



August 10, 2011

Roger Thelen
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Regarding: Catch basin and storm separator cleaning procedures

Mr. Thelen,

In order to assist Michigan State University with updating their Storm Water Pollution Prevention Plans (SWPP), Terra Contracting, LLC is pleased to provide you with the following procedures that are followed when cleaning the catch basins and storm separators on campus.

Catch Basin Cleaning

1. Remove the basin cover
2. Utilizing vacuum and high pressure water, evacuate all remaining liquid and sediment from within the structure
3. Complete a basin report for the structure identifying the following:
 - a. Date the structure was cleaned
 - b. Location of basin
 - c. Condition of basin structure (noting any defects)
 - d. Basin diameter and depth
 - e. Condition of any lines coming into the structure
 - f. Condition of casting
 - g. Condition of cover
4. Place the cover back over the basin
5. If a sediment trap has been placed in the structure due to construction activities in the area, these additional steps are taken:
 - a. Remove the sediment trap using caution to avoid having a “full” sediment trap accidentally fall into the basin.
 - b. Empty the trap and vacuum any debris that is present
 - c. Upon completing the cleaning of the structure, carefully place the sediment trap back into position under the basin lid.
6. Repeat these steps until the machine is full of water and needs to be decanted (drained off).



7. Utilizing the hydraulically operated submersible pump mounted inside the debris body of the machine, the water collected from the cleaning operation is pumped from the truck to a large diameter sanitary sewer on campus.
 - a. Please note- this pump is located towards the front of the debris body and approximately 18" off the bottom of the tank.
 - b. There is a screen mesh mounted in front of the pump to keep debris from entering the pump housing
 - c. The machine is designed to load material from the back door forward.
 - d. With the pump mounted in this position, it minimizes the amount of solids that may be pumped from the machine during the decant process.
8. When the machine is full of debris, this material is dumped into an open top 20 cubic yard roll off box.
9. A plastic box liner is placed into the box prior to dumping to avoid leaks
10. Prior to hauling the container to the landfill, the remaining liquids are vacuumed from the roll off box.
11. These liquids are also decanted into a large diameter sanitary sewer on campus.

Storm Separator Cleaning

1. Remove the manhole cover
2. Utilizing vacuum and high pressure water, evacuate all remaining liquid and sediment from within the structure
3. Complete a storm separator report for the structure identifying the following:
 - a. Date the structure was cleaned
 - b. Location of the storm separator
 - c. Condition of the structure (noting any defects)
 - d. Structure diameter and depth
 - e. Estimated amount of debris removed
 - f. Measure and provide distance from bottom of the sump to the outlet.
These measurements are to be used to evaluate future maintenance intervals before debris levels reach 75% of sump capacity.
 - g. Condition of casting
 - h. Condition of cover
4. Place the cover back on the separator
5. Repeat these steps until the machine is full of water and needs to have the liquid pumped off
6. Surface lot storm separators will be cleaned with the same process as the catch basin cleaning by periodically sampling the water within these structures to ensure the oil level is non-detect (to be performed by MSU). The structures associated with this item include: (3) at Brody Hall, (1) at Van Heusen Hall and (2) in Lot 83 located off from Service Road.
7. The storm separators associated with parking ramps will have the water and oil evacuated prior to removing the sediment. A separate vacuum tanker is used for pumping the liquid from the cleaning machine, leaving the solids and sediment in the machine performing the cleaning operation



8. Upon completion of each cleaning event, the vacuum tanker will be hauled to a licensed disposal facility for treatment.
9. When the machine performing the cleaning operation is full of debris, this material is dumped into an open top 20 cubic yard roll off box.
10. A plastic box liner is placed into the box prior to dumping to avoid leaks
11. Prior to hauling the container to the landfill, the remaining liquids are vacuumed from the roll off box.
12. These liquids are pumped into the tanker trailer to be hauled to a licensed facility for treatment.

Deliverables upon completion of each annual cleaning

Upon completion of each annual catch basin/storm separator cleaning event, Michigan State University is to be provided with the following information:

An index map of the areas of campus addressed per calendar year with corresponding page numbers

Sub maps that correlate with the index map with the applicable catch basin locations

- a. Each catch basin on these sub maps will be highlighted and dated when they were completed
- b. If catch basins are found that are not referenced on the maps provided by MSU, they will be denoted on the maps in an effort to assist with updating the University's data base.

Catch basin cleaning reports will be provided to support the data referenced on the maps listed above along with diameter, depth and structure condition.

Dump slips will be provided supporting the volume of waste generated from each cleaning event

Reports for each of the "Storm Separators" including location, estimated depth of debris removed, depth, diameter along with measurements from the bottom of the sump to the outlet.

Terra Contracting, LLC is fully licensed and insured for transporting solid waste and liquid industrial waste as required by State and Federal regulations. A copy of our liquid industrial waste haulers license is attached. Once you have had a chance to review these steps and procedures, please do not hesitate to contact me at (269) 375-9595, ext. 308 with any questions or clarification you might require.

Submitted by:

TERRA CONTRACTING, LLC

Steve A Taplin
Estimator