



## *Stormwater Pollution Prevention Plan*

Permit MNG490010

Issued: July 24, 2012

Barton Sand & Gravel Co. #744  
Intersection of Hwy 95 and Hwy 97  
Scandia, Minnesota



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STORMWATER POLLUTION PREVENTION PLAN  
FOR  
Tiller Corporation  
Scandia, Minnesota

Permit number MNG490010, Facility ID number LA019 / SD024

1. *GENERAL*

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared for a sand and gravel mine located in Scandia, Minnesota (Site) in compliance with the provisions contained within the National Pollutant Discharge Elimination System (NPDES) and State Disposal System (SDS) General Permit MNG490000 for Nonmetallic Mining and Associated Activities (Permit). The Site is considered to be within the J1 subsector (construction sand and gravel). The Site is leased by Tiller Corporation (Tiller) and its operating division Barton Sand and Gravel Company is the operator of the mine.

The goal of this SWPPP is to eliminate or minimize contact of stormwater with significant materials that may result in pollution of stormwater runoff as well as to identify and manage non-stormwater discharges. This SWPPP has been prepared to address Site specific conditions at the Site and to document the Best Management Practices (BMPs) used to comply with required stormwater control measures that address potential pollutants associated with mining operations utilizing accepted engineering practices.

This SWPPP will remain on-site, or if there is no suitable on-site storage location may be maintained at a readily available off-site location. The SWPPP will be submitted to the Minnesota Pollution Control Agency upon request.

The Site is located in portions of Sections 18 and 19, Township 32 N, Range 19W, at the intersection of State Trunk Highway (TH) 95 and TH 97 in Scandia, Washington County, Minnesota. Site operations consist of overburden removal, aggregate mining, loading and hauling, dust control and reclamation activities. The Site encompasses 114 acres with the mining and reclamation project area limited to 64 acres. Site boundaries and features are shown on Figure 1, USGS Quad Map Excerpt.

2. *Site Figures*

A series of figures have been developed to satisfy the requirements of the

SWPPP: Figure 1, USGS Quad Map Excerpt; Figure 2, Existing Conditions; Figure 3 through Figure 6, Stormwater BMP Plan: Phase 1-4. The figures illustrate the following items:

- 2.1 *Location of the Site in relation to surface waters:* There are no wetlands located within the proposed mining limits. There is a pond located immediately west of the Site and seepage wetlands associated with springs located along the bluffs, east of the Site. There are several unnamed drainageways through the bluffs that eventually become spring fed creeks that sustain base flows in the lower elevations of the bluffs as they descend toward the St. Croix River. The St. Croix River is located approximately 400 feet from the Site boundary and 1,000 feet from the mining limits (Figure 1).
- 2.2 *Location of all impaired waters within one-mile of the Site:* The St. Croix River is an impaired water located within one-mile of the Site. Aquatic consumption due to Mercury and PCB in fish tissue is the affected designated use (Figure 2).
- 2.3 *Location of all outstanding value resource waters (OVRW), MN Department of Natural Resources (DNR)-designated trout waters, and wetlands within 1 mile of the Site:* There are two OVRWs located within approximately 1 mile of the Site. These are waters that are located within the 136 acres Falls Creek Scientific and Natural Area, and the St. Croix River.

There are two DNR designated trout streams located within 1 mile of the Site. One is an unnamed creek, locally known as Gilbertson's Creek, and is located approximately 1,300 feet southeast of the Site. The Creek is approximately 1,700 feet from the mining limits. The Site is not tributary to Gilbertson's Creek.

The second DNR designated trout stream is an unnamed creek locally referred to as Falls Creek. This creek is located approximately 1 mile northwest of the Site and just over 1 mile from the mining limits. The Site is not tributary to Falls Creek. (Figure 1)

Because there is a DNR designated trout stream and an OVRW located within 2,000 feet of the mining limits, additional BMPs as required in MNG490000 have been incorporated into this SWPPP.

- 2.4 *Direction of stormwater flow indicated by arrows:* Existing stormwater flow patterns are illustrated by arrows (Figure 2). As mining activity advances, existing stormwater patterns will be altered and stormwater that currently drains off-site will be

redirected internally through the mining area where it will be treated prior to discharge or infiltrated on-site (Figure 3 - Figure 6).

- 2.5 *Topography of the area:* USGS ten foot topographic contours are indicated on Figure 1 and two foot topographic contours are indicated on Figure 2. The topography of the Site reflects the past mining activity which resulted in irregular depressions, stockpiles and steep slopes throughout the area.
  - 2.6 *Location of all activities and materials:* Activities at the Site include removing topsoil and overburden from areas to be mined, aggregate mining, loading, hauling, dust control and reclamation activities. These activities will be conducted in phases within the mining and reclamation limits identified in Figure 2 through Figure 6. Limited equipment maintenance is conducted on-site.
  - 2.7 *Location of all structural BMPs:* Location of all structural BMPs are illustrated in Figure 3 through Figure 6.
  - 2.8 *Location and description of any non-stormwater discharges:* There are no non-stormwater discharges from the Site. Washwater from equipment washing (no degreasers, solvent's or detergents are used) and water used on haul roads for dust control is infiltrated on-site.
  - 2.9 *Dewatering points:* Dewatering is not conducted at the Site.
  - 2.10 *Water supply wells:* There is one production well located on-site. Adjacent businesses and residences are also served by private wells. These are illustrated on Figure 2.
  - 2.11 *Surface water intakes:* There are no surface water supply intakes located on the Site.
3. **POTENTIAL SOURCES OF POLLUTANTS**

The following are potential sources of stormwater pollution at the Site:

- 3.1. *Excavation areas:* Sediment picked up in runoff contacting areas stripped in preparation of mining activity as well as exposed mining faces and mine floor is a potential source of stormwater pollution at the Site. The proposed limits of disturbance encompass 64 acres, which includes approximately 52 acres that currently drain internally due to past mining operations which have lowered the grade below the elevation of the surrounding land. As a result, runoff generated within the internally drained area is not

discharged off-site. About 12 acres within the mining limits currently drain off-site.

There are three separate areas within the proposed mining limits that currently drain off-site. Surface water from each of these three areas drains to a separate spring creek that flows through the bluffs and eventually into the St. Croix River. The northernmost area encompasses approximately 3.43 acres and drains towards an unnamed creek locally known as Zavoral Creek. The central drainage area consists of approximately 2.19 acres and drains to an unnamed creek referred to throughout environmental review as Middle Creek. The southernmost drainage area consists of approximately 5.97 acres and drains to a third and southernmost creek that is also unnamed, but referred to as South Creek.

As these areas are stripped and incorporated into the active mining operations, diversion berms and ditches or swales will be constructed to divert stormwater internally into the floor of the mine where it will be managed to promote infiltration.

- 3.2 *Explosives:* There are no explosives stored or used on-site.
- 3.3 *Overburden, waste and product stockpiles:* Limited volumes of topsoil and overburden may be stockpiled on-site. Existing stockpiles of aggregates from past mining activity are also located within the mine site. Stockpiled materials are considered significant materials.
- 3.4 *Raw material and final product storage:* Excavated granular material will be excavated and loaded directly into haul trucks and hauled from the Site. Any clays or non granular soils will be moved to active reclamation areas or placed into temporary stockpiles. Some existing aggregate stockpiles from past mining operations are located on the existing mine floor.
- 3.5 *Waste products:* There will be no concrete or asphalt wastes hauled to the Site or stockpiled on-site.
- 3.6 *Sediment Washing:* There will no washing of aggregates on-site.
- 3.7 *Material loading/unloading:* Material is loaded from the active mine face and placed into haul trucks. The location of loading areas varies as mining progresses throughout the life of the Site.
- 3.8 *Areas where spills and leaks may potentially contribute pollutants to stormwater:* Areas where the mining equipment and loaders

operate are typically located on the floor of the mine. Spills during equipment fueling operations or leaks in the equipment may be a source of pollution to stormwater discharges.

- 3.9 *Vehicle and equipment maintenance, washing and fueling:* Vehicle and equipment maintenance activities will be performed on-site within a designated area. Service trucks come to the Site to perform maintenance activities. These activities have the potential to introduce contaminants into the stormwater through leaks, drips or spills. All used oil is collected in a leak-proof metal container, and is hauled off-Site to be recycled.

No engine degreasing is performed on-site. Major equipment repairs are conducted off-site.

Fueling from above ground storage tanks (AST) will be performed at a designated location over a hard surfaced pad. This will allow uniform control over refueling operations. The pad will allow easy visual detection and facilitate clean-up of any spills or drips which may occur.

There will be limited truck and equipment washing conducted at the Site. This primarily occurs when equipment is being prepared to be transported from the Site, to eliminate any loose materials from falling off the equipment during transport. Equipment washing does not include the use of detergents, solvents or degreasers. No engine degreasing is allowed at the Site.

- 3.10 *Fuel Storage:* Equipment will primarily be fueled by a fuel service truck that would directly fuel the operating equipment. In the event that fuel storage is necessary, storage will be in a single 1,000-gallon above ground storage tank (AST) with secondary containment in accordance with MPCA and local rules. Secondary containment will consist of an impermeable enclosure with an impermeable base or approved double walled tank.

As an additional precaution, any AST installed at the Site will be located more than 500 feet from surface water to reduce the potential for impact to surface water. As required by rule, MPCA will be notified about all ASTs within 30 days of installation by submitting an AST Notification Form.

Fuel storage and fueling operations have the potential to contaminate stormwater through leaks, drips, and spills. Any spills are reported to the appropriate supervisor immediately. The

supervisor will arrange for cleanup and report to the State Duty Officer as required by law.

- 3.11 *Roads and vehicle parking:* Internal haul roads are gravel surfaced and represent the potential for sediment to be discharged into stormwater runoff. Vehicles parking within the mining area have the potential to leak and contaminate stormwater runoff.

The following activities or conditions do not occur at the Site; therefore they do not represent a potential pollution source at this Site:

1. Crushers or screening plants do not operate at the Site.
2. There is no material storage of explosives or chemicals at the Site.
3. Conveyors are not used at the Site.
4. There are no buildings on the Site.
5. There are no asphalt storage tanks on the Site.
6. There is no hot mix asphalt production at the Site.
7. There is no truck box lubrication and cleaning at the Site.
8. There are no wet scrubber containment structures at the Site.
9. There is no sediment or sludge storage at the Site.

#### 4. *BEST MANAGEMENT PRACTICES:*

Best Management Practices (BMPs) are in place at the Site to control stormwater flows, prevent co-mingling of authorized non-stormwater discharges and provide treatment of stormwater that has contacted significant materials prior to discharge from the Site.

BMPs have been developed to minimize or eliminate pollution at the Site. These BMPs include perimeter controls designed to prevent sediment from leaving the Site, focusing on the three areas that contribute to off-site drainage, as well as stabilization controls that prevent erosion from being generated at the Site. These include measures to redirect surface water runoff internally as areas are stripped and prepared for mining. BMPs to reduce or eliminate the contact of stormwater with significant materials are also included in the discussion. BMPs that will be implemented are described below. Locations of BMPs are illustrated on the accompanying BMP Plan.

##### 4.1 *Non- Structural BMPs designed and implemented at the Site:*

- 4.1.1 *Phasing:* Minimize the disturbed area open at any given time by stripping only those areas that will be mined in the next mining

season or two and progressively reclaiming areas where mining activity has been completed. The Site will be mined in phases and not stripped all at one time in order to minimize the exposed soils. Any portion of a Site that can be maintained in its current vegetated state by using this BMP will not contribute increased stormwater runoff and will reduce the amount of treatment necessary. The phasing plans are indicated on Figure 3 through Figure 6.

Any overburden that is removed as part of stripping operations that is not used immediately in reclamation activities will be stockpiled within the mining area to prevent movement of sediment off-site.

- 4.1.2 *Volume/Runoff Minimization:* There are three areas within the mining and reclamation limits which contribute to off-site runoff: northern, eastern and southern. As the phases of mining progress, the potential for off-site drainage is reduced because these areas will be lowered in elevation and converted to internally drained areas, therefore mining will not increase the volume of runoff generated at the Site. The areas that currently drain off-site are indicated on (Figure 2).

Stormwater could potentially contact exposed soils during the time interval between removing vegetation and stripping the overburden from the Site. Prior to stripping perimeter controls will be established to divert stormwater from these areas to internal areas to be infiltrated, The overburden is an average of six feet deep, therefore, once the overburden has been removed, the active area will be lowered sufficiently to retain stormwater within the Site and prevent it from running off-site.

- 4.1.3 *Fuel Storage:* Any AST installed at the Site will be located more than 500 feet from surface water to reduce the potential for impact to surface water.

As required by rule, MPCA will be notified about all ASTs within 30 days of installation by submitting an AST Notification Form.

- 4.1.4 *Establishment of Vegetation:* Completed portions of the Site will be reclaimed and vegetation reestablished as mining is completed. All soils will be stabilized by a uniform perennial vegetative cover with a density of 70 percent over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions. Portions of the Site which lie within the River District or Scenic Easement area will likely be reforested with white pine trees.

Revegetation and reforestation of the Site will help to intercept rainfall, maximize infiltration and increase evapotranspiration. Restoration grades will maintain the internal drainage patterns of the Site. Impervious surfaces after reclamation will be limited to the Site entrance and gravel surfaced internal roads. Runoff from these surfaces will infiltrate and not be discharged off-Site.

- 4.1.5 *Special Requirements:* For stormwater discharges within 2000 feet of Outstanding Resource Value Waters (ORVWs), an undisturbed buffer zone of not less than 100 linear feet from the receiving water (not including tributaries) shall be maintained at all times. Mining limits are located at a distance greater than or equal to 1,000 feet from any ORVWs. Mining limits are located more than 100 linear feet from any receiving waters and therefore will not disturb this buffer zone.

For stormwater discharges within 2000 feet of ORVWs and trout waters, stormwater shall infiltrate to groundwater. The operator will divert all stormwater discharges from disturbed or exposed areas internally to the floor of the mining area to infiltrate stormwater. Final reclamation grades have been designed with multiple low areas for encouraging stormwater infiltration (Figure 6). Any exposed soil areas with a slope of 3:1 or steeper, that have a continuous positive slope to an ORVW or trout waters, will have temporary erosion protection or permanent cover within 3 days after the area is no longer actively being worked.

For stormwater discharges within 2000 feet of those ORVWs and trout waters, the stormwater management system must be designed such that the pre and post project runoff rate and volume from the 1 and 2-year 24-hour precipitation events remains the same. The Environmental Impact Statement (EIS) conducted for the Site described there will be no increase in post project runoff rates.

- 4.1.6 *Good Housekeeping:* The Site employs good housekeeping practices to help reduce potential pollutants from contacting stormwater runoff. These include:
- a) Routine pavement cleaning and sweeping of Site access points is conducted to prevent tracking of dirt and fugitive dust and to periodically remove debris. This includes watering of internal haul roads as needed and paving at the Site entrance. Street sweeping at the paved entrance to the facility is conducted one

to two times per week as needed. The Site entrance will be visually inspected for tracking on a daily basis during Site operations.

- b) Litter Control - an adequate number of trash receptacles are provided for employees and customers to prevent litter and waste around the Site. Litter and other wastes are routinely collected by a Tiller employee and disposed of at Tiller's Maple Grove facility where waste is picked up by a licensed solid waste hauler for disposal at a licensed waste facility.
- c) Removal of unnecessary equipment.
- d) Materials Storage: Any materials incidental to the operation such as grease, engine oil, hydraulic fluid and anti-freeze if stored on-site, will be stored in an enclosed trailer in compliance with state, county and city requirements and regulations.
- e) Training: Employee training is conducted regularly on good housekeeping practices, and spill prevention and response.
- f) Equipment/vehicle washing will occur in a designated area where the wash water is collected or directed to an infiltration area.

#### 4.2 *Structural BMPs designed and implemented at the Site.*

- 4.2.1 Flow diversion, berms, and sediment traps will be used as needed for erosion and sediment control along perimeter areas to divert stormwater runoff from these areas towards the interior recessed portion of the Site to be infiltrated as indicated in Figure 3 through Figure 6.
- 4.2.2 Silt fence: Silt fencing will be used as needed for erosion and sediment control along perimeter areas that may temporarily drain off-site during stripping and overburden removal. A double row of heavy duty silt fence will be placed and maintained just outside of the down slope limits of the mining area before mining in these areas is initiated. Where possible, a vegetative buffer of five to ten feet will be left intact between the silt fence and the mining limits to provide initial filtering and sediment removal prior to runoff reaching the silt fence. All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches a height of 1/3 of the height of the fence. Silt fencing will be maintained as needed and removed from the Site once mining has redirected surface water from the stripped area internally. These areas are located along a portion of the northern berm and along the entirety of the berm running along the south

and east portion of the mining limits, as indicated in Figure 3 through Figure 6.

- 4.2.3 Diversion Berms: After vegetation has been removed from the area to be stripped, a temporary diversion berm or diversion swale will be constructed just inside of the limits of the mining area. The berm or swale will intercept stormwater that contacts exposed soils and direct it to internally drained areas of the Site during the interval of time between removal of vegetation and removal of overburden. The temporary berm or swale will be removed once the existing grade has been lowered sufficiently to eliminate off-site discharges. The limits of any disturbance will be over 100' linear feet from any receiving waters.
- 4.2.4 Temporary infiltration basins will be located throughout the floor of the active mine area to collect stormwater runoff and allow it to infiltrate and/or evaporate. The locations of these infiltration areas are expected to move from time to time as mining progresses through the Site.
- 4.2.5 Additional structural BMP's will be added as needed to insure that all discharges meet the terms of the NPDES permit and that violations of water quality standards do not occur, that floating solids or visible foams are not discharged except in trace amounts, and that oil or other substances are not discharged in amounts that create a visible color film.
- 4.2.6 Portions of the Site discharge to a water that appears on the current USEPA approved list of impaired waters. The entire length of the St. Croix River is designated as impaired for aquatic consumption due to Mercury and PCB in fish tissue. A total maximum daily load (TMDL) for various pollutants is being prepared at this time. The permittee will, on at least an annual basis, review the current EPA approved list of impaired waters and the TMDLs to determine if and to what extent the Site's Pollution Prevention Plan must address these impairments and TMDLs.

## 5. *NON-STORMWATER DISCHARGES*

There are no dewatering discharges from the Site. Non-stormwater discharges allowed under the permit that may potentially be generated at the Site include: washwater associated with mobile equipment that does not use detergents, solvents or degreasers and water used for dust control on Site roadways. These non-stormwater discharges must be collected, contained or infiltrated into the ground on-site.

## 6. MANAGEMENT AND RESPONSE

- 6.1 The SWPPP must be kept at the Site when the Site is active and must be available to the MPCA within 72 hours of a request for a review. Electronic access of the plan is acceptable if no office is located on-Site. The Site leader is the person responsible for managing, implementing, maintaining, modifying, and ensuring compliance with the SWPPP including reporting requirements. Team members are personnel responsible for managing and implementing the SWPPP.

The following persons are responsible for ensuring that the SWPPP is implemented and maintained.

Primary Contact for permit compliance issues:

Paul Schultz, Land Use Coordinator

Office: (763) 425-4191                      Mobile: (612) 554-9299

Site Contact:

Pete Olson, Director of Operations

Office: (763) 425-4191                      Mobile: (612) 290-3669

General Telephone Number: (763) 425-4191

- 6.2 Review of Plan: This Plan will be reviewed at least annually and will be modified if:
- a) There is construction or a change in design, operation, or maintenance at the facility that affects stormwater and wastewater management or compliance with this permit.
  - b) Routine inspection identifies deficiencies in the SWPPP and /or BMPs.
  - c) Additional stormwater control measures and BMPs are necessary to meet applicable water quality standards or to address exceedances of intervention limits.
  - d) There is an unauthorized discharge from the facility.
- 6.3 Employee Training: An employee training program will be implemented to inform appropriate personnel of the components and goals of the plan. Training events will occur in April of each year.

Employee Training: The company provides an annual review of this plan, along with other environmental requirements, for all Site foremen (refer to Site Environmental Compliance Guide) in the spring immediately prior to each production season (April to November). The annual review, along with a pre-season production review, includes the following:

- a) The details of this SWPPP, including an explanation of the appropriate information necessary for prevention of spills and leaks as described in the Site Spill Prevention Control and Counter Measures Plan (SPCC Plan).
- b) The actions required to prevent or minimize stormwater pollution.
- c) The necessity for preventing soil from being tracked out or off the Site by departing vehicles.

## 7. INSPECTIONS

The Site shall be inspected at least once per calendar month when the Site is active and staffed to ensure that the Plan is followed and that Tiller is in compliance with the requirements of their NPDES Stormwater Permit. Monthly inspections are not required if the Site is inactive and unstaffed. A minimum of one inspection per calendar year will be conducted during a runoff event and one monthly inspection must occur during a snowmelt event.

If a BMP is identified as not properly functioning, it shall be replaced, maintained or repaired within seven (7) calendar days of discovery. If a BMP cannot be replaced, maintained or repaired within seven (7) calendar days, a backup BMP will be implemented. A written record of the inspections will be retained by Tiller. All of the inspection and maintenance information will be recorded in writing and the records will be retained with the SWPPP. Records of the inspection and maintenance activity will include:

- a) Date and time of inspections.
- b) Name of person conducting the inspection.
- c) An evaluation of the Site to determine that this Plan accurately reflects conditions as described above. At a minimum, storage tank areas, waste disposal areas, maintenance areas, loading/unloading areas and any exposed mining surfaces shall be inspected.
- d) An evaluation of all structural and non-structural BMPs to determine effectiveness and proper function.
- e) An evaluation of the Site to determine whether new exposed significant materials or activities have been added to the Site since completion of this Plan.
- f) Recommendations for corrective actions, and corrective actions taken (including dates, times and party completing maintenance activities).
- g) The inspection conducted during the snowmelt event must include a visual assessment of the runoff to identify any visible sheens or films that indicate the presence of oil or grease. If sheens are

present in surface discharges, corrective actions to prevent sheens must be implemented and documented in the SWPPP.

Inspections, recording and reporting requirements will be conducted until Tiller no longer conducts the activities authorized by MN G49000 and they ensure and certify in the Annual Report/Site Inventory Form that: There is no stormwater runoff and /or pit dewatering from the Site; or that Tiller certifies that a new owner or operator has assumed responsibility for the Site; or the Site closure activities have achieved final stabilization.

8. *STORMWATER MONITORING*

Because stormwater will be directed internally and will not discharge from the Site, no monitoring is required. In the event that stormwater is not entirely contained on-site, stormwater monitoring and sampling as outlined in MN G490000 will be required.

9. *SPILLS AND LEAKS*

The Site operates under a number of spill prevention and clean up requirements under various federal and state regulations. Company policy regarding spills is that any spill of oil, gasoline, diesel fuel, lubricant or other potential contaminant is to be reported and cleaned up promptly. In addition, "topping-off" tanks of any kind is not allowed under company procedures. This practice can help eliminate accidental spills during materials transfer. If a spill of petroleum products or any type of hazardous material occurs, Site personnel will follow the guidelines of the Site **SPCC Plan** (if applicable - refer to Site Environmental Compliance Guide). Refer to those plans for additional information.

**Hazardous materials spills of any volume and petroleum spills of 5 gallons or more are to be reported to the state duty officer as required by applicable state statutes and regulations (Minn. Stat. 115.06).**

**Federal Reportable Spill Applicability** - Petroleum spills that cause sheen on "navigable waters" as defined in section 502.7 of the Clean Water Act must be reported to the National Response Center.

10. *GENERAL REQUIREMENTS:*

Tiller Corporation will follow all of the general requirements of the NPDES General Permit MNG 490000 for nonmetallic mining and related activities issued for the Site, including but not limited to pollution prevention plans, inspections, and reporting.

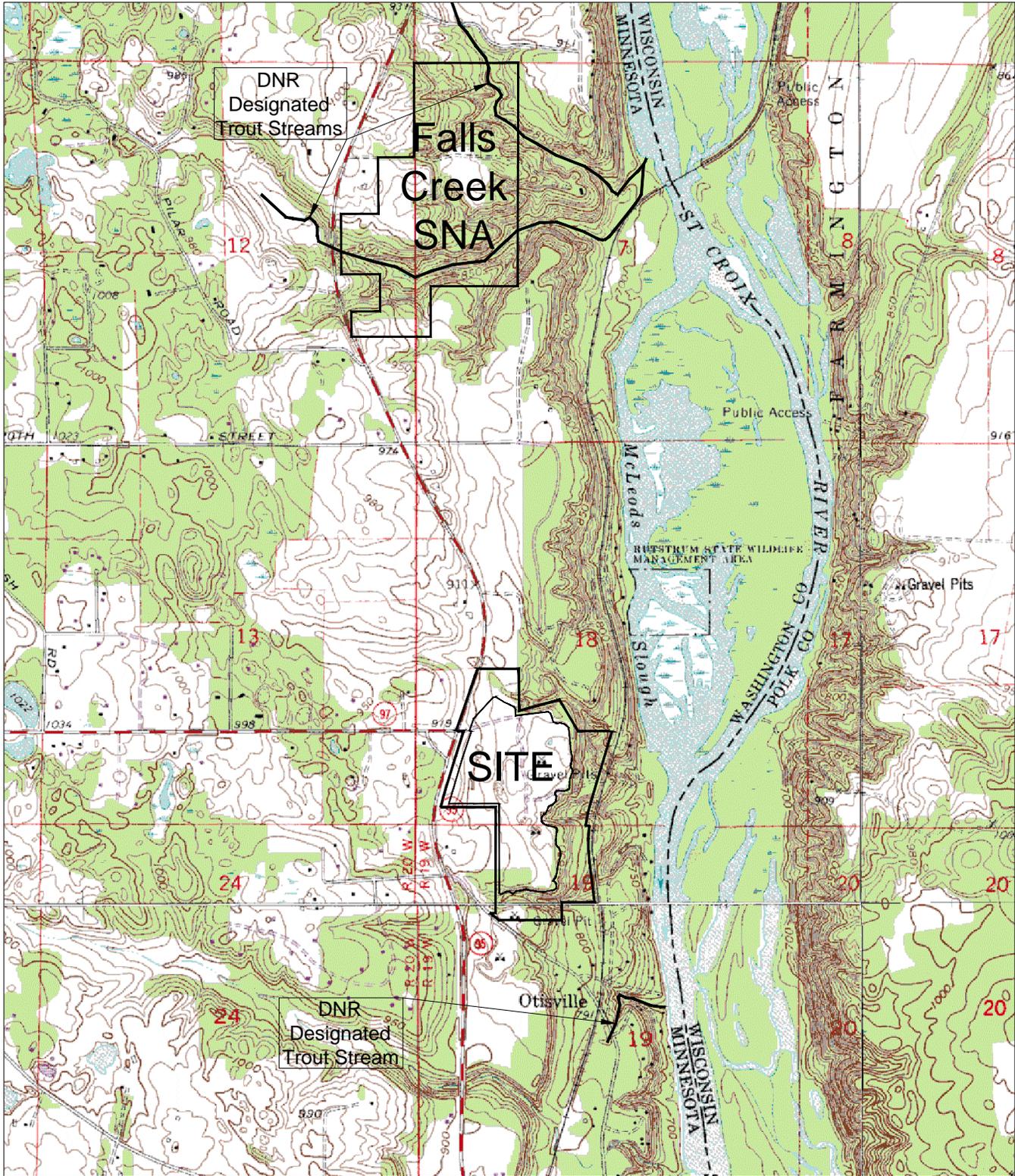


Figure 1 - USGS Quad Map Excerpts  
 Scandia, MN, WI; Osceola, WI, MN; Marine on St.  
 Croix, MN, WI; Somerset North, WI, MN



1" = 2000 FEET









