

## **CONTRACTOR SAFETY REQUIREMENTS**

### **1.0 PURPOSE:**

The Pennsylvania State University endeavors to provide a safe and healthy environment for all students, employees, and visitors. Likewise, the University seeks to facilitate the creation and maintenance of a safe and healthy work environment on all work sites, construction and maintenance alike. This document establishes a framework of safety and health requirements that must be met during all phases of work activities at the University.

The Contractor and its subcontractors are responsible for the safety of its employees and all persons on and around a work site. The Contractor is solely responsible for the development and implementation of its own safety program. This document does not relieve, in any way, the duty and responsibility of Contractors, subcontractor, their agents and employees, and other persons performing portions of the Work on the Project to comply with all requirements of Public Law 91-596, the Occupational Safety and Health Act of 1970 ("OSHA"), 29 U.S.C. § 651 et. seq., and all amendments thereto, and any other applicable federal, state or local laws or regulations that address or relate to work site safety.

### **2.0 SCOPE:**

This document provides Contractors with the University's specific requirements that must be incorporated into the Contractor's safety program. This document is not designed nor intended to replace the Contractor's safety program, nor to address every possible safety, environmental, or health issue. In the event that the Contractor's safety program includes a requirement or practice that is more stringent than set forth herein, the provision of the Contractor's safety program shall be followed. This document does not relieve the Contractor of its obligations to: (1) control the means and methods by which its employees, and any subcontractors, shall perform the Work; or (2) independently ascertain what health and safety practices are necessary for the performance of the Work.

This document applies to all Contractors who are awarded a Contract or Purchase Order by the Office of Physical Plant to perform Work at The Pennsylvania State University or any of its campuses. This document does not apply to Work performed at the Penn State Milton S. Hershey Medical Center unless noted otherwise.

No specific requirements herein shall be construed to limit, replace or supersede applicable provisions of federal, state or local laws or regulations that relate to work site safety.

### 3.0 DEFINITIONS:

**Competent person:** Defined by OSHA as "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them". [[29 CFR 1926.32\(f\)](#)]. By way of training and/or experience, a competent person is knowledgeable of applicable standards, is capable of identifying workplace hazards relating to the specific operation, and has the authority to correct them.

**Confined Space:** is a space that means a space that:(1) Is large enough and so configured that an employee can bodily enter it;(2) Has limited or restricted means for entry and exit; and (3) Is not designed for continuous employee occupancy. These spaces may also be classified as permit required confined spaces if they meet the definition of a permit required confined space. See 1926.1200 for additional information and guidance.

**Contract / Contract Documents:** The contract or purchase order, including as applicable any general conditions, drawings, specifications, addenda, or other documents listed or referenced in the contract or purchase order, and any modifications thereof, which specify the Work to be performed on the Project.

**Contractor:** The party named in the contract agreement who will execute the Work (Contractor/Construction Manager) and who shall be responsible for the proper completion of the Project. When not otherwise specified herein, the term "Contractor" shall include subcontractors of any tier, agents and employees of contractors or subcontractors, and any persons engaged to perform Work on the Project.

**Near Misses:** Unplanned events that did not result in injury, illness, or damage, but had the potential to do so. In the case of a near miss, injury, fatality or property damage was averted only through a fortunate break in the chain of events.

**Permit Required Confined Space:** means a confined space that has one or more of the following characteristics: (1) Contains or has a potential to contain a hazardous atmosphere; (2) Contains a material that has the potential for engulfing an entrant; (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or (4) Contains any other recognized serious safety or health hazard.

**Project:** The building, facility or property, that is to be constructed, altered, repaired or improved, as specified in the Contract Documents.

**Qualified Person:** - One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the Project.

**Site Specific Safety Plan (“SSSP”):** The procedures and requirements that must be prepared for each Project, per the template set forth at Appendix A, in order to establish a Project-Specific Safety Plan and to address job- specific hazards that could impact workers on the Job and the University Community. Safety plans are custom made documents that can be amended and changed based upon the hazards of the workplace.

**Subcontractor/Trade Contractor:** Where “subcontractor/trade contractors” is referenced, this includes all trade contractors, subcontractors and lower tier subcontractors engaged to perform work on the Project.

**University:** The Pennsylvania State University and representatives/agents of the University. Also referred to herein as “Penn State” or “Owner.”

**University Community:** This includes but is not limited to employees, students, visitors to Penn State University premises, and any contractors performing work on University controlled property.

**Work** - The construction and services necessary or incidental to fulfill the Contractor's obligations for the Project in conformance with the Contract Documents, including the furnishing of labor and services to perform construction, alteration, demolition and/or maintenance/repair, including painting and decorating.

## **4.0 Responsibilities**

### **4.1 Contractor**

4.1.1 The Contractor is responsible for maintaining and implementing its own safety program and meeting the University's Contractor Safety Requirements.

4.1.2 The Contractor is solely responsible for the safety of all persons on or near to the work site and for all property in proximity thereto and must take all necessary steps to ensure a safe work site.

### **4.2 University**

4.2.1 The University is committed to helping the Contractor meet its goals of a safe, healthy and productive work site.

4.2.2 Nothing herein shall be construed as providing the University with the right or responsibility to control the manner, method and operative details of the work.

## **5.0 Safety Elements**

### **5.1 Safety Representative**

5.1.1 For all Projects, Contractors must designate a Safety Representative prior to the start of the Project. The Safety Representative must actively monitor safety issues on the job site on a daily basis and shall conduct comprehensive safety inspections on at least a weekly basis. The Safety Representative shall have at a minimum completed an

authorized 30-hour OSHA Construction Safety Course within the last five years of the start of the project and a current CPR/First Aid/AED training card. Upon written request by the Contractor, the University may grant an exemption to this requirement, on a case-by-case basis. The Contractor must request this exemption in writing to the University prior to the start of the project. For Projects with a construction or work volume of less than \$30 million, this employee may also have additional site duties such as foreman, supervisor, or lead person.

5.1.2 For all Projects exceeding **\$30 million** in total construction volume or deemed to be high risk by the Owner, Contractor must have a full-time Safety Professional assigned to the Project. For Projects involving a Construction Manager and exceeding \$30 million in total construction volume, it shall be the Construction Manager's responsibility to supply a full-time Safety Professional. The duties of the full-time Safety Professional must be strictly limited to safety-related activities, with no additional job site duties. In addition to the qualifications stated for Safety Representative in the preceding paragraph, the Safety Professional must have one or more of the following credentials: a professional certification beyond those referenced in subparagraph 5.1.1, a college or professional degree related to safety & health, OSHA 500, or significant previous experience and skills necessary to thoroughly understand the health and safety hazards and controls relevant to the Project in question. The designation and adequacy of qualifications of the full-time Safety Professional shall be reviewed by the University, in writing, prior to commencement of the work.

## **5.2 Site Specific Safety Plan (SSSP):**

Prior to starting the Work on any Project, all Contractors must complete and submit a SSSP that meets or exceeds the minimum requirements included in the University's Site Specific Safety Plan template. (See Appendix A). Contractors are encouraged to collaborate in the development of the SSSP with all the Project team members and other interested or affected members of the University Community.

The SSSP must be submitted to the designated University Representative on the Project (through the CORR process in e-Builder). Please be sure to include provisions on how the University Community will be protected from any hazards associated with the Work. A Contractor may not begin work in the field until the SSSP has been submitted to the University. Contractors are encouraged to revise their SSSP during the Project in order to keep the plan relevant to the Work. The University reserves the right to add or remove additional requirements depending on the Project and its scope.

The University shall have the right, but not the obligation, to review and comment on the SSSP. The Contractor shall carefully consider any University comments regarding the SSSP, but the Contractor bears final responsibility for scope, detail, implementation,

enforcement, and administration of all such plans. Neither comments offered by the University nor the failure of the University to offer any comments shall in any way reduce the Contractor's responsibility for safety. Contractors' corporate safety program / manual shall be available for inspection by the University, upon request, but shall not be submitted in lieu of the SSSP.

### **5.3 Safety Inspections**

5.3.1 Any of the inspections that are performed by a contractor shall be stored within the respective project folder within e-Builder.

5.3.2 *Daily Inspections:* The Contractor shall perform daily safety inspections on the job site. Any deficiencies shall be corrected as soon as possible or protected until corrections can be performed.

5.3.3 *Weekly Documentation:* On, at least, a weekly basis throughout the duration of the Project, the Contractor shall document its safety inspections for that week, per the following requirements:

- The weekly inspection report must describe any safety deficiencies and also identify a corrective action plan for any hazards identified in the report.
- The weekly inspection report shall be available for review by the University, upon request.
- In the event that a hazard cannot be immediately and completely remedied, the Contractor must provide a means of protecting all personnel from exposure to the hazard until it can be corrected or otherwise immediately cease work in the affected area or cease the activity causing the hazard.

5.3.4 *Monthly Inspections:* For projects exceeding \$5 million in work volume or deemed to be high risk by the Owner, a principal for the Contractor, or the Contractor's designated senior overall safety officer shall inspect the job site on, at least, a monthly basis, and shall document all relevant findings, including safety concerns or deficiencies, accidents and incidents. The person performing this monthly inspection may not be an individual who is assigned to work on the job site on a daily or regular basis. Documentation of monthly inspections shall be available for review by the University, upon request.

5.3.5 University Project Visits: The Owner may perform random visits to Project sites to address adherence to the Site Specific Safety Program and the Contractor Safety Requirements:

- Any violations that are discovered will be reported to the responsible Contractor for prompt remediation and correction.
- Poor performance in regards to safety, as determined by the Owner, is grounds for contract termination and/or immediate removal from the Office of Physical Plant contractor prequalification listing.
- The Owner may also require meetings with contractors regarding safety on the Project.
- The Owner may request to review contractor safety inspection forms and the current SSSP, as required.

#### **5.4 University General Site Safety Rules:**

All Contractors are required to comply with all relevant Federal Occupational Safety and Health Regulations promulgated at 29 Code of Federal Regulations Part 1926 and Part 1910 at all times. These regulations provide the minimally acceptable work practices and procedures. The University also reserves the right to include additional requirements for a given Project based on industry best practices and the overall well-being of the University Community. Contractors must take steps to ensure the safety of faculty, staff, students, workers, and visitors of the University. Failure to comply with this document and/or the report of unsafe work shall be referred to the Owner. Incidents shall be reviewed on a case-by-case basis by Project Management & the Office of Physical Plant Safety Department. The following are PSU specific site rules of conduct that must be followed at all times by the contractor personnel on site:

- 100% head protection is required on the work site. (Head protection must be ANSI approved.)
- 100% eye protection is required on the work site. (Eye protection must be ANSI approved.)
- The premises shall be kept clean at all times and free from excessive dirt, rubbish, and debris resulting from the Project work. All rubbish and debris shall be removed from the work site each working day.
- Contractors shall report accidents and incidents, including Near Misses, immediately to the University Project representative, as further detailed at paragraph 5.6.19, below.
- No weapons, illegal drugs, ammunition, alcohol, or other illegal substances are permitted on the work site.
- Smoking is prohibited on the work site unless there is a designated area identified.

- At a minimum, all workers must wear long pants, t-shirts with sleeves at least 4" in length, appropriate footwear for the task being performed.
- ANSI approved high visibility vests, jackets, or t-shirts (min class 2) are required for anyone working near cranes, other heavy equipment and on/near roadways and traffic.

*Note: These general site safety rules are considered the minimum acceptable rules for any job site; however, if a Contractor or CM's safety program or safety rules are more stringent, the more stringent rules shall apply.*

## 5.5 Safety Data

The safety data listed below shall be provided to the University upon request during the course of the project. It must also be submitted with the final invoice or final application for payment submitted by the Contractor in order to be processed. These metrics need to be project specific. All numbers (hours, injuries/illnesses, inspections) for any subcontractor shall be included in your report. Metrics to be included in the monthly e-Builder CPA for the project.

- Cumulative hours worked
- Number of recordable injuries/illnesses<sup>1</sup>
- Number of lost time injuries/illnesses<sup>1</sup>
- OSHA Inspection information<sup>1</sup>

## 5.6 Specific Safety Requirements

**5.6.1 Crane Safety:** Prior to the operation of any crane on University property, a suitable location needs to be determined and the owner notified. Consideration should be made to the capacity of the physical site as well as any underground conditions. A PA One Call shall be made to confirm the presence and location of any utilities that may be located under the proposed site. See section 5.6.10 for additional information. All crane operators need to be certified by the National Commission for Certification of Crane Operators (NCCCO). All signal persons & riggers at a minimum need to be qualified in accordance with the OSHA standard. The University encourages contractors to have certified riggers & signal persons working on campus and reserves the right to request this depending on the scope of work being performed with a crane on PSU property. Contractors shall develop a lift plan for any crane work being performed. Any documentation must be provided to the owner upon request. Tag lines will be used on all lifts unless it is determined that the line itself will cause a greater hazard. If it is necessary to conduct a lift over an occupied building, a registered structural engineer

shall review and certify that the building can withstand the impact of the load being dropped on the building as a worst-case scenario. If the structural engineer determines that the building roof cannot withstand the impact, the building will need to be evacuated during the duration of the lift. The decision between evacuating the building or scheduling the lift for off-hours will be made by the University.

**5.6.2 Concrete & Masonry:** At no time should any contractor cut any concrete or masonry product without protecting themselves as well as others around them. This means that at a minimum, they should be using means to control the dust created from cutting of silica containing material. Dry sawing of concrete or other silica containing material is not permitted without having adequate controls in place. This includes any other activity that could create a potential silica exposure. Contractors are required to implement table 1 from 29 CFR 1926.1153 regarding Silica or have other controls in place, with validation of their effectiveness to ensure employee protection. The burden of proof will fall upon the contractor to prove to the owner their employees are complying with the OSHA standards regarding Silica containing material.

**5.6.3 Confined Spaces:** All contractors shall comply with 1926.1200, Subpart AA. In addition to this, the owner shall meet with the controlling contractor and complete the OPP Confined Space Communication & Coordination Form (Appendix C) if they will be working in or around a known permit required space. This form is designed to document all known Permit Required Confined Spaces within a project's work area. A contractor shall be responsible for providing their own rescue plan/services when working in a confined space when required. Contractors should also understand that their work and associated activities within a non-permitted space may change the classification of that space. Declassification of a permitted space must be completed by a competent person as described in the standard. See Owner for a listing of known PRCs.

**5.6.4 Demolition, Structural:** Prior to any demolition taking place, an engineering survey shall be conducted by a Qualified Person. This survey should focus on the condition of the immediate work area as well as any adjacent structure(s) next to the demolition area. This survey should be used to create a plan for demolition. The contractor is also responsible for completion and submittal of notifications to PA DEP and US EPA. The plan should include provisions for encountering asbestos, lead, other hazardous material, dust and water control during the demolition phase. It should also include the proper disposal of demolition debris and any contaminated soil (if present). The contractor shall also ensure all utilities are controlled and in a safe condition prior to the start of demolition. Contractor shall also follow 5.6.10 to ensure that no utilities endangered during the scope/course of their work. This does not apply to demolition of a ceiling or other non-load bearing item (ceilings, some walls, and some other items).



**5.6.5. Electricity:** Any electricity used on a work site must be protected by either an assured grounding program or through the use of GFCIs. This includes electrical generators, welding machines, or existing building power supply. All cords will be of the heavy-duty type and have an intact ground prong and be in safe condition for use. Any electrical device shall be double insulated or grounded. No energized work will be performed on University property unless it conforms to OSHA and NFPA 70E. Notice shall be given to the University for approval of any energized work. For electrical shutdowns, refer to section 5.6.26.1.

**5.6.6 Emergency Action Plan:** All contractors shall have a plan in place to account for all workers on the site in the event of an emergency. This plan should also include an evacuation of the site to a safe location, accounting for employees and reasons for such an evacuation. This should be practiced and reviewed throughout the job. Contractors shall work with the Owner to coordinate these drills with their customers and PSU Police Services if necessary. Contact OPP Safety for more information.

**5.6.7 Equipment Safety:** The operator of any piece of mobile equipment/powered industrial truck, shall have been properly trained in the safe use of that equipment. This includes but is not limited to fork lifts, all terrain fork lifts, scissor lifts, aerial lifts and other heavy equipment. The contractor shall also ensure the equipment is regularly inspected & maintained. Operators shall wear seatbelts at all times if equipped.

**5.6.8 Fall Protection:** All contractors must enforce 100% fall protection at 6' or higher (all trades). There may be a requirement to protect workers and employees when a hazard exists less than 6' below a lower level. The University would also discourage the use of a safety monitoring system for fall protection unless other means are determined to be infeasible or impossible.

**5.6.9 Fire Prevention & Protection:** Contractors shall follow The University's Hot Work Program while on the property. This includes supplemental fire protection for the duration of their hot work activity. At no time should a contractor rely upon any University owned fire protection equipment as their primary means. They should provide their own fire extinguisher(s) or other acceptable equipment. Contractors shall ensure that fire watch times are adhered to. If a contractor's Hot Work Program is more stringent than ours, they shall follow their own program. Additional information, including a copy of the PSU Hot Work Permit can be found [here](https://ehs.psu.edu/hot-work/requirements-guidelines).  
(<https://ehs.psu.edu/hot-work/requirements-guidelines>)

**5.6.10 Ground Disturbance & Penetration:** Ground disturbance & penetration activities include but are not limited to driving stakes, removal or addition of plant life root systems, removal of sidewalk or roadway, removal of topsoil, removal of concrete bases, trenching, drilling, excavations, crane placement, blasting, etc. Contractors are required to submit and have a completed PA 1 Call prior to ANY ground disturbance or penetration regardless of method used, manual or mechanical. Contractors shall mark

their proposed area of work boundary in white paint with their company's initials or name and a number. This will differentiate projects when the contractor has more than one project on campus. These details must be described in the notes sections of the PA 1 Call. If a contractor uncovers an unmarked utility at any time during the course of their work, work shall stop immediately and notify their PSU representative and the Work Reception Center. Clearance to resume will only be given by the Safety Office.

Contractors shall also inquire about the location of the high-pressure gas line that runs through parts of campus. Upon completion of the ground disturbance & penetration, the markings from the PA 1 Call shall be removed prior to leaving the site. If a contractor strikes, damages or impacts a utility of any kind at any time, they shall notify the owner (project manager, assistant project manager, head of maintenance (commonwealth campuses), or construction services representatives. Contractors shall submit a completed Appendix D prior to the start of any ground disturbance at least 24 hours prior to the disturbance of any material.

**5.6.11 Hazard Communication/GHS:** Contractors shall have in place a program that complies with OSHA 1910.1200 to train and instruct employees in the proper use and cleanup of any chemical or material on site. Safety Data sheets for any hazardous materials shall be on site and provided to the owner upon request. Compressed gases, fuel, and other hazardous materials shall be stored in accordance with applicable standards.

**5.6.12 Hazardous Building Material:** If a contractor's scope of work involves the abatement of any hazardous material, they shall first contact PSU Environmental Health & Safety to ensure compliance with University standards. Common materials abated on campus include asbestos, polychlorinated biphenyl (PCB) and lead paint. Additional information can be found on the PSU EHS website including policies and contact information. <https://ehs.psu.edu/>

**5.6.13 Housekeeping:** The contractor shall ensure that the job site and areas immediately outside of the work zone are kept clean daily for the duration of the Project. This includes proper storage of material, routes of egress, and areas leading outside the site. In order to keep up with housekeeping, contractors are encouraged to clean up and the end of every shift.

**5.6.14 Indoor Air Quality:** The contractor shall take steps to ensure that dust and other air contaminants are controlled when working in or nearby occupied spaces. This will require work barriers to be installed to separate the work zone from the occupied area of the building. This also means that substitution of products and materials and additional ventilation may be required. Air monitoring/testing may be required to ensure the safety of building occupants. If an IAQ problem is discovered, work will stop until the problem can be resolved. The specific requirements are set forth within the 01 50 00 Temporary Dust Barriers and Construction Indoor Air Quality Control Plan (<https://oppwiki.atlassian.net/wiki/spaces/OPPDCS/overview>)

**5.6.15 Job Hazard Analysis/Activity Hazard Analysis:** The contractor shall outline high frequency/high risk and low frequency/high risk activities using some type of analysis to identify, evaluate and control hazards. The analysis tool must list any measures that will be taken to mitigate any safety issues. This is a requirement of the Site Specific Safety Plan. Examples of high-risk work includes but is not limited to; crane picks, scaffolding, confined space, utility shut-downs, hazardous material abatement, hot work, trenching, etc.

**5.6.16 Ladder safety:** Contractors shall ensure that any ladder being used on their site has been inspected for damage prior to and during use. Any ladder that is identified as being damaged or defective shall be removed from use immediately. Ladders shall be used in accordance with the OSHA requirements for ladders.

**5.6.17 OSHA Inspections:** In the event that an OSHA inspector shows up on site, the contractor shall notify their PSU representative immediately and inform them of the purpose of their visit. If any violations are discovered, the contractor shall disclose those in a written report to the University as well as the corrective actions to be taken. Furthermore, the University's Project representative shall receive electronic copies of all correspondence or reports to or from OSHA. This information should be summarized in a contractor's final payment application or made available within e-Builder.

**5.6.18 PPE:** The contractor shall ensure that employees & visitors are wearing the minimum required PPE at all times. Additional PPE will be required when working with certain tools. Contractors shall consult manufactures instructions and OSHA standards for more information. Examples include fall protection equipment for fall exposures, face shields for demolition saws, and hearing protection. Refer to General Safety Rules section for additional PPE requirements.

**5.6.19 Process Safety Management:** Contractors working within a Process Safety Management (PSM) covered process area defined by the University shall abide by the additional qualification standards, training requirements, pre-project hazard assessments and enhanced on-site performance evaluations. Pre-project training provided by the University is required for all on-site contractor employees prior starting the project. In addition, strict compliance to the Management of Change and access to the covered process area will be enforced by site personnel. Additional information can be found on the Penn State EHS website including procedures and contact information. (<https://ehs.psu.edu/process-safety-management/overview>)

**5.6.20 Record Keeping, Incident Reporting, & Major Accident Protocol:** The contractor shall maintain records of safety training for their employees and shall document any

incidents that occur on the Project (including near misses). The contractor shall notify their University Representative immediately about any incident that occurs on the jobsite and submit a Safety Incident Report (SIR) via e-Builder within 24 hours). In the event that significant injury to a person (worker or other member of PSU community) or building damage has occurred, the contractor shall contact the University as soon as possible with initial details of the incident. The University will then initiate the appropriate accident protocols. The University reserves the right to hold a meeting with all responsible parties after an incident occurs to discuss its details, cause, and preventative measures contractors will implement going forward.

**5.6.21 Scaffolding:** All scaffolding must comply with OSHA's requirements. In addition, contractors shall implement some type of inspection system that will be maintained on the scaffold.

**5.6.22 Sidewalk/Roadway work:** When a contractor is working in or around a sidewalk or roadway, they shall take proper steps to ensure the safety of anyone in that area. This could mean the modification of a traffic pattern, a flag person(s), or a closure of that sidewalk and/or road. Adequate signage shall be posted and Hi-Vis clothing be worn. All work shall comply with [Temporary Traffic Control Guidelines, Publication 213 \(67 PA Code, Chapter 212\)](#). (See Appendix B, Jobsite Security Requirements).

**5.6.23 Site Control/Site Security/Fencing:** In order to maintain a safe jobsite, it is necessary for the contractor to isolate their work from any unauthorized persons. This could include fences, gates, temporary walls, or other means of protection. These should be inspected periodically to ensure the integrity of the control method. (See Appendix B, Jobsite Security Requirements, for additional site requirements & guidance)

#### **5.6.24 Spill Prevention and Response**

Contractors may have fuels, oils, and/or machinery which contains these materials on site, as well as other materials which may cause contamination if spilled or released. The Pennsylvania Department of Environmental Protection (PADEP) in 25 PA Code Chapter 102.5 (I) requires an operator to prepare and implement a Preparedness, Prevention, and Contingency (PPC) Plan when storing, using, or transporting several materials including: fuels, chemicals, solvents, pesticides, fertilizers, lime, petrochemicals, wastewater, wash water, core drilling wastewater, cement, sanitary wastes, solid wastes, or hazardous materials. If a contractor has a requirement from PADEP for a PPC Plan, it is the contractor's responsibility to prepare the PPC Plan that is specific to the type and volume of hazardous materials to be used/stored during the project. The PPC Plan provides information on the materials that could cause spills or releases, practices to reduce the possibility of these, and procedures that need to be undertaken if they occur.

Contractors have the primary responsibility for spill prevention, clean-up and for reporting spills to PADEP in accordance with 25 PA Code Chapter 91.33 and 91.34

regardless of the presence or absence of a PPC Plan. At Penn State, a contractor must contact PSU project management personnel as soon as possible following a release or spill of any of these materials. Contractors should have spill control materials on site that are sized to the largest expected release – typically these are hydraulic releases from equipment. Penn State provides the document [Fuel Handling Practices, Spill Response, and Responsibilities for Contractors](#) on [the Environmental Health and Safety \(EHS\) website](#) for guidance on spill/release cleanup. EHS may provide additional specific requirements based on the size of the spill, where the spill occurred, and the material spilled. They can also provide a few local environmental firm names that can assist with the required sampling for disposal and for confirming that cleanup has been complete, if needed. Spill cleanup reports are to be submitted to PSU site personnel and to EHS.

**5.6.25 Trenching & Excavations:** All excavations or trenching on campus shall comply with the applicable OSHA standards as well as section 5.6.10. The soil type on campus is typically treated as type C unless classified otherwise by a Qualified Person. A competent person must inspect the excavation prior to the start of work and after any event that could have compromised the safety of the trench or excavation. These records, along with methods & results of soil testing shall be available for the owner to review.

**5.6.26 Utility Shutdown:** During work, it may be necessary to shut down certain systems. These could include steam, electrical, sprinklers, and water. PSU has an established process shall be used and the shutdown shall be coordinated with the University prior to any utility being shut off. Contractors should go through their respective Owner points of contact (Project management staff, Construction Service Representatives etc.) (<http://opp.psu.edu/about-opp/divisions/work-control-center/shutdown-coordination>)

**5.6.26.1 Electrical Shutdowns** - The Contractor shall be responsible for scheduling all electrical shutdown requests with the Office of Physical Plant. The Contractor shall be responsible for de-energization and energization of electrical equipment within Contractor's scope of work. The Office of Physical Plant will require a representative to be physically present during de-energization and energization of electrical equipment within the Contractors scope of work.

**5.6.27 Utility Tunnels:** Before working in a utility tunnel, the Contractor is responsible for coordination with the appropriate PSU Utility Contact. See Confined Space section at 5.6.3 for additional details. Contact Owner's representative for additional information.

**5.6.28 Visitors/Tours:** The University may bring visitors to the site for various reasons. These visits will be coordinated with the Contractor as far in advance as possible as to not impact the Project schedule. The Contractor shall hold these visitors to the same safety requirements as anyone else on the site. Orientation to the site may be required

depending on the scope of work at the time of the tour. The Contractor shall ensure that any recognizable hazards are controlled prior to visitors arriving on site. Site safety rules must be strictly adhered to at all times during the tour.

**5.6.29 Weather:** Contractors shall ensure that jobsites and any equipment or material stored on their jobsite is secured to prevent damage from severe weather. This includes the storage of equipment, materials or trash that may potentially fall from a height and/or cause personal injury or damage to property. This includes but is not limited to job site fences, building material, construction waste, temporary enclosures, lifts, and cranes.

## Record of updates, changes & additions

Date of update	Location	Subject	Changed by	Notes
12/2017	5.6.24	Added spill section for contractors	JR/EHS	
12/2017	6.0	Added record of updates, changes & additions section	JR	
12/2017	Appendix B	Fencing requirements changed - blue screen and code reference	JR	
12/2017	Appendix E	Added Ground Disturbance Form	JR	
12/2018	5.3	Added e-Builder guidance for reporting	JR	
12/2018	5.5	Added e-Builder guidance for reporting	JR	New section
12/2018	5.6	Revised numbers for added sections to keep topics in alphabetical order	JR	New section
12/2018	5.6.2	Grammar edits	JR	
12/2018	5.6.17	Added e-Builder reference	JR	
12/2018	5.6.26.1	Add specifics on electrical shutdowns	JR	
12/2018	5.6.5	Added reference to electrical shutdown	JR	
4/2022	5.2/App. E	Added language regarding COVID 19	JR/JB	
2/2023	5.2/App. E.	Removed language regarding COVID 19	TJR	
5/2023	All/App. B	Grammar Corrections / Fencing requirement	TJR	

## **Appendix A**

### **Site Specific Safety Plan (SSSP) Template**

**Purpose:** The intent of this template is to identify the MINIMUM requirements of a Site Specific Safety Plan (SSSP) for any contractor awarded work at Penn State University (PSU). Contractors are encouraged to elaborate and expand upon these requirements.

**SSSP Deliverable:** The SSSP shall be submitted to the OPP Project representative along with other required contract documents prior to contract execution. Failure to submit the SSSP will result in a delay of the start of the Work. DO NOT SUBMIT your company's safety manual.

**SSSP Template** (minimum requirements): PSU reserves the right to request additional information on a project-by-project basis.

1. **Scope of Work:** narrative of the Project scope associated with your contract including schedule and major Project milestones.
2. **Designated On-Site Safety Representative and Competent Persons**
3. **Safety Orientation Program:** process to orient workers and visitors to your safety rules and expectations including ongoing toolbox safety talks.
4. **Hazard Communication Program and Safety Data Sheets**
5. **24-hour emergency points of contact**
6. **Site Logistics Plan:** plan shall address student/faculty/staff/public protection, traffic plan, equipment and lay-down areas, site security, tire washing, emergency evacuation muster points, etc.
7. **Min. PPE requirements**
8. **Accident Procedures**
9. **Safety Audit/Inspection Procedures**
10. **Project Clean-Up Plan:** detail how your company plans on keeping the workplace clean and free of potential hazards.
11. **Hazard Assessment:** identification of hazards associated with defined Project tasks. Please focus on highly hazardous tasks associated with the work (crane picks, scaffolding, confined space, utility shut-downs, hazardous material abatement, hot work, trenching, etc.).

**Reminder:** Contractors are required to submit the following information to PSU in each Contractor Pay Application via e-Builder:

1. Total Project man-hours worked
2. Total OSHA Recordable injuries and illnesses on Project<sup>1</sup>
3. Total Lost Time Injuries on Project<sup>1</sup>
4. OSHA Inspection information (if applicable)<sup>1</sup>

Any questions regarding the submission of SSSP may be directed to OPP Safety.



## **Appendix B**

### **Construction Project Security/Fencing Requirements**

The following safety and security measures shall be implemented on construction projects, as applicable. Contractors will work with their subcontractors and the University to ensure protection is in place for the safety of the University community. These requirements will cover project fencing, pedestrian overhead protection, construction traffic control measures, and construction signage. Contractors shall also monitor the effectiveness of these controls and ensure their integrity is maintained per the requirements and throughout the project. Public protection shall conform to all local codes in addition to the following requirements (the more stringent shall apply):

#### **Project Fencing:**

1. All construction projects (inclusive of stored material, equipment, etc.) shall be fenced at all open perimeters to prevent unauthorized or inadvertent entry by the public.
2. Provide a six-foot high (6') chain-link fence with galvanized frame and entry gates as required. All fencing includes top and bottom stabilizing rail between posts. All fence tubing shall be capped at an open end.
3. Provide 5'–6" continuous mesh fabric windscreen, mount top of fabric to top stabilizing bar. Fabric shall be PVC vinyl coated polyester, equal to Tenn-air curtain style, color US Open blue as manufactured by M. Putterman and Co., Inc. (800) 621-0146. Windscreen shall have reinforced hems and grommets every 12 inches on all edges. Install windscreen on construction side of fence, using 50-pound break strength tie wraps at every grommet. Pull fabric taught and maintain in this condition.
4. The Contractor is responsible for ensuring the fencing is designed and installed according to the currently adopted versions of the applicable building code(s). Gaps in fencing shall not exceed 4" in the vertical or horizontal direction at any location.
5. Where construction material may tend to splash or fly into public areas, the fence shall be constructed of solid material such as plywood and be free of openings which might permit the passage of the materials. This fence should also meet the same requirements stated within this document.
6. Fences shall be free of projections such as protruding nails, etc., upon which the public may become injured. Additionally, when pedestal fencing bases are used (meeting the performance requirements of this document) shall not protrude more than 5 inches into a walking path. In general, fences shall be free of projections that may present tripping hazards to the public.

7. No materials, debris, or equipment shall be stored outside of the fencing.
8. Openings in fences for the passage of construction vehicles and employees shall be equipped with gates that in a closed condition do not allow unauthorized or inadvertent entry by the public. All gates shall remain in a closed condition when not in use.
9. All gates shall be equipped with locking devices and shall be locked during non-working hours.
10. Where the erection of fences is not immediately feasible due to the nature of the work, or where fences must be temporarily taken down to facilitate the work, alternative protection shall be provided to ensure the safety of the public.
11. Gates should swing inward as to not create a hazard to oncoming pedestrian and vehicular traffic.
12. All fences shall be installed in a manner to allow access to building fire department connections (FDCs).
13. Variants to any of the previous details must be submitted and approved by the assigned PSU project team.

#### Pedestrian Overhead Canopies:

1. When applicable or necessary, sidewalk canopies or covered walkways erected over pedestrian walkways shall be constructed according to local codes. Overhead protection must be built in a manner to prevent falling objects, tools and/or debris from harming the public. Roof canopy protection shall be designed and installed to withstand projected impact loading from overhead work.
2. Temporary walkways constructed under canopies shall present a smooth and stable walking surface, free of excessive deflection and tripping hazards, comply with ADA requirements.
3. Canopies and covered walkways shall be lit in accordance with local codes. Maintain lighting in working order at all times.
4. Canopy roofs are not to be used for the storage of construction materials or equipment.
5. Canopies are not to be used as work platforms.

#### Construction Traffic Controls:

1. Each Contractor shall assign dedicated personnel to direct construction delivery traffic to ensure pedestrian safety. All construction operations involving workers, construction vehicles, and equipment in the public way, which are not static or fixed, but are changing or

fluid, shall be attended by one or more flaggers as required to safely control pedestrians and other vehicular traffic around the operations.

2. Traffic control personnel shall be trained in accordance with PennDOT Publication 213. In all cases where flaggers are used to control pedestrians and vehicular traffic, they shall receive instructions on the type of work to be done, traffic controls required, and proper signaling of traffic.
3. Construction vehicles backing up on the job site shall be equipped with back-up alarms or have a flagger.
4. Flaggers shall wear high visibility PPE, ANSI approved, and use a flag to signal traffic.
5. Where construction operations take place in a pedestrian walkway or create safety hazards over pedestrian walkways, the walkway shall be closed and pedestrian traffic routed to safe, alternate walkways. Walkways shall be closed with barricades and warning signs clearly posted at the points of closure, warning of the hazard and clearly indicating the alternate walkway.

#### Construction Signage:

1. Subcontractor shall provide for the prompt and conspicuous posting and maintenance of Danger Signs, Caution Signs and Safety Instruction Signs as required for general use at the project to alert and inform subcontractors and workers of safety hazards and safety rules and regulations.
2. Areas adjacent to gates where construction vehicles are entering and leaving the job site shall be posted with signs warning the public to watch out for trucks and other vehicles.
3. All doors, gates or other points of entry from occupied areas into construction areas shall be posted with warning signs. Signs may state "DANGER: CONSTRUCTION AREA," "KEEP OUT," "AUTHORIZED PERSONNEL ONLY," etc. Signage strategy must be reviewed with the University.
4. Where blind spots may exist for pedestrians or motorists along fences, under canopies, at approaches to driveways or gates where construction vehicles are entering or leaving the job site, appropriate warning signs shall be posted to warn the public of the hazard. Strategic placement of Plexiglas mirrors will help both pedestrians and vehicles through potential blind spots.
5. Contractors shall post signs with jobsite information regarding emergency contact information for the project.
6. Contractors shall provide signs on fencing that identifies the locations of any fire hydrant, FDC, or other important location so it can be seen from the road/street.

## **Appendix C**

### **OPP Confined Space Communication & Coordination Form**

To comply with 29 CFR 1926.1203(h), an owner's representative (Project Management, Construction Services Representative, Commonwealth Services, OPP Safety, or EHS) shall review the following information with a contractor regarding permit required confined spaces, PRCs, at the project mentioned below. If contractor's scope does not include entry into a PRCs, the owner will ensure that any PRCs in which a contractor could enter is properly identified and secured.

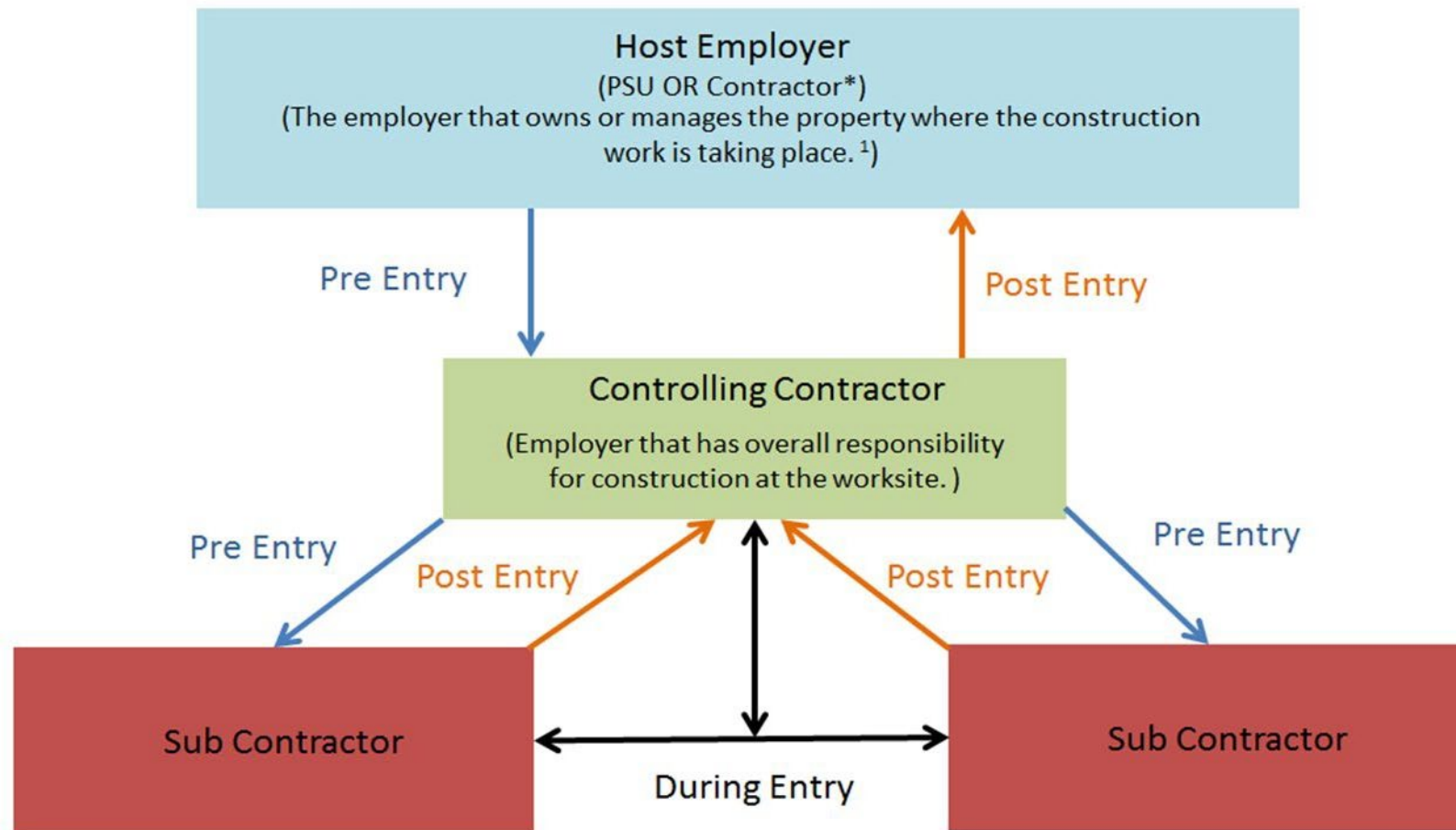
<b>Date</b>		<b>Project Name</b>	
<b>Project Number</b>		<b>Campus (UP, Berks, Erie)</b>	
<b>Owner's Representative (Name &amp; Title)</b>		<b>Contractor's Representative (Name &amp; Company)</b>	

Before entry into any PRCs takes place, the owner shall meet with the contractor assuming control of the project or PRCs to discuss the following regarding each PRCs associated with that project (Location of PRCs, hazards of each PRCs, precautions that previous contractors or hosts have used in each PRCs, any other information related to the PRCs).

<b>Location of PRCs</b>	<b>Hazards of PRCs</b>	<b>Precautions</b>	<b>Additional Information</b>

Once completed, work can then begin according to the appropriate confined space standard (29 CFR 1910. 146 and/or 1926.1200) and the contractor's confined space program.

# PSU Confined Space Flow Chart



1. If the owner of the property on which the construction activity occurs has contracted with an entity for the general management of that property, and has transferred to that entity the information specified in §1203(h)(1), OSHA will treat the contracted management entity as the host employer for as long as that entity manages the property. Otherwise, OSHA will treat the owner of the property as the host employer. In no case will there be more than one host employer. Please use the reverse side of this form to document this meeting.

## **Appendix D - Office of Physical Plant Ground Disturbance Form**

This form is to be completed in its entirety by the person in charge of the ground disturbance (digging, excavation, stake driving etc.) This form shall be submitted electronically to the PSU Project Manager/Leader, CSR (if assigned), the Maintenance Supervisor (Commonwealth Campuses) and [oppsafety@psu.edu](mailto:oppsafety@psu.edu) at least 1 business day prior to any earth disturbance. If the scope changes to include a larger area, this form will need re-accomplished along with another PA 1-Call. Pictures of the site post 1 Call may be included with the form.

Project Name		
Project Number/Work Order Number		
Project/Work Order Start & End Dates of ground disturbance		
Location of disturbance (marked in white with company initials & #)		
PA 1-Call Ticket Number/Date		
Ground Disturbance Activities on Site <input type="checkbox"/> Driving of any stake <input type="checkbox"/> Add/remove plant life root systems <input type="checkbox"/> Trenching/excavation <input type="checkbox"/> Sidewalk/roadway removal <input type="checkbox"/> Crane placement <input type="checkbox"/> Blasting <input type="checkbox"/> Topsoil removal <input type="checkbox"/> Other	Utilities that were located on site <input type="checkbox"/> Temp. Survey Markings (pink) <input type="checkbox"/> Electrical (Red) <input type="checkbox"/> Gas, oil, steam, petroleum or gaseous material (yellow) <input type="checkbox"/> Communication, alarm, or signal line (orange) <input type="checkbox"/> Potable water (blue) <input type="checkbox"/> Reclaimed water, irrigation, and slurry (purple) <input type="checkbox"/> Sewer and drain lines (green) <input type="checkbox"/> Other: (color: )	
Other resources consulted – list (drawings, mapping etc.)		
Contractor Name, 24-hour POC and Contact info, include email & phone number		
PSU Project Manager/Leader Name (Contact info, include		
PSU Construction Services Rep/Maintenance Supervisor (Contact info, if assigned)		
Name & Contact of person completing permit (Printed)		

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**Bureau of Waste Management**

**DOCUMENT NUMBER:** 258-2182-773

**EFFECTIVE DATE:** January 16, 2021

**TITLE:** Management of Fill Policy

**AUTHORITY:** This document is established in accordance with the Solid Waste Management Act, 35 P.S. §§ 6018.101 *et seq.* (SWMA); the Clean Streams Law, 35 P.S. §§ 691.1 *et seq.*; Section 1917-A of the Administrative Code, 71 P.S. § 510-17; and the Land Recycling and Environmental Remediation Standards Act, 35 P.S. §§ 6026.101 *et seq.*

**POLICY:** A person placing solid waste onto the ground is generally required to obtain a disposal permit from the Department of Environmental Protection (Department or DEP). A person is not required to obtain a permit under SWMA if the person can demonstrate that the material qualifies as clean fill in accordance with the municipal and residual waste regulations, 25 Pa. Code § 271.101(b)(3) and § 287.101(b)(6).

**PURPOSE:** This policy provides DEP's procedures for determining whether fill is "clean fill," as defined in the municipal and residual waste regulations at 25 Pa. Code § 271.1 and § 287.1, respectively, or "regulated fill," as defined in this policy. Regulated fill may not be used outside of a project area or right-of-way of a project unless a SWMA permit has been issued to the person using the regulated fill.

**APPLICABILITY:** This policy shall be used to evaluate whether a person is required to obtain a permit under the SWMA for the use of fill in accordance with the municipal and residual waste regulations, 25 Pa. Code § 271.101(b)(3) and § 287.101(b)(6). This policy describes the type of fill that qualifies as clean fill or regulated fill. This policy does not apply to mine land reclamation activities subject to a permit or fill used within the same project area or project right-of-way. Excavation, movement or reuse of fill within a project area or right-of-way of a project is not an activity that requires a SWMA permit. This policy does not apply to fill that has been determined to be clean or regulated fill prior to the effective date of this policy, unless the fill is moved to a new receiving site or off the project area or project right-of-way after the effective date of this policy. This policy does not apply to fill that has been determined to be clean or regulated fill prior to the implementation of revised clean fill concentration limits or regulated fill concentration limits, unless the fill is moved to a new receiving site or off the project area or project right-of-way after the effective date of the revised limits.

**DISCLAIMER:** The policies and procedures outlined in this guidance document are intended to supplement existing requirements. Nothing in the policies or

procedures shall affect regulatory requirements. The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of the DEP to give the rules in these policies that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

**PAGE LENGTH:**

26 pages



## DEFINITIONS:

*Acid-producing rock* – Stone, rock or other mineral materials that, when exposed to air and water, cause a low pH discharge that adversely affects or endangers public health, safety, welfare, or the environment or causes a public nuisance.

*Act 2* – The Land Recycling and Environmental Remediation Standards Act, 35 P.S. §§ 6026.101 *et seq.*

*Act 2 site* – A site as defined in Section 103 of Act 2, 35 P.S. § 6026.103, for which a notice of intent to remediate has been submitted to DEP.

*Background* – The concentration of a regulated substance that is present at a site but not related to the release of regulated substances from a specific point source or activity at the site.

*Background reference area* – The area identified for sampling that: will be used to establish background; is sampled and analyzed to determine the concentration of regulated substances found at or within a close proximity to the donor site, at a depth comparable to that of the area to be excavated at the donor site, in the same soil layer as the donor fill; is unaffected by a release of regulated substances from a specific point source or activity at the site; and meets one of the following criteria:

- i. The concentration of regulated substances in the soil is attributable to the parent material from which the soil was derived and the natural processes which produce soil, or
- ii. The concentrations of regulated substances in the soil resulted from an atmospheric deposition, including lead or polynuclear aromatic hydrocarbons, but are not attributable to a specific point source or release of a regulated substance. For the purposes of this definition, “atmospheric deposition” refers only to the ubiquitous, widespread deposition of regulated substances from the air that is incapable of being traced to a specific point source or multiple point sources. For example, chromium that has condensed on the ground outside an electroplater air vent would not be due to “atmospheric deposition” because the presence of the chromium is a result of a discharge from a specific point source, even though the chromium was released into the air before being deposited on the ground. However, the presence of lead or benzo-a-pyrene (BAP) in an urban or industrial area that can be traced to the operation of motor vehicles may be due to atmospheric deposition if the concentration levels are demonstrated to be pervasive over the greater urban or industrial area.

*Clean fill* – Uncontaminated, nonwater-soluble, nondecomposable, inert solid material used to level an area or bring an area to grade. The term does not include materials placed in or on the waters of the Commonwealth. Although the placement of clean fill in or on waters of the Commonwealth cannot be managed under this policy, placement of clean fill in or on waters of the Commonwealth may be approved under a separate DEP authorization. The term includes only those materials that are identified as “fill,” as the term is defined in this policy. The term does not include fill that has been blended, mixed or treated with the purpose of meeting the definition of “clean fill” and that without being blended, mixed or treated would fail to meet the numeric limits identified in the definition of “uncontaminated material” contained in this policy.

*Clean fill concentration limits (CFCLs)* – With the exception of PCBs and chloride, the concentrations of regulated substances that do not exceed the numeric values specified in Table 3 [Medium-Specific Concentrations (MSCs) for Organic Regulated Substances in Soil] and Table 4 [Medium-Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil] of Appendix A in 25 Pa. Code

Chapter 250 (relating to administration of land recycling program). The applicable numeric limit is determined by comparison of the Generic Soil to Groundwater Value<sup>1</sup> with the Direct Contact Residential Value<sup>2</sup> and selection of the lower of the two values. For PCBs, the sum total of the concentration of all PCB aroclors (total PCB concentration) may not exceed 50 ppm. Fill containing a concentration of total PCBs greater than 2 ppm may be subject to regulation under the Toxic Substances Control Act (TSCA), 15 U.S.C. Section 2601 et seq., and 40 C.F.R. Part 761, which is administered and implemented by the U.S. Environmental Protection Agency (EPA). EPA's TSCA requirements are independent of any use of fill that is otherwise in accordance with the Department's policy and regulations. An applicant should be aware that its characterization and handling of any soils through the guidance of the Management of Fill policy does not necessarily satisfy a potential EPA TSCA inquiry, and that an applicant may need a separate approval from EPA should EPA require it. For all such material, DEP recommends that you contact the PCB Coordinator for EPA Region 3 by email at [R3\\_PCB\\_Coor@epa.gov](mailto:R3_PCB_Coor@epa.gov) to determine whether PCB-containing fill may be used and to obtain information relating to the associated EPA procedures for collecting and analyzing samples. For chloride, the value obtained using the Synthetic Precipitation Leaching Procedure, (SPLP, SW-846, Method 1312) may not exceed the numeric value specified in Table 2 [MSCs for Inorganic Regulated Substances in Groundwater] of Appendix A in 25 Pa. Code, Chapter 250.

*Composite sample* – A sample collected across a spatial range that typically consists of a set of discrete samples that are combined or “composited.” A composite sample should not be confused with a discrete sample that is created from multiple increments taken at a single location to obtain a sample of the desired size, shape and orientation.

*Discrete sample* – A sample that represents material from a single location. A discrete sample can be composed of more than one increment.

*Donor site* – The area from which fill originates that is separate from a receiving site. Multiple donor sites may be identified on a single project area.

*Environmental due diligence* – Investigative techniques used to determine whether fill from a donor site has been affected by a release of a regulated substance. Examples of investigative techniques included in this term are visual property inspections, electronic data base searches, review of ownership and historical use of a property, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments, audits, or procedures outlined in ASTM standard E1527-13. A single investigative technique may not be used as the basis for environmental due diligence. Environmental due diligence includes visual property inspection and a review of ownership and historical property use, at a minimum, unless analytical sampling is performed in lieu of a review of ownership and historical property use.

*Fill* – The term is limited to clean, regulated and historic fill that is soil, rock, stone, gravel, used asphalt, brick, block or concrete from construction and demolition activities that is separate from other waste and recognizable as such, and “dredged material,” as the term is defined by the municipal and residual waste regulations, 25 Pa. Code §§ 271.1 and 287.1, whichever is applicable. The term does not include reclaimed asphalt pavement, naturally occurring asbestos, mine spoils or acid-producing rock.

*Grab sample* – A discrete sample, consisting of one increment, collected specifically for Volatile Organic Compounds (VOC) analysis.

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<sup>1</sup> Numeric values based on generic leaching modeling for soils at residential properties overlying used aquifers with total dissolved solids at concentrations less than or equal to 2500 mg/L.

<sup>2</sup> Direct contact numeric values for soils at residential properties.

*Historic fill* – Material, excluding material disposed in landfills, waste piles and impoundments, used to bring an area to grade prior to 1988, and consisting of a conglomeration of soil and residuals, such as ashes from the residential burning of wood and coal, incinerator ash, coal ash, slag, dredged material and construction and demolition waste. The term does not include iron or steel slag that is separate from residuals if it is a coproduct, as the term is defined in 25 Pa. Code § 287.1 and satisfies the requirements of 25 Pa. Code § 287.8. The term does not include coal ash that is separate from residuals if it is beneficially used in accordance with 25 Pa. Code §§ 290.1 – 290.415.

*Increment* – Material collected in a single operation of the sampling device.

*PCB* – A chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or a substance that contains that substance.

*ppm* – Parts per million.

*Project area* – The boundary within which earth disturbance activities occur, including areas in close proximity to the earthmoving activities that are necessary for the completion of a construction project, or other human activity which disturbs the surface of the land, including land clearing and grubbing; grading; excavations; embankments; land development; agricultural plowing or tilling; operation of animal heavy use areas; timber harvesting activities; road maintenance activities; linear projects such as utility line work; oil and gas activities; well drilling; mineral extraction; and the moving, depositing, stockpiling, or storing of soil, rock or earth materials. The term includes the boundary within which all earth disturbance activity, construction, materials storage, grading, landscaping and related activities occur.

*Reclaimed asphalt pavement (RAP)* – Small particles, typically less than one inch in size, of bitumen and inorganic materials produced by the mechanical grinding of bituminous pavement surfaces that have not been subject to a release of regulated substances or mixed with other solid waste. The term does not include “used asphalt,” as the term is defined in this policy.

*Receiving site* – The area to which fill is proposed to be relocated. A receiving site is separate from a donor site and not part of a project area or right-of-way.

*Regulated fill* – “Fill,” as the term is defined in this policy, that has been affected by release of a regulated substance and is not “uncontaminated material,” as the term is defined in this policy. The term does not include fill that has been blended, mixed or treated with the purpose of meeting the definition of “regulated fill” and that without being blended, mixed or treated would fail to meet the regulated fill concentration limits, as the term is defined in this policy.

*Regulated fill concentration limits (RFCLs)* – With the exception of PCBs, the concentrations of regulated substances that do not exceed the numeric values specified in Table 3 [Medium-Specific Concentrations (MSCs) for Organic Regulated Substances in Soil] and Table 4 [Medium-Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil] of Appendix A in 25 Pa. Code Chapter 250 (relating to administration of land recycling program). The applicable numeric limit is determined by comparison of the Generic Soil to Groundwater Value<sup>3</sup> with the Direct Contact Non-Residential Value<sup>4</sup> and selection of the lower of the two values. For PCBs, the sum total of the

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<sup>3</sup> Numeric values based on generic leaching modeling for soils at non-residential properties overlying used aquifers with total dissolved solids at concentrations less than or equal to 2500 mg/L.

<sup>4</sup> Direct contact numeric values for soils at non-residential properties.

concentration of all PCB aroclors (total PCB concentration) may not exceed 50 ppm. Fill containing a concentration of total PCBs greater than 2 ppm may be subject to regulation under the Toxic Substances Control Act (TSCA), 15 U.S.C. Section 2601 et seq., and 40 C.F.R. Part 761, which is administered and implemented by the EPA. EPA's TSCA requirements are independent of any use of fill that is otherwise in accordance with the Department's policy and regulations. An applicant should be aware that its characterization and handling of any soils through the guidance of the Management of Fill policy does not necessarily satisfy a potential EPA TSCA inquiry, and that an applicant may need a separate approval from EPA should EPA require it. For all such material, DEP recommends that you contact the PCB Coordinator for EPA Region 3 by email at [R3\\_PCB\\_Coor@epa.gov](mailto:R3_PCB_Coor@epa.gov) to determine whether PCB-containing fill may be used and to obtain information relating to the associated EPA procedures for collecting and analyzing samples.

*Regulated substance* – The term includes hazardous substances and contaminants regulated under the Hazardous Sites Cleanup Act, 35 P.S. §§ 6020.101 et seq.; and substances regulated by the Clean Streams Law, 35 P.S. §§ 691.1 et seq.; the Air Pollution Control Act, 35 P.S. §§ 4001 et seq.; the Solid Waste Management Act, 35 P.S. §§ 6018.101 et seq.; the Infectious and Chemotherapeutic Waste Law, 35 P.S. §§ 6019.1 et seq.; and the Storage Tank and Spill Prevention Act, 35 P.S. §§ 6021.101 et seq.

*Release* – Spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing of a regulated substance into the environment in a manner not authorized by the Department. The term includes the abandonment or discarding of barrels, containers, vessels and other receptacles containing a regulated substance.

*Uncontaminated or Uncontaminated material* – The term means either of the following:

- (1) Fill unaffected by a release of a regulated substance or,
- (2) Fill affected by release of a regulated substance, if the concentrations of regulated substances in the fill do not exceed the clean fill concentration limits, as the term is defined in this policy. Analysis should be carried out for only those regulated substances that are suspected to be present due to a release.

The term does not include fill that has been blended, mixed or treated with the purpose of meeting the definition of “uncontaminated material.”

*Used asphalt* – Pieces of bitumen and inorganic materials from the demolition of bituminous pavement. The term does not include “reclaimed asphalt pavement,” as the term is defined by this policy.

## **REFERENCES:**

25 Pa. Code Chapters 287 to 299 (residual waste regulations)  
25 Pa. Code Chapters 271 to 285 (municipal waste regulations)  
Solid Waste Management Act, 35 P.S. §§ 6018.101 et seq.  
Land Recycling and Environmental Remediation Standards Act, 35 P.S. §§ 6026.101 et seq.  
Section 1917-A of the Administrative Code, 71 P.S. § 510-17  
The Clean Streams Law, 35 P.S. §§ 691.1 et seq.

## TECHNICAL GUIDANCE:

### A. Purpose and Applicability

Fill is used in construction or earthmoving projects across the Commonwealth to level an area or bring an area to grade. These projects may involve using fill as a subbase or to fill in low-lying areas. The manner in which fill may be used depends on whether the fill is clean fill or regulated fill. This policy provides procedures for determining whether fill is clean fill or regulated fill and describes how each category may be managed after a fill determination has been performed.

This policy does not apply to the following activities:

- Mine land reclamation activities subject to a permit.
- Management of waste from land clearing, grubbing and excavation, including trees, brush, stumps and vegetative material.<sup>5</sup>
- Movement or use of fill within a project area or right-of-way of a project.
- Use of reclaimed asphalt pavement in accordance with DEP's industry-wide coproduct determination.
- The use of clean fill or regulated fill prior to January 1, 2020, unless the fill is moved to another receiving site, project area or off the project right-of-way after January 1, 2020.

In general, fill that is demonstrated to be clean fill can be used in an unrestricted manner, provided it is not placed in waters of the Commonwealth; it is used in compliance with 25 Pa. Code, Chapters 102 and 105 (relating to erosion and sediment control; and dam safety and waterway management); and it is managed in accordance with Section D of this policy. Persons using fill must also comply with the fugitive emissions regulations under 25 Pa. Code, Chapter 123 (relating to standards for contaminants) issued under the Air Pollution Control Act, 35 P.S. § 4001, and shall comply with all the applicable provisions of 25 Pa. Code §§ 123.1 and 123.2 (relating to prohibition of certain fugitive emissions and fugitive particulate matter). Depending on the manner in which it is generated, clean fill may be a "waste," as that term is defined in the municipal or residual waste regulations, 25 Pa. Code § 271.1 and § 287.1, respectively, whichever is applicable.

This policy does not apply to fill that has been determined to be clean or regulated fill prior to the implementation of revised CFCLs or RFCLs, unless the fill is moved to a new receiving site or off the project area or project right-of-way after the effective date of the revised CFCLs or RFCLs.

Fill that is demonstrated to be regulated fill can be used by persons who have applied for and obtained coverage under the Department's General Permit No. WMGR096, Beneficial Use of

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<sup>5</sup> In accordance with 25 Pa. Code § 271.101(b)(4), a person managing waste from land clearing, grubbing and excavation, including trees, brush, stumps and vegetative material, shall implement best management practices developed by the Department. Refer to Document No. 254-5400-001 - *Best Management Practices for the Management of Waste From Land Clearing, Grubbing, and Excavation (LCGE)*.

Regulated Fill. Coverage under General Permit No. WMGR096 is not required in the following instances:

- Remediation activities undertaken entirely on an Act 2 site, pursuant to the requirements of § 902 of Act 2.
- When fill from an Act 2 site is used as construction material at a receiving site that is being remediated to attain an Act 2 standard, provided the procedural and substantive requirements of Act 2 and the conditions specified in Section C.2.a. and b. of this policy are satisfied.
- Use of the regulated fill is limited to the excavation, movement or use of the regulated fill within a project area or right-of-way of a project.

Regulated fill is a “waste,” as that term is defined in the municipal or residual waste regulations, 25 Pa. Code § 271.1 and § 287.1, respectively.

## **B. Procedure for Performing a Fill Determination**

Prior to the movement of fill to a receiving site, either the person proposing to provide the fill from a donor site or the person proposing to receive the fill determines whether the fill is clean fill or regulated fill pursuant to this policy. Use the following steps to make that determination:

1. Determine Eligibility: A material is eligible for management as clean or regulated fill under this policy if it satisfies the following criteria:
  - a. The material is “fill,” as the term is defined in this policy. If the fill under consideration contains acid-producing rock, it is specifically excluded from the definition of fill. Appendix B contains information relevant to identifying acid-producing rock.
  - b. The fill does not contain regulated substances that were intentionally released.
  - c. The fill has not been blended, mixed or treated with the purpose of meeting the definition, or applicable numeric limits, of “uncontaminated material,” “clean fill” or “regulated fill.”
  - d. The fill does not exhibit a characteristic of toxicity, as determined by 40 CFR § 261.24 (relating to toxicity characteristic). The toxicity characteristic is of concern only when environmental due diligence indicates that the fill being considered for use may have been affected by a release of a regulated substance that is included in Table 1 in 40 CFR § 261.24. If the total concentration of the substance exceeds the limit for the substance in Table 1 of 40 CFR § 261.24 by a factor of 20 or more, the issue regarding potential toxicity should be addressed either by performing the Toxic Characteristic Leaching Procedure (TCLP), in accordance with Method 1311, found in the most recent version of EPA’s publication, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, also known as SW-846, or providing additional description of the fill, indicating that the substance is bound in the matrix and not leaching.

- e. **PCB-containing Fill:** If the environmental due diligence indicates that the fill may have been subject to a release of PCBs, test it for the presence of PCBs. Fill containing a concentration of total PCBs greater than 2 ppm may be subject to regulation under the Toxic Substances Control Act (TSCA), 15 U.S.C. §§ 2601 *et seq.*, and 40 CFR Part 761, which is administered and implemented by the EPA. EPA's TSCA requirements are independent of any use of fill that is otherwise in accordance with the Department's policy and regulations. An applicant should be aware that its characterization and handling of any soils through the guidance of the Management of Fill policy does not necessarily satisfy a potential EPA TSCA inquiry, and that an applicant may need a separate approval from EPA should EPA require it. For all such material, DEP recommends that you contact the PCB Coordinator for EPA Region 3 by email at [R3\\_PCB\\_Coor@epa.gov](mailto:R3_PCB_Coor@epa.gov) to determine whether PCB-containing fill may be used and to obtain information relating to the associated EPA procedures for collecting and analyzing samples.
2. **Perform Environmental Due Diligence:** Once determined that the fill is eligible for use under this policy, evaluate the fill to determine whether it has been affected by a release of a regulated substance by performing "environmental due diligence," as the term is defined in this policy. Except for historic fill, analytical testing of the fill is not necessary unless environmental due diligence indicates that the fill may have been affected by a release of a regulated substance. However, a person performing a fill determination may choose to perform analytical testing in lieu of conducting a review of ownership and historic property use to satisfy the minimum condition for performing environmental due diligence.

The use of historic fill as clean fill under this policy is limited to historic fill that is a conglomeration of soil, residuals and fill. Historic fill that is comprised primarily of residuals does not represent a conglomeration of soil, residuals, and fill and therefore, cannot be used as clean fill. Pockets of residuals, such as ash or slag, should be removed and managed separately from other historic fill prior to making a determination that the historic fill can be used as clean fill. Perform analytical testing to demonstrate that the historic fill meets the definition of uncontaminated material. To qualify for use as clean fill, historic fill should be tested for the parameters included in Table 1, below, as well as any additional parameters that are suspected based on historic property use or review of records. The placement of historic fill as clean fill may not contaminate groundwater. For regulated substances detected in the historic fill, the value obtained using the Synthetic Precipitation Leaching Procedure, (SPLP, SW-846, Method 1312) may not exceed the numeric value as identified in Table 1 [MSCs for Organic Regulated Substances in Groundwater] and Table 2 [MSCs for Inorganic Regulated Substances in Groundwater] of Appendix A in 25 Pa. Code, Chapter 250.

- a. If due diligence shows no evidence that the fill may have been affected by a release of a regulated substance, the fill may be managed as clean fill in accordance with the Section D of this policy (relating to management of clean fill) unless during movement, transport or placement there are observable indications (such as appearance or odors) which indicate evidence of a release of a regulated substance.

- b. If due diligence shows evidence that the fill may have been affected by a release of a regulated substance, test the fill to determine if it is clean fill or regulated fill. Perform the testing in accordance with Appendix A of this policy. Analysis should be carried out for only those regulated substances that are suspected to be present due to a release or based upon historic use of the donor site.
- i. Except as provided elsewhere in this policy, if testing reveals that the fill contains regulated substances at concentrations that are below the CFCLs, the fill may be managed as clean fill in accordance with Section D of this policy (relating to management of clean fill). A person may not blend, mix or treat fill that would otherwise fail to meet the CFCLs with the purpose of meeting the definition of uncontaminated material or clean fill. For the purposes of completing Form FP-001 for the certification of clean fill, the CFCLs in effect on the date of submission should be used to evaluate whether the fill qualifies for use as clean fill.
  - ii. Except as provided elsewhere in this policy, if testing reveals that the fill contains regulated substances at concentrations that exceed the CFCLs but are at or below the RFCLs, the fill may be managed as regulated fill only if coverage under General Permit No. WMGR096 is obtained. A person may not blend, mix or treat fill that would otherwise fail to meet the RFCLs with the purpose of meeting the definition of regulated fill. Manage regulated fill in accordance with the Section C of this policy (relating to management of regulated fill).
  - iii. Except as provided elsewhere in this policy, if testing reveals that the fill contains regulated substances at concentrations that exceed the RFCLs, the fill may not be managed as clean fill or regulated fill. Fill exceeding the RFCLs may require disposal in accordance with the hazardous, municipal or residual waste regulations, 25 Pa. Code, Articles VII, VIII or IX, respectively, whichever is applicable.

**TABLE 1: Screening Parameters for Historic Fill**

Regulated Substance	CASRN	Regulated Substance	CASRN	Regulated Substance	CASRN
Aldrin	309-00-2	PCB-1254 (Aroclor)	11097-69-1	Copper	7440-50-8
Anthracene	120-12-7	Phenanthrene	85-01-8	Iron	7439-89-6
Benzene	71-43-2	Pyrene	129-00-0	Lead	7439-92-1
Benzo(a)anthracene	56-55-3	Toluene	108-88-3	Manganese	7439-96-5
Benzo(a)pyrene	50-32-8	Trichloroethane, 1,1,1-	71-55-6	Mercury	7439-97-6
Benzo(b)fluoranthene	205-99-2	Trichloroethylene (TCE)	79-01-6	Molybdenum	7439-98-7
Benzo(ghi)perylene	191-24-2	Xylenes (Total)	1330-20-7	Nickel	7440-02-0
Chrysene	218-01-9	Aluminum	7429-90-5	Selenium	7782-49-2
Cumene (Isopropyl benzene)	98-82-8	Antimony	7440-36-0	Silver	7440-22-4
DDD, 4,4	72-54-8	Arsenic	7440-38-2	Thallium	7440-28-0
DDE, 4,4	72-55-9	Barium	7440-39-3	Vanadium	7440-62-2
DDT, 4,4	50-29-3	Beryllium	7440-41-7	Zinc	7440-66-6



**TABLE 1: Screening Parameters for Historic Fill**

Regulated Substance	CASRN	Regulated Substance	CASRN	Regulated Substance	CASRN
Dichloroethylene, cis-1,2-	156-59-2	Boron	7440-42-8	Ammonia	7664-41-7
Dieldrin	60-57-1	Cadmium	7440-43-9	Chloride	7647-14-5
Ethylbenzene	100-41-4	Chromium(III)	16065-83-1	Fluoride	7681-49-4
Fluorene	86-73-7	Chromium(VI)	18540-29-9	Sulfate	7757-82-6
Ideno(1,2,3-cd) pyrene	193-39-5	Chromium (total)	7440-47-3		
Napthalene	91-20-3	Cobalt	7440-48-4		

### **C. Management of Regulated Fill**

Regulated fill must be managed in accordance with the Department's municipal or residual waste regulations, 25 Pa. Code § 271.2 and § 287.2, respectively, whichever is applicable, and may be beneficially used in accordance with General Permit No. WMGR096.

Coverage under General Permit No. WMGR096 is not required in the following instances:

1. Remediation activities undertaken entirely on an Act 2 site, pursuant to the requirements of Section 902 of Act 2.
2. When fill from an Act 2 site is used as construction material at a receiving site that is being remediated to attain an Act 2 standard, provided the procedural and substantive requirements of Act 2 and the following are satisfied:
  - a. Regulated substances contained in the fill are incorporated into the notice of intent to remediate and the final report for the remediation taking place at the receiving site.
  - b. Movement of fill between Act 2 sites is documented in the final reports for both the donor site and receiving site.
  - c. Except as provided elsewhere in this policy, placement of the fill does not and will not cause the receiving site undergoing remediation to exceed the selected Act 2 standard.
3. Use of the regulated fill is limited to the excavation, movement or use of the regulated fill within a project area or right-of-way of a project.

A person or municipality interested in obtaining coverage under General Permit No. WMGR096 must apply to the Department in accordance with the application instructions provided in the permit. The terms and conditions of General Permit No. WMGR096 are available on the Department's website.

### **D. Management of Clean Fill**

Pursuant to 25 Pa. Code § 271.101(b)(3) and § 287.101(b)(6), use of clean fill does not require a permit under the SWMA or the municipal or residual waste regulations. Clean fill may be used in accordance with all applicable requirements governing the placement or use of clean fill,

including 25 Pa. Code Chapter 102 (relating to erosion and sediment control) and 25 Pa. Code Chapter 105 (relating to dam safety and waterway management). Persons using fill must also comply with the fugitive emissions regulations under 25 Pa. Code, Chapter 123 (relating to standards for contaminants) issued under the Air Pollution Control Act, 35 P.S. § 4001, and shall comply with all the applicable provisions of 25 Pa. Code §§ 123.1 and 123.2 (relating to prohibition of certain fugitive emissions and fugitive particulate matter). The use of clean fill may be regulated under other environmental laws and regulations.

If the uncontaminated brick, block or concrete from a construction or demolition activity is intended for use as clean fill, best management practices (BMPs) should be followed prior to demolition activities to remove from a building or structure all materials that do not meet the definition of clean fill, such as materials or surfaces covered with lead-based paint, friable asbestos, and hazardous materials such as mercury switches, PCB ballasts, tritium-containing exit signs, and fluorescent light bulbs.

Clean fill may not contain any free liquids based on visual inspection and cannot create a public nuisance (such as an objectionable odor) to users of the receiving site or adjacent properties.

If any person wants to use clean fill under this policy, complete Form FP-001, Certification of Clean Fill, and submit it to DEP electronically on the DEP website at <https://www.dep.pa.gov/Business/Land/Waste/SolidWaste/Residual/Pages/default.aspx>. Complete and submit the FP-001 prior to movement of clean fill to the receiving site. Complete and submit FP-001 regardless of whether sampling and analysis are performed as part of environmental due diligence.

If the donor site has undergone or is undergoing cleanup or remediation under a local, state or federal regulatory program that requires site characterization, or if the fill proposed to be managed as clean fill has otherwise been subject to analytical testing or other procedures identified in the definition of “environmental due diligence,” attach the following to Form FP-001:

- Copies of the sampling plan developed for the fill,
- All laboratory reports,
- Documentation and data associated with a background determination and equivalent site evaluation conducted as part of the fill determination, including the identification and location of point sources, the proximity of identified point sources to the background reference area, identification of areas of imported fill other than imported clean fill, etc.

If a person receives fill from multiple donor sites, a separate Form FP-001 is necessary for each donor site. DEP will accept the completed FP-001 electronically via a link on the DEP website.

If a background demonstration is made, as described in Appendix A of this policy, use the FP-001 to include documentation of the background demonstration along with documentation demonstrating that an equivalent site evaluation has been performed and the provisions of Appendix A have been satisfied.

Both the donor site and the receiving site are responsible for maintaining copies of the completed Form FP-001 for a period of five (5) years. Copies of the form and all supporting documentation, including analytical test reports, should be made available and provided to DEP upon request.

## **Appendix A**

### **Sample Collection and Analytical Testing Protocol for Performing Environmental Due Diligence**

Prior to movement of fill to a receiving site, use Sections B-D of the Management of Fill policy to make a fill determination. Analytical testing of the fill is not necessary unless environmental due diligence indicates a release of a regulated substance. This Appendix provides guidelines for using analytical testing as part of the environmental due diligence.

#### **A. Sampling Plan Development**

The first step in a chemical evaluation of fill is to develop a plan for sampling. To use analytical testing as part of the environmental due diligence, develop and implement a scientifically credible sampling plan in accordance with the most recent version of the EPA's publication, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, also known and hereinafter referred to as SW-846, and the *RCRA Waste Sampling Draft Technical Guidance, EPA530-D-02-002*. Chapter 9 of SW-846 describes procedures for developing a sampling plan and the statistical treatment of data. Where there is disagreement between the procedures outlined in this Appendix and the referenced EPA documents, follow the procedures contained in this Appendix.

Employ a systematic planning process, such as the Data Quality Objectives Process identified in the *RCRA Waste Sampling Draft Technical Guidance*, to set objectives for the type, quantity and quality of data needed to demonstrate with a known level of assurance that the applicable standards for clean fill or regulated fill are achieved. The level of complexity and detail needed in the sampling plan are directly related to the size, scope and level of complexity of the donor site.

The following are the minimum scientific objectives of a sampling plan developed under this policy:

- Identify and quantify known or suspected contaminants in the fill.
- Collect samples that will allow measurements of the chemical properties of the fill that are both accurate and precise.
- Collect representative samples, which for the purposes of implementing this policy are samples exhibiting typical properties of the whole volume of fill.
- Collect enough samples, and in no case less than eight discrete samples or two composite samples, to sufficiently represent the variability of the fill.
- Obtain a statistically valid and reliable estimate of the fill's chemical properties.

Characterize the fill both horizontally and vertically to represent the entire volume of fill to be transported off the donor site and used at a receiving site. A thorough characterization will provide the following information:

- Identity of regulated substances associated with a release that are present in the fill, the concentration of each identified regulated substance, and the spatial variation in concentration of each regulated substance both horizontally and vertically.
- The physical characteristics of the fill in which the regulated substances associated with a release are present. Examples of these include the fill type (such as soil, rock, dredge), texture, dry bulk density, permeability, organic carbon content, porosity, and moisture content. Include documentation of physical characteristics and any significant variability over the donor site.

In the sampling plan include a summary of existing information about the donor site, including any previously performed sampling or analysis information, preliminary estimates of summary statistics such as the mean and standard deviation, process descriptions and materials used, spatial boundaries of the donor site to be managed under this policy, information about what is known or suspected at the donor site, releases, and release mechanisms. Document this information by written descriptions of site conditions supported by maps, cross-sections, site diagrams, or other descriptive, graphical, or tabular illustrations necessary to characterize the site conditions.

Sampling units for fill managed under this policy should represent the total volume of fill being characterized pursuant to Sections B and C of this Appendix. Sampling plans may include a combination of probability sampling and authoritative sampling designs depending on conditions at the donor site. Probability sampling should be used to characterize the fill as a whole. Some sites may require additional, more focused sampling, such as authoritative sampling, to evaluate problem areas, such as localized areas that are suspected to contain the highest levels of regulated substances, or “hot spots,” or areas that may require further evaluation. For example, areas that housed an underground storage tank or experienced a release of regulated substances should be sampled authoritatively and more frequently than other areas of the donor site. The remaining area of the donor site should be sampled using probability sampling, in which all parts of the fill being characterized have a known probability of being included in the characterization. Samples collected to delineate a “hot spot” are typically in addition to those collected for the overall site characterization.

## **B. Sampling Procedures for Fill Stored in Piles**

There are several variables involved in the sampling of fill stored in piles, including the size and shape of the pile, compactness of the fill, and physical properties of the fill. The size and shape of the pile should be used to calculate volume and plan for the correct number of samples to be taken. Simple random sampling or stratified random sampling should be used to obtain representative samples from a fill pile, in accordance with SW-846 and Sections 5.2.1 – 5.2.2, and 5.3 of the *RCRA Waste Sampling Draft Technical Guidance, EPA530-D-02-002*. A method of random sampling, such as simple random or stratified random sampling should be used unless one of the following conditions exists:

- There are known distinct strata.

- An objective of the sampling is to prove or disprove that there are distinct strata.
- The number of samples is limited, and an objective of the sampling is to statistically minimize the size of a “hot spot” that might not get sampled.

Stratified random sampling can be employed only if all points within the pile can be accessed. In such cases, the pile should be divided into a three-dimensional grid system. The grid cubes should be numbered, and the grid cubes to be sampled should be chosen by random number tables or generators.

Generally, stainless-steel shovels, trowels, or scoops should be used to clear away surface material before samples are collected. Depth samples may be collected using a decontaminated auger. For a sample core, thin-wall tube samplers or grain samplers may be used. Near surfaces, samples can be collected with a clean, stainless-steel spoon or trowel. All samples collected, except those for VOCs analysis, should be placed into a Teflon-lined or stainless-steel pail and mixed thoroughly before transfer to the appropriate sample container. Since volatilization of VOCs can occur rapidly once the matrix is disturbed, grab samples are necessary for VOCs analysis. Grab samples should be handled as intact cores and transferred immediately to the container that will be used for analysis. Refer to SW-846, Method 5035, for container and preservation details specific to samples for VOCs analysis.

The sampling and subsequent analysis of fill stored in piles may be performed by collecting composite or discrete samples.

1. Procedure for Using Composite Samples:

- a. Do not use composite sampling if the integrity of the individual sample changes because of the physical mixing of discrete samples.
- b. For up to 125 cubic yards of fill, collect and handle eight discrete samples (plus two grab samples for VOCs) as follows:
  - i. Prior to compositing, field screen the eight discrete samples to identify the two that are most likely to contain the highest concentrations of VOCs.
  - ii. In accordance with SW-846, Method 5035, collect grab samples for VOC analysis from the two points identified by the field screening described above.
  - iii. For all other substances, combine the eight discrete samples collected into two composite samples comprised of four discrete samples each. Perform the analysis on the two composite samples in accordance with SW-846.

- c. For greater than 125 cubic yards and up to and including 3,000 cubic yards, collect and handle 12 discrete samples (plus three grab samples for VOCs) as follows:
    - i. Prior to compositing, field screen the 12 discrete samples to identify the three samples that are most likely to contain the highest concentrations of VOCs.
    - ii. In accordance with SW-846, Method 5035, collect grab samples for VOC analysis from the same sampling points as the three discrete samples identified by field screening.
    - iii. For all other substances, combine the 12 discrete samples collected into three composite samples comprised of four discrete samples each. Perform the analysis on the three composite samples in accordance with SW-846.
  - d. For each additional 1,000 cubic yards of fill or part thereof over the initial 3,000 cubic yards, collect four additional discrete samples (plus one grab sample for VOCs). Composite and analyze the four discrete samples in accordance with SW-846.
2. Procedure for Using Discrete Samples:
- a. For up to 125 cubic yards of fill, collect and analyze a minimum of eight discrete samples (plus two grab samples for VOCs). For volumes of fill greater than 125 cubic yards and up to and including 3,000 cubic yards, collect and analyze a minimum of 12 discrete samples (plus three grab samples for VOCs). For each additional 1,000 cubic yards of fill or part thereof over the initial 3,000 cubic yards, collect and analyze a minimum of four additional discrete samples (plus one grab sample for VOCs).
  - b. For VOCs analysis, perform grab sampling as described in subsection B.1 of this Appendix.

### **C. Sampling Procedures for In-situ Fill**

For the purposes of this policy, “in-situ fill” refers to fill that is undisturbed in its original location at the donor site or fill that has previously been used as clean or regulated fill and will be subsequently excavated and moved to a receiving site. If conducting sampling on in-situ fill to evaluate whether that fill can be managed as clean or regulated fill, characterize both the vertical and horizontal extent of the fill to be transported and used at a receiving site. Where multiple zones of contamination are possible due to site-specific conditions, including separate and discrete releases or the manner in which fill was originally placed, the characterization and demonstration that the fill meets the CFCLs or RFCLs apply individually to the separate zones.

For in-situ sampling where the purpose of the sampling is to characterize a specific release at the donor site, discrete samples collected using a focused sampling technique, such as authoritative sampling, must be used for analysis. These areas may be:

- Localized areas that are known to contain levels of regulated substances that exceed the CFCLs or RFCLs, whichever is applicable, based on analytical results, or
- Localized areas suspected to contain levels of regulated substances that exceed the CFCLs or RFCLs from a specific release, whichever is applicable, based on the historic use of the site.

Once the specific release at the donor site has been characterized, composite samples may be used to confirm that the remaining fill to be excavated and transported to a receiving site and used as clean or regulated fill meets the CFCLs or RFCLs, respectively.

To characterize the remaining area, the area should be sampled using a method of random sampling, such as simple random or stratified random sampling. Composite samples can then be used to verify that the fill intended for excavation and transportation meet the CFCLs or RFCLs, whichever is applicable. When composite samples are utilized for in-situ samples, the sampling plan must demonstrate that localized areas that are known to contain regulated substances exceeding the CFCLs or RFCLs, whichever is applicable, are not included in the portion of the site evaluated using composite samples.

Apart from known hot spots, which may require further sampling and analysis, as discussed above, the donor site should be divided into a three-dimensional grid. Where possible, each grid unit should be of similar size and shape and be comprised of equal volumes of fill. A method of random sampling, such as simple random or stratified random sampling, should be chosen based on knowledge of the donor site as set forth in SW-846 or the *RCRA Waste Sampling Draft Technical Guidance, EPA530-D-02-002*.

The number of sample points is determined by the volume of fill being characterized. Sampling frequency should account for the depth of donor fill to be removed. If an area of donor fill will be excavated to more than one depth (for example, three feet in one part and six feet in another part), then the samples should be distributed accordingly at multiple depths to be representative of the full depth of each cut. Determine the minimum number of samples using the procedure outlined in subsection B.2 of this Appendix. Additional sampling may be necessary based on site-specific conditions.

#### **D. Evaluation of Data**

Evaluate sample data generated in accordance with Sections B and C of this Appendix in accordance with the following:

1. For a composite sample collected in accordance with subsection B.1, the measured numeric value for a parameter may not exceed the CFCL for that parameter for the fill to be managed as clean fill, or the RFCL for that parameter for the fill to be managed as regulated fill.



2. For a grab sample collected for VOC analysis in accordance with the above sections, the measured numeric value for a parameter may not exceed the CFCL for that parameter for the fill to be managed as clean fill, or the RFCL for that parameter for the fill to be managed as regulated fill.
3. For discrete samples collected in accordance with subsection B.2, the measured numeric values for a substance in 75% of the discrete samples may not exceed the CFCL for that parameter for the fill to be managed as clean fill, or the RFCL for that parameter for the fill to be managed as regulated fill. For persons using the discrete sampling method, no single sample may show regulated substances at a concentration that is more than twice the CFCL or RFCL, whichever is applicable, for any parameter.

#### **E. Alternate Evaluation of Data**

In lieu of Section D of this Appendix, a person may use the 95% Upper Confidence Limit (UCL) of the arithmetic mean to determine whether the fill meets the CFCL or RFCL, whichever is appropriate, for a parameter. The calculated 95% UCL of the arithmetic mean should be below the appropriate CFCL or RFCL for that parameter. Persons intending to use this method for the treatment of data should determine a minimum number of samples in accordance with SW-846 and the *RCRA Waste Sampling Draft Technical Guidance, EPA530-D-02-002*. The application of the 95% UCL of the arithmetic mean should comply with the following performance standards:

1. The null hypotheses (Ho) is that the true arithmetic average concentration is at or above the CFCL or RFCL for that parameter, whichever is appropriate, and the alternative hypothesis (Ha) is that the true arithmetic average concentration is below the CFCL or RFCL for that parameter, whichever is appropriate.
2. Meet the underlying assumptions of the statistical method, such as data distribution.
3. Compositing cannot be used for VOCs.
4. The censoring level for each non-detect is the assigned value randomly generated that is between zero and the limit related to the practical quantitation limit (PQL).
5. Tests should account for spatial variability, unless otherwise approved by the Department.
6. Statistical testing should be done individually for each parameter for which a single sample result or multiple results exceed(s) a limit.
7. Where a fill has distinct physical, chemical or biological characteristics, or originates from different areas, do the statistical testing separately.
8. Document the following information:
  - a. A description of the original areas of the fill and physical, chemical and biological characteristics of the fill.

- b. A description of the underlying assumptions of the statistical method.
- c. Documentation showing that the sample data set meets the underlying assumptions of the statistical method.
- d. Documentation of input and output data for the statistical test, presented in tables or figures, or both, as appropriate.
- e. An interpretation and conclusion of the statistical test.

**F. Use of the Synthetic Precipitation Leaching Procedure (SPLP, SW-846 Method 1312) to Establish an Alternative Soil-to-Groundwater Value**

Fill may be analyzed using SPLP to provide an alternative soil-to-groundwater value for use in making a fill determination. The value obtained using the SPLP represents a concentration of a regulated substance in the fill that does not produce leachate in which the concentration of the regulated substance exceeds the applicable groundwater MSC identified in Table 1 [MSCs for Organic Regulated Substances in Groundwater] or 2 [MSCs for Inorganic Regulated Substances in Groundwater] of Appendix A in 25 Pa. Code, Chapter 250. For both clean and regulated fill, the groundwater MSC for used aquifers with TDS <2,500 mg/L should be used to compare the SPLP result to Tables 1 or 2. For clean fill, use the groundwater MSC for residential use (“R”) for comparison. For regulated fill, use the groundwater MSC for non-residential use (“NR”) for comparison. If SPLP is used to identify an alternative soil-to-groundwater value, the alternative value is only applicable to the fill that was tested using SPLP.

Use the following procedure to determine an alternative soil-to-groundwater value based upon the SPLP:

1. During characterization of the donor site, obtain a minimum of ten samples from the proposed fill. For volumes of fill less than 125 cubic yards, collection of a minimum of eight samples is acceptable. Submit the four samples with the highest total concentration of the regulated substance for SPLP analysis. Samples obtained will be representative of the soil type and horizon impacted by the release of the regulated substance.
2. Determine the lowest total concentration (TC) that generates a failing SPLP result. The alternative soil-to-groundwater value will be the next lowest TC.
3. If all samples result in a passing SPLP level, the alternative soil-to-groundwater value will be the TC corresponding to the highest SPLP result. Additional samples may be collected.
4. If none of the samples generates a passing SPLP, additional samples may be collected and concurrent TC/SPLP analyses performed to satisfy the above conditions for establishing an alternative soil-to-groundwater value.
5. The alternative soil-to-groundwater value is then compared to the direct contact residential value for clean fill or the direct contact non-residential value for regulated fill

found in Chapter 250, Appendix A, Tables 3<sup>6</sup> or 4<sup>7</sup>. The lower of the compared values is the applicable numeric limit.

## **G. Performing a Background Demonstration and Equivalent Site Evaluation**

A background demonstration may be utilized for both clean fill and regulated fill determinations. For clean fill determinations, use the CFCLs. For regulated fill, use the RFCLs. If fill from the donor site contains regulated substances at concentrations exceeding the CFCL or RFCL, whichever is appropriate, for that parameter, a demonstration may be made to show that the exceedance is due to background at the donor site. If a successful background demonstration is made, perform an equivalent site evaluation prior to movement of fill to a receiving site. The equivalent site evaluation ensures that no new regulated substance is placed on the receiving site other than a regulated substance already determined to be present and that the concentration(s) of regulated substance(s) in the donor fill has been compared to the concentration(s) of the same regulated substance(s) at the receiving site in accordance with subparagraphs G.3.b.i-ii. of this Appendix. Regulated substances detected in the donor fill that are below the CFCL or RFCL, whichever is appropriate, for that parameter, do not require a background demonstration or an equivalent site evaluation.

Generally, only naturally occurring metals, lead and some ubiquitous organics, such as polynuclear aromatic hydrocarbons (PAHs), from widespread atmospheric deposition, are eligible for a background demonstration. When data or other information indicates that a regulated substance has migrated onto the donor site from the release of a regulated substance at another site, the regulated substance is not due to background of that substance at the donor site. Pathways for the migration of a regulated substance due to an offsite release include surface runoff from specific sources (such as runoff from parking lots and storage facilities where spills have occurred); spills at railroad facilities and in railroad rights-of-way; and air deposition of regulated substances from specific sources.

Previously collected background data published by an accredited source with appropriate peer review may be considered, provided the information is sufficiently focused and contains the level of detail on the area used to determine background necessary to legitimately compare it to the donor site. The description of the sampling and analysis performed should be detailed enough to provide statistical validity.

Use the following guidelines when performing a background demonstration under this policy:

### **1. Select a Background Reference Area:**

The first step in making a demonstration that the presence of a regulated substance is due to background at the donor site and is not due to a release is to select a background reference area, as the term is defined in this policy, to collect samples for the purpose of establishing background at the donor site. Samples may be collected from the background reference area to demonstrate that an exceedance of a CFCL or RFCL, as appropriate, can be attributed to background, as the term is defined in this policy. Background reference areas should not include areas affected by a known or suspected

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<sup>6</sup> Direct contact numeric values for soils at residential properties

<sup>7</sup> Direct contact numeric values for soils at non-residential properties

release of a regulated substance, including areas impacted by road runoff, areas near railroads affected by engine exhaust contaminants, and areas near buildings contaminated by paint chips. In urban areas, background reference areas may include areas where widespread, ubiquitous contamination is present that cannot be traced to a specific source.

Background reference areas should be as similar as possible to the donor site. Every attempt should be made to reduce the factors that are different between the background reference area and the donor site. This does not mean that a sample collected at a location that is a considerable distance from an area known or suspected to have been affected by a release of a regulated substance is unacceptable merely because the known or suspected regulated substance is detected in the sample. The presence of regulated substance outside of the area known or suspected to have been affected by a release may indicate that the presence of the regulated substance is truly ubiquitous, widespread and incapable of being traced to a specific source. In this case, the regulated substance may be part of the background at the donor site.

A background reference area, as the term is defined in this policy, should be selected for use in the background demonstration.

## 2. Sampling, Analysis and Evaluation of Data:

Establish background by a sampling methodology that is statistically valid and consistent with the methodology used to perform the fill determination. Use the same analysis methods for the background samples that were used for performing the fill determination.

Compare the analytical results of the background samples with the results obtained from the fill determination. Use the following statistical methods for the comparison:

- a. Demonstrate that the highest measurement from the donor site is not greater than the highest measurement from the background reference area. The Department may accept insignificant variances in numbers. The minimum number of samples to be collected is 10 from the background reference area and 10 from each donor site. Analysis should be carried out on discrete samples.
- b. The Department may accept another appropriate statistical method if it meets the conditions below.
  - i. For nonparametric and parametric methods, the false-positive rate for a set of data applied to a statistical test may not be greater than 0.05. The minimum number of samples to be collected is 10 from the background reference area and 10 from each donor site.
  - ii. For parametric methods, the censoring level for each non-detect (ND) should be the assigned value randomly generated that is between zero and the limit related to the PQL.

3. Equivalent Site Evaluation:

The equivalent site evaluation ensures that no new regulated substance is placed on the receiving site other than a regulated substance that is already determined to be present and that the concentration(s) of regulated substance(s) in the donor fill has been compared to the concentration(s) of the same regulated substance(s) at the receiving site in accordance with subparagraphs G.3.b.i-ii. of this Appendix. Regulated substances detected in the donor fill that are below the CFCLs or RFCLs, as appropriate do not need to be included in the equivalent site evaluation. Perform the equivalent site evaluation prior to the movement of fill to a receiving site. Include documentation in the FP-001 demonstrating that the equivalent site evaluation has been performed and is satisfied in accordance with this section.

a. Develop a Plan for Sampling the Receiving Site.

Make a background determination on the receiving site to determine whether the same regulated substances present in the donor fill due to background are also present at the receiving site, and if so, determine the concentrations of the identified regulated substances. Development of a sampling plan in accordance with Section A of this Appendix is necessary to characterize the receiving site.

In the sampling plan include a summary of existing information about the receiving site, including any previously performed sampling or analysis information, process descriptions and materials used, spatial boundaries of the receiving site, information about what is known or suspected at the receiving site, releases, and release mechanisms. Document this information by written descriptions of site conditions and supported by maps, cross-sections, site diagrams, or other descriptive, graphical, or tabular illustrations necessary to characterize the site conditions.

The receiving site should be sampled using probability sampling, in which all parts of the site being characterized have a known probability of being included in the characterization, except for areas of the receiving site that are known to be or suspected of being affected by a release of a regulated substance, including areas impacted by road runoff, areas near railroads affected by engine exhaust contaminants, and areas near buildings contaminated by paint chips, unless the entire receiving site is part of a larger urban area where ubiquitous, widespread contamination is present that is incapable of being traced to a specific source.

Select the area of the receiving site used for the equivalent site evaluation in accordance with the following:

- i. The area sampled is unaffected by a release of a regulated substance.
- ii. The area sampled should be at a depth comparable to the area where donor fill is to be placed on the receiving site.
- iii. The concentration of regulated substances in the area sampled is attributable to the parent material from which the soil was derived and the

natural processes which produce soil; or the concentrations of regulated substances resulted from an atmospheric deposition, as the term is described in the definition of “background reference area,” but are not attributable to a specific point source or release of a regulate substance.

b. Sampling, Analysis and Evaluation of Data.

Establish the background by a sampling methodology that is statistically valid and consistent with the methodology used to perform the fill determination. Use the same analysis methods for background samples that were used for performing the fill determination.

Compare the analytical results of background samples for the receiving site with the results obtained from the donor fill. Use one of the following statistical methods for comparison:

- i. Demonstrate that the highest measurement from the donor site is not greater than the highest measurement from the receiving site. The Department may accept insignificant variances in numbers. The minimum number of samples to be collected is 10 from the receiving site and 10 from each donor site.
- ii. The Department may accept another appropriate statistical method if it meets the conditions below.
  - (A) For nonparametric and parametric methods, the false-positive rate for a set of data applied to a statistical test may not be greater than 0.05. The minimum number of samples to be collected is 10 from the receiving site and 10 from each donor site.
  - (B) For parametric methods, the censoring level for each non-detect (ND) should be the assigned value randomly generated that is between zero and the limit related to the PQL.

## **Appendix B**

### **Recognition and Identification of Acid-Producing Rock**

Pennsylvania's municipal and residual waste regulations define clean fill, in part, as inert solid material. Acid-producing rock reacts when exposed to air or water and therefore does not meet the regulatory definition of clean fill. In addition to presenting abrupt and adverse environmental concerns, exposed acid-producing rock can also have long-term damaging effects on highways and highway structures, including corrosion of concrete and steel structures; destabilization of cut slopes and fill slopes; ground heaving of structures and pavements; toxicity to roadside vegetation and aquatic life; and degradation of drinking water supplies.

Determining whether or not fill contains acid-producing rock begins with determining the presence of or likelihood of encountering acid-bearing rock (ABR), which is widespread in Pennsylvania. The primary source of acidity in Pennsylvania sedimentary rocks is sulfide minerals. Although there are many minerals that contain sulfur, those containing pyrite, or ferrous disulfide, are the major contributors to the release of acid. While pyrite minerals are not always large enough to be visible to the unaided eye, larger crystals have a yellowish, metallic appearance. Deposits containing pyrite concentrations greater than 0.5% have the potential to be significant sources of acid. Various other forms of sulfide minerals are of lesser concern due to their chemical stability, and include chalcopyrite ( $\text{CuFeS}_2$ ), galena ( $\text{PbS}$ ) and sphalerite ( $\text{ZnS}$ ), but can be problematic when present with pyrite.

Although there are more than 200 common minerals that contain sulfur, only those classified as iron sulfide are of potential concern due to the ability of these elements to promote oxidation, hydration and the release of acid. In Pennsylvania, there are four potential sulfide deposit types, listed as follows in descending order of pyrite oxidation reactivity:

- Veined Rock Deposits;
- Sedimentary Rock Deposits;
- Mine Spoils; and
- Acid Sulfate Soil Deposits.

Typically, the upper 25- to 35-feet of bedrock does not contain pyrite because pyrite is not stable under atmospheric conditions and will weather away. Therefore, if excavations are shallower than 30 feet, the risk of acid release is generally minimal. This is particularly true if a site is located south of the glacial margin. Within the glaciated regions of Pennsylvania, weathered bedrock may have been removed by glaciers and pyrite may exist closer to the surface. Unconsolidated sediments, such as glacial till, sand, and gravel, are not acid-producing and can be excavated without risk of acidic drainage. With regard to characterization of fill excavated to depths greater than 25 feet, environmental due diligence should include details demonstrating that the fill does not contain acid-producing rock.

The following publicly available resources may also assist in assessing the likelihood of encountering ABR:

- The Pennsylvania Geological Survey's a map of potentially acid bearing rocks (OFMI Report 05-01.1);
- The Pennsylvania Department of Transportation's (PennDOT) Geotechnical Engineering Manual, Publication 293 (4/18) ([PUB 293 \(4/18\)](#)); and
- DEP's Fact Sheet titled, "How to Avoid and Handle Acid-Producing Rock Formations Encountered During Well Site Development" ([PA DEP Link](#))

If ABR is anticipated in the fill based on published information or identified during due diligence, testing should be done to estimate the acid-producing potential. For more information on testing procedures and acid-base accounting procedures, please refer to PennDOT's "Geotechnical Engineering Manual, Publication 293 (4/18) ([PUB 293 \(4/18\)](#))," DEP's "Coal Mine Drainage Prediction and Pollution Prevention in Pennsylvania ([Coal Mine Drainage Prediction and Pollution Prevention](#))" or DEP's "Evaluation of Acid-Base Accounting Using Computer Spreadsheets ([Evaluation of Acid-Base Accounting](#))."