed, maintained, or removed and total weight of each battery type.
4. Paints, which shall be tracked by total amount used.
5. Fuels and Oils. The use of fuels and oils, or their removal from existing equipment, shall be tracked by total amount and type of fuel and oil used or removed. Exception: fuels and oils used in or removed from motor vehicles.
6. Coolants and Refrigerants, which shall be tracked by total amount used. Exception: coolants and refrigerants being tracked in LaRC's electronic Refrigerant Compliance Manager tracking system.
7. Lead-containing products, such as solder, cable sheathings/sleeves, coatings, etc. Products containing lead shall be tracked by total weight of the materials used.
8. Other chemicals and products (solvents, cleaners, lubricants, degreasers, adhesives, acids, etc.), which shall be tracked by type of material and amount used.

Tracking shall not be required if the materials are being used for simple building maintenance and basic administrative, housekeeping, and janitorial services. A pre-prepared Project Materials Usage Spreadsheet is available from LaRC Environmental for tracking purposes.

3.4.3 Reporting Requirements

The Contractor shall submit the project materials usage spreadsheet and MSDS's to LaRC Environmental upon completion of the project. If the project extends into a new calendar year, the Contractor shall provide the data for all materials used in the preceding year by January 31st of the new calendar year.

3.5 WASTE MANAGEMENT AND DISPOSAL

NOTE: Waste Management Responsibility will be determined early in the planning stages of the project. The Waste Management Requirements (Government responsible) will apply for waste generated by ROME personnel during in-house routine maintenance tasks. All other Projects/Tasks (ROME or NASA) that generate hazardous waste will be reviewed by LaRC Environmental to determine if the Government or Contractor will be responsible for the disposal of the waste. Information submitted through the LF



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

June 04, 2012

The Whiting-Turner Contracting Company
c/o Eric Murphy
300 East Joppa Rd
Baltimore, MD 21286

RE: VSMP Construction Stormwater General Permit No. VAR10-12-103624, NASA Integrated Engineering Services Building (IESB) - Corner of West Taylor and West Reed Street - Hampton

Dear Eric Murphy:

The staff has received your registration statement for the proposed land-disturbing project under the VSMP General Permit for Discharges of Stormwater from Construction Activities (VAR10) on 05/24/2012. The project's date of coverage is either the date in which you receive this letter or fifteen business days after the postmark date of the project's complete registration packet submittal to DCR.

By submission of the registration statement, you acknowledge that the proposed project is eligible for coverage under the General Permit and you have agreed to the conditions in the General Permit including any applicable conditions regarding Total Maximum Daily Loads and impaired waters. Please be aware that § 10.1-603.8:1 of the Code of Virginia and the General Permit contain additional requirements if nonpoint nutrient offsets are chosen to meet the post-development nonpoint nutrient runoff compliance requirements. Section § 10.1-603.8:1 I requires that the permit issuing authority require that nonpoint nutrient offsets or other off-site options achieve the necessary nutrient reductions PRIOR TO THE COMMENCEMENT OF THE PERMITTEE'S LAND DISTURBING ACTIVITY.

A copy of the General Permit is available on the DCR web page at http://www.dcr.virginia.gov/soil_and_water/documents/vsmgngenpermvar10.pdf. Print the VAR10 permit and read it carefully as you are responsible for meeting all the permit conditions. The General Permit will expire on June 30, 2014.

Your project specific permit registration number is VAR10-12-103624. A copy of this permit coverage letter, registration statement, copy of the VAR10 permit, and the project's stormwater pollution prevention plan (SWPPP) must be at the construction site from the date of commencement of the construction activity to final stabilization. In addition, DCR staff conducts periodic site inspections for compliance with the permit.

Additional information on the permit and DCR staff contact information are available at http://www.dcr.virginia.gov/soil_and_water/vsmp.shtml on the DCR web page.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Douglas Fritz".

J. Douglas Fritz
Stormwater Permits Manager



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

August 07, 2012

Fleming L. Dodd
13141 N. Enon Church Rd.
Chester, VA 23836

**RE: VSMP Construction Stormwater General Permit No. VAR10-13-100158, NASA Langley Research Center
Stratton Substation - Commercial - 10 Victory Street - Hampton**

Dear Fleming L. Dodd:

The staff has received your registration statement for the proposed land-disturbing project under the VSMP General Permit for Discharges of Stormwater from Construction Activities (VAR10) on 08/01/2012. The project's date of coverage is either the date in which you receive this letter or fifteen business days after the postmark date of the project's complete registration packet submittal to DCR.

By submission of the registration statement, you acknowledge that the proposed project is eligible for coverage under the General Permit and you have agreed to the conditions in the General Permit including any applicable conditions regarding Total Maximum Daily Loads and impaired waters. Please be aware that § 10.1-603.8:1 of the Code of Virginia and the General Permit contain additional requirements if nonpoint nutrient offsets are chosen to meet the post-development nonpoint nutrient runoff compliance requirements. Section § 10.1-603.8:1 I requires that the permit issuing authority require that nonpoint nutrient offsets or other off-site options achieve the necessary nutrient reductions **PRIOR TO THE COMMENCEMENT OF THE PERMITTEE'S LAND DISTURBING ACTIVITY.**

A copy of the General Permit is available on the DCR web page at http://www.dcr.virginia.gov/soil_and_water/documents/vsmpgenpermvar10.pdf. Print the VAR10 permit and read it carefully as you are responsible for meeting all the permit conditions. The General Permit will expire on June 30, 2014.

Your project specific permit registration number is VAR10-13-100158. A copy of this permit coverage letter, registration statement, copy of the VAR10 permit, and the project's stormwater pollution prevention plan (SWPPP) must be at the construction site from the date of commencement of the construction activity to final stabilization. In addition, DCR staff conducts periodic site inspections for compliance with the permit.

Additional information on the permit and DCR staff contact information are available at http://www.dcr.virginia.gov/soil_and_water/vsmp.shtml on the DCR web page.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Douglas Fritz".

J. Douglas Fritz
Stormwater Permits Manager



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

June 07, 2013

M. K. Taylor Jr Contractors, Inc.
PO Box 519
Hampton, VA 23669

RE: Construction Stormwater General Permit No. VAR10-13-101677, NASA LaRC - Commercial - Replacement of Underground Steam Line - 9 Langley Blvd - Hampton

Dear Randy D. Parrish:

The staff has received your registration statement for the proposed land-disturbing project under the General Permit for Discharges of Stormwater from Construction Activities (VAR10) on 05/29/2013. The project's date of coverage is either the date in which you receive this letter or fifteen business days after the postmark date of the project's complete registration packet submittal to DCR.

By submission of the registration statement, you acknowledge that the proposed project is eligible for coverage under the General Permit and you have agreed to the conditions in the General Permit including any applicable conditions regarding Total Maximum Daily Loads and impaired waters. Please be aware that § 10.1-603.8:1 of the Code of Virginia and the General Permit contain additional requirements if nonpoint nutrient offsets are chosen to meet the post-development nonpoint nutrient runoff compliance requirements. Section § 10.1-603.8:1 I requires that the permit issuing authority require that nonpoint nutrient offsets or other off-site options achieve the necessary nutrient reductions **PRIOR TO THE COMMENCEMENT OF THE PERMITTEE'S LAND DISTURBING ACTIVITY.**

A copy of the General Permit is available on the DCR web page at http://www.dcr.virginia.gov/soil_and_water/documents/vsmgngenpermvar10.pdf. Print the VAR10 permit and read it carefully as you are responsible for meeting all the permit conditions. The General Permit will expire on June 30, 2014.

Your project specific permit registration number is VAR10-13-101677. A copy of this permit coverage letter, registration statement, copy of the VAR10 permit, and the project's stormwater pollution prevention plan (SWPPP) must be at the construction site from the date of commencement of the construction activity to final stabilization. In addition, DCR staff conducts periodic site inspections for compliance with the permit.

Additional information on the permit and DCR staff contact information are available at http://www.dcr.virginia.gov/soil_and_water/vsmp.shtml on the DCR web page.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ginny Snead".

Ginny Snead, P.E.
Regulatory Programs Manager



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

August 13, 2013

Heard Construction, Inc.
201 Dexter Street West Suite 101
Chesapeake, VA 23324

RE: Construction General Permit Coverage #VAR10-14-100253, Upgrades to NASA Langley Fire Station & Emergency Op. Center - 3500 SF facility construction and interior renovations of existing building - - Hampton

Dear Ceber White:

DEQ has received your registration statement for the proposed land-disturbing project under the General Permit for Discharges of Stormwater from Construction Activities (VAR10) on 8/1/13. The project's date of coverage is either the date of this letter or fifteen business days after the postmark date of the project's complete registration packet submittal to DEQ.

By submission of the registration statement, you acknowledge that the proposed project is eligible for coverage under the General Permit and you have agreed to the conditions in the General Permit including any applicable conditions regarding Total Maximum Daily Loads and impaired waters. Please be aware that §62.1-44.15:35 of the Code of Virginia and the General Permit contain additional requirements if nonpoint nutrient offsets are chosen to meet the post-development nonpoint nutrient runoff compliance requirements. Section §62.1-44.15:35 I requires that the permit issuing authority require that nonpoint nutrient offsets or other off-site options achieve the necessary nutrient reductions **PRIOR TO THE COMMENCEMENT OF THE PERMITTEE'S LAND DISTURBING ACTIVITY.**

A copy of the General Permit is available on the DEQ web page at <http://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/CGPvar10.pdf>. Print the VAR10 permit and read it carefully as you are responsible for meeting all the permit conditions. The General Permit will expire on June 30, 2014.

Your project specific permit registration number is VAR10-14-100253. A copy of this permit coverage letter, registration statement, copy of the VAR10 permit, and the project's Stormwater Pollution Prevention Plan (SWPPP) must be at the construction site from the date of commencement of the construction activity to final stabilization. In addition, DEQ staff conduct periodic site inspections for compliance with the permit.

Additional information on the permit and DEQ staff contact information are available at <http://www.deq.virginia.gov/programs/water/stormwatermanagement/vsmppermits/constructiongeneralpermit.aspx> on the DEQ web page.

Sincerely,

Ginny Snead, P. E., Manager
Office of Stormwater Management



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

November 8, 2013

MK Taylor Jr Contractors Inc
PO Box 519
Hampton, VA 23669

RE: Construction General Permit Coverage #VAR10C315, NASA LaRC - Commercial - Replacement of Underground Steam Line Piping - 15 W Taylor St - Hampton

Dear Randy Parrish:

DEQ has received your registration statement for the proposed land-disturbing project under the General Permit for Discharges of Stormwater from Construction Activities (VAR10). The project's date of coverage is either the date of this letter or fifteen business days after the postmark date of the project's complete registration packet submittal to DEQ.

By submission of the registration statement, you acknowledge that the proposed project is eligible for coverage under the General Permit and you have agreed to the conditions in the General Permit including any applicable conditions regarding Total Maximum Daily Loads and impaired waters. Please be aware that §62.1-44.15:35 of the Code of Virginia and the General Permit contain additional requirements if nonpoint nutrient offsets are chosen to meet the post-development nonpoint nutrient runoff compliance requirements. Section §62.1-44.15:35.1 requires that the permit issuing authority require that nonpoint nutrient offsets or other off-site options achieve the necessary nutrient reductions **PRIOR TO THE COMMENCEMENT OF THE PERMITTEE'S LAND DISTURBING ACTIVITY.**

A copy of the General Permit is available on the DEQ web page at <http://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/CGPvar10.pdf>. Print the VAR10 permit and read it carefully as you are responsible for meeting all the permit conditions. The General Permit will expire on June 30, 2014.

Your project specific permit registration number is VAR10C315. A copy of this permit coverage letter, registration statement, copy of the VAR10 permit, and the project's Stormwater Pollution Prevention Plan (SWPPP) must be at the construction site from the date of commencement of the construction activity to final stabilization. In addition, DEQ staff conduct periodic site inspections for compliance with the permit.

Additional information is available on the DEQ webpage at: <http://www.deq.virginia.gov/programs/water/stormwatermanagement/vsmpppermits/constructiongeneralpermit.aspx>. For questions, contact the Permit Processor at (804) 698-4039.

Sincerely,

Ginny Snead, PE

Ginny Snead, P. E., Manager
Office of Stormwater Management



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

12/9/2013

All Phase Services LLC
34 SW 5th Ave
Delray Beach, VA 33444

RE: Construction General Permit Coverage #VAR10C696, NASA Langley Research Center - Demolition - 11 Langley Blvd Hampton

Dear Carlos Martins:

DEQ has received your registration statement for the proposed land-disturbing project under the General Permit for Discharges of Stormwater from Construction Activities (VAR10). The project's date of coverage is either the date of this letter or fifteen business days after the postmark date of the project's complete registration packet submittal to DEQ.

By submission of the registration statement, you acknowledge that the proposed project is eligible for coverage under the General Permit and you have agreed to the conditions in the General Permit including any applicable conditions regarding Total Maximum Daily Loads and impaired waters. Please be aware that §62.1-44.15:35 of the Code of Virginia and the General Permit contain additional requirements if nonpoint nutrient offsets are chosen to meet the post-development nonpoint nutrient runoff compliance requirements. Section §62.1-44.15:35 I requires that the permit issuing authority require that nonpoint nutrient offsets or other off-site options achieve the necessary nutrient reductions **PRIOR TO THE COMMENCEMENT OF THE PERMITTEE'S LAND DISTURBING ACTIVITY.**

A copy of the General Permit is available on the DEQ web page at <http://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/CGPvar10.pdf>. Print the VAR10 permit and read it carefully as you are responsible for meeting all the permit conditions. The General Permit will expire on June 30, 2014.

Your project specific permit registration number is **VAR10C696**. A copy of this permit coverage letter, registration statement, copy of the VAR10 permit, and the project's Stormwater Pollution Prevention Plan (SWPPP) must be at the construction site from the date of commencement of the construction activity to final stabilization. In addition, DEQ staff conduct periodic site inspections for compliance with the permit.

Additional information is available on the DEQ webpage at:

<http://www.deq.virginia.gov/programs/water/stormwatermanagement/vsmpppermits/constructiongeneralpermit.aspx> For questions, contact the Permit Processor at (804) 698-4039.

Sincerely,

A handwritten signature in cursive script that reads "Frederick K. Cunningham".

Frederick K. Cunningham, Director
Office of Water Permits



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

Fax: 804-698-4019 - TDD (804) 698-4021

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

1/15/2014

Aspen Construction Company
PO Box 6
Hackensack, MN 56452

RE: Construction General Permit Coverage #VAR10C750, NASA Langley Research Center - Sanitary sewer repairs and upgrade - 1 Lewis Loop Hampton

Dear Mark Lannon:

DEQ has received your registration statement for the proposed land-disturbing project under the General Permit for Discharges of Stormwater from Construction Activities (VAR10). The project's date of coverage is either the date of this letter or fifteen business days after the postmark date of the project's complete registration packet submittal to DEQ.

By submission of the registration statement, you acknowledge that the proposed project is eligible for coverage under the General Permit and you have agreed to the conditions in the General Permit including any applicable conditions regarding Total Maximum Daily Loads and impaired waters. Please be aware that §62.1-44.15:35 of the Code of Virginia and the General Permit contain additional requirements if nonpoint nutrient offsets are chosen to meet the post-development nonpoint nutrient runoff compliance requirements. Section §62.1-44.15:35 I requires that the permit issuing authority require that nonpoint nutrient offsets or other off-site options achieve the necessary nutrient reductions **PRIOR TO THE COMMENCEMENT OF THE PERMITTEE'S LAND DISTURBING ACTIVITY.**

A copy of the General Permit is available on the DEQ web page at <http://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/CGPvar10.pdf>. Print the VAR10 permit and read it carefully as you are responsible for meeting all the permit conditions. The General Permit will expire on June 30, 2014.

Your project specific permit registration number is **VAR10C750**. A copy of this permit coverage letter, registration statement, copy of the VAR10 permit, and the project's Stormwater Pollution Prevention Plan (SWPPP) must be at the construction site from the date of commencement of the construction activity to final stabilization. In addition, DEQ staff conduct periodic site inspections for compliance with the permit.

Additional information is available on the DEQ webpage at: <http://www.deq.virginia.gov/programs/water/stormwatermanagement/vsmpppermits/constructiongeneralpermit.aspx>. For questions, contact the Permit Processor at (804) 698-4039.

Sincerely,

Frederick K. Cunningham, Director
Office of Water Permits



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
Fax: 804-698-4019 - TDD (804) 698-4021
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

2/14/2014

BCI Construction USA Inc
45 Empire Dr
Belleville, IL 62220

RE: Construction General Permit Coverage #VAR10D018, NASA Langley Research - Commercial - Replace waterlines and valves - 15 Langley Blvd Hampton

Dear Carl B Butner Jr:

DEQ has received your registration statement for the proposed land-disturbing project under the General Permit for Discharges of Stormwater from Construction Activities (VAR10). The project's date of coverage is either the date of this letter or fifteen business days after the postmark date of the project's complete registration packet submittal to DEQ.

By submission of the registration statement, you acknowledge that the proposed project is eligible for coverage under the General Permit and you have agreed to the conditions in the General Permit including any applicable conditions regarding Total Maximum Daily Loads and impaired waters. Please be aware that §62.1-44.15:35 of the Code of Virginia and the General Permit contain additional requirements if nonpoint nutrient offsets are chosen to meet the post-development nonpoint nutrient runoff compliance requirements. Section §62.1-44.15:35 I requires that the permit issuing authority require that nonpoint nutrient offsets or other off-site options achieve the necessary nutrient reductions **PRIOR TO THE COMMENCEMENT OF THE PERMITTEE'S LAND DISTURBING ACTIVITY.**

A copy of the General Permit is available on the DEQ web page at <http://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/CGPvar10.pdf>. Print the VAR10 permit and read it carefully as you are responsible for meeting all the permit conditions. The General Permit will expire on June 30, 2014.

Your project specific permit registration number is **VAR10D018**. A copy of this permit coverage letter, registration statement, copy of the VAR10 permit, and the project's Stormwater Pollution Prevention Plan (SWPPP) must be at the construction site from the date of commencement of the construction activity to final stabilization. In addition, DEQ staff conduct periodic site inspections for compliance with the permit.

Additional information is available on the DEQ webpage at: <http://www.deq.virginia.gov/programs/water/stormwatermanagement/vsmpppermits/constructiongeneralpermit.aspx>. For questions, contact the Permit Processor at (804) 698-4039.

Sincerely,

Frederick K. Cunningham, Director
Office of Water Permits

APPENDIX I:
Construction Inspection Report Examples

Stormwater Construction Site Inspection Report

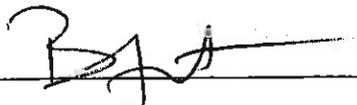
General Information			
Project Name	Firestation Upgrades		
DCR Tracking No.	VAR-14-100253	Location	Fire station
Date of Inspection	11/8/13	Start/End Time	3:30
Inspector's Name(s)	Todd Herbert		
Describe present phase of construction	utility, foundation work		
Type of Inspection: NASA MS4 Permit #VAR040092 Oversight Inspection			
Weather Information			
Has there been a storm event since the last inspection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Weather at time of this inspection?			
<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: Temperature: 60			
Maintaining and Updating SWPPP Compliance			
Is the SWPPP retained, along with a copy of state's permit, registration statement, and acknowledgement letter from DCR, at the construction site or other location easily accessible during normal business hours? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>need to post letter</i>			
Is the following information posted conspicuously near the main entrance of the construction site:			
<ul style="list-style-type: none"> • A copy of the permit coverage letter including the registration number for the construction activity <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No • The location of the SWPPP (or internet address for an electronic version) <input type="checkbox"/> Yes <input type="checkbox"/> No • The name and telephone number of a contact person for scheduling SWPPP viewing times? <input type="checkbox"/> Yes <input type="checkbox"/> No 			
Have any design changes to the construction project been needed? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, has the SWPPP been updated and the date of the SWPPP update logged? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated recorded in the SWPPP? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Inspection Compliance			
Are weekly and/or post rain producing event site inspections being conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are the inspections documented? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Is the documentation available for review at the time of the inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are pollution prevention controls, BMPs, and measures (identified in the SWPPP) revised as appropriate, but in no case later than 7 days following the inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Condition of Receiving Waters (Outfall Inspection)			
Is a stormwater discharge apparent at the time of the inspection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Is there evidence that there has been a discharge of polluted runoff (e.g., muddy flows, sediment deposits, etc.) to the receiving water? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

Non-Compliance/Comments

Unable to locate posted coverage letter and SWPPP location as required

Overall Site Issue				
	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas (not actively being worked) properly stabilized?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	Are natural resource areas (e.g., wetlands, mature trees, etc.) protected with barriers or similar BMPs?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	Are perimeter controls and sediment barriers adequately installed and maintained?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4	Are discharge points and receiving waters free of any sediment deposits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5	Are storm drain inlets properly protected?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
6	Is the construction exit preventing sediment from being tracked into the street?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
8	Are washout facilities available, clearly marked, and maintained?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
11	Are non-stormwater discharges (e.g., dewatering) properly controlled?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Print name and title: Todd Hebert, SEI

Signature:  Date: 11/8/13

Stormwater Construction Site Inspection Report

General Information			
Project Name	LTPT demo		
DCR Tracking No.	VAR10C646	Location	LTPT
Date of Inspection	2/10/14	Start/End Time	
Inspector's Name(s)	Peter Van Dyke		
Describe present phase of construction	Demo of main building.		
Type of Inspection: NASA MS4 Permit #VAR040092 Oversight Inspection			
Weather Information			
Has there been a storm event since the last inspection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Weather at time of this inspection?			
<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: Temperature: 30°F			
Maintaining and Updating SWPPP Compliance			
Is the SWPPP retained, along with a copy of state's permit, registration statement, and acknowledgement letter from DCR, at the construction site or other location easily accessible during normal business hours? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Is the following information posted conspicuously near the main entrance of the construction site:			
<ul style="list-style-type: none"> • A copy of the permit coverage letter including the registration number for the construction activity <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No • The location of the SWPPP (or internet address for an electronic version) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No • The name and telephone number of a contact person for scheduling SWPPP viewing times? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 			
Have any design changes to the construction project been needed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, has the SWPPP been updated and the date of the SWPPP update logged? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated recorded in the SWPPP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Inspection Compliance			
Are weekly and/or post rain producing event site inspections being conducted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are the inspections documented? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Is the documentation available for review at the time of the inspection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are pollution prevention controls, BMPs, and measures (identified in the SWPPP) revised as appropriate, but in no case later than 7 days following the inspection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Condition of Receiving Waters (Outfall Inspection)			
Is a stormwater discharge apparent at the time of the inspection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Is there evidence that there has been a discharge of polluted runoff (e.g., muddy flows, sediment deposits, etc.) to the receiving water? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

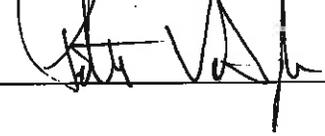
Non-Compliance/Comments

• No issues noted. Site in really good shape with perimeter controls around

Overall Site Issue

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas (not actively being worked) properly stabilized?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	Are natural resource areas (e.g., wetlands, mature trees, etc.) protected with barriers or similar BMPs?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	Are perimeter controls and sediment barriers adequately installed and maintained?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	OK
4	Are discharge points and receiving waters free of any sediment deposits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5	Are storm drain inlets properly protected?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	OK
6	Is the construction exit preventing sediment from being tracked into the street?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Dumpsters on site w/ plugs
8	Are washout facilities available, clearly marked, and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	N/A
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
11	Are non-stormwater discharges (e.g., dewatering) properly controlled?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	N/A

Print name and title: Peter VanDyle

Signature:  Date: 2/10/14

Stormwater Construction Site Inspection Report

General Information			
Project Name	Aspen Aspen Construction - I ¹ I repairs		
Tracking No.	VAR10C750	Location	1229
Date of Inspection	3/12/14	Start/End Time	11:00 - 11:30
Inspector's Name(s)	Peter VonDyke		
Describe present phase of construction	Adding lift station - digging, field work		
Type of Inspection:	MS4 overnight		
Inspection Schedule			
<input type="checkbox"/> Upon initial installation of erosion & sediment controls		<input checked="" type="checkbox"/> At least once during every two-week period	
<input type="checkbox"/> Within 48 hours of any runoff-producing storm event		<input type="checkbox"/> Upon completion of the project	
Weather Information			
Has there been a storm event since the last inspection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Weather at time of this inspection?			
<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds			
<input type="checkbox"/> Other:		Temperature: 60 ^o F	
<input type="checkbox"/> Records and Field Inspection		<input checked="" type="checkbox"/> Field Inspection Only	
Maintaining and Updating SWPPP Compliance			
Is the SWPPP retained, along with a copy of state's permit, registration statement, and acknowledgement letter from DCR, at the construction site or other location easily accessible during normal business hours? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Is the following information posted conspicuously near the main entrance of the construction site:			
<ul style="list-style-type: none"> • A copy of the permit coverage letter including the registration number for the construction activity <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No • The location of the SWPPP (or internet address for an electronic version) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No • The name and telephone number of a contact person for scheduling SWPPP viewing times? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 			
Have any design changes to the construction project been needed? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, has the SWPPP been updated and the date of the SWPPP update logged? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated recorded in the SWPPP? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Inspection Compliance			
Are weekly and/or post rain producing event site inspections being conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are the inspections documented? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Is the documentation available for review at the time of the inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are pollution prevention controls, BMPs, and measures (identified in the SWPPP) revised as appropriate, but in no case later than 7 days following the inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Condition of Receiving Waters (Outfall Inspection)			
Is a stormwater discharge apparent at the time of the inspection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No dewatering			
Is there evidence that there has been a discharge of polluted runoff (e.g., muddy flows, sediment deposits, etc.) to the receiving water? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

Not reviewed
 Not reviewed
 Site only

Non-Compliance/Comments

◦ Dewater bag was leaking unfiltrated water b/c connection needed attention
 → contractor fixed on site

Overall Site Issue				
	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas (not actively being worked) properly stabilized?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	Are natural resource areas (e.g., wetlands, mature trees, etc.) protected with barriers or similar BMPs?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	Are perimeter controls and sediment barriers adequately installed and maintained?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(P)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Add haybales to back of silt-fenced soil pile.
4	Are discharge points and receiving waters free of any sediment deposits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5	Are storm drain inlets properly protected?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Scrap gutters around <i>(P)</i>
6	Is the construction exit preventing sediment from being tracked into the street?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	N/A
7	Is trash/litter from work areas collected and placed in covered dumpsters?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
8	Are washout facilities available, clearly marked, and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	N/A
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	N/A Not @ this site
10	Are materials that are potential stormwater contaminants stored inside or under cover?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
11	Are non-stormwater discharges (e.g., dewatering) properly controlled?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Dewater bag connection issue. Bypass.

Print name and title: Peter VanDyke

Signature: *Peter VanDyke* Date: 3/12/14

Stormwater Construction Site Inspection Report

General Information			
Project Name	IESB Building site		
Tracking No.		Location	New Town 2
Date of Inspection	5/16/2014	Start/End Time	2 pm /
Inspector's Name(s)	Todd Herbert		
Describe present phase of construction	Building construction, landscaping		
Type of Inspection:	CoF, SWM Compliance		
Inspection Schedule			
<input type="checkbox"/> Upon initial installation of erosion & sediment controls		<input checked="" type="checkbox"/> At least once during every two-week period	
<input type="checkbox"/> Within 48 hours of any runoff-producing storm event		<input type="checkbox"/> Upon completion of the project	
Weather Information			
Has there been a storm event since the last inspection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Weather at time of this inspection?			
<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: Temperature: 60°			
<input type="checkbox"/> Records and Field Inspection		<input checked="" type="checkbox"/> Field Inspection Only	
Maintaining and Updating SWPPP Compliance			
Is the SWPPP retained, along with a copy of state's permit, registration statement, and acknowledgement letter from DCR, at the construction site or other location easily accessible during normal business hours? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Is the following information posted conspicuously near the main entrance of the construction site:			
<ul style="list-style-type: none"> • A copy of the permit coverage letter including the registration number for the construction activity <input type="checkbox"/> Yes <input type="checkbox"/> No • The location of the SWPPP (or internet address for an electronic version) <input type="checkbox"/> Yes <input type="checkbox"/> No • The name and telephone number of a contact person for scheduling SWPPP viewing times? <input type="checkbox"/> Yes <input type="checkbox"/> No 			
Have any design changes to the construction project been needed? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, has the SWPPP been updated and the date of the SWPPP update logged? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated recorded in the SWPPP? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Inspection Compliance			
Are weekly and/or post rain producing event site inspections being conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are the inspections documented? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Is the documentation available for review at the time of the inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are pollution prevention controls, BMPs, and measures (identified in the SWPPP) revised as appropriate, but in no case later than 7 days following the inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Condition of Receiving Waters (Outfall Inspection)			
Is a stormwater discharge apparent at the time of the inspection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Is there evidence that there has been a discharge of polluted runoff (e.g., muddy flows, sediment deposits, etc.) to the receiving water? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

Concerns over improper planting of trees were forwarded to contract manager / QA/QC personnel

Non-Compliance/Comments

- Drop inlet nearest the protection spine has no silt fence and appears clogged
- silt fence down for other inlets in this Northeast Area of the project

Overall Site Issue				
	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas (not actively being worked) properly stabilized?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	Are natural resource areas (e.g., wetlands, mature trees, etc.) protected with barriers or similar BMPs?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	Are perimeter controls and sediment barriers adequately installed and maintained?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	See above
4	Are discharge points and receiving waters free of any sediment deposits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5	Are storm drain inlets properly protected?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	See above
6	Is the construction exit preventing sediment from being tracked into the street?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
8	Are washout facilities available, clearly marked, and maintained?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
11	Are non-stormwater discharges (e.g., dewatering) properly controlled?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Print name and title: Brandon Todd Herbert, Strayhan Environmental

Signature:  Date: 5/16/14

APPENDIX J:
Training Certifications

COMMONWEALTH OF VIRGINIA
Soil and Water Conservation Board
203 Governor Street, Suite 206, Richmond, Virginia 23219
Telephone: (804) 371-7505

**EROSION AND SEDIMENT CONTROL
Combined Administrator**

Brandon Todd Herbert
508 Warwick Avenue
Norfolk, Virginia 23509

EXPIRES

11/30/15

CERTIFICATE NUMBER

6146



Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL AND RECREATIONAL RESOURCES

Director

Division of Stormwater Management

cut here

This Certificate is for your records and should be kept in a safe location. Please detach the above certificate and the two wallet size cards below. It is your responsibility to ensure that your certification is kept current and that you meet the requirements for re-certification before the expiration date.
If your personal information such as name or address changes, please fill out the requested information on the back of your certificate and mail it to the address shown to help us keep your file up to date. Failure to do so may cause a delay in receiving important information.
If you have any questions regarding your certification, you may contact DCR at (804) 371-7505 for assistance.

Cut carefully around cards to detach.

COMMONWEALTH OF VIRGINIA
Soil and Water Conservation Board
203 Governor Street, Suite 206, Richmond, Virginia 23219
Telephone: (804) 371-7505

Erosion and Sediment Control
Combined Administrator

Expires

11/30/15

Cert #

6146

Brandon Todd Herbert



COMMONWEALTH OF VIRGINIA
Soil and Water Conservation Board
203 Governor Street, Suite 206, Richmond, Virginia 23219
Telephone: (804) 371-7505

Erosion and Sediment Control
Combined Administrator

Expires

11/30/15

Cert #

6146

Brandon Todd Herbert



COMMONWEALTH OF VIRGINIA
Soil and Water Conservation Board
203 Governor Street, Suite 206, Richmond, Virginia 23219
Telephone: (804) 371-7533

EROSION AND SEDIMENT CONTROL



924 Old Dominion Drive
Chesapeake, VA 23323

CERTIFICATE NUMBER
5482

1
11/30/14



Department of Conservation & Recreation
LOWERING VIRGINIA'S NATURAL AND RECREATION RESOURCES

A. Renee Paul

Director
Division of Soil & Water Conservation

-----cut here-----

This Certificate is for your records and should be kept in a safe location. Please detach the above certificate and the two wallet size cards below. It is your responsibility to ensure that your certification is kept current and that you meet the requirements for re-certification before the expiration date.

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Cut carefully around cards to detach.

COMMONWEALTH OF VIRGINIA
Soil and Water Conservation Board
203 Governor Street, Suite 206
Richmond, Virginia 23219
Telephone: (804) 371-7533
Erosion and Sediment Control



Expires
11/30/14

Card #
5482

COMMONWEALTH OF VIRGINIA
Soil and Water Conservation Board
203 Governor Street, Suite 206
Richmond, Virginia 23219
Telephone: (804) 371-7533
Erosion and Sediment Control

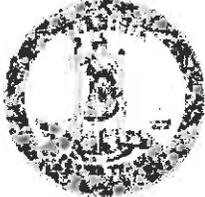
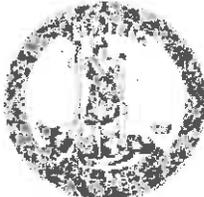


Expires
11/30/14

Card #
5482

ON-LINE COMBINED ADMINISTRATOR RE-CERTIFICATION PROGRAM

STEP 5: PRINT YOUR NEW CERTIFICATE

	<p>COMMONWEALTH OF VIRGINIA Soil and Water Conservation Board 203 Governor Street, Suite 206, Richmond, Virginia 23219 Telephone (804) 786-2064</p>	
<p>Expires 05/31/2017</p>	<p>Peter R. Van Dyke</p>	<p>Certificate Number 6059</p>
		<p><i>Ginny Snead</i> Director Division of Soil & Water Conservation</p>

	<p>COMMONWEALTH OF VIRGINIA Soil and Water Conservation Board 203 Governor Street, Suite 206 Richmond, Virginia 23219 Telephone (804) 786-2064</p>	
<p>Expires 05/31/2017</p>	<p>Peter R. Van Dyke</p>	<p>Certificate 6059</p>

APPENDIX K:
Street Sweeping Records

COMMERCIAL POWER SWEEPING

(FY 13-14)

Date	Hours	Truck #	(each dump)		=	CYDS
			# of cyds	# of dumps		
22-Oct-13	6.25	75	6	3	=	18
23-Oct-13	2.25	75	6	2	=	12
24-Oct-13	3.00	75	6	2	=	12
26-Oct-13	4.25	75	6	1.5	=	9
	<u>15.75</u>					<u>51</u>

Date	Hours	Truck #	(each dump)		=	CYDS
			# of cyds	# of dumps		
10-Feb-14	7.00	75	4	4	=	16
14-Feb-14	6.75	75	4	4	=	16
18-Feb-14	5.75	53	5	2	=	10
22-Feb-14	8.00	53	5	2	=	10
1-Mar-14	8.75	53	5	3	=	15
	<u>36.25</u>					<u>67</u>

additional sweeping

Date	Hours	Truck #	(each dump)		=	CYDS
			# of cyds	# of dumps		
24-Mar-14	6.25	75	3	4	=	12
5-Apr-14	11.75	75	5	4	=	20
12-Apr-14	5.00	80	3	4	=	12
	<u>23.00</u>					<u>44</u>

Date	Hours	Truck #	(each dump)		=	CYDS
			# of cyds	# of dumps		
22-Apr-14	5.75	80	5	2	=	10
23-Apr-14	3.75	80	5	2	=	10
26-Apr-14	4.50	64	3	1	=	3
	<u>14.00</u>					<u>23</u>

Date	Hours	Truck #	(each dump)		=	CYDS
			# of cyds	# of dumps		
					=	0
					=	0
					=	0
	<u>0.00</u>					<u>0</u>

Total FY12-13 185 CYDS

COMMERCIAL POWER SWEEPING

(FY 12-13)

(each dump)						
Date	Hours	Truck #	# of cyds	# of dumps	=	CYDS
20-Oct-12	6.50	74	2	8	=	16
22-Oct-12	2.25	58	4	0	=	0
23-Oct-12	5.25	58	4	2	=	8
24-Oct-12	3.00	58	4	2	=	8
	<u>17.00</u>					<u>32</u>

(each dump)						
Date	Hours	Truck #	# of cyds	# of dumps	=	CYDS
28-Jan-13	3.75	66	1	1	=	1
29-Jan-13	5.50	66	3	4	=	12
2-Feb-13	6.75	74	3	4	=	12
	<u>16.00</u>					<u>25</u>

(each dump)						
Date	Hours	Truck #	# of cyds	# of dumps	=	CYDS
15-Apr-13	5.50	75	5	2.5	=	12.5
17-Apr-13	4.00	75	5	1.5	=	7.5
20-Apr-13	6.00	66	3	4	=	12
	<u>15.50</u>					<u>32</u>

(each dump)						
Date	Hours	Truck #	# of cyds	# of dumps	=	CYDS
15-Jul-13	7.00	58	4	1	=	4
17-Jul-13	4.75	75	3	1	=	3
20-Jul-13	4.00	58	4	1	=	4
	<u>15.75</u>					<u>11</u>

Total FY12-13	100	CYDS
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APPENDIX L:
Yard Inspection Records

Environmental Yard Area Inspection Form

MS4 Permit VAR040092 Compliance

Inspector: Peter VanDyke

Investigation Date: 8/26/13

Yard Location/Description: Grounds Maintenance

Outfall # for Site Discharge: 11

Is the outfall running clear? Dry at time of inspection. No flow.

Describe what the yard is mainly used for:

- 2 buildings store equipment.
- Mulch / top soil / branches stored outside

YARD OBSERVATIONS:

Is soil or other erodible materials stored properly, if applicable? Yes No *

Are there any indications of illegal dumping activities? Yes No

Is there any indication of stormwater pollution? Yes No

Are there any suspected illicit connections to the MS4? Yes No

Are dumpster properly maintained and emptied? Yes No

Are chemicals or waste materials properly managed and no exposed to rain? Yes
No

Notes:

Storm debris piled outside. No runoff issues were seen, but a battery storage system should be evaluated and planned. Silt fence or jersey block on area possibly.

Are there any stormwater concerns associated with the Yard area? List pollutants, exposure, or activities of concern, if any.

* See note on other page.

What plan of action will follow to eliminate stormwater concerns?

SPEEB is going to evaluate/plan for a dedicated storage area for debris.

Resolution:

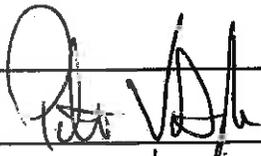
Planning in place. Looking for budget.

Inspector's Name:

Title:

Signature:

Date:


Peter V. Della
8/26/13

Environmental Yard Area Inspection Form

MS4 Permit VAR040092 Compliance

Inspector: Peter Van Dyke

Investigation Date: 11/19/13

Yard Location/Description: NASA Garden Area

Outfall # for Site Discharge: 001

Is the outfall running clear? Yes.

Describe what the yard is mainly used for:

NASA garden club - growing fruits/veggies. Tilling, etc

YARD OBSERVATIONS:

Is soil or other erodible materials stored properly, if applicable? Yes No

Are there any indications of illegal dumping activities? Yes No

Is there any indication of stormwater pollution? Yes No

Are there any suspected illicit connections to the MS4? Yes No

Are dumpster properly maintained and emptied? Yes No

Are chemicals or waste materials properly managed and not exposed to rain? Yes
No

Notes:

- Minimal fertilizer used,
- site not situated where runoff to MS4 is a issue. surrounded by grass

- Offseason now. Ground mostly bare

Are there any stormwater concerns associated with the Yard area? List pollutants, exposure, or activities of concern, if any.

NA

What plan of action will follow to eliminate stormwater concerns?

NA

Resolution:

NA

Inspector's Name:

Title:

Signature:

Date:

11/19/13

Environmental Yard Area Inspection Form
MS4 Permit VAR040092 Compliance

Inspector: Peter VonDyke

Investigation Date: 2/25/14

Yard Location/Description: 1244 Hanger Yard

Outfall # for Site Discharge: 001

Is the outfall running clear? Yes

Describe what the yard is mainly used for:

Washing of planes (very seldom, VPD/ES permitted). Storage of products - No exposure/ indoor sheds.

YARD OBSERVATIONS:

Is soil or other erodible materials stored properly, if applicable? Yes No

Are there any indications of illegal dumping activities? Yes No

Is there any indication of stormwater pollution? Yes No

Are there any suspected illicit connections to the MS4? Yes No

Are dumpster properly maintained and emptied? Yes No

Are chemicals or waste materials properly managed and not exposed to rain? Yes
No

Notes: No issues noted.

Are there any stormwater concerns associated with the Yard area? List pollutants, exposure, or activities of concern, if any.

NA

What plan of action will follow to eliminate stormwater concerns?

NA

Resolution:

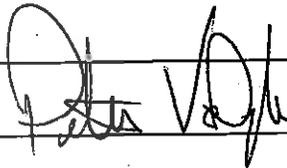
NA

Inspector's Name:

Title:

Signature:

Date:



2/25/14

Environmental Yard Area Inspection Form

MS4 Permit VAR040092 Compliance

Inspector: Peter VanDyke

Investigation Date: 5/26/14

Yard Location/Description: Vehicle Maintenance

Outfall # for Site Discharge: 008

Is the outfall running clear? Yes. Light, clear flow.

Describe what the yard is mainly used for:

Fueling, storage, and maintenance of Gov. vehicles.

YARD OBSERVATIONS:

Is soil or other erodible materials stored properly, if applicable? Yes No

Are there any indications of illegal dumping activities? Yes No

Is there any indication of stormwater pollution? Yes No

Are there any suspected illicit connections to the MS4? Yes No

Are dumpster properly maintained and emptied? Yes No

Are chemicals or waste materials properly managed and no exposed to rain? Yes
No

Notes:

→ 3 baby foxes were observed under a Conex. Indications of feeding - told personnel not to feed foxes.

No SWM issues noted.

Are there any stormwater concerns associated with the Yard area? List pollutants, exposure, or activities of concern, if any.

None identified. Spill kit was on site next to gas pumps. No staining or odors found.

What plan of action will follow to eliminate stormwater concerns?

NA

Resolution:

NA

Inspector's Name:

Title: Pat Viti

Signature: Pat Viti

Date: 5/26/14