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Resource NEWS & VIEWS
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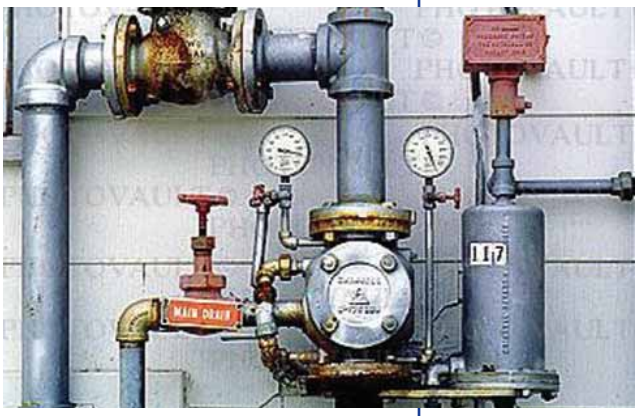
INFORMATION FOR THE ENVIRONMENTAL AND ENGINEERING INDUSTRY

What Is Act 220?

In our newsletter of December 2002, we reported the passage of "The Water Resources Planning Act" and told you that the Pennsylvania Department of Environmental Protection (PADEP) was designated as the agency responsible for obtaining information from required water use registrants. Known as Act 220 (Act 220 of 2002), "The Water Resources Planning Act" is a piece of planning legislation; it does not establish any water allocation or water withdrawal permitting requirements. However, it requires that all persons that use more than 10,000 gallons of water per day over any consecutive 30-day period report their uses to the PADEP. Key elements of Act 220 and the associated compliance requirements are set forth as follows:



Water meter used in determining water usage or withdrawal.

- All persons who withdraw or use more than 10,000 gallons of water per day (gpd), over any consecutive 30-day period, are required to register their withdrawal and identify their use or uses. There are no exemptions to this requirement. Industrial, commercial, municipal, agricultural, and government agencies-alike are required to register their withdrawals and their uses. You may be required to register as a 'withdrawer' and not be a 'user', or you may be required to register as a 'user', even though you may not have a qualifying withdrawal.

- All persons registered through other agencies or permit programs (e.g., Susquehanna River Basin Commission, Delaware River Basin Commission, or holding permits from PADEP) are required to register independently of (and in addition to) those programs.

- Users of less than 10,000 gpd are encouraged to register voluntarily to help PADEP get a better, quantitative understanding of the use of water within the Commonwealth.

- All users that are required to register are also required to keep accurate records of their uses, and periodically report their uses to PADEP. The frequency of reporting has yet to be determined, but will be no more frequent than annually.

- No Fees! There are no fees for registering and reporting.

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What Is Act 220?

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- Generally, users of more than 50,000 gpd are required to meter their uses; water users who withdraw less than 50,000 gpd are not required to meter uses.

- Upon registration, users are required to: identify sources; indicate the 30-day average daily withdrawal amounts from each source; provide well construction and well yield information; describe the method of metering or measurement, and meter location(s); and indicate the method of water disposal.

- Registration Forms can be downloaded from the PA PowerPort website at www.state.pa.us, Keyword: "DEP Water Management." Alternately, you may call the Act 220 hotline at 1-888-457-6653.

- The registration deadline for existing withdrawals and users is March 16, 2004.

- Withdrawals or uses in excess of 10,000 gpd that are initiated after February 16, 2004 must be registered within 30 days after initiation of a qualifying flow (>10,000 gpd over 30 days).

For more information, please contact Ned Wehler of ARM at 717-533-8600 or nwehler@armgroup.net.

March 2004

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Registration deadline for existing withdrawals and users is March 16, 2004

ARM Group Inc. Announcement

ARM is pleased to announce that Mr. Jeffery Leberfinger has joined the ARM staff as Vice President and General Manager of Geophysical Services. Mr. Leberfinger has worked closely with ARM's geophysicists for a number of years and has now accepted a formal position with our company. In his new position, Mr. Leberfinger will be focusing his geophysical expertise in the area of Ordnance Explosives/Unexploded Ordnance (OE/UXO) identification at various types of Department of Defense (DoD) and former DoD sites and Hazardous, Toxic, Radioactive Waste (HTRW) sites. He will also provide leadership and assistance for the broad range of geophysical services ARM offers, including services for geotechnical and environmental projects.

Geophysicist Jeffrey Leberfinger using a Garrett Sea Hunter metal detector.

Mr. Leberfinger has more than 18 years of experience performing geophysical services for a wide range of applications. He has performed extensive geophysical investigations for the U.S. Army Corps of Engineers, U.S. Air Force, U.S. Navy, and U.S. Department of Energy. Mr. Leberfinger holds a Bachelor's Degree in Geology from Bloomsburg University, and a Master's Degree in Geology from the University of Toledo. He holds a Professional Geologist license in Pennsylvania and is a member of the Association of Engineering Geologists. He is also a member of the Society of Exploration Geophysicists.

Mr. Leberfinger can be contacted at 717-533-8600 or via e-mail at jleberfinger@armgroup.net. For those of you who are accustomed to having Ms. Beth Williams assist with your geophysical needs, Ms. Williams will be more than happy to continue providing geophysical services and can be reached, as before, at 717-533-8600 of via e-mail at bwilliams@armgroup.net.

Water System Operator's Certification

Recent changes to Pennsylvania's water and wastewater system operator's certification now require that owners of "non-transient, non-community water supplies" have certified water system operators. Known as Act 11 (Act 11 of 2002), the Water and Wastewater Systems Operator's Certification Act (Act 11) established an interim operator certification program to meet the requirements of Section 1419 of the 1996 Amendments to the Safe Drinking Water Act. The interim rules remain in effect until the Pennsylvania Environmental Quality Board (EQB) adopts rules and regulations for a new operator's certification program. Heretofore, owners of "non-transient, non-community water supplies" were not required to employ certified operators. In effect, Act 11 requires that such owners come into compliance with the Act 11 requirements not later than February 21, 2004. Key elements of Act 11 and your compliance requirements are set forth as follows:

- Owners and operators of a "non-transient, non-community water supply" shall employ the services of an available certified operator of the required classification and sub-classification who shall make all "process control decisions" during all periods of system operation.
- A "non-transient, non-community water system" is a non-community water system that regularly serves water to 25 or more of the same persons over six months per year. Examples of "non-community" systems include schools, restaurants, shopping centers, hotels, government agencies, or businesses that have their own water supply and treatment systems.
- "Process control decisions" include any decision that changes or maintains water quality or water quantity. Examples include actions or decisions that concern the selection of sources, pumps, pressure and storage tanks, treatment devices, including biological or chemical levels, corrosion control, sampling and analysis, and maintenance procedures.
- Written standard operating procedures (SOPs) are required to assist the "available, certified operator" in carrying out his or her "process control decision" responsibilities, if that person is not employed and stationed on-site. The SOPs shall be approved, in writing, by the certified operator.
- Owners of a water system not previously required by the Act to employ a certified operator, such as a non-transient, non-community system, may have their operators gain certification through a "grandparenting" process.
- Grandparented operator certification can be obtained by meeting minimum criteria related to operating experience prior to February 21, 2002, application for grandparented certification prior to February 21, 2004, criminal history clearance, and approval by the State Board.
- Regular operator certification can be obtained by meeting the required level of experience and by passing the applicable, state-wide general and technology examination.
- Special small water system certifications (Dc or Dn sub-classifications) may be issued to uncertified operators for small, groundwater supplied systems (serves less than 500 persons) where disinfection only is required as treatment, upon the passing of an examination.
- All certified operators shall meet specified, continuing education requirements to qualify for certification renewal.

For more information, please contact Ned Wehler of ARM at 717-533-8600 or nwehler@armgroup.net. ARM Group Inc. can assist you with the preparation of SOPs and with operator certification, as needed.

ARM and Soil Nail Launcher, Inc. Team to Deliver Slope Stabilization Projects

Soil nailing has emerged as a cost-effective method for stabilizing embankment and slope failures and for constructing temporary and permanent retaining walls. Soil nails can be used to remediate retaining wall distress and failures and to construct steepened slopes. Traditional soil nails or ground nails are steel bars inserted into drilled holes and then grouted in place. These bars are usually about 1 inch in diameter and are inserted into 4- to 6-inch diameter drilled holes. Grout is typically placed in the hole before insertion of the bar or "nail". These nails provide tensile strength, which is limited to the bond strength at the grout/soil interface. Figure 1 shows a schematic drawing of a typical shallow embankment failure with soil nails inserted to provide stability.

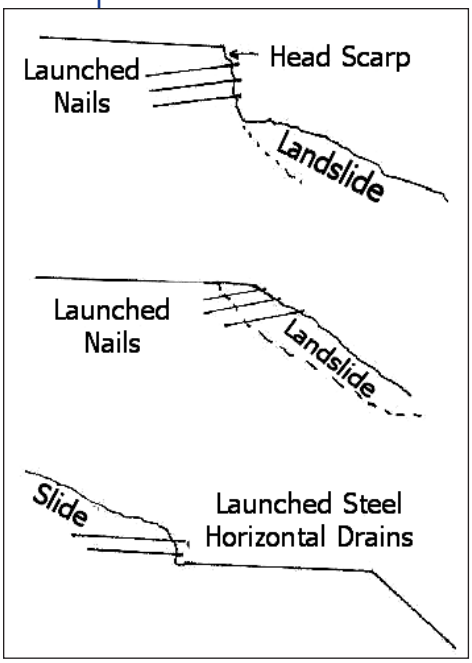

Figure 1 - Schematic of a Soil Nail Repair

Soil Nail Launcher, Inc. of Grand Junction, Colorado owns and operates a special machine that actually shoots steel bars into the ground. Figure 2 shows the Soil Nail Launcher in action and Figure 3 shows a typical Launched Soil Nail slope repair.

The Soil Nail Launcher is a declassified British military tool that can accelerate a 1.5 inch diameter, 20 foot-long steel bar to 220 miles per hour. As these high speed projectiles enter the earth, a shock wave is generated at the tip that causes the soil particles to "jump away". The bar enters the earth without significant abrasion. The soil particles then collapse onto the bar, providing high pullout resistance. The Soil Nail Launcher is very mobile. It can reach over guard rails, work between trees, and walk across golf courses. The Soil Nail Launcher is non-invasive, quick, and is often less expensive than other available options.

Figure 2 - Soil Nail Launcher in Action

ARM Group Inc. and Soil Nail Launcher plan to partner to deliver Launched Soil Nail projects across the Mid-Atlantic region. A U.S. Forest Service video that shows the Soil Nail Launcher in action can be viewed at: http://www.soilnaillauncher.com/media.htm. If you have any questions or comments, or if ARM can help you with a slope stabilization or retaining wall project, please contact either Wayne Herring at wherring@armgroup.net or Bill Tafuto at wtafuto@armgroup.net, or at 717-533-8600.

Figure 3 - Typical Launched Soil Nail Slope Repair

Inhalation Concerns for Remediation Projects

Early in 2000, the Pennsylvania Department of Environmental Protection (PADEP) determined that the intrusion of chemical vapors into buildings presented potential inhalation risks at many cleanup sites, including some sites that were being cleaned up to the Act 2 (Chapter 250) Statewide Health standards. In response to these concerns, the PADEP asked the Cleanup Standards Scientific Advisory Board (CSSAB) to assist in developing guidance on the issue. Since then, staff from the PADEP and members from the CSSAB have developed guidance under Act 2 that addresses the vapor intrusion of contaminants into buildings and below-grade occupied spaces from groundwater and soils. Following numerous revisions, the Final Draft Guidance was issued on July 29, 2003, with supplemental guidance issued in November 2003. Notice of the final guidance is expected to be published in the Pennsylvania Bulletin in January 2004, although remediators are encouraged to implement the guidance now on all Act 2 and Storage Tank (Chapter 245) cleanup projects. A copy of the Final Draft Guidance on Vapor Intrusion is available at PADEP's website at: www.dep.state.pa.us/dep/deputate/airwaste/wm/landrecy/facts/VaporGuidance062303.pdf. As presented in the PADEP's Guidance, the general process for assessing potential vapor intrusion risks is as follows:

1. **Determine if there is a complete exposure pathway.** A complete exposure pathway is an existing or potential future inhabited structure within the vicinity of the soil or groundwater contamination. If there is no complete exposure pathway, the assessment is complete, and risks are acceptable.

2. **Compare existing data to default screening criteria.** Available soil, groundwater, soil gas, and indoor air quality data should be compared to default screening criteria to determine if chemical types and concentrations present potential inhalation risks. This information is considered in conjunction with site-specific information such as separation distance between the contamination and receptor, soil type, building use and building construction to estimate potential indoor air exposures. Soil and groundwater chemistry data are typically used at this stage to provide an initial indication of potential concerns, and to determine if a more involved study is necessary.

3. **Conduct site-specific evaluation.** If a complete exposure pathway exists, and the initial screening indicates a potential concern, or if separate phase liquids are present, a more detailed site-specific evaluation is generally required. This evaluation can include soil gas sampling and analysis, indoor air quality sampling, contaminant fate and transport modeling (e.g., using the Johnson & Ettinger or J&E model), and/or a site-specific risk assessment. Pursuant to the PADEP Guidance, soil gas and indoor air quality sampling programs need to be developed on a case-by-case basis. If this step determines that potential risks are acceptable, no additional investigation or remediation work is required to address indoor air quality.

Summa canister for collection of air samples for VOC analysis

4. **Take measures to control or prevent unacceptable exposure risks.** If the preceding steps indicate potential vapor intrusion risks, these risks can generally be addressed by one or more of the following approaches:

   a. **Engineering/Institutional Controls** - Engineering and institutional controls can be used to control vapor intrusion risks by preventing or eliminating a complete exposure pathway. Engineering controls can

Inhalation Concerns for Remediation Projects

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be low cost, typically including measures such as a vapor barrier and venting system below the floor slab (for a new building), or a perimeter venting trench (for an existing building). In many cases, the costs for implementing engineering controls can be less than the costs for the completion of a detailed site-specific study, especially where inhalation concerns are likely. Institutional controls can be used in some cases to control exposures by restricting building locations or limiting the number of hours the building can be occupied. Deed notices and related measures are commonly required to ensure continued compliance.

b. **Soil/Groundwater Remediation** - Where appropriate, soil and/or groundwater remediation can be conducted to remove contamination or reduce chemical concentrations to levels that will not present potential inhalation exposure risks.

Similar programs have been developed and are being implemented by the EPA and other state agencies. For additional information regarding this issue, or for assistance with the development or implementation of a vapor intrusion investigation or remediation plan, please contact Steve Fulton of ARM at 717-533-8600 or sfulton@armgroup.net.

WITH REGARD TO EPA

SPCC Plan Reviews

Do not forget that as a result of the EPA's July 17, 2002 final amendments to the Spill Prevention, Control, and Countermeasures (SPCC) rule, many on- and off-shore facilities using oil will need to modify their SPCC plans or prepare them for the first time. The term "using" is of importance as the EPA has added this word to clarify that all operational equipment using or handling oil is covered by the rule, not just the storage of oil in tanks. In fact, the word "tank" has been replaced by the term "container" in the modified rule.

EPA indicates that the SPCC rule change reduces the burden of information collection on the regulated community by as much as 40 percent by eliminating duplicate regulation and also eliminating certain small facilities and most wastewater treatment facilities from SPCC Plan preparation. The modified rule also allows an owner or operator to substitute a required measure for another providing equivalent environmental protection, with the exception of secondary containment requirements. However, the rule's structure has been modified. Although the modification does not require existing SPCC Plans to follow the sequence of the regulation as has been required in the past, when the sequence is not followed, cross-referencing is required. Therefore, at the very least, existing SPCC Plans may require cross-referencing modifications to meet the rule change.

Based on an April 17, 2003 deadline extension, facilities in operation on or before August 16, 2002 must amend their Plans, if necessary, by August 17, 2004, and implement their revised Plans as soon as possible, but no later than February 18, 2005. For facilities becoming operational between August 16, 2002 and February 18, 2005, SPCC Plans must be prepared and implemented in accordance with the new rule by February 18, 2005. Facilities becoming operational after February 18, 2005 must implement their Plans before becoming operational.

The modified rule, including a summary of all of the rule changes, can be reviewed at www.epa.gov/oilspill/spccrule.htm. The final rule was published in the Federal Register on Thursday, April 17, 2003, and can be accessed online at www.epa.gov/fedrgstr.

PADEP's Proposed Clean Fill Policy

If you are a user or generator of fill materials, you should be aware that the Pennsylvania Department of Environmental Protection (PADEP) has published its most recent policy to guide the Department and the regulated community with the identification and beneficial use of potentially impacted fill material, currently being termed "regulated fill". PADEP emphasizes that this is a policy, not a regulation or requirement, and is intended to supplement existing requirements and regulations, not to supercede them.

The proposed Clean Fill Policy was published for public comment on October 30, 2003, with the public comment period ending on January 9, 2004. Ms. Khatija Satyaswaroop, PADEP, Bureau of Land Recycling and Waste Management, has indicated that until the final policy is published, PADEP will continue to enforce the 1996 Clean Fill Policy in conjunction with the February 2, 2002, proposed safe fill numeric standards, on a case-by-case basis.

The proposed policy states that to determine whether potential fill material is clean, environmental due diligence should be performed. The policy does not provide specific direction regarding the degree of due diligence required, although the definition of environmental due diligence (see back cover) is presented in the policy. Material that is determined to be clean fill can be used in a nearly unrestricted manner, except that it cannot be placed in waters of the Commonwealth, unless authorized by other environmental programs for such use. If there is evidence of a release, however, the material does not qualify as clean fill, but may be beneficially used as regulated fill (see back cover) under proposed Statewide Residual Waste General Permit WMGR096. Under this general permit, regulated fill can be beneficially used as a construction material for any of the following activities:

1. To bring an area to grade;
2. To control runoff, and;
3. To limit infiltration of water.

Proposed General Permit WMGR096 contains 31 stipulations that define how regulated fill can be used. A number of these stipulations are relatively straight forward, such as restrictions against placement in a 100-year flood plain or within 50 feet of a property line, while stipulations concerning the concentrations of contaminants in the fill follow a more complicated matrix to determine where and if the material can be used as fill.

Prior to use, regulated fill must be sampled and analyzed in accordance with guidance provided in the general permit. Constituent concentrations in the fill are to be compared to allowable constituent levels presented in tables that are part of the general permit. One of the tables pertains to use of the material on residential properties, while another table presents allowable concentrations for commercial/industrial properties. The standards presented in these tables are consistent with standards adopted by Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2). Concentrations of constituents in the fill material must also be compared to background concentrations at the receiving site, although concentrations in the fill for many constituents may exceed background concentrations at the receiving site. Additionally, the fill material cannot be a hazardous waste as defined in 40 CFR Chapter 261a or 25 PA Code §288.623(a)(1) and (2). The proposed Clean Fill Policy and General Permit WMGR096 may be reviewed on PADEP's web site at: www.dep.state.pa.us/dep/deputate/airwaste/wm/MRW/cleanfill/cleanfill.htm, or by calling the

Contaminated soils can be beneficially used as regulated fill.

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PADEP's Proposed Clean Fill Policy

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Department of Land Recycling and Waste Management headquarters office at 717-787-7564.

Questions about the Clean Fill Policy shouldbe directed to Ms. Satyaswaroop at ksatyaswar@state.pa.us, or at the PADEP phone number listed above.

If you need assistance carrying out the steps set fourth in this policy or the beneficial use of excavated materials, please contact Steve Fulton, P.E, P.G. of ARM at 717-533-8600 or at sfulton@armgroup.net.

Clean Fill Policy Definitions

Background *- The concentration of a substance that is present at the receiving site before beneficial use activities occur under General Permit WMGR096.*

Clean fill *- Uncontaminated, nonwater-soluble nondecomposable inert solid material used to level an area or bring the area to grade. The term does not include materials placed in or on the waters of the Commonwealth. The term does includethe following materials: soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and recognizable as such. (25 Pa. Code §§ 287.1, 271.1)*

Environmental due diligence *- Investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of ownership and use history of property, sandborne maps, environmental questionnaires, transaction screens, environmental assessments and audits. (35 P.S. § 6027.103)*

Regulated fill *- Contaminated soil, contaminated dredged material, contaminated used asphalt, historic fill and contaminated brick, block or concrete from construction and demolition activities that is separate from other waste and recognizable as such. Materials identified as "regulated fill" are waste and must be managed in accordance with the municipal or residual waste regulations, whichever is applicable, based on 25 Pa. Code §§ 287.2 or 271.2.*

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 of Environmental Protection. The term includes the abandonment or discarding of barrels, containers, vessels and other receptacles containing a regulated substance. (35 P.S. § 6026.103)*

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