



MILLENNIUM ENGINEERING, INC.

Land Surveyors and Civil Engineers

POLLUTION PREVENTION AND OPERATION AND MAINTENANCE PLAN

FOR THE

SITE PLAN

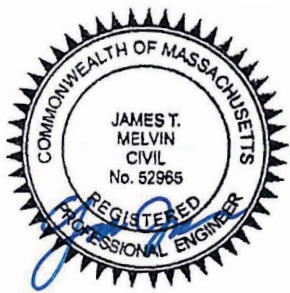
AT

**2 AND 13 MERRIMAC STREET
AMESBURY, MA**

PREPARED FOR:

**14 MERRIMAC STREET, LLC
2 MERRIMAC STREET
AMESBURY, MA**

DATE: JULY 24, 2024



Massachusetts:

62 Elm Street-
Salisbury, MA 01952
Phone: 978-463-8980

New Hampshire:

13 Hampton Road
Exeter, NH 03833
Phone: 603-778-0528

Pollution Prevention and Operations and Maintenance Plan Construction Phase

1.0 OWNERSHIP AND RESPONSIBILITY

1.1 Stormwater Management System Owners:

The owners of the land (14 Merrimac Street, LLC and any successors) on which the stormwater management systems are located shall be the owners of the systems.

1.2 Parties Responsible for Operation and Maintenance:

The general contractor of the project shall be responsible for the operation and maintenance of the stormwater management systems during construction.

1.3 Erosion and Sedimentation Control Plan: Additional information on Erosion and Sedimentation Control Plan is provided in detail on Sheet C-11 of the design plans.

2.0 IDENTIFICATION OF POTENTIAL STORMWATER POLLUTANTS

The purpose of this section is to identify pollutants that could impact storm water during the construction of this project.

2.1 Significant Material Inventory

Pollutants that result from clearing, grading, excavation and building materials that have the potential to be present in storm water runoff are listed in Table 1. This table includes information regarding material type, chemical and physical description and the specific regulated storm water pollutants associated with each material.

2.2 Potential Areas for Storm Water Contamination

The following potential source areas of storm water contamination were identified and evaluated:

- Cleared and graded areas;
- Asphalt roadway and driveway construction;
- Building construction;
- Construction site entrance;
- Tree removal areas;
- All undisturbed areas.

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Table 1

Potential Construction Site Storm Water Pollutants

TRADE NAME MATERIAL	CHEMICAL/PHYSICAL DESCRIPTION ⁽¹⁾	STORM WATER POLLUTANTS ⁽¹⁾
Pesticides (insecticides, fungicides, herbicides, rodenticides)	Various colored to colorless liquid, powder, pellets, or grains	Chlorinated hydrocarbons, organophosphates, carbamates, arsenic
Fertilizer	Liquid or solid grains	Nitrogen, phosphorous
Plaster	White granules of powder	Calcium sulphate, calcium carbonate, sulfuric acid
Cleaning Solvents	Colorless, blue or yellow-green liquids	Perchloroethylene, menthylene chloride, trichloroethylene, petroleum distillates
Bituminous Asphalt	Black solid	Oil, petroleum distillates
Concrete	White solid	Limestone, sand
Glue, adhesives	White or yellow liquid	Polymers, epoxies
Paints	Various colored liquid	Metal oxides, Stoddard solvent, talc, calcium carbonate, arsenic
Curing compounds	Creamy white liquid	Naphtha
Wastewater from construction equipment washing	Water	Soil, oil and grease, solids
Wood preservatives	Clear, amber or dark brown liquid	Stoddard solvent, petroleum distillates, arsenic, copper, chromium
Hydraulic oil/fluids	Brown or red oily petroleum hydrocarbon	Mineral oil
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE
Diesel Fuel	Clear, blue-green to yellow liquid	Petroleum distillates, oil and grease, naphthalene, xylenes
Kerosene	Pale yellow liquid petroleum hydrocarbon	Coal oil, petroleum distillates
Antifreeze/coolant	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)
Erosion	Solid particles	Soil, sediment

⁽¹⁾ Data obtained from MSDSs when available.

Table 2 presents site specific information regarding storm water pollution potential for each of these areas.

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Table 2

Locations of Potential Sources of Storm Water Contamination

POTENTIAL STORM WATER CONTAMINATION POINT	DRAINAGE AREAS ⁽¹⁾	POTENTIAL POLLUTANTS	POTENTIAL PROBLEMS
Cleared and graded areas	All	Soil erosion, fertilizer, pesticides	Erosion of soils from cleared and graded areas have the potential to discharge into protected resource areas
Asphalt roads and driveways and construction site entrance	All	Asphalt, hydraulic oil, gasoline, antifreeze, soil erosion, fertilizer, pesticides	Leaking hydraulic oil and antifreeze from clearing, grading and asphalt application construction equipment. Gasoline and diesel fuel spills while fueling construction equipment, and erosion of exposed and stockpiled soils. Asphalt chemicals can be released to storm water if a rain event occurs before curing is complete.
Building construction	All	Plaster, cleaning solvents, asphalt, concrete, paints, hydraulic oil, gasoline, antifreeze, soil erosion, fertilizer, pesticides, glue/adhesives, curing compounds, wood preservatives, kerosene	Accidental spills of paints and cleaning solvents, leaking hydraulic oil and antifreeze from construction equipment, gasoline and diesel fuel spills while fueling construction equipment, erosion of exposed and stockpiled soils, and degradation of scrap dry wall can potentially contaminate storm water.
Tree removal areas	All	Soil erosion, fertilizer, pesticides	Ruts caused by logging equipment can fill with water, preventing complete re-vegetation.
All undisturbed areas	All	None	No storm water related issues with completely vegetated areas.

2.3 Summary of Available Storm Water Sampling Data

No storm water sampling data is available for this site.

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STORMWATER MANAGEMENT CONTROLS

The purpose of this section is to identify the types of temporary and permanent erosion and sediment controls that will be used during construction activities. The controls will provide soil stabilization for disturbed areas and structural controls to divert runoff and remove sediment. This section will also address control of other potential storm water pollutant sources such as construction materials (paints, concrete dust, solvents, and plaster), waste disposal, control of vehicle traffic, and sanitary waste disposal.

2.4 Temporary and Permanent Erosion Control Practices

A list of best management practices (BMPs) is included as Table 3;

2.5 Site Wide Control Measures

To prevent soil from washing into adjacent resource areas the following BMPs will be implemented:

- 2.5.1 Silt Sock barriers will be placed along the perimeter of the area to be cleared and graded before any clearing or grading takes place.
- 2.5.2 Soil stockpiles are to be covered and surrounded by a double row of hay bales.
- 2.5.3 A construction entrance will be installed

**Table 3
BEST MANAGEMENT PRACTICE MAINTENANCE**

BEST MANAGEMENT PRACTICE	DRAINAGE AREAS	TYPE	MAINTENANCE
Silt Sock	All	Construction Phase	- Built up sediment will be removed from behind silt sock fence when it has reached one-third the height of the fence.
Stabilized Construction Entrance	All	Construction Phase	- The paved street adjacent to the site entrance will be swept daily to remove excess mud, dirt, or rock tracked from the site. - Dump trucks hauling material from the construction site are to have their payload covered with a tarpaulin. - The stabilized construction entrance will be inspected for sediment tracked on the road, for clean gravel, and to make sure that the culvert beneath the entrance is working and that all traffic use the stabilized entrance when leaving the site.

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2.6 Construction Practices to Minimize Storm Water Contamination

All waste materials will be collected and stored in a securely lidded metal dumpster rented through a reputable, licensed solid waste management company. The dumpster is to be located outside the buffer zone to resource areas on site. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week and the trash disposed of in accordance to all local, state and federal regulations. All personnel will be instructed regarding the correct procedure for waste disposal. All sanitary waste will be collected from the portable units a minimum of three times per week by a licensed sanitary waste management contractor. Good housekeeping and spill control practices will be followed during construction to minimize storm water contamination from petroleum products, fertilizers, paints and concrete. Good housekeeping practices are listed below:

- 2.6.1 A stabilized construction entrance will be constructed at the curb cut in Merrimac Street to reduce vehicle tracking of sediments.
- 2.6.2 The paved street adjacent to the site entrance will be swept daily to remove excess mud, dirt, or rock tracked from the site.
- 2.6.3 Dump trucks hauling material from the construction site are to have their payload covered with a tarpaulin.
- 2.6.4 All ruts caused by equipment used for cutting and removing of trees will be graded and re-vegetated.
- 2.6.5 Fertilizers will be applied only in the minimum amounts recommended by the manufacturer.
- 2.6.6 Fertilizers will be worked into the soil to limit exposure to storm water.
- 2.6.7 Fertilizers will be stored in a covered shed and partially used bags will be transferred to a sealable bin to avoid spills.
- 2.6.8 All vehicles on site will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage.
- 2.6.9 Petroleum products will be stored in tightly sealed containers which are clearly labeled.
- 2.6.10 Spill kits will be included with all fueling sources and maintenance activities.
- 2.6.11 Any asphalt substances used on-site will be applied according to the manufacturer's recommendation.
- 2.6.12 Sanitary waste will be collected from portable units a minimum of three times a week to avoid overfilling.
- 2.6.13 A covered dumpster will be used for all waste materials.
- 2.6.14 All paint containers and curing compounds will be tightly sealed and stored when not in use. Excess paint will not be discharged into the storm sewers, but will be properly disposed of in accordance to the manufacturer's instructions.
- 2.6.15 Materials and equipment necessary for spill clean up will be kept in the temporary material storage trailer on-site. Equipment will include, but not be limited to, brooms, dust pans, mops, rags, gloves,

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goggles, kitty litter, sand, saw dust, and plastic and metal trash containers.

- 2.6.16 Spray guns will be cleaned on a removable tarp.
- 2.6.17 All spills will be cleaned up upon discovery. Spills large enough to reach the storm water treatment system will be reported to the engineer, environmental monitor, Haverhill Conservation Commission and the Nation Response Center at (800) 424-8802.
- 2.6.18 Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site.
- 2.6.19 Form release oil used for building foundations will be applied over a pallet covered with an absorbent material to collect excess fluid. The absorbent material will be replaced and disposed of properly when saturated.
- 2.6.20 When testing/cleaning water supply lines, the discharge from the tested pipe(s) will be collected and conveyed to a completed section of the storm sewer for discharge into the sedimentation basin.

2.7 Coordination of BMPs with Construction Activities

Structural BMPs will be coordinated with construction activities so the BMP is in place before construction begins. The following BMPs will be coordinated with construction activities:

- 2.7.1 The temporary perimeter controls (silt fence and silt sock) will be installed before any clearing and grading begins.
- 2.7.2 Clearing and grading will not occur in an area until it is necessary for construction to proceed.
- 2.7.3 The stabilized construction site entrance and sedimentation basins will be constructed before clearing and grading begins.
- 2.7.4 Once construction activity ceases permanently in an area, that area will be stabilized with permanent seed and mulch.
- 2.7.5 After the entire site is stabilized, the accumulated sediment will be removed from the sediment basins or other structural BMPs.
- 2.7.6 The temporary perimeter controls (silt fence and silt sock) will not be removed until all construction activities at the site are complete and soils have been stabilized.

3.0 CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

This Operation and Maintenance Plan reflects the storm water management requirements of the City of Amesbury and the Commonwealth of Massachusetts, as well as the requirements of the US EPA's National Pollutant Discharge Elimination System (NPDES) permit. There

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are no other applicable State or Federal requirements for sediment and erosion site plans (or permits) or storm water management site plans (or permits).

4.0 INSPECTION AND MAINTENANCE OF STORMWATER MANAGEMENT CONTROLS:

Visual inspections of cleared and graded areas should be performed weekly (silt fence/silt sock barriers should be inspected daily by the General Contractor). The inspection will be conducted by the Erosion Control monitor. The inspection will, at a minimum, verify that the structural BMPS listed in Table 3 of this plan are in good condition and minimizing erosion. Any entrapped silt shall be removed to an area outside of the buffer zone and wetland resource areas; silt fence and silt socks shall be replaced as necessary. The inspection will also verify that the procedures used to prevent storm water contamination from construction materials and petroleum products are effective.

The maintenance inspection report will be made after each inspection. A copy of the report form to be completed by the Erosion Control Monitor is provided in Appendix A of this Operations and Maintenance Plan. Completed forms will be maintained on-site during the entire construction project. Copies of the forms will be sent weekly to the environmental monitor, design engineer, and Amesbury Conservation Commission. Following construction, the completed forms will be retained at the general contractor's office for a minimum of one year.

If construction activities or design modifications are made to the site plan which could impact storm water, this plan will be amended appropriately. The amended plan will have a description of the new activities that contribute to the increased pollutant loading and the planned source control activities.

4.1 Construction Phase

- 4.1.1 Erosion Control shall be inspected and maintained/reinforced on a daily basis during construction.
- 4.1.2 Built up sediment will be removed from behind silt fence when it has reached one-third the height of the fence.
- 4.1.3 Silt fences will be inspected for depth of sediment, for tears, to see if the fabric is securely attached to the fence posts, and to see that fence posts are securely in the ground.
- 4.1.4 All exposed soil finish surfaces shall be immediately landscaped and stabilized; or loamed, seeded and mulched with a layer of mulch hay. Outside of the growing season, surfaces shall be covered with a layer of mulch hay until climate conditions allow for seeding.
- 4.1.5 Immediately upon installation of any catch basin or storm drain, erosion control devices shall be set and staked around the inlet to prevent sediment from entering the drainage system prior to paving.
- 4.1.6 All stockpile areas are to be covered, and should have a double row of haybales staked at the base.
- 4.1.7 During construction, all drainage structures shall be cleaned on an as needed basis and/or after heavy rainfalls. Prior to the placement of

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any impervious materials on site, all drainage structures shall be properly installed and functional.

4.1.8 During construction (after paving) street sweeping shall be performed on a monthly basis to remove sediment before it enters the catch basins.

4.1.9 Temporary and permanent seeding will be inspected for bare spots, washouts, and healthy growth.

4.1.10 Snow Removal and Storage

All snow from impervious surfaces shall be plowed to adjacent vegetated pervious surfaces to melt and recharge into the ground or run off into the stormwater system for treatment. If snow piles on site become too large to accommodate additional plowed snow they should be removed from the site; snow shall never be plowed onto adjacent properties or into adjacent resource areas.

4.1.11 De-Icing and Sanding

De-icing compounds shall be used sparingly and only in areas required for the safety of the public. Sanding of the driveways and walks should also be kept to a minimum; if sanding is required the best management practices listed in this plan should be inspected immediately after the winter and, if needed, accumulated sediment from sanding shall be removed.

5.0 ILLICIT DISCHARGES

Recording of this Instrument constitutes agreement by the Owner and Operator of the facility that no stormwater discharges other than those outlined on this plan are allowed for this site.

Appendix A
Inspection Logs

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Inspection and Maintenance Report Form

To be completed every 7 days and within 24 hours of a rainfall event of 0.5 inches or more.

Inspector: _____

Date: _____

Inspector's Qualifications: _____

Days since last rainfall: _____ days

Amount of last rainfall: _____ in.

Stabilization Measures

Drainage Area	Date Since Last Disturbance	Date of Next Disturbance	Stabilized (Yes/No)	Stabilized With	Condition

Stabilization required:

To be performed by: _____ On or before: _____

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Inspection and Maintenance Report Form

Sediment Forebay/Basin

Depth of Sediment in forebay (inches)	Condition of Swale Side Sloped	Any Evidence of Overtopping of the Embankment (Yes/No)	Condition of Outfall from Swales

Maintenance required for sediment forebay/basin:

To be performed by: _____ On or before: _____

Stabilized Construction Entrance (Area _____):

Does Much Sediment Get Tracked on to Road?	Is Gravel Clean or Full of Sediment?	Does all Traffic use the Stabilized Entrance to Leave the Site?	Is the Culvert Beneath the Entrance Working?

Maintenance required for stabilized construction entrance (Area _____):

To be performed by: _____ On or before: _____

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Inspection and Maintenance Report Form

Perimeter Controls:

Date: _____

Silt sock

Drainage Area	Has Silt Reached 1/3 of Fence Height? (Yes/No)	Depth of Silt?	Is Fence Properly Secured?	Is There Evidence of Overtopping?	If a Problem is Found, List Nearest Flag No.

Maintenance required for silt fence and hay bales:

To be performed by: _____ On or before: _____

This long-term Stormwater Management System Operations and Maintenance (O&M) Plan, filed with the City of Amesbury, shall be implemented for the proposed development at 2 & 13 Merrimac Street to ensure that the stormwater management system functions as designed. The Owner holds the primary responsibility for overseeing and implementing the O&M Plan and assigning a Property Manager who will be responsible for the proper operation and maintenance of the stormwater structures. In case of transfer of property ownership, future property owners shall be notified of the presence of the stormwater management system and the requirements for proper implementation of the O&M Plan. Included in the manual is a Stormwater Management O&M Plan identifying the key components of the stormwater system and a log for tracking inspections and maintenance.

The stormwater management system protects and enhances the stormwater runoff water quality through the removal of sediment and pollutants, and source control significantly reduces the number of pollutants entering the system. Preventive maintenance of the system will include a comprehensive source reduction program of regular vacuuming and litter removal, and prohibitions on the use of pesticides.

The purpose of the Stormwater Operations and Maintenance (O&M) plan is to ensure inspection of the system, removal of accumulated sediments, oils, and debris, and implementation of corrective action and record keeping activities.

The ongoing responsibility is the Owner, its successors, and assigns. Adequate maintenance is defined in this document as good working condition.

Contact information is provided below:

Responsibility for Operations and Maintenance
14 Merrimac St. LLC
2 Merrimac Street
Amesbury, MA

Illicit Discharge Compliance Statement

I, Michael C. Sanchez, verify that all illicit discharges to the stormwater management system are prohibited and no illicit discharges exist on the site.

POST-CONSTRUCTION BMPs

Snow and Snow Melt Management

Proper management of snow and snow melt, snow removal and storage, use of deicing compounds, and other practices can minimize major runoff and pollutant loading impacts. Snow will be stored in areas adjacent to the edge of the roadway. Use of alternative deicing compounds, such as calcium chloride and calcium magnesium acetate, will be investigated for use. Professional services will be used for snow management.

Deep Sump/Hooded Catch Basins

Deep sump/hooded catch basins are incorporated in the proposed development's stormwater management plan as pre-treatment for the proposed drainage system. The sump provides for settlement of suspended solids and a hood is provided to remove floatables and trapped hydrocarbons. It is not anticipated that the proposed roadway will become an area of high sediment loading. The sump should be inspected and cleaned at least four times per year; the more frequent the cleaning, the less likely sediment will be resuspended and subsequently discharged. Catch basin sediments and debris shall be disposed of at an approved DEP landfill. The owner shall be responsible for the catch basin cleaning operations.

Rain Garden

A Rain Garden is incorporated into the site design to provide treatment for stormwater runoff. After rainstorms, inspect the garden and make sure that drainage paths are clear and that ponding water dissipates over 4-6 hours. Inspect and repair erosion monthly. Use small stones to stabilize erosion along drainage paths. Re-mulch any void areas by hand as needed and every year, in the spring, add a fresh mulch layer. Immediately after the completion of garden construction, water plant material for 14 consecutive days unless there is sufficient natural rainfall. Twice a year remove and replace all dead and diseased vegetation. The property owner will be responsible for proper maintenance of the rain gardens.

CDS System

A CDS2015-4 is incorporated into the site design for treatment for the proposed underground infiltration system. At a minimum, the unit shall be inspected twice per year (spring and fall). The CDS unit should be vacuum cleaned when the level of sediment has reached 75% of capacity in the isolated sump. Sediments and debris shall be disposed of at an approved DEP landfill. The owner shall be responsible for the CDS cleaning

operations.

Peastone Diaphragm

A Peastone diaphragm is proposed along the outer edge of the gravel parking lot at 13 Merrimac Street. The stone diaphragm shall be inspected twice per year (spring and fall). Any sediment and debris should be removed manually before the stone is adversely impacted. The owner will be responsible for proper maintenance of the stone trenches.

Rip Rap

Inspect the rip rap outlets regularly, especially after major storm events. Notation of any low spots or erosion should be made.

FINAL STABILIZATION

Permanent Seeding

Loam and hydroseed any disturbed surfaces after the final design grades have been achieved. A minimum of 6" of loam shall be installed. Seed mix shall be a maximum of 10% rye grass and a minimum of 90% permanent bluegrass and/or fescue. Lime shall be applied at a rate of 2 tons/acre.

Construction debris, trash and temporary BMPs (including silt fences, material storage areas, and inlet protection) will also be removed and any areas disturbed during removal will be seeded immediately.

Estimated Operations and Maintenance Budget

Any opinions of probable project cost or probable construction cost provided by Millennium Engineering, Inc.. are made on the basis of information available to Millennium Engineering, Inc. and on the basis of Millennium Engineering, Inc.'s experience and qualifications, and represents its judgment as an experienced and qualified professional engineer. However, since Millennium Engineering, Inc has no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor(s') methods of determining prices, or over competitive bidding or market conditions, Millennium Engineering, Inc does not guarantee that proposals, bids or actual project or construction cost will not vary from opinions of

probable cost Millennium Engineering, Inc prepares.

1.1.1 Catch Basins

1.1.1.1 Engineer 4 hr @ \$175/hr. (1 time/yr.)

Subtotal - \$700

1.1.2 Rain Garden (2 times per year)

1.1.2.1 Excavator – 6hrs @ \$100/hr

1.1.2.2 Disposal - \$500

Subtotal - \$2200/year

Total Annual Estimated Operating Budget: \$2,900/year

Training

The individual who will be responsible for the inspection and maintenance of the stormwater system shall be trained by the previous person responsible or by contacting a local engineer for assistance.

Stormwater System Inspection Report

General Information			
Location:			
Date of Inspection		Start/End Time	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Purpose of Inspection			

Site-Specific Stormwater Devices

	Description	Installed and Operating Properly?	Corrective Action Needed	Date for Corrective Action/Responsible Person
1		☐ Yes ☐ No		
2		☐ Yes ☐ No		
3		☐ Yes ☐ No		
4		☐ Yes ☐ No		
5		☐ Yes ☐ No		

Certification Statement:

“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 gathered and evaluated 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.”

Print name: _____

Signature: _____

Date: _____

