**Supplement 20**

**Common Best Management Practices**

**Basic Operation and Maintenance Guidelines**

The purpose of this document is to provide basic operation and maintenance guidelines for common Best Management Practices (BMPs) that may be used in Act 38 Nutrient Management Plans (NMPs) to provide adequate manure and stormwater management to prevent pollution of surface and groundwater. For the purpose of this guidance document, the term “BMPs” is understood broadly to encompass the following:

* Required BMPs – Practices that are listed in the NMP that must be implemented to address identified Manure Management and Critical Runoff Problem Areas.
* Existing BMPs – Practices implemented to PA Technical Guide standards prior to securing an Act 38 NMP.
* Adequate “BMPs” – This includes sites, conditions, or practices that adequately address manure and stormwater management but have not been designed or implemented to PA Technical Guide standards.

Some operations obtaining NMPs, such as horse operations, are often not familiar with common agricultural BMPs and the required operation and maintenance associated with them. Nutrient Management Specialists writing and reviewing NMPs can provide these basic operation and maintenance guidance lists to these operators for the existing or planned BMPs on their operation.

It is understood that design packages and existing operation and maintenance guidelines provided for BMPs by the PA Natural Resources Conservation Service (NRCS) or a Professional Engineer supersede the general operation and maintenance bullets listed below. Likewise, when issues arise, the Act 38 program only recognizes the PA Technical Guide as the official source of information and guidelines for BMPs.

**Access Road (560)**

Maintain the existing access roads used for vehicles and farm equipment. Follow these basic operation and maintenance guidelines:

* Inspect the access road and associated culverts, water bars, and outlets after each major storm event, and make necessary repairs.
* Mow vegetated areas along the access road annually between August 1 and August 15 to control weedy vegetation or more frequently if needed.
* Maintain width of the access road and resurface as needed.

**Animal Mortality Facility (316)**

Maintain the existing facility for the treatment or disposal of animal carcasses for routine animal mortalities. Catastrophic mortality should be done with guidance from the state veterinarian, USDA APHIS, or other appropriate authority. For normal, non-catastrophic events follow these basic operation and maintenance guidelines:

* Maintain practices to divert upslope surface water runoff around/away from site.
* Maintain the site surface to provide positive drainage. Fill and compact surface using appropriate surface material as needed to avoid ponding.
* Maintain dense vegetation downslope of the site.
* Use sufficient bulking material to prevent leachate.
* Stack in single pile or windrow, up and down hill, to shed water and avoid ponding.
* Turn piles at least one time and re-compost prior to application or exporting.
* Maintain roof or cover on small, bin-style mortality composting facilities.

**Composting Facility (317)**

Maintain the existing composting facility. Follow these basic operation and maintenance guidelines:

* Inspect after all significant storm events to identify repair and maintenance needs.
* Re-grade, reshape and/or resurface earthen or improved surface as needed to maintain positive drainage.
* Maintain structures to divert upslope surface water runoff around/away from the area, if applicable.
* Build piles in windrows, up and down the hill, to avoid ponding water.
* Properly remove and land apply unsuitable materials.
* Maintain a Vegetated Treatment Area to handle liquid runoff unless collected and stored in a Waste Storage Facility.
* Follow your approved NMP for the handling and application of finished compost.
* Maintain appropriate local, state and federal permits, as applicable.

**Contour Farming (330)**

Maintain established contour farming areas throughout the cropping system. Follow these basic operation and maintenance guidelines:

* Maintain established contour lines.
* Preform all tillage and planting operations parallel to contour lines, minimizing headrows as much as possible.
* Evaluate annually for signs of erosion or deviation from contour. Re-establish or devise alternate plan to meet erosion control.
* Maintain sod turn strips on sharp ridge points or other odd areas were contour row curvature is too sharp for machinery alignment.

**Cover Crop (340)**

Plant a cover crop on row crop fields where manure application is planned or needed to meet Act 38 fall and winter application requirements or Ag E&S Ch. 102 sediment control regulations. Follow these basic operation and maintenance guidelines:

* Seed in time to ensure adequate establishment to meet nutrient management plan or Ag E&S plan requirements.
* Record rates and timing of nutrient application consistent with your NMP requirements.
* Completely terminate the cover crop to prevent crop competition.
* Evaluate the cover crop to determine if the cover crop is meeting the planned purposes(s). If not change species, use shorter season row-crops, or choose a different technology.

**Critical Area Planting (342)**

Maintain re-vegetated areas that were previously devoid of vegetation due to high rates of erosion by surface water runoff, lack of topsoil, and/or high access by animals. These areas are typically steep, devoid of topsoil and require extra preparation for establishment of vegetation. Areas within 100’ of a stream and some others will require additional best management practices such as erosion control blankets, mulching, silt fence, etc. Follow a plan approved by the local conservation district or DEP for these unique situations. Species, seeding rates, fertility rates and timing, mulching requirements, and establishment methods can be found in the current Penn State Agronomy Guide and/or the Critical Area Planting Practice Guide. Follow these basic operation and maintenance guidelines:

* Maintain additional best management practices until vegetation established.
* Monitor initial plantings for water stress. If seeding fails, reseed. Best results can be obtained by seeding in early spring through the end of April or late summer from August through late September.
* Control undesirable plants by means of mowing and/or spot spraying herbicides if their presence threatens the establishment or persistence of the stand. This includes invasive species.
* Limit animal access when vegetation is drought stressed and to avoid having stand heights under 3”. Allow no access during initial establishment.
* Continue to keep animals out of sites that can’t withstand any animal activity.
* Inspect weekly during initial establishment, followed by semi-annual inspections to identify bare spots or eroded areas that will need reestablished.
* Inspect periodically to identify insect and diseases that could threaten stand survival and control as appropriate.

**Diversion (362)**

Maintain a diversion or grassed channel constructed across the slope. Follow these basic operation and maintenance guidelines:

* Inspect after all significant storm events to identify and repair maintenance needs.
* Maintain existing width and cross-sectional shape.
* Mow at least annually between August 1 and August 15 to control weedy vegetation.
* Re-grade, reshape and/or resurface earthen channel surface as needed to maintain positive drainage.
* Reseed and mulch or protect with erosion control blanket during early spring or early fall if erosion occurs.
* Significant gullies may require professional assistance to repair.
* Inspect frequently for burrowing animals. Eradicate burrowing animals and close burrows as soon as practical.

**Fence (382)**

Maintain existing fence associated with **pastures, streams and stream crossings**. Follow these basic operation and maintenance guidelines:

* Inspect fence, particularly those located adjacent to streams or in flood zones, after each major storm event to identify and make necessary repairs.
* Maintain gates in working condition.
* Maintenance and repair must be performed in a timely manner to maintain the desired control.
* Maintain fence free of vegetation, annually clearing of weeds and brush under and near the fence.

**Fence (382)**

Maintain existing fence around **waste storage facilities or concrete heavy use areas**. Follow these basic operation and maintenance guidelines:

* Maintain gates and associated safety devices in working condition. Replace as needed.
* Maintain fence free of weeds and woody vegetation.
* Maintenance and repair must be performed in a timely manner to maintain the desired control or safety benefits they provide.
* Inspect safety fence on waste storages bi-annually.
* Maintain safety signs and replace when signs are missing or no longer legible.

**Filter Strip (393)**

Maintain a strip of permanent herbaceous vegetation in the location where installed. Follow these basic operation and maintenance guidelines:

* All overland flow reaching the filter strip must be sheet flow. Concentrated flow must be dispersed prior to reaching the filter strip and any adjacent rills or gullies must be addressed upslope of the filter strip.
* Annually mow between the dates of August 1 and August 15 to control undesired weed species and all state-listed noxious weeds.
* Regularly inspect following all major storm events when located along a stream corridor.
* Repair immediately when gullies or uneven sedimentation occur in filter strip.
* Major gullies require addressing the source of concentrated flow.

**Forage and Biomass Planting (512)**

Maintain re-vegetated areas that were previously devoid of vegetation due to overgrazing and/or high animal usage or traffic in all or part of a designated pasture area. Species, seeding rates, fertility rates and timing, mulching requirements, and establishment methods can be found in the current Penn State Agronomy Guide or in the associated practice standard. Severely disturbed areas will need extra seed bed preparation. Areas within 100’ of streams will need a cover crop and/or mulching. Follow these basic operation and maintenance guidelines:

* Monitor initial plantings for water stress. If seeding fails, reseed. Best results can be obtained by seeding in early spring through the end of April or late summer from August through late September.
* Control undesirable plants by means of mowing and/or spot spraying of herbicides if their presence threatens the establishment or persistence of the stand. This includes invasive species.
* Limit animal access when vegetation is drought stresses and to avoid having stand heights under 3”. Allow no access during initial establishment.
* Inspect annually or more frequently to identify bare spots or eroded areas that will need reestablished.
* Inspect periodically to identify insect and diseases that could threaten stand survival and control as appropriate.

**Grade Stabilization Structure (410)**

Maintain the grade stabilization structure used to reduce grade in waterways or watercourses. Follow these basic operation and maintenance guidelines:

* Inspect structure annually and repair or replace as needed.
* Inspect after all significant storm events to identify and repair maintenance needs.
* Significant issues may require professional design assistance.

**Grassed Waterway (412)**

Maintain existing grassed waterway or plow skip waterways. Follow these basic operation and maintenance guidelines:

* Maintain the original width and profile.
* Inspect after all significant storm events to identify and repair maintenance needs.
* Mow annually between August 1 and August 15 to control weedy vegetation.
* If minor repairs are needed, reseed and mulch or protect with erosion control blanket during early spring or early fall.
* Significant gullies or sedimentation issues may require professional assistance to resolve.
* Gullies must be repaired and vegetation must be re-established and maintained to provide erosion control. Vegetative repairs should be done during early spring or fall.
* Turn off sprayers before crossing waterway to ensure that herbicides are not applied to vegetation in the waterway.

**Heavy Use Area Protection (561)**

Maintain existing heavy use area. Follow these basic operation and maintenance guidelines:

* Remove solids, typically daily for dairy cows and horses and weekly for beef or more frequently as needed for slotted curb or screen box liquid control systems. Solids on stoned equine pads should be collected weekly.
* Scrape or remove solids prior to predicted rainfall to reduce maintenance issues.
* Provide extra bedding or waste forage if solids to be stacked.
* Frozen manure and/or snow should not be scraped into a reception pit. If possible, safely load directly into a storage, stockpile on the lot, or stockpile in areas suitable for temporary in-field stacking as located on the NMP maps.
* Maintain and repair any damage to concrete floor and openings in curbing.
* Gravel pads associated with equine will need regular maintenance. Fill in low areas, replace working surface material, and regrade as needed.
* Maintain associated practices that keep off-site/upslope water out of area.
* Maintain and clean devices used to screen solids from liquid run-off after all rainfall events. Can include slotted curb, screen box, etc.
* Maintain any safety fence and signs.
* Animal access to pastures should follow guidance found underPrescribed Grazing (528).
* Animal movement from this area to the pasture should follow guidance under Trails and Walkways (575).
* Maintain vegetation below equine gravel pads.

**Lined Waterway or Outlet (468)**

Maintain rock lined (or turf reinforced mat) outlet at end of waterway or transition into diversion. Follow these basic operation and maintenance guidelines:

* Inspect after all significant storm events to identify and repair maintenance needs.
* Minor rock movement may be resolved by moving rock back and resetting.
* Major rock movement and washouts may indicate undersized materials or lack of capacity. It is recommended that professional assistance be obtained to resolve these issues.

**Prescribed Grazing (528)**

Maintain pastures included in the grazing system. Follow these basic operation and maintenance guidelines:

* Pastures must be managed to minimize bare spots and to maintain dense vegetation at average height of at least 3 inches throughout the growing season.
* Animals need to be restricted from the pasture during the winter, as well as when soil conditions are too wet or muddy to support hooved animals without causing damage to the soil structure or pasture vegetation. Grazing animals will be removed from the pasture when heat or drought conditions cause pastures to dry up and forage regrowth shuts down. During these conditions use either a temporary earthen sacrifice area or permanent concrete heavy use area.
* If a permanent heavy use area (concrete or stoned) is not available to move animals off pasture, use a temporary sacrifice area that is located away from surface water, wetlands, poorly drained soil, exposed bedrock and areas subject to flooding. Temporary fencing may be needed to isolate the area. Follow additional guidance for “Temporary Earthen Livestock Heavy Use Areas” in this standard.
* Renovate or reseed any areas that lack vegetation, have an undesirable stand, or are unable to meet system’s needs.
* Areas within pastures associated with feed bunks, waterers, and shade should follow the guidelines outlined in the Heavy Use Area Protection (561) guidance.
* Mow, at least annually, to control weeds and promote even forage production.
* Maintain other associated practices such as Fencing (382), Trails and Walkways (575) and Watering Systems (614).

**Pumping Plant (533)**

The pump or pumps associated with manure transfer, water supply, or irrigation. Follow these basic operation and maintenance guidelines:

* Regular inspection and testing of all components.
* Routine maintenance of all mechanical components in accordance with manufacturer’s recommendations.
* Operate all valves at least one time per year.
* Perform regular checks, and as needed, remove debris or sediment.
* Maintain safety shields and periodically inspect of all safety features and repair and replace as needed.

**Residue and Tillage Management Reduce Till (****345)**

Maintain residue and tillage management on fields as detailed in the Ag E&S or Conservation Plan. Follow these basic operation and maintenance guidelines:

* No moldboard plowing and heavy one-way disk plow usage is allowed.
* Crop residue cannot be burned.
* Maintain minimum amount residue as prescribed in the AG E&S or Conservation Plan. If residue levels are not achieved, adjust management accordingly by planning a new residue amount; adjusting the planting, tillage, or harvesting equipment; decreasing secondary tillage passes; or not removing crop residue / fodder.
* In areas of heavy residue, uniformly spread the residue prior to planting.

**Riparian Forest Buffer (391)**

Maintain existing riparian forested buffer. Follow these basic operation and maintenance guidelines:

* All livestock will be permanently excluded from this area.
* Spot apply herbicide, following all herbicide label recommendations, or mow as necessary to control noxious weeds, to prevent the invasion of undesirable vegetation, and to provide habitat for a variety of wildlife species.
* Vehicular traffic is limited to only what is necessary to perform required operation and maintenance.
* Replace dead trees or shrubs and control competing vegetation until the buffer is fully functional.

**Roof Runoff Structure (558)**

Maintain existing structures, typically roof gutters and downspouts, drip line drains, etc. Follow these basic operation and maintenance guidelines:

* Keep roof runoff structures clean and free of obstructions that reduce flow.
* Inspect the roof regularly and after all significant storm events, to identify repair and maintenance needs and make needed repairs.
* Maintain devices to protect downspouts from livestock and equipment damage, and outlets from small animal access.

**Roofs and Covers (367)**

Maintain the existing roof or cover over associated facility such as waste stacking facility, heavy use area, mortality facility, etc. Follow these basic operation and maintenance guidelines:

* Inspect roof after high wind or significant storm events and make needed repairs.
* Do not add additional loads to members (including adding sides to enclose the structure) without professional review.
* Consider snow load removal if loads exceed structural limits.
* Inspect for mechanical damage and replace or reinforce as needed.
* Inspect all structural connections (bolts, gusset plates, etc.) and repair or replace as needed.
* Inspect fabric covers and replace or repair damaged covers.
* Significant structural issues or questions should be referred to a building professional or PA registered engineer.

**Short Term Storage of Animal Waste and Byproducts (318)**

Maintain short term storage areas or in-field stacking areas at location(s) shown on plan maps. **The location of these sites must meet the Act 38 nutrient management plan and DEP manure management plan requirements.** Follow these basic operation and maintenance guidelines:

* Apply stacked manure within 120 days or cover.
* Add additional bedding if manure does not stack at least 4 feet.
* Rotate site location and re-vegetate area.
* Stack in single pile or windrow, up and down hill, to shed water and avoid ponding.
* Divert offsite/upslope water.
* Certain manure types more subject to runoff should be located above vegetated areas.

**Sprinkler System (442)**

Maintain the existing system (stationary, overhead, pulse jet, traveling gun, etc.) used to land apply liquid wastes. Follow these basic operation and maintenance guidelines:

* Maximum one time application must not exceed 9,000 gallons/acre. Verify that proper settings are used to avoid over-application.
* Rates above 9,000 gallons/acre need to be approved by the SCC and must not exceed infiltration rate and water holding capacity.
* No application within 100’ of stream unless permanent vegetated buffer of at least 35 feet.
* Total application during the winter period must not exceed 5,000 gallons per acre provided soils are not frozen.
* Observe and verify that fixed sprinkler nozzles are properly rotating when applying liquid wastes and repair as needed.
* Empty solids from the settling tank annually, or more frequently, as needed.

**Stormwater Runoff Control (570)**

Maintain practices associated with stormwater runoff. These could include, but are not limited to inlets, piping, stormwater basins, infiltration areas, etc. Follow these basic operation and maintenance guidelines:

* Maintain practices, unless impervious structures are converted back to prior conditions.
* Inspect after all significant storm events to identify repair and maintenance needs.
* Remove sediment, trash and other accumulated debris from settling basins and trash guards as needed.
* Inspect all practices on an annual basis.
* Mow vegetated areas annually between August 1 and August 15 to control weedy vegetation or more frequently as desired.
* Inspect frequently for burrowing animals for practices with earthen embankments. Eradicate burrowing animals and close burrows as soon as practical.

**Stream Crossing (578)**

Maintain existing stream crossing(s). Follow these basic operation and maintenance guidelines:

* Inspect after all significant storm events to identify and repair maintenance needs.
* Replace damaged or lost materials with similar products.
* Maintain associated practices such as gates, fencing, stabilized trails etc.
* Relocation or significant changes will typically require obtaining local, state, and federal permits.
* Maintain up-slope surface water diversion devices such as waterbars and belt deflectors. Reshape and repair as needed.
* Continuous repairs may signal a need for professional assistance in resolving issues.

**Stripcropping (585)**

Maintain stripcropping in designated fields. Follow these basic operation and maintenance guidelines:

* Follow conservation plan crop rotation as outlined in the Ag E&S or Conservation Plan, and the associated maximum allowed tillage.
* Maintain required width and alignment.
* Adjacent strips may be similar if both are close growing, sediment trapping, erosion-resistant crops like hay or small grains.
* Establish a cover crop with rotations having corn silage and requiring manure application.
* Strips done within 100’ of a stream with tillage require additional practices to maintain Act 38 compliance, such as no-till or cover crops, to maintain a minimum of 25% crop residue.

**Structure for Water Control (587)**

Maintain existing screen box(s), level lip spreader(s), waterbar(s), grated channel, dropbox(s), etc. Follow these basic operation and maintenance guidelines:

* Inspect after all significant storm events to identify and repair maintenance needs.
* Clean and remove debris, built up manure, etc. as needed on screens, grates, inlet holes, etc.
* Re-grade, reshape, and /or resurface area around the structure as needed to maintain grade and flow of surface water into structure.
* All practices should be checked at least twice a year.

**Subsurface Drain (606)**

Maintain existing drainage systems. Follow these basic operation and maintenance guidelines:

* Inspect outlet annually to verify outlet clear of obstructions and animal guard in place.
* Repair areas with blowouts or washed out outlets.
* Discharges with manure odor or organic material require collection and redirection. Report to appropriate agencies if discharging into a stream.

**Terrace (600)**

Maintain the existing terrace or terrace system. Follow these basic operation and maintenance guidelines:

* Inspect after all significant storm events to identify and repair maintenance needs.
* Keep inlet for piped terraces free of debris. Replace if damaged.
* Keep manure application at least 100’ away from inlet.
* Remove accumulated sediment when needed.
* Inspect associated underground piping for blowouts.
* Inspect outlet annually. Verify free of debris and outlet stable for both pipe outlet and gradient terraces.
* Mow vegetated areas at least annually between August 1 and August 15 to control weedy vegetation or more frequently as desired.
* Inspect frequently for burrowing animals in sections with earthen embankments. Eradicate burrowing animals and close burrows as soon as practical.

**Trails and Walkways (575)**

Maintain the existing animal walkways. Follow these basic operation and maintenance guidelines:

* Livestock should not be confined, fed or watered in these areas.
* Inspect after all significant storm events to identify repair and maintenance needs.
* Re-grade, reshape and/or resurface walkways as needed to maintain grade, dimensions, and desired walking surface.
* Divert runoff away from walkway and maintain waterbars to deflect water off walkway. Reshape and repair as needed.
* Manage manure accumulation by cleaning heavily used sites yearly or more frequently.
* Maintain all supporting practices, such as fence, gates, crossings, subsurface drainage, waterbars, and geotextile as originally installed.

**Underground Outlet (620)**

Maintain existing outlets associated with other practices such as roof runoff, waste storage facilities, structure for water control, etc. Follow these basic operation and maintenance guidelines:

* Inspect after all significant storm events to identify repair and maintenance needs.
* Keep all inlets and outlets free of trash and debris. Maintain animal guards.
* Repair damage caused by construction or farm equipment or loss of cover due to erosion.
* Maintain adequate backfill over all pipes.
* Maintain all supporting practices, such as riser pipes, drop boxes, downspouts, water and sediment control basins and rock-lined outlets as originally installed.

**Vegetated Treatment Area (635)**

Maintain the existing area of vegetation to treat runoff. Follow these basic operation and maintenance guidelines:

* Maintain distribution system to avoid concentrated flow. Verify that flow is spread uniformly across the design flow width. Regrade and redirect as needed to re-establish.
* Spreader pipe systems need to be flushed annually and discharge holes cleaned as needed.
* Observe and verify that fixed sprinkler system nozzles are properly rotating when applying liquid wastes and fix and replace as needed.
* Maintain practice used to divert off-site surface water from the treatment area.
* Any visible erosion must be filled with topsoil and reseeded as soon as possible.
* Dense, uniform vegetation is needed for optimum performance.
* Harvest/remove treatment area vegetation as appropriate to encourage dense growth. Do not harvest too short (not less than 4 inches) or too late in the growing season to prevent sufficient regrowth for practice function.
* Flash grazing shall only be done when surface is able to support hooved animals without damaging the soil structure or destroying vegetation. Grazing must be managed to avoid overgrazing.
* Maintain 4 to 12 inches of vegetation at all times.
* Control weed species, especially state-listed noxious weeds.
* Inspect and repair treatment strips after storm events to fill in gullies, remove flow disrupting sediment accumulation, reseed disturbed areas, maintain distribution system, and take other measures to prevent concentrated flow.

**Waste Separation Facility (632)**

Maintain the existing waste separation facility. Follow these basic operation and maintenance guidelines:

* Follow instruction manuals for mechanical separation equipment such as manure or sand separation equipment.
* Inspect facilities annually and repair as needed.
* Maintain inlet and outlet structures.
* Remove sediment and wastes as needed.
* Maintain any associated safety fencing, warning signs, and gates.

**Waste Storage Facility (313)**

Maintain the existing waste storage facility or facilities. Follow these basic operation and maintenance guidelines:

* All facilities must be inspected on an annual basis. Outside and open top facilities should be inspected when empty. Interiors of enclosed or covered facilities should be inspected if there are indications of leakage and only after proper ventilation and use of SCBA equipment before accessing the facility.
* Maintain any associated safety fencing, warning signs, and gates, keeping the gates locked when not in use.
* Facilities using gypsum products require additional safety precautions during agitation of both covered and open storage facilities. Deadly gases can develop around the agitation area.
* Inspect perimeter drain outlets or check observation wells to verify no leakage. Manure odors or colored liquids require additional investigation. Discharges to a watercourse or stream require collection and storage. Report to appropriate local or state authorities.
* Structural repairs, leakage areas, and rehabilitation plans require assistant from a professional engineer.
* Facilities storing manure with sand will require additional agitation and extra effort to remove to maintain storage capacity at each cleanout.
* Maintain required freeboard plus 25 year-24 hour storm event. Typically 6 inches for vertical walled storages or 12 inches for sloped storages plus 6 inches. Additional depth is needed for CAFO facilities.
* When loading or unloading storage collect and clean up all spillage of manure around the facility.
* Divert all stormwater from entering manure storage facilities, including dry stacking facilities.
* Filter and treat all stormwater that is comes off a manure stacking facility.
* Restrict and/or limit animal access to manure storage and stacking facility.
* New storages or expansion of existing semi-solid of liquid storages require a design and certification from a PA registered professional engineer.

**Waste Transfer (634)**

Maintain all components associated with the movement of manure, both liquid and solid fraction from the point of origin to short or long term storage or final land application. Items include cross channels, scrape alleys, pushoff, milkhouse collection and transfer, reception pit, etc. Follow these basic operation and maintenance guidelines:

* All facilities must be inspected on an annual basis.
* Repair concrete floors and curbs and any other materials used to control or direct manure.
* Maintain any associated safety fencing, warning signs, and gates, keeping the gates locked when not in use.
* Structural repairs and rehabilitation plans require assistant from a PA professional engineer.
* Conversion of gravity flow collection channels to storage will require certification for water tightness by a PA professional engineer.

**Water and Sediment Control Basin (638)**

Maintain the existing water and sediment control basin. Follow these basic operation and maintenance guidelines:

* Inspect after all significant storm events to identify repair and maintenance needs.
* Keep all inlets and outlets free of trash and debris.
* Repair concrete walls and floors as needed.
* Repair earthen fill.
* Repair stabilized overflow channels. Replace rock or other materials as needed.
* Mow vegetated areas annually between August 1 and August 15 to control weedy vegetation or more frequently as desired.
* Inspect frequently for burrowing animals. Eradicate burrowing animals and close burrows as soon as practical.

**Watering Facility (614)**

Maintain the existing watering facility that consists of a system for collection of water, tanks, and outlets. Follow these basic operation and maintenance guidelines:

* Check entire system regularly for leaks and repair as necessary.
* Monitor to ensure regular inflow and outflow.
* Ensure that areas adjacent to the watering facility are stable.
* Regularly clean the facility, removing any algae or iron sludge accumulation.
* Seasonal systems must have waterlines and troughs drained to prevent damage from freezing.