



"SHARPER INSIGHT"

A Newsletter from ERG

Specializing in Consulting Services to the Solid Waste, Mining, Commercial/Institutional, and Industrial Market Sectors

In The News



Louis F. Vittorio, Jr., P.G.

EarthRes Group, Inc. announces that Louis F. Vittorio, Jr., P.G., has been elected to the Board of Directors for the Pennsylvania Council of Professional Geologists. Lou is the Vice President and Principal Hydrogeologist at EarthRes Group, Inc. and has over 20 years of experience in the environmental consulting industry. Lou has a B.S. Degree in Geology/Geophysics from the University of Pittsburgh and an M.S. Degree in Geology from Lehigh University. He is a registered Professional Geologist in Pennsylvania and Wyoming, a New Jersey Certified Subsurface Evaluator and a member of the American Water Works Association and National Ground Water Association.

Lou's areas of specialization include the combination of geological, hydrological, and geophysical investigations targeted at groundwater resource assessment, aquifer contamination evaluation and remediation.

Some of Lou's hydrogeological projects have included groundwater source permitting, numerical and analytical dewatering analysis, design and installation of monitoring networks, pumping systems and remediation systems, advanced aquifer analysis techniques, groundwater flow and contaminant transport modeling, geophysical assessment of subsurface conditions, and environmental site assessment, characterization and remediation.

Lou has been involved with PCPG as a moderator, presenter and, most recently, on a PCPG committee which recommended changes to the site characterization process within the Stormwater Best Management Practices (BMP) manual.



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Sharper Insight: *Using Licensed Professionals*

by William Y. Potter, P.G.

In order to comply with local, state and federal environmental standards, individuals, businesses and municipalities retain environmental and technical professionals for assistance. The duties of such professionals might include subsurface investigation, aquifer testing, discharge permitting, land development, plant or site design, development of treatment methodologies, PPC/SPCC plans, tank closure, permit application preparation, expert testimony, regulatory violation resolution and other tasks.

In most cases, regulatory agencies require that technical/environmental work be sealed by a licensed professional or, where licensing for a particular discipline does not exist, by someone certified to perform the work. Care should always be taken to verify that the practitioner(s) you retain are licensed or certified to perform the work. Using unlicensed environmental practitioners could result in rejection of an application, and in some cases the permittee could face punitive regulatory action.

At a minimum, the work will have to be re-evaluated by a licensed professional and, if deemed technically competent, sealed. If the work is deemed technically incompetent, then the entire project or parts of it may have to be repeated at significant cost in money and time to you.

“In most cases, regulatory agencies require that technical/environmental work be sealed by a licensed professional....or, by someone certified to perform the work.”

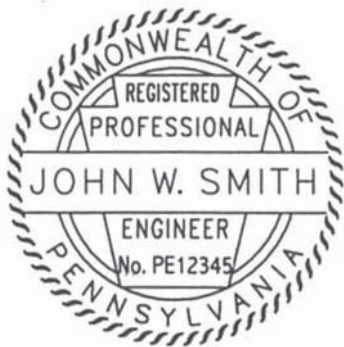
Also, municipalities hire experts to review applications which require local review and approval. They may unknowingly retain unlicensed practitioners to review the work of your licensed professional, and this can lead to municipal comments and requirements for your project based on

opinions with insufficient credentials behind them. Should you ever find this to be the case, you are encouraged to communicate to the municipality that you should not be required to revise your project to respond to unlicensed or uncertified opinions. The municipality may not be aware that practice of many professional disciplines without licensing or certification is unethical, and often times illegal.

The use of unlicensed/uncertified professionals by you or others can result in significant costs and setbacks for your project. It is therefore important that

you verify the qualifications and licensure of those hired by you, and those hired by others to review your consultant’s work. Any qualified professional should have no objection to verifying his/her qualifications promptly upon your request. Most states

list licensed certified professionals on their websites, often at the Department of State or Consumer Affairs pages. Or call EarthRes Group, Inc. for assistance.



New Service Update: *Beneficial Reuse Evaluation*

Many mining companies are faced with growing regulatory and cost pressure to minimize waste from their manufacturing facilities or to find a beneficial use for stockpiled waste materials. Cost of disposal, ongoing storage and liability of storing these materials represents a significant challenge for mining operations, globally.

EarthRes Group, Inc. is now offering a new service to mining clients to support beneficial reuse and waste minimization. ERG can provide technical expertise in materials characterization, process technology and market knowledge of functional additives and fillers to provide clients with creative strategies for waste minimization and/or beneficial reuse.

Initial Consultation

ERG provides an initial consultation at no charge to evaluate the potential of your waste materials for waste minimization and/or beneficial re-use.

Characterization & Preliminary Market Evaluation

Following the on-site evaluation by ERG, the client may request to have us characterize the material and develop a preliminary assessment of processing strategies and applications for the material in the marketplace. The client will receive lab data characterizing the material, processing strategies (if required) and recommendations for target markets for the material.

Estimated cost: \$3,000 to \$5,000

Market Development, Plant Design & Processing Cost Estimate

If the client views the preliminary market assessment as favorable, ERG can perform pilot production studies, develop the product and specifications, present to specific customers in the client's target market, deliver a conceptual flow-sheet design and an operating cost estimate for production of the product.

The new service will be managed by Joel Hutwelker, who recently joined ERG as Chief Operating Officer and Senior Project Manager. Joel has 21 years of experience in the Minerals and Chemical Industries including 17 years with BASF Corporation in Marketing, Strategy and Manufacturing and four years in minerals consulting. His marketing experience is in high-valued industrial mineral products for cosmetics, personal care, paint, plastics, rubber, chemical filtration, ceramics, concrete, glass, and catalyst markets. He has in-depth knowledge of the global industrial mineral markets, competition and known reserves. Joel is also experienced in industrial minerals acquisitions including opportunity finding, due diligence, valuation, and sales agreement negotiation and integration. He has led projects to qualify mineral reserves or plant by-product streams for use in multiple end-use applications. He has direct experience leading the development and design of the mineral preparation process and developing the market for the finished mineral products. Joel is a degreed Mineral Processing Engineer and has authored peer-reviewed technical papers in his field and holds a commercial patent for a column flotation process.

A Case Study: *Evolving Leachate Treatment Plant Designs*



Tom Pullar presenting at the Conference

Thomas G. Pullar, P.E., Senior Project Manager at EarthRes Group, Inc., presented a technical paper, entitled “Leachate Treatment: A Case Study of Grand Central Sanitary Landfill” at the First Global Waste Management Symposium held at the Copper Mountain Conference Center in Colorado. The conference, attended by more than 500 people from 30 countries, served as a forum for applied and research case studies on solid waste management topics.

The paper presented the case study of leachate treatment at Grand Central Sanitary Landfill (GCSL). GCSL is a regional municipal waste landfill located in Eastern Pennsylvania. Tom co-authored the paper along with David R. Horvath, P.G. and Jan C. Hutwelker, P.E. of EarthRes Group, Inc., and Ronald Myer, P.L.S. of GCSL. The 55-year history of the landfill provided a case study on the evolution of leachate treatment and management methods.

Driven by changing leachate characteristics and increasingly stringent regulatory criteria, leachate treatment and management at the site began with natural renovation and culminated with the construction of an upgraded treatment plant capable of stream discharge. Following a detailed evaluation of viable alternatives, the selected design called for treatment in a PACT®

sequencing batch reactor plant followed by microfiltration and two-stage reverse osmosis. RO treatment provides effluent polishing sufficient to meet total dissolved solids, color, boron and ammonia discharge limits. The new treatment units were installed in the existing treatment building and existing tankage was used to the extent practicable.

“RO treatment provides effluent polishing sufficient to meet total dissolved solids, color, boron and ammonia discharge limits.”



Left to Right: Dave Horvath, ERG and Ron Myer, GCSL

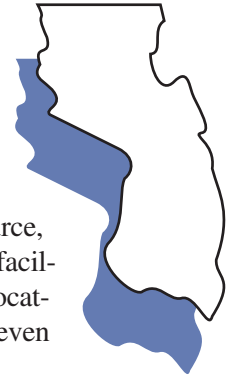
The plant meets all of the established goals. Treated effluent (permeate) is discharged to the headwaters of the Little Bushkill Creek, a state-designated High Quality-Cold Water Fishery.

The paper presentation topped off a successful project for ERG and GCSL, and demonstrated our ability to upgrade leachate treatment plant designs to meet increasingly stringent discharge limits.

Regulatory Update: *New NJDEP Requirements for Annual Combustion Adjustments*

by Nicole Wilson, P.E.

On December 9, 2008, the New Jersey Department of Environmental Protection (NJDEP) issued new technical guidance for compliance with annual combustion adjustment requirements affecting boilers, furnaces, and indirect fired process heaters with a rated heat input of 5 MMBTU/hr or greater. The NJDEP already requires facilities with boilers rated at 10 MMBTU/hr or greater to perform annual combustion adjustments as part of its NOx Reasonably Available Control Technology (RACT) Rule under New Jersey Administrative Code (N.J.A.C.) 7:27-19.16. Unlike other NOx RACT requirements, the annual combustion adjustment requirements apply to a wide spectrum of combustion sources and not just to major source or Title V facilities. The new requirement is based on the capacity of each individual source, whether or not the source is new or existing, located at a major (Title V), synthetic minor, or natural minor facility, and regardless of fuel type. For example, an industrial natural gas-fired boiler rated at 5 MMBTU/hr located at a small New Jersey-based facility, school, or warehouse would be subject to the new requirements even if the facility was not a major source for NOx emissions.



Under requirements adopted in December 2005, facilities with boilers rated between 5 and 10 MMBTU/hr must begin performing annual combustion adjustments in the year 2010. Facilities with affected boilers must begin reporting the results of annual adjustments to NJDEP beginning in 2009 for boilers rated at 20 MMBTU/hr or greater, in 2010 for boilers rated between 10 and 20 MMBTU/hr, and in 2012 for boilers rated between 5 and 10 MMBTU/hr. This compliance schedule is summarized below.

“The new requirement is based on the capacity of each individual source, whether or not the source is new or existing, located at a major (Title V), synthetic minor, or natural minor facility, and regardless of fuel type.”

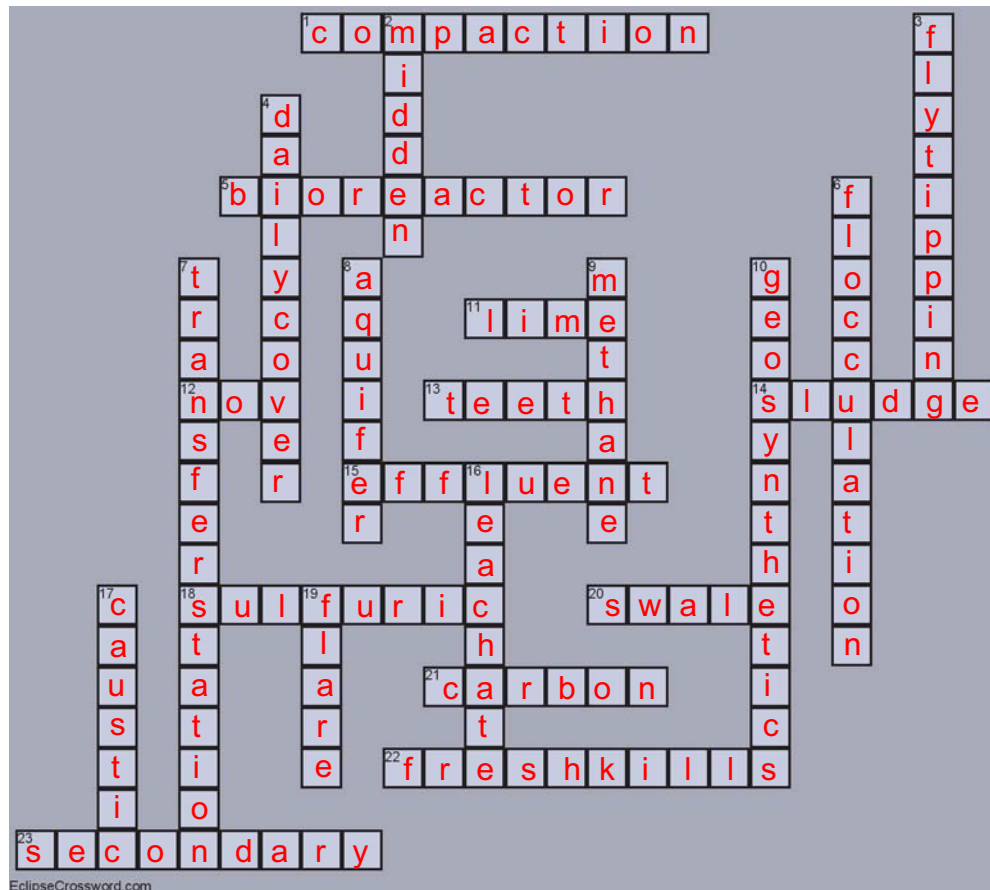
Annual Adjustment Compliance Schedule

Boiler Size	Begin Performing Annual Adjustment	Begin Online Reporting
≥20 MMBTU/hr	2007	2009
≥10 MMBTU/hr and <20 MMBTU/hr	2008	2010
≥5 MMBTU/hr and < 10 MMBTU/hr	2010	2012

Reporting must be completed electronically using “NJDEP Online” and must be submitted within 45 days after the annual combustion adjustment is completed. The reporting, called an “Annual Adjustment Combustion Process Report” or “NOx RACT Combustion Adjustment Report,” requires specific information such as NOx and CO concentrations before and after the adjustment, converted emission values in lb/MMBTU, and descriptions of any corrective actions taken. Many facilities are already performing annual combustion adjustments as required under their air quality operating permits. However, these facilities may not be performing and recording all required information necessary to properly complete the electronic reporting. Additionally, facilities may require a third party vendor to perform the actual adjustment and/or complete the electronic reporting. If your facility has a new or existing boiler or other combustion source rated at 5 MMBTU/hr or greater, it is recommended that you review the requirements under the NOx RACT rule for performing and reporting annual combustion adjustments. Some useful guidance documents are available from the NJDEP website:

- <http://www.nj.gov/dep/enforcement/advisories/2008-13A.pdf>; <http://www.nj.gov/dep/aqpp/adjustment.htm>;
- <http://www.nj.gov/dep/aqpp/Annual%20Adjustment%20Rules.html>; and,
- <http://www.nj.gov/dep/aqpp/downloads/NOx%20RACT%20How%20To.pdf>

Take A Break



ACROSS

1. Method to reduce the volume of waste in a landfill.
5. This type of landfill operates to rapidly transform and degrade organic waste.
11. Used to remove metals and phosphorous from wastewater, or stabilize sludge.
12. Informs a person or business that a state law, or permit condition has been violated.
13. The “pegs” on a wheel of a landfill compactor are referred to as?
14. Solid residue from wastewater treatment process.
15. Treated discharge from a wastewater treatment plant.
18. This acid is commonly used to lower the pH of leachate during the treatment process.
20. Promotes the conveyance of storm water.
21. PACT stands for: Powered Activated _____ Treatment.
22. Was formerly the largest landfill in the world.
23. Two layers of impermeable liners are placed below the waste. A Primary and a ?

DOWN

2. A word used by archaeologists worldwide to describe any kind of feature containing waste products relating to day-to-day human life.
3. A British term for illegally dumping waste somewhere other than an authorized disposal facility.
4. The layer of compressed soil or earth which is laid on top of a day's deposition of waste.
6. This process is a common method of removing suspended solids during the leachate treatment process.
7. Facility where municipal solid waste is unloaded and reloaded for shipment to disposal facilities.
8. A geologic formation, group of formations or part of a formation capable of yielding sufficient groundwater for monitoring purposes.
9. Decomposing municipal waste generates this type of gas?
10. The impermeable liners that waste is placed on are also known as?
16. The liquid produced from waste decomposing in a landfill.
17. This is added to raise the pH during the leachate treatment process.
19. An elevated vertical stack used for venting or burning landfill gas.

Answers to the crossword puzzle can be found on our website, under “News.”

Blast From The Past: Using Dynamite to Straighten Streams

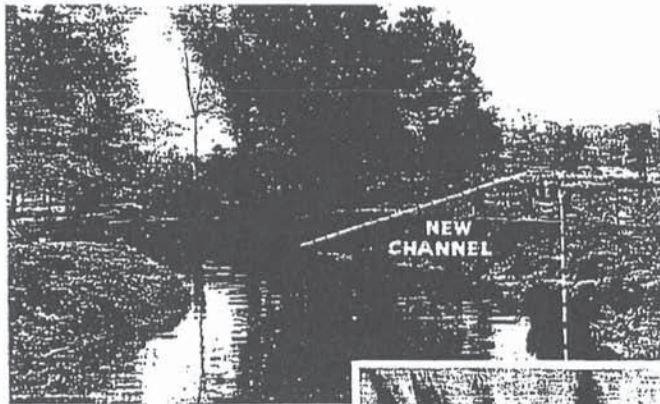
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AMERICAN FORESTS

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How DYNAMITE

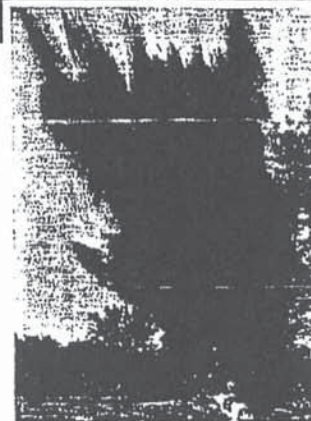
streamlines streams



Straightening of Pequest River in New Jersey by CCC workers stopped its yearly floods. Location of new channel is seen at right. Note temporary dam at left to provide volume of water for scouring blasted channel.

Explosion of dynamite charge by propagation excavates new channel.

Immediately after explosion, water is entering new channel, whose banks will be smoothed and "stream-lined" by the speedier flow of water.



CROOKED STREAMS are a menace to life and crops in the areas bordering on their banks. The twisting and turning of the channel retards the flow and reduces the capacity of the stream to handle large volumes of water. Floods result. Crops are ruined. Lives are lost. Banks are undermined, causing cave-ins that steal valuable acreage.

In many instances straightening out a stream has doubled its capacity for disposing of run-off water.

DYNAMITE may be used most efficiently and economically in taking the kinks out of a crooked stream. The dynamite is loaded along the length of "cut-off" channel. When fired, the dirt and other debris is heaved high in the air and is scattered over the adjoining territory—leaving practically no spoil-banks. In addition to the material actually thrown out, much dirt is loosened and is later scoured out by the water which rushes swiftly through the straightened channel.

Du Pont Dynamite has straightened many thousands of miles of crooked streams. Du Pont engineers have worked for years to develop the best blasting methods for the cleaning out and straightening of streams. All their data is in a 48-page book, "Ditching with Dynamite." It is for your use. Write for it.

Dynamite can help you do other jobs, too. It can help you build highways, dams; fight soil erosion; work quarries. Du Pont has an explosive for every purpose.



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Noteworthy Events

- ▲ On April 7-8, 2009; ERG hosted a booth at the PA Chamber of Commerce 2009 Annual Environmental & Energy Conference and Trade Show Conference at the Eden Resort, Lancaster, Pennsylvania.
- ▲ May 7, 2009; Quarterly PA Chamber Meeting, Harrisburg, Pennsylvania.
- ▲ June 7-10, 2009; PennTec 81st Annual Technical Conference & Exhibition, Lancaster, Pennsylvania.
- ▲ June 15, 2009; ERG is a Gold Sponsor for the SWANA Mid-Atlantic Road-E-O event to be held at WM Grand Central Sanitary Landfill, Pen Argyl, Pennsylvania.
- ▲ August 31 to September 2, 2009; AWMA Green House Gas Assessment Methods, Baltimore, Maryland.
- ▲ September 17-18, 2009; ERG will host a booth at the PADEP/PWIA Annual Technical Meeting, State College, Pennsylvania.
- ▲ September 24, 2009; Quarterly PA Chamber Meeting, Harrisburg, Pennsylvania.
- ▲ December 3, 2009; Quarterly PA Chamber Meeting, Harrisburg, Pennsylvania.