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Northwest Gateway/Armstrong Project

The City of Lancaster, PA, is experiencing a surge in redevelopment activity thanks in part to the Northwest Gateway/Armstrong Project. This Project is the result of collaboration among three Project Partners – Franklin & Marshall College (F&M), Lancaster General Hospital (LGH), and the EDC Finance Corporation (EDC) – to redevelop 47 acres of the Armstrong World Industries Liberty Street Plant, located along the Amtrak Railroad, east of Dillerville Road, and situated mostly within Lancaster City.

Armstrong's neighbors – F&M and LGH, in conjunction with EDC-Lancaster – realized the potential of the property and were in a position to expand their own facilities and invest in community redevelopment. F&M plans to utilize approximately 26 acres of the property for athletic fields and general campus expansion, while LGH will redevelop approximately 19 acres into four new city blocks of commercial and mixed use property, in support of the hospital. Additionally, Armstrong will upgrade its current manufacturing facility on an abutting (residual) parcel of property where it will continue to make vinyl sheet/vinyl flooring products.

Economic stimulus packages provided by the Commonwealth of Pennsylvania have helped make this project possible including:

- ❑ **\$175,000 grant** from the Pennsylvania Department of Community and Economic Development's (DCED's) Business in Our Sites Planning Program, which was used in 2005 and 2006 for the initial study of the site. The study included an analysis of the existing environmental conditions and the steps required to demolish and clear the site, the development of a master plan for the property, and an economic impact study for the master plan.
- ❑ **\$500,000 grant** from Pennsylvania's Redevelopment Assistance Capital Program (RACP). Keith Orris of F&M explained that this grant is being used for site demolition, environmental site characterization and remediation, and the installation of infrastructure.

Continued on page 2

Continued from page 1

Northwest Gateway/Armstrong Project

- **\$1,000,000 grant** from DCED's Industrial Sites Reuse Program (ISRP) to EDC for the environmental remediation of the site.

Additionally, Lancaster City and County, the federal government, and other state grants have made funding available for this redevelopment project. Fifty-four percent of the total estimated project cost is being born by F&M, LGH, and Armstrong, who are contributing \$6 million each.

Work at the Northwest Gateway/Armstrong Site was initiated in the fall of 2006. Demolition, environmental clean up, and construction of new infrastructure for the site is estimated to cost approximately \$35 million and take up to 36 months to complete.

ARM's Role

ARM is pleased to announce that our firm will be conducting the environmental and geotechnical investigations required to support this renewal project. The Project Partners have retained Radnor Property Group (Radnor) to serve as the overall Project Manager. With overall project coordination being conducted by Radnor, ARM is working closely with the Pennsylvania Department of Environmental Protection's

(PADEP's) Brownfield Action Team to characterize and remediate the site in accordance with Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2) of 1995. This is a fast-tracked project, being conducted in accordance with EPA's One Cleanup Program, and the environmental work is expected to be completed by the middle of 2008. An essential part of ARM's responsibilities will be to complete its work in a timely and efficient manner in order to avoid demolition and construction delays. Additionally, ARM's role includes close coordination with the demolition contractor (Brandenburg Industrial Services Corporation) to ensure that decisions are being made to facilitate effective environmental remediation with respect to the proposed future uses of each parcel. The location of this project is depicted on Page 3.

ARM is also providing geotechnical inspections and testing during demolition and site preparation work.

For additional information about the Northwest Gateway/Armstrong Project please contact Ned Wehler, P.G., ARM's President at nwehler@armgroup.net.

Building Expansion

ARM is excited to announce that we will be expanding our Hershey, Pennsylvania office building, located on West Governor Road (Route 322). We expect to break ground in February on a two story, 12,000-square-foot expansion immediately to the east of our current building. Construction should be completed by September 2007. This expansion will provide

our employees much needed office, storage, and associated space.

It will also include first floor retail space and basement level fitness, parking, and storage facilities.

ARM Assists F&M College in Rail Yard Relocation Planning

Dovetailing with the consolidation of its athletic fields on a parcel of Armstrong World Industries' former property (part of Lancaster's Northwest Gateway Project), Franklin & Marshal College (F&M) is taking steps to connect its new athletic complex with its existing campus. To accomplish this, F&M would like to assist Norfolk Southern Railroad with a land swap that results in the relocation of its existing Dillerville Rail Yard (refer to Figure 1).



Figure 1. Northwest corner of Lancaster City showing parcels of the Radnor Property Group project, Norfolk Southern's current Dillerville Rail Yard, and the proposed rail yard.

The Dillerville Rail Yard is located immediately east of Dillerville Road in Lancaster; it parallels the Harrisburg Pike and extends southeast, abutting several dead-end streets. A successful land swap will result in the railroad's abandonment of these lands, allowing F&M to establish a connection to its new athletic fields, provide a significant band of green space in Lancaster, enable the reconnection of several dead-end streets, and allow an extension of College Avenue. These changes will improve traffic flow in the northwest quadrant of Lancaster City and further enhance economic development of this area.

Norfolk Southern has expressed its support for the idea of relocating the rail yard to a site located further west along its rail line – to a site (Figure 1)

currently owned by the Lancaster County Solid Waste Management Authority. Considering that the Lancaster market is growing and the existing Dillerville Yard cannot meet Norfolk Southern's future needs, the railroad company has embraced the idea of moving to a location where it can expand its operations. The proposed site is a former city landfill, closed in 1962 (Lancaster Intelligencer Journal, October 25, 2006).

In support of this project, F&M has engaged ARM Group Inc. (ARM) to conduct environmental investigations of the proposed site for the new rail yard. Likewise, F&M has also engaged Gannett-Fleming Engineers to prepare preliminary designs of the rail yard and related sidings. These studies will be complete in early 2007, at which time ARM expects that the Pennsylvania Department of Environmental Protection will approve the project from an environmental perspective, under Pennsylvania's Land Recycling Program.

On October 24, 2006, F&M received a \$700,000 grant from Pennsylvania's Capital Budget and Rail Freight Assistance Program to support planning and design studies required for implementation of the proposed project. John Fry, President of F&M, stated "We're looking for a win-win. The win for Norfolk Southern is the ability to grow its business and provide better service to Lancaster County. For the college and the city, it creates more expansion space and allows streets to be knit together" (Lancaster Intelligencer Journal, October 25, 2006).

For more information concerning this project, please contact Ned Wehler, P.G., ARM's President at nwehler@armgroup.net.

ARM - An Approved Landfill Methane Verifier

ARM has been approved by the Chicago Climate Exchange (CCX) as one of only five landfill methane verifiers in North America. CCX is a self regulated exchange that manages a voluntary program through which greenhouse gas (GHG) emissions are registered, reduced, and traded. CCX's purpose is to assist businesses in reducing their GHG emissions. This is strictly voluntary and can only be undertaken for projects that are not subject to federal GHG emissions regulations.

CCX member businesses agree to reduce their GHG emissions by specific percentages each year. Those members that reduce their emissions below



Landfill Gas Well

the target level can sell surplus emission allowances on the exchange or bank them for the future. A member that cannot achieve the CCX target at its own facilities can meet its commitment by purchasing emission allowances from other CCX members that reduce their emissions by greater than targeted amounts. Target reductions for 2003 through 2006 were one percent per year, cumulative, relative to baseline calculations. In other words, while the goal for reduction in 2003 was one percent, it was two percent in 2004 etc. The 2007 target had not been published at the time of this printing.

Methane is one of six types of GHGs that are part of the CCX program and the gas that landfill operators typically focus on controlling. ARM has assisted a number of landfill clients in the development of beneficial uses for their landfill gases and has engineered gas collection and monitoring systems for numerous sites. It is this experience that qualified ARM for approval as a landfill methane verifier and will benefit those requesting ARM's services.

As a methane gas verifier, ARM will be retained by CCX members to verify the quantities of methane gas emissions that members report on the CCX. CCX members must have their gas flow measurements, records, and procedures verified annually.

Examples of landfill methane projects that are accepted by the CCX and may benefit from trading gas credits on the CCX include:

- ❑ Landfill gas collection and treatment systems installed to mitigate gas migration, if the treatment (combustion) of the gas is voluntary;
- ❑ The sale of energy produced from landfill gas to third parties; or
- ❑ Use of landfill gas to power in-house operations.

Specific stipulations pertain to electricity producing projects activated after January 1, 2005.

To learn more about the CCX and its programs please visit the CCX website at <http://www.chicagoclimateexchange.com>. For additional information about ARM's landfill engineering services, including landfill methane verification, please contact Bill Tafuto, P.E. of ARM at 717-533-8600 or by e-mail at wtafuto@armgroup.net.

State Water Plan Update

The Pennsylvania Water Resources Planning Act (Act 220) was passed in December 2002, requiring the preparation of a new State Water Plan. Pennsylvania's current Water Plan is over 25 years old and does not adequately provide a means of determining:

- ❑ The quantity of water available for use in the Commonwealth;
- ❑ The manner in which water is currently being used; or
- ❑ Where demand for water may exceed water availability in the future.

Act 220 also established regional and statewide water resources committees which have been holding public meetings across the Commonwealth to identify water resource issues of concern to Pennsylvania stakeholders. Based on the results of these meetings and various other forms of public input, the Pennsylvania Department of Environmental Protection (PADEP) completed regulations pertaining to the collection of current water usage data. These regulations have been developed as revisions to Chapters 109 and 110 of the Pennsylvania Code (25 PA Code CHS. 109 and 110, Water Resources Planning). The regulations were published for review and comment in the Pennsylvania Bulletin on December 2, 2006, and a copy of the regulations can be reviewed on ARM's website at <http://www.armgroup.net/newsletters.asp>.

The regulations pertain to registration, monitoring, recordkeeping, and reporting requirements for water use and withdrawals. Water use and withdrawal registration is required by:

- ❑ Public water supply agencies and hydropower facilities, irrespective of the quantity of water withdrawal;

- ❑ Persons whose total withdrawal exceeds an average rate of 10,000 gallons of water per day in a 30-day period; and
- ❑ Agricultural operations that use more than 50,000 gallons per day (gpd).

There are no fees required as a result of these regulations and provisions have been established for confidentiality where adequate justification is provided.

Additionally, the regulations state that:

- ❑ Registration of a withdrawal or use under the regulations will not be construed as a determination of a person's water rights or approval of a withdrawal by any agency of the Commonwealth or a compact basin commission.
- ❑ The deadline for water use registration is no later than 90 days after the initiation of a water withdrawal.

Public comments on the regulations were accepted until January 2, 2007. Comments from the Independent Regulatory Review Commission (IRRC) and the State Legislature will be accepted until February 2, 2007. Once the comment period is completed, PADEP will finalize the regulations, which is expected to take between four and six months. The finalized regulations will then be submitted to the Environmental Quality Board (EQB) for adoption and final publication in the Pennsylvania Bulletin.

For additional information about the State Water Plan and associated regulatory requirements please contact Bill Seaton, P.G. @ 717-533-8600 or by email at wseaton@armgroup.net. Additional information is also posted on ARM's website at www.armgroup.net.

John Masland Named ARM Shareholder

Mr. John C. Masland, P.E., has been named shareholder of the ARM. Mr. Masland is responsible for oversight of ARM's geotechnical engineering practice. He has over 25 years experience in geotechnical engineering and has managed a wide variety of geotechnical engineering projects in the mid-Atlantic region over the course of his career. He specializes in

preparation of soils, geological, and foundation reports; foundation design; evaluation and remediation of sinkholes; design of soil and rock anchors; design of retaining walls and earth structures; evaluation and design of earth embankment and concrete gravity dams; and pavement design and repairs. He has also performed value engineering studies, forensic evaluations and studies, and has provided expert witness services to a variety of clients. Mr. Masland received his B.S. in Civil Engineering from Lehigh University in 1981. He is a licensed Professional Engineer in Pennsylvania, Maryland, Virginia and Massachusetts.

Mr. Masland is in ARM's Hershey office and can be contacted at 717-533-8600 or by e-mail at jmasland@armgroup.net.



John Masland P.E., has been named ARM Shareholder

PA Stormwater Guidance Manual Published

The Pennsylvania Department of Environmental Protection (PADEP) has published its Final Stormwater Best Management Practices (BMP) Manual. The Guidance Manual establishes recommended guidance for stormwater management through the utilization of best management practices (BMPs). The significance of this Guidance Manual should not be underestimated; PADEP states that the Guidance Manual will provide the means by which they will determine whether stormwater controls for land development projects meet the requirements of state and federal water quality laws.

The Guidance Manual was prepared to assist local and state governments, planners, land developers, contractors, and others involved with planning, designing, reviewing, approving, and constructing land development projects. The recommended BMPs will affect not only site characterization,

design, and construction activities, but also long-term post-construction stormwater management. Among other practices, the Guidance Manual includes protocols for the evaluation and design of stormwater infiltration BMPs.

A copy of the 600 plus page Guidance Manual can be downloaded from PADEP's website: <http://www.dep.state.pa.us>, keyword *Stormwater Management*. The same webpage also provides a link to training seminars being conducted across Pennsylvania to help the regulated community understand the new stormwater practices.

For additional information about the new stormwater management BMPs or ARM's infiltration testing or stormwater management support services, please contact Steve Fulton, P.E./P.G. at 717-533-8600 or by e-mail at sfulton@armgroup.net.

Geologists, Engineers, and Land Surveyors: Take Note!

Licensed Geologists, Engineers, and Land Surveyors in Pennsylvania will be required to take continuing education courses in the future. On November 30, 2006, Governor Rendell signed Senate Bill 655 into law, requiring 24 hours of professional development courses during every biennial license renewal period for professional geologists, engineers, and land surveyors. This law gives the Pennsylvania Registration Board up to 18 months to develop regulations implementing the requirement. The Pennsylvania Society of Professional Engineers

(PSPE) estimates that the regulations will not take effect until the 2009 registration renewal period.

The Board is currently determining what courses will meet the continuing education requirements and who is eligible to teach the courses.

As additional information becomes available regarding the Board's regulations, this information will be posted on ARM's website at www.armgroup.net.

Closer Look:

PADEP Letters to the Regulated Community

Until recently, Pennsylvania Department of Environmental Protection (PADEP) letters to the regulated community were considered only statements of opinion and could not be appealed until an official enforcement action was undertaken by PADEP. However, based on a November 9, 2006 ruling by the Pennsylvania Environmental Hearing Board (EHB), these letters may be appealed. In the Case of Redbank Municipal Authority v. Department of Environmental Protection, the EHB held that a letter from PADEP, regarding stipulated penalties owed to PADEP, was an appealable action.

The significance of this decision is not just that specific PADEP letters are appealable, but that there may be a finite period of time within which the appeal must occur. EHB appeals must be filed within 30 days after the notice of the action by PADEP (25 PA Code § 1021.52). Although the implications of this EHB decision remain to be determined, failure to appeal a PADEP letter

within thirty days could render PADEP's action final, thus preventing future challenges to the enforcement action.

Mr. Terry Bossert, attorney for the Redbank Municipal Authority and former Chief Counsel of PADEP, has indicated that it may be necessary to file protective appeals so that one does not lose the right to challenge findings and conclusions contained in a PADEP letter. Mr. Bossert states "PADEP correspondence must now be read closely to see if it is the type of correspondence that the EHB has held to be appealable in Red Bank."

Mr. Bossert's evaluation of the Redbank Municipal Authority appeal was presented in an e-flash from Post and Schell, Attorneys At Law, where Mr. Bossert serves as Chair of Post & Schell's Environmental Regulation & Litigation Group. This e-flash can be viewed at <http://www.postschell.com>.

New SRBC Regulations On Hold

On December 5, 2006, the Susquehanna River Basin Commission (SRBC) adopted new regulations regarding its project review procedures. The new regulations were to take effect on January 1, 2007. However, weeks after SRBC adopted the new regulations, Pennsy Supply, Inc. (Pennsy) filed a federal law suit to block the implementation and enforcement of the regulations. As a result of the lawsuit, Federal District Judge William W. Caldwell temporarily prohibited enforcement of the regulations pending the outcome of a preliminary injunction hearing scheduled for January 17, 2007. Please refer to the ARM website for updates as this case progresses: www.armgroup.net.

The Pennsy lawsuit asserts that proper procedures for public notice, hearings, and input were not followed during the adoption of the new regulations. It also alleges that the regulations exceed the powers granted to the SRBC in its Compact, which is the law that created and governs the SRBC. The Compact is administered jointly by the United States, Pennsylvania, Maryland, and New York (Saul Ewing Press Release 1-3-07 see http://www.saul.com/press_room/pressroom.aspx. Saul Ewing, LLP attorney Michael Finio filed the lawsuit in U.S. District Court on behalf of Pennsy).

According to the lawsuit, Pennsy was informed of the December 5, 2006 SRBC meeting, where the new regulations were adopted, in a November 27, 2006 e-mail, only eight days before the meeting. The lawsuit asserts that this was an insufficient notice period. It also states that SRBC approved additional changes to the regulations during the meeting.

Robert B. Hoffman, an attorney for SRBC, commented that many of the allegations “have very little merit. They had oodles and oodles of notice.”

The Proposed New Regulations

Key aspects of the new regulations adopted by SRBC were:

1. Dockets approved after the regulatory changes take effect will have a term of 15 years, instead of the previous 25-year term.
2. When project ownership changes, SRBC will have the authority to require new dockets for previously docketed projects, which may include retesting of wells and similar requirements. SRBC’s decision of whether to require a new docket or not will depend on how the water use may change after the sale of the property. In addition, all previously authorized “grandfathered” water withdrawals will be lost when projects change ownership.
3. Disputed docket conditions can be challenged through a formalized process handled through an appeals board established by SRBC. The new rules state that all costs associated with an appeal may be charged to the project sponsor.
4. SRBC fees will increase 10 percent each year for the next 5 years (2007 through 2011).

SRBC dockets are permits or approvals of specified water use conditions. The dockets are legally binding under federal law.

As of January 16, 2007, the previously established SRBC regulations 18 CFR Parts 803, 804, and 805 remain in effect. The new regulations have been suspended until further notice by the SRBC.

For additional information about SRBC regulations or ARM’s water resources management services please contact Bill Seaton, P.G., at 717-533-8600 or by e-mail at wseaton@armgroup.net. As news develops regarding the status of the new regulations, information will be posted on ARM’s website at www.armgroup.net.

Over \$1 Billion Earmarked for PA Mine Land Reclamation

Pennsylvania Department of Environmental Protection (PADEP) Deputy Secretary for Mineral Resources Management, J. Scott Roberts, announced on January 3, 2007, that Pennsylvania is expected to receive over \$1 billion in federal funding for abandoned coal mine reclamation. The funding results from a 15-year extension of the federal Abandoned Mine Lands Trust Fund.

Funding will be phased in over five years, which Deputy Secretary Roberts says “will give us (PADEP) the opportunity to begin long-term planning and meet with local and state leaders to gather input on the future direction of Pennsylvania’s abandoned mine reclamation program.” Roberts further explained that Pennsylvania’s mandate to reclaim the most dangerous sites will remain the highest priority (printed in the PADEP Newsletter - Update, January 3, 2007).

PADEP’s Bureau of Abandoned Mine Reclamation plans to work with stakeholders and help the public to become better informed about the increased funding and opportunities it presents in three ways. PADEP will:

- ❑ Develop a fact sheet that will summarize the changes in the new law and inform local watershed and community groups about how the federal government intends to allocate funds for Pennsylvania.
- ❑ Conduct a series of public outreach meetings to involve state and local elected officials, environmental and watershed groups, businesses, foundations, and economic development organizations to explore options for addressing the various problems faced by Pennsylvania’s mining communities.

- ❑ Seek input on alternative reclamation methods and investments in creative approaches to convert mine drainage and mine lands into opportunities for economic development.

Under the new law, the collection and distribution of abandoned mine lands (AML) funds will be directed by the U.S. Office of Surface Mining (OSM). Allocation of funds will no longer require congressional approval, and will allow Pennsylvania and other coal mining states to embark on long-term planning and budgeting. Pennsylvania will have the option of allocating up to 30 percent of its total annual funding for cleanup of acid mine drainage (AMD) that impacts over 5,000 miles of rivers and streams in the Commonwealth.

The Abandoned Mine Lands Trust Fund was created in 1977 under the Surface Mining Control and Reclamation Act (SMCRA). As part of this legislation, OSM inventoried abandoned mine sites nationwide. Based on its ranking system, safety concerns associated with abandoned mines received the highest priority for reclamation.

The Trust Fund Extension takes effect on Oct. 1, 2007, and extends the collection and distribution of fees through 2021. Fees for the Trust Fund come from a tax on active mining operations, which will reportedly be reduced by 20 percent over the next six years.

For information about ARM’s coal mine reclamation services, including mine drainage abatement and abandoned mine lands restoration, please contact Steve Fulton, P.E./P.G. at 717-533-8600 or by e-mail at sfulton@armgroup.net.

New Well Logging Truck

The energy industry is responding to market demands by re-visiting Pennsylvania's oil and gas fields. Oil and gas drilling activity in Pennsylvania has increased significantly in recent years. Well logging is an important tool in oil and gas development, facilitating the evaluation of potential subsurface reservoirs by geologists, geophysicists and engineers. In order to meet the increasing demand for well logging, ARM has acquired a new state of the art well logging truck.

Logging wells for coal bed methane (CBM) production can help maximize the reserves and rate of gas extraction while keeping costs down. Information from logging can aid in optimizing well design, placement, completion, stimulation, and production. Information obtained from logging includes coal thickness, depth, gas content, and the permeability and mechanical properties of the targeted coal seams and surrounding strata.

Borehole geophysical logs also have environmental and geotechnical applications. Logs can provide valuable information regarding the physical properties of soil, rock, and groundwater. Structural information such as strike and dip of lithologic and bedrock fractures can be obtained. Hydrogeologic information including identification of water producing and receiving zones, flow rate measurements, and estimates of permeability, porosity, moisture content, and specific yield can be provided from the logs.

For additional information about ARM's borehole geophysical services, contact Scott McQuown, P.G., at smcquown@ARMgeophysics.net or at 610-380-4778.

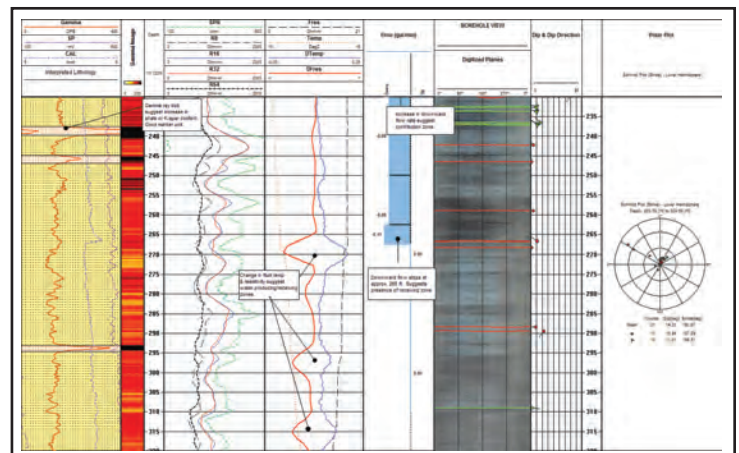


ARM's new geophysical logging truck

The logging system is mounted on a four wheel drive F350 diesel truck that is small and mobile, which allows it to reach wells easier than larger logging trucks.

The truck provides state of the art logging capabilities including a full suite of standard electric logging tools, optical televiewer, acoustic televiewer, heat pulse flowmeter, neutron, density, and sonic tools.

ARM's logging service allows cost effective determination of rock and fluid properties that are key to characterizing and understanding an oil and gas reservoir such as porosity, formation thickness, fluid saturation, pressure, permeability, lithology and mineralogy, and rock mechanical properties, among others. These data allow geologists and engineers to evaluate potential hydrocarbon reserves and reservoir producibility, decide where and how to complete the well, and where to drill the next well.



Composite well log characterizing lithology, fractures, and water producing zones.

Internet Imagery Applications

Several internet applications offer virtual globe programs that allow the user to freely move around in the virtual environment by changing the viewing angle and position. The different views of the earth's surface may include aerial photographs, satellite images, Geographic Information System (GIS), and/or topographic maps to show geographical features, man-made features, or abstract representations of demographic quantities such as population. Many programs allow the user to layer the views for improved interpretation.

Google Earth is an example of a free, downloadable imagery program (<http://earth.google.com/>). It maps the earth using satellite images, aerial photographs and GIS.

Highlights of the Google Earth virtual globe program:

- ❑ **High Resolution** (usually in large cities such as Philadelphia, PA, Washington, D.C., and London, England). It is possible to clearly discern individual buildings, houses, the color of cars, and even the shadows of people and street signs.
- ❑ **Convenient Searching Methods**, including address entry (for selected countries), coordinate entry, or simply mouse-browsing on a map.
- ❑ **Three Dimensional (3D) Views** (using digital terrain model data collected by NASA's Shuttle Radar Topography Mission - SRTM). This means one can view the Grand Canyon, Mount Everest, or even the sky scrapers in Harrisburg, PA in 3D. Since November 2006, the 3D views of many mountains, including Mount Everest, have been improved by the use of supplementary Digital Elevation Model (DEM) data to fill the gaps in SRTM coverage.

Other commercial programs are available such as Terrain Navigator Pro, which provides a greater range of functions and support than free programs. Selected features include:

- ❑ **GIS support:** Data can be saved and stored for use in a wide range of GIS programs.
- ❑ **Higher-resolution aerial photos;** selected photo coverage is available in color.
- ❑ **Updated topographic maps.**
- ❑ **3-D route animation** that can be recorded and saved.
- ❑ **Customized grids** can be superimposed onto maps and photos.
- ❑ **GPS position averaging,** a feature which helps maximize accuracy when marking single locations.
- ❑ **Range/bearing lines** calculate distance and bearing between any two points.
- ❑ **Range rings** gauge distance in all directions from a particular point.
- ❑ **PDA menu** allows transfer of maps to handheld PocketPC device, for use with mobile GIS software.
- ❑ **Custom profiles:** The vertical axis can be adjusted to customize the vertical minimum/maximum against which a profile is shown.
- ❑ **Line of sight** applies height offsets. Raises either end of a sight line to achieve clearance and anticipate obstacles.
- ❑ **GeoTips:** Customizable Tooltips. GeoTips provides a handy data readout when you hold the cursor over a specific layer or map location.
- ❑ **Multiple Track Lines:** Track appending lets you connect multiple track lines.

Continued on page 14

Other virtual globe programs and their features:

	World Wind	Norkart	Google Earth	Virtual Earth 3D
Multiple datasets	◆	◆		
Street map overlay		◆	◆	◆
Restaurant, hotel, transportation guides			◆	
Satellite and aerial image overlay	◆	◆	◆	◆
Weather map overlay	◆		◆	
Real-time traffic report				
GPS-integration	◆		◆	
3D graphics	◆	◆	◆	◆
3D building models		◆	◆	◆
Terrain models	◆	◆ *	◆	◆
Sea-floor models	◆	◆ *		
Planetarium			◆	
Day/night views	◆			
Views of other planets	◆	◆ *		
Online community user input	◆		◆	

* Norkart Virtual Globe

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