

**IMPACT OUTDOORS P1 (AML) PILOT PROJECT  
CLAY COUNTY, KENTUCKY**

A. STANDARD DOCUMENTS

The AML Standard Details, Technical Specifications, and Bid Item Descriptions are posted on the Division's website at [www.aml.ky.gov](http://www.aml.ky.gov). Electronic copies may be downloaded through the KY Finance Cabinet/Division of Engineering & Contract Administration (DECA) Online Planroom; [www.stateofkyplanroom.com](http://www.stateofkyplanroom.com). These documents shall be enforced for this project unless stated otherwise in writing from KYDAML. Special Conditions and Drawing notes shall supersede the AML Standard versions.

B. ALLOWABLE PRICE LIMIT

Allowable Price Limit (APL) is part of the contract documents and is stated on the Bid Schedule. The Unit Price (UP) / Lump Sum Price (LS) high/low as stated is a price range that has been defined for each item on the Bid Schedule. **Any Unit Price / Lump Sum Price outside this range may be considered an unbalanced bid and may have to be justified in writing if such bid is deemed the low responsive bid.** The CONTRACTOR is also cautioned that other considerations for rejection, notwithstanding the APL, may be enforced (e.g. total bid price being excessively over the ENGINEER'S ESTIMATE).

C. CONTRACT LENGTH

All work shall be completed within (90) calendar days from the effective date of the Award of Contract. Within the bounds of prudent project performance, it shall be the responsibility of the CONTRACTOR to plan and implement construction sequences which follow the intent of these CONTRACT DOCUMENTS, particularly as, reflected in the Drawings and Special Conditions and to protect any portion of the contract which may be completed before others.

D. CONTRACTOR'S INFORMATION SHEET

The Contractor's Information sheet must be filled out and submitted with the bid. Failure to submit the Contractor's Information sheet with the bid will be the basis for declaring the bid "unresponsive."

E. SPECIAL CONDITIONS & PROJECT NOTES

None

F. PERMITS

None

**BID ITEM DESCRIPTION**  
**IMPACT OUTDOORS P1 (AML) PILOT PROJECT**  
**CLAY COUNTY, KENTUCKY**

NO	ITEM	DESCRIPTION
1	<b>MOBILIZATION</b>	<p>This item consists of the mobilization and demobilization of the CONTRACTOR’S forces and equipment in accordance with the “Mobilization/Demobilization” AML Standard Technical Specification. The amount of this bid item is based on the Engineer’s Estimate.</p> <p><b>Measurement:</b> Not Applicable.</p> <p><b>Payment:</b> Payment shall be made at increments set in the AML Technical Specifications totaling the Lump Sum price.</p>
2	<b>UTILITY RELOCATION / REPLACEMENT</b>	<p>This consists of furnishing all materials, equipment, and labor necessary to replace utilities damaged by construction or relocate any utilities that are in the construction area in accordance with the “Utility Relocation” AML Standard Technical Specification. The CONTRACTOR is required to supply the ENGINEER with all documentation to support cost incurred to qualify for reimbursement.</p> <p><b>Special Considerations:</b> None</p> <p><b>Major Incidentals:</b> These will be listed in writing by the ENGINEER prior to beginning the work.</p> <p><b>Measurement:</b> Not Applicable.</p> <p><b>Payment:</b> Payment shall be made for Actual Documented Costs for “UTILITY RELOCATION/REPLACEMENT” approved by the ENGINEER. The payment shall be a direct reimbursement for actual documented costs to the CONTRACTOR in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all labor, equipment, materials, and incidentals.</p>

3	<b>SITE PREPARATION</b>	<p>This item of work shall consist of furnishing all materials, equipment, and labor as depicted on the Drawings and as directed by the ENGINEER in accordance with the “Site Preparation” AML Standard Technical Specification.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Major Incidentals:</u></b> Clearing, grubbing, windrowing, burning, pipe removal and disposal, pipe cleanout, temporary diversion ditch construction, domestic debris removal and disposal, concrete &amp; bituminous asphalt debris removal and disposal, access improvement/construction, in-kind fence repair/replacement, and temporary stream diversion.</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured with a handheld GPS and rounded up to the next whole 0.5 acre actually cleared and grubbed (excludes slurry and refuse areas).</p> <p><b><u>Payment:</u></b> Payment shall be the product of the Actual Accepted Quantities and the Unit Price bid for “<b>SITE PREPARATION</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all labor, materials, equipment, and other items necessary to complete the work.</p>
4	<b>FILTER FABRIC</b>	<p>This item consist of furnishing all materials, equipment, and labor, necessary to install filter fabric utilized in ditch construction as depicted on the Drawings and as directed by the ENGINEER in accordance with “Filter Fabric” AML Standard Technical Specification. This includes all types of filter fabric used on a jobsite. The standard details list the type and quantity of fabric for each purpose.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Inspector Notes:</u></b> Collect manufacturer certificates for each unit.</p> <p><b><u>Major Incidentals:</u></b> Staples</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured as the next whole square yard installed and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment shall be the product of the Actual Accepted Quantities and the Unit Price bid for “<b>FILTER FABRIC</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all labor, equipment, materials, and incidentals.</p>

5	<b>SILT BARRIER- BALES &amp; FENCE</b>	<p>This item consists of furnishing all materials, equipment, and labor necessary to maintain silt control as depicted on the Drawings, AML Standard Details, and as directed by the ENGINEER in accordance with the "Silt Control" AML Standard Technical Specification. Hay/straw bales shall be placed with an overlap equal to 0.4 bales per linear foot of silt control fencing. Silt fence shall be trenched and removed at the end of the project. <u>Failure to remove silt control fence (geotextile fabrics) shall result in forfeiture of demobilization.</u></p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Major Incidentals:</u></b> Maintenance, silt fence trenching and removal</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured as the next whole linear foot installed and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment shall be the product of the Actual Accepted Quantities and the Unit Price bid for "<b>SILT BARRIER - BALES &amp; FENCE</b>" in accordance with the "General Provisions" AML Standard Technical Specification. Such payment shall constitute full compensation for materials, equipment, labor, and incidentals.</p>
6	<b>EXCAVATOR FOR EXPOLORATION</b>	<p>This item of work shall consist of furnishing all materials, equipment, and labor as depicted on the Drawings and as directed by the ENGINEER in accordance with the "Earthwork" and "Equipment" AML Standard Technical Specifications. The minimum equipment size and purpose will be listed on the Drawing, Project Description, and/or Special Conditions. Excavation related to earthwork, gradework, and ditches are covered under their respective items, not this item.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Major Incidentals:</u></b> Equipment, operator, fuel, maintenance items</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured as the next whole hour used for purposes approved and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment shall be the product of Actual Accepted Quantities and the Unit Price for "<b>EXCAVATOR</b>" in accordance with the "General Provisions" AML Standard Technical Specification. Such payment shall constitute full compensation for all labor, materials, equipment, and incidentals.</p>

7	<b>HOE RAM</b>	<p>This item consist of furnishing all materials, equipment, and labor necessary to accomplish the required excavation of rock utilizing a hoe ram as depicted on the Drawings and as directed by the ENGINEER in accordance with the “Equipment” AML Standard Technical Specification.</p> <p><b>Special Considerations:</b> None</p> <p><b>Major Incidentals:</b> Equipment, operator, fuel, maintenance items</p> <p><b>Measurement:</b> Actual Quantities shall be measured as the next whole equipment hour when required to construct ditches and other features approved by the ENGINEER.</p> <p><b>Payment:</b> Payment shall be the product of the Actual Accepted Quantities and the Unit Price bid for “<b>HOE RAM</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for materials, equipment, labor and incidentals.</p>
8	<b>EARTHWORK – GRADEWORK</b>	<p>This item consist of furnishing all materials, equipment, and labor necessary to accomplish the required excavating, placement, and grading of material as depicted on the Drawings and as directed by the ENGINEER in accordance with the “Earthwork” AML Standard Technical Specification.</p> <p><b>Special Considerations:</b> None</p> <p><b>Measurement:</b> Actual Quantities shall be measured with a handheld GPS and rounded up to the next whole 0.5 acre.</p> <p><b>Payment:</b> Payment shall be the product of the Plan Quantity Volume and the Unit Price bid for “<b>EARTHWORK-GRADEWORK</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all labor, materials, equipment, and other items necessary to complete the work—this includes all transportation and gradework efforts associated with designated waste areas.</p>
9	<b>EROSION CONTROL BLANKET-ECB</b>  <b>(BENCHES, DITCHES, &amp; SLOPES)</b>	<p>This item consist of furnishing all materials, equipment, and labor necessary to install all types of erosion control blanket (ECB) as depicted on the Drawings, AML Standard Details, and as directed by the ENGINEER in accordance with the “Erosion Control Blanket” AML Standard Technical Specification. Subgrade preparation shall be incidental. Placement of ECB for slope protection will also be covered by this bid item.</p> <p><b>Special Considerations:</b> None</p> <p><b>Major Incidentals:</b> Excavation, subgrade preparation</p> <p><b>Measurement:</b> Actual Quantities shall be measured as the next whole square yard, including overlaps, installed and approved by the ENGINEER.</p> <p><b>Payment:</b> Payment shall be the product of the Actual Accepted Quantities and the Unit Price bid for “<b>EROSION CONTROL BLANKET-ECB</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation full compensation for all labor, materials, equipment, and incidentals.</p>

10	<b>CLASS II / III –  (DITCHES, ANCHORS, DRAINS, &amp; BUTTRESSES)</b>	<p>This item consist of furnishing all materials, equipment, and labor necessary to install Class II and Class III rock as depicted on the Drawings, AML Standard Details, and as directed by the ENGINEER in accordance with “Crushed Aggregate and Channel Lining” and “Ditches” AML Standard Technical Specifications. Subgrade preparation shall be incidental. For channels with acid mine drainage DAML will use the current Limestone Sample Results published by the KY Department of Agriculture to determine an effective weight when material is from a source with &lt; 85% calcium carbonate.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Inspector Notes:</u></b> Collect supplier tickets.</p> <p><b><u>Major Incidentals:</u></b> Excavation, subgrade preparation</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured based on weigh tickets supplied to the ENGINEER as ton(s) installed and accepted by the ENGINEER. Material for treating AMD and not meeting the 85% minimum is adjusted by multiplying the weight ticket tons by the ratio of the report % CaCO<sub>3</sub> (as Calcium %) to the 85% minimum, rounded to the nearest ton. Material exceeding the 85% minimum is not adjusted.</p> <p><b><u>Payment:</u></b> Payment shall be the product of the Actual Accepted Quantities and the Unit Price bid for “<b>CLASS II/III</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all labor, materials, equipment, and incidentals.</p>
11	<b>24” DWPP PIPE</b>	<p>This item consists of furnishing all materials, equipment, and labor, necessary to install the dual wall polypropylene pipe as depicted on the Drawings, AML Standard Details, and as directed by the ENGINEER in accordance with the “Crushed Aggregate and Channel Lining”, “Grout Products”, and “Pipe” AML Standard Technical Specifications.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Inspector Notes:</u></b> Collect manufacturer certificates for each unit.</p> <p><b><u>Major Incidentals:</u></b> Excavation, bedding, aggregate backfill to 1’ over top of pipe, steel plates for access maintenance.</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured as the next whole linear foot installed and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment shall be the product of the Actual Accepted Quantities and the Unit Price bid for “<b>DWPP PIPE</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all labor, equipment, materials, and incidentals.</p>

12	<b>CONCRETE HEADWALL- PIPES ≤36” DIA.</b>	<p>This item consists of furnishing all materials, equipment, and labor, necessary to construct the headwalls as depicted on the Drawings, AML Standard Details, and as directed by the ENGINEER in accordance with the “Concrete Headwalls” AML Standard Technical Specification. Units cast in the field require fiber, pre-cast units require manufacturer certification that concrete meets or exceeds required strength.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Inspector Notes:</u></b> For pre-cast units collect manufacturer certificate (includes strength of concrete used).</p> <p><b><u>Major Incidentals:</u></b> Concrete, steel reinforcement, fiber, grout, formwork, dissipaters, backfill</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured as “EACH” unit installed and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment shall be the product of the Actual Accepted Quantities installed and the Unit Price for “<b>CONCRETE HEADWALL- PIPES ≤36” DIA.</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all labor, materials, equipment, and incidentals.</p>
13	<b>SEEDBED PREPARATION</b>	<p>This item shall consist of furnishing all materials, equipment, and labor for the purpose of revegetation of the disturbed areas as depicted on the Drawings and as directed by the ENGINEER in accordance with the “Revegetation” AML Standard Technical Specification.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured to the next whole full acre approved by and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment for revegetation shall the product of the Actual Accepted Quantities and the respective Unit Price bid for “<b>SEEDBED PREPARATION</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all materials, labor, equipment, and incidentals.</p>

14	<b>AGRICULTURAL LIMESTONE</b>	<p>These items shall consist of furnishing all materials, equipment, and labor for the purpose of revegetation of the disturbed areas as depicted on the Drawings and as directed by the ENGINEER in accordance with the “Revegetation” AML Standard Technical Specification. DAML will use the current Limestone Sample Results published by the KY Department of Agriculture to determine a Relative Neutralizing Value (RNV) for weight adjustment.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Inspector Notes:</u></b> Collect supplier tickets.</p> <p><b><u>Major Incidentals:</u></b> Application and incorporation</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured based on weigh tickets supplied to the ENGINEER as ton(s) of appropriately sized 85% calcium carbonate (min.) aggregate installed and accepted by the ENGINEER. Material not meeting the minimum sizing and/or calcium carbonate content will be adjusted by multiplying the weight ticket tons supplied by the ratio of the RNV to the minimum RNV rounded to the nearest ton. Material meeting or exceeding all the minimum values is not adjusted.</p> <p><b><u>Payment:</u></b> Payment for revegetation shall the product of the Actual Accepted Quantities and the respective Unit Price bid for "<b>AGRICULTURAL LIMESTONE</b>" in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all materials, labor, equipment, and incidentals.</p>
15	<b>FERTILIZER</b>	<p>These items shall consist of furnishing all materials, equipment, and labor for the purpose of revegetation of the disturbed areas as depicted on the Drawings and as directed by the ENGINEER in accordance with the “Revegetation” AML Standard Technical Specification.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured to the next whole half ton approved by and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment for revegetation shall the product of the Actual Accepted Quantities and the respective Unit Price bid for "<b>FERTILIZER</b>" in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all materials, labor, equipment, and incidentals.</p>



16	<b>SEED</b>	<p>These items shall consist of furnishing all materials, equipment, and labor for the purpose of revegetation of the disturbed areas as depicted on the Drawings and as directed by the ENGINEER in accordance with the “Revegetation” AML Standard Technical Specification. Seed mixture will be listed on the Drawings, Project Description, and/or Special Conditions.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Inspector Notes:</u></b> Collect manufacturer certificates for each unit.</p> <p><b><u>Major Incidentals:</u></b></p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured to the next whole pound of pure live seed approved by and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment for revegetation shall the product of the Actual Accepted Quantities and the respective Unit Price bid for "<b>SEED</b>" in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all materials, labor, equipment, and incidentals.</p>
17	<b>MULCH- STRAW &amp; HAY</b>	<p>These items shall consist of furnishing all materials, equipment, and labor for the purpose of revegetation of the disturbed areas as depicted on the Drawings and as directed by the ENGINEER in accordance with the “Revegetation” AML Standard Technical Specification.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured to the next half acre approved by and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment for revegetation shall the product of the Actual Accepted Quantities and the respective Unit Price bid for "<b>MULCH- STRAW &amp; HAY</b>" in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all materials, labor, equipment, and incidentals.</p>
18	<b>ROADWAY STONE</b>	<p>This item shall consist furnishing all materials, equipment, and labor necessary to place and compact as necessary the various gradations of stone as depicted on the Drawings and as directed by the ENGINEER in accordance with the “Crushed Aggregate and Channel Lining” AML Standard Technical Specification.</p> <p><b><u>Special Considerations:</u></b> None</p> <p><b><u>Measurement:</u></b> Actual Quantities shall be measured based on weigh tickets supplied to the ENGINEER as ton(s) of each type of channel lining, and/or aggregate installed and accepted by the ENGINEER.</p> <p><b><u>Payment:</u></b> Payment shall be the product of the Actual Accepted Quantities and the Unit Price bid for “<b>ROADWAY STONE</b>” in accordance with the “General Provisions” AML Standard Technical Specification. Such payment shall constitute full compensation for all labor, equipment, materials, and incidentals.</p>

# Erosion and Sediment Control Best Management Practices (BMP) Plan

January 2017

## **OVERVIEW**

This Best Management Practices (BMP) plan is a guide for Kentucky Division of Abandoned Mine Lands (DAML) projects. It contains information regarding preventing, reducing and controlling erosion, sediment, and pollutant runoff from Abandoned Mine Land (AML) Reclamation and Acid Mine Drainage (AMD) Abatement project construction sites. The information in this BMP will aid DAML staff and contractors in selecting, installing, and maintaining erosion prevention and sediment control measures during the different stages of construction. This BMP plan, in accordance with DAML Technical Specifications and Standard Drawings, is intended to protect Kentucky's streams from potential water quality impacts resulting from DAML projects.

This general BMP document is to outline the various pollution prevention measures used on AML Reclamation or AMD Abatement Projects. The primary sources of pollutants are solids mobilized during storm events and precipitants from mineralized mine drainage. Other sources of pollutants include oil/fuel/grease from servicing and operating construction equipment, concrete washout water, sanitary wastes, and trash/debris.

## **EROSION PREVENTION AND SEDIMENT CONTROL MEASURES**

Plans for Reclamation and AMD abatement construction projects will include erosion control measures on the planview sheets when possible, and will depict Disturbed Drainage Areas (DDAs) and related information. The construction notes and project description may describe other control measures. The Contractor and Engineer may select an additional BMP for the project as the project changes and construction progresses. Projects that do not have DDAs annotated in the plans will employ the same concepts selecting and implementing this general BMP plan.

Address disturbed areas or sources of sediments by the most effective means in the specific work area. Direct non-storm water discharges to sediment basins/traps or to a filter fence enclosure in a flat vegetated infiltration area or filtered via another approved commercial product. All deep mine and surface impoundment water will be tested and treated, when as necessary, to meet the DAML Water-Treatment and Disposal Technical Specification unless stricter limitations are listed in an existing Total Daily Maximum Load (TMDL) limit.

## **PERMITS**

The DAML shall review each project during project development to determine whether any permits are required to implement the project work. When a permit is required, DAML will make every effort to obtain the permit prior to letting the project for bidding. Permit specific conditions shall trump any standard conditions and/or practices. All permits must be maintained onsite and produced when requested by regulatory authorizes inducing representative of the permitting authority.

Common permits types for DAML projects:

- 401 Water Quality Certification (WQC)
  - Issued by the KY Division of Water
- 402 KY Pollution Discharge Elimination System (KPDES)
  - DAML activities are covered under the AML KPDES General Permit
- 404 US Army Corps of Engineers (USACE)
  - Issued by the US Army Corps of Engineers- Nashville District, Louisville District, or Huntington District (Depending upon major drainage basin)
- KY Stream Construction (Floodplain)
  - Issued by the KY Division of Water
- Local Floodplain Permit
  - Issued by the County/Municipality
- Local Storm Water Construction
  - Issued by the County/Municipality

#### **A) Field Review Walk-Thru:**

The DAML will conduct a project review between the Project Engineer, Construction Branch Personnel, Project Design Technician, and Field Office Staff, to review the construction plans and identify any changes needed prior to letting the project for bidding. The group will evaluate the locations and types of site specific BMP and any other erosion prevention and sediment control measures chosen for incorporation into the final design plans.

#### **B) Pre-Bid Conference**

DAML will present the project specific BMP and permit requirements/conditions to the potential contractors during the pre-bid conference meeting.

#### **C) Pre-Construction Conference**

Prior to the actual beginning of the project, DAML will hold a pre-construction conference between representatives of the DAML, the Contractor, including any Subcontractors, as well as other interested agencies and parties. Items discussed will include the time and sequence for construction, planned methods of operation, payment, and other relevant questions including any permit requirements and the erosion and sediment control plan.

#### **D) Construction Access**

This is the first land-disturbing activity. Construction entrances shall be a minimum of twenty (20) feet wide by fifty (50) feet long, measured from the shoulder of the public road, and consist of No. 2 aggregate over a heavy weight non-woven filter fabric base. As soon as construction begins, stabilize bare areas with gravel and temporary mulch and/or vegetation.

#### **E) Clearing and Grubbing**

Use the following techniques for clearing and grubbing activities:

- 1) Leave areas undisturbed when possible.
- 2) Construct silt basins to provide silt volume for large areas.
- 3) Construct Silt Trap(s) Type A for small areas.
- 4) Construct Type B silt traps for areas with rapid runoff and sediment-laden runoff.
- 5) All silt traps should have a 3:1 flow length to width ratio. Add spreader bars, baffles, or turbidity curtains to maintain the flow path ratio when site conditions require traps sizes smaller than the standard detail dimensions.
- 6) Install geotextile bags and/or rock checks in front of existing drop inlets.
- 7) Construct diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
- 8) Maintain brush and/or other barriers to slow and/or divert runoff.
- 9) Construct silt fences/hay bales to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence/hay bales may be considered.
- 10) Apply temporarily mulch to area not actively being disturbed or for any area left undisturbed for fourteen (14) days.
- 11) Employ non-standard or innovative methods.

#### **F) Stream Crossings / Work Along Streams**

- 1) Temporary low-water stream crossings follow the guidelines included in the DAML Technical Specifications and those established by the KY Division of Water Floodplain Management Section. Removal of a temporary crossing may be required to accommodate large storm events.
- 2) Do not completely block stream flow (even temporary). Instead, utilize some form of pass thru mechanism during all AML projects.
- 3) Work within a stream channel shall not cause flooding of properties upstream, downstream or within the project area or cause downstream water quality degradation. Minimize equipment contact time with the stream water by diverting water around equipment working in or along streams.
- 4) No flowing water will interact with any uncured concrete placed in the stream channel.
- 5) Divert all stream water around the work areas in accordance to methods listed in the DAML Stream Protection & Relocation technical specification, AML Standard Details Section 60, and as by the appropriate permit guidelines.
- 6) Temporary out of channel stream diversion must use one of the three approved methods: pipe diversion, sandbag/stone channel diversion, and/or fabric-based channel diversion. Do not construct any temporarily diverted channel on bare, erodible soil. No temporary diversion shall be permanent without a 401, 404, and other appropriate permits.

## **G) Deep Mine and Surface Water Impoundments**

The DAML Resident Inspector will test the mine water from deep mines and surface impoundments on the project area to determine the pH and total iron content. Treat the water until it meets the DAML Water-Treatment and Disposal Technical Specification or an existing TMDL, whichever is stricter, before release through a silt control structure(s).

### **Monitoring & Recording**

The DAML Inspector will maintain a log of the pH and total iron content results prior to releasing and during each release day. Perform a minimum of two (2) tests downstream each day to ensure the maintenance of water quality during release and is not degrading the receiving stream.

### **Types of structures/facilities include:**

- 1) Silt Traps Type A (20'L x 5'W x 2'D min dugout)
- 2) Silt Traps Type B (20'L x 5'W x 2'D min dugout with rock berm)
- 3) Silt Check - Rock checks with filter fabric core lining installed in channels and in front of pipes
- 4) Temporary silt control fence with Class II filter berm
- 5) Sediment collection bags

## **H) Cut and Fill and Placement of Drainage Structures**

Areas at final grade will be seeded and mulched within five (5) days. Soil stock piles and areas that are not at final grade but where construction will cease for a period of fourteen (14) days or longer, shall receive temporary mulch no later than fourteen (14) days from the last construction activity in that area.

### **Types of structures/facilities include:**

- 1) Silt Traps Type B (20'L x 5'W x 2'D min dugout with rock berm)
- 2) Silt Checks - Bags in front of pipes after they are placed
- 3) Channel lining
- 4) Erosion control blanket
- 5) Temporary mulch and/or seeding for areas where construction activities will be ceased for 14 days or more
- 6) Non-standard or innovative methods

## **I) Temporary Shutdown**

### **Items to be completed prior to shutdown include:**

- 1) Clean out behind, repair or replace silt fence and/or hay bales
- 2) Clean out all silt traps

- 3) Apply temporary mulch and track into the soil
- 4) Sow cover crop (weather permitting)

#### **J) Finish Work**

- 1) Establish permanent seeding and protection
- 2) Remove non-permanent silt checks from ditches and drains if protected with other BMPs sufficient to control erosion and vegetation is established.
- 3) Remove non-permanent silt traps and basins.
- 4) Remove geotextile silt fence.
- 5) Planting trees and/or shrubs where they are included in the project.
- 6) Clean out behind, repair, and/or replace bale silt barriers
- 7) Clean out all permanent silt traps and basins

#### **K) Post-Construction**

The Contractor shall assume responsibility for all workmanship and materials for a period of one year from the date of final payment, as directed by the Contract Documents. Any work found to be defective due to failure to comply with the provisions and intent of the Contract Documents shall be corrected at the Contractor's expense. Problems determined not to be created by the landowner or due to the Contractor will be addressed by the DAML for a period of up to three years, pending available funding.

#### **OTHER CONTROL MEASURES**

##### **L) Solid Materials**

No solid materials, including rock and building materials, shall be discharged into waters of the U.S. except as authorized by the Clean Water Act (CWA) Section 401 and Section 404 permits.

##### **M) Waste Materials**

Collect and store waste materials that may leach pollutants (paint and paint containers, caulk tubes, oil/grease containers, liquids of any kind, soluble materials, etc.) in appropriate covered waste containers. Remove waste containers from the project site frequently as to not allow wastes to become a source of pollution. Instruct all personnel regarding the correct procedure for waste disposal and dispose of wastes in accordance with appropriate regulations.

##### **N) Hazardous Waste**

Manage and dispose of hazardous waste materials in the manner specified by local or state regulation. Notify the Resident Inspector if there are any hazardous wastes generated, and provide a plan for the management and disposal of such materials. Instruct site personnel with regard to proper storage and handling of hazardous wastes when required and use the practices to reduce the risks associated with all hazardous materials. Keep products in original containers

unless they are not re-sealable with the original labels and material safety data sheets (MSDS) will be reviewed and retained.

#### **O) Spill Prevention**

Use good housekeeping and material management practices to reduce the risk of spills or other exposure of materials and substances to the weather and/or runoff. Manufacturers' recommended methods for spill cleanup will be maintained on site and readily available upon request. Make personnel aware of procedures and the location of the information and cleanup supplies. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.

Clean up all spills immediately after discovery. Keep the spill area well ventilated. Personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance. Report spills of toxic or hazardous material to the appropriate state/local agency as required by KRS 224 and applicable federal law. Wastes from spill cleanup will be disposed of in accordance with appropriate regulations. The spill prevention plan will be adjusted, as needed, to prevent spills from reoccurring and improve spill response and cleanup.

#### **P) Petroleum Products**

Monitor vehicles and equipment fueled and maintained on site for leaks, and receive regular preventative maintenance to reduce the chance of leakage. Protect petroleum products onsite will be stored in tightly sealed, clearly labeled containers from exposure to weather. The CONTRACTOR shall not have a total of over 1,300 gallons of petroleum products on site at any given time.

#### **Q) Fertilizers**

Store fertilizers in a covered area away from water. Transfer the contents of any partially used bag of fertilizer to a sealable plastic bin to avoid spills. Once applied, work into the soil and apply mulch to limit exposure to storm water.

#### **R) Concrete Truck Washout**

Concrete truck mixers and chutes will not be washed on pavement, near storm drain inlets, or within seventy (75) feet of any ditch, stream, wetland, lake, or sinkhole. Where possible, discharge excess concrete and wash water to areas prepared for pouring new concrete, flat areas to be paved that are away from ditches or drainage system features, or other locations that will not drain off site. Where this approach is not possible, excavate a shallow earthen washbasin away from ditches to receive the wash water.

### **INSPECTIONS**

Use inspection and maintenance practices to maintain erosion and sediment controls:



- 1) The Contractor and DAML Resident Inspector will inspect all erosion prevention and sediment control measures at least once each week and following any rain of 0.1 inch or more.
- 2) The DAML Resident Inspector will record the silt control inspections by in their daily report.
- 3) Silt fences/hay bales will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- 4) Inspect silt traps and basins for depth of sediment, and built-up sediment and clean out when it reaches 50% of the design capacity and at the end of the job.
- 5) Inspect diversion dikes and berms and promptly repaired any breaches. Repair areas that are eroding or scouring and re-seeded / mulched as needed.
- 6) Inspect temporary and permanent seeding and mulching for bare spots, washouts, and healthy growth. Repair bare or eroded areas as needed.
- 7) Inspect all material storage and equipment servicing areas that involve the management of bulk liquids fuels and bulk solids weekly for conditions that represent a release or possible release of pollutants to the environment.

## **MAINTENANCE**

Maintain all measures in good working order; initiate corrective actions within twenty-four (24) hours of being reported and completed with five (5) days, address critical failures immediately unless site conditions are too dangerous. Remove Built-up sediment from behind the silt fence/hay bales before it has reached halfway up the height of the fence.

## **ENFORCEMENT**

At all times, representatives from DAML and enforcement agencies will have access to the project site. The ENGINEER reserves right to stop work until erosion prevention and sediment control problems are addressed to his/her satisfaction.