



## **Technical Innovation and Professional Services**

TIPS newsletter of highlights, news, and information for the TIPS End User

If you use any TIPS services – this document is for you!!!

**TIPS web page: [html://www.tips.osmre.gov](http://www.tips.osmre.gov)**

### **Indian Trust Case Temporarily Shuts Down TIPS**

**Access - Lou Hamm**

On the afternoon of March 15, 2004, TIPS Service Managers sent a message to their customer contacts that the Internet may be shut down by court order as happened in December of 2002. Five minutes later, The Department of the Interior was disconnected from the Internet. The impact to TIPS customers was immediate and severe. As the shut down continued over that week TIPS Team members received calls from customers concerned about their ongoing projects that depended upon the tools provided by TIPS via Internet licensing. There was nothing that TIPS could do to bring the Internet back online to provide the licenses that many customers needed.

A stay of the order was granted nine days later by the U.S. Court of Appeals (No. 03-5262) thus bringing the Department and TIPS back online. Subsequently, on April 9 the Appeals Court made the stay permanent.

TIPS will continue to provide its licenses via the Internet. As you will read in this newsletter, TIPS is going strong, we are updating 11 of our software packages and updating more this summer.

You can follow the developments of this case at [www.doi.gov/indiantrust/](http://www.doi.gov/indiantrust/) or at [www.indiantrust.com](http://www.indiantrust.com).

# Software News – Updates and New Software

## Software Upgrades Available April 15, 2004

– *Mary Greene*

The Technical Innovation and Professional Services (TIPS) is pleased to provide you with eleven Core Software updates:

- AMDTreat 3.1c
- AQTESOLV 3.5
- AquaChem 4.0
- AutoDesk Map 2004
- EarthVision 7.5
- Galena 4
- Groundwater Modeling System – GMS 4.0
- Groundwater Vistas 3.44
- HEC-RAS 3.1.1
- SDPS 5.4J
- StatGraphics 5.1

and our newest core software, Image Analyst for ArcGIS. If you have not received your upgraded software, contact your office TIPS liason.

Descriptions of uses for each of the software programs are included on the TIPS website under *Software/Hardware Support*. This will give you an idea of



how the TIPS tools can help you right away in the work you do. **TIPS software HELP**

**contacts** are listed on the web page to support your software use.

## Upgrade Notes and Highlights

### AMDTreat 3.1c - *Bob McKenzie*

AMDTreat is available through the TIPS distribution. AMDTreat “is a computer application for estimating abatement costs for pollutional mine drainage. AMDTreat can assist a user in estimating costs to abate water pollution using a variety of passive and chemical treatment types; including, vertical flow ponds, anoxic limestone drains, anaerobic wetlands, aerobic wetlands,



manganese removal beds, oxic limestone channels, caustic soda, hydrated lime, pebble quicklime, ammonia and soda ash treatment systems. The

AMD abatement cost model considers over 400 variables in estimating costs for treatment facility construction, excavation, revegetation, piping, road construction, land acquisition, system maintenance, labor, water sampling, design, surveying, pumping, sludge removal, chemical consumption, clearing and grubbing, mechanical aeration, and ditching. (AMDTreat is pronounced: am'-D-treat or A-M-D-treat.)”

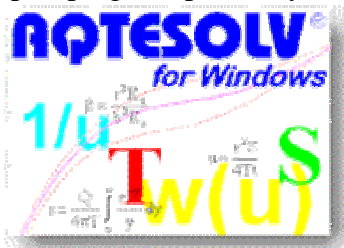
The TIPS software manager for AMDTreat is Bob McKenzie and more information and software download upgrades are available at the AMDTreat web page at <http://www.amdtreat.osmre.gov/amdtreat.asp>.

**ArcGIS 8.3 Service Pack 3** - The ArcGIS Service Pack 3 is available for download from the ESRI web page at <http://support.esri.com/index.cfm?fa=downloads.patchesServicePacks.viewPatch&PID=15&MetaID=663> If you have not already done so, TIPS highly recommends downloading and installing the Service Pack 3 to ensure you are working with the current version of ArcGIS. **ArcGIS 9** is expected to be distributed from ESRI in the summer of 2004. The TIPS software manager is Alan Wilhelm.

**AutoDesk 2005** is being tested as you read this newsletter. TIPS plans to distribute as soon as testing is completed. The TIPS software manager is Bill Joseph.

**AQTESOLV 3.5 – Mary Greene**

This version of AQTESOLV includes several new analysis techniques, including multi-well slug tests, a forward solution (prediction) wizard to simulate a pumping test prior to your going to the

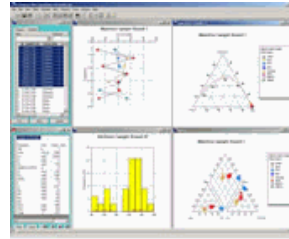


field, a recovery data plot, visual matching guides for slug tests,

quick and easy activation and deactivation of observation wells, a quick tips section, and more. Check it out when it arrives. For more information on the upgrade, go to the AQTESOLV web page at <http://www.aqtesolv.com/news.htm#Version%203.5>. TIPS expects to provide AQTESOLV 4.0 in the summer of 2004. The TIPS software manager is Mary Greene.

**AquaChem 4.0 - Mary Greene**

AquaChem 4.0 offers advances in its main features including data management, data analysis, water quality



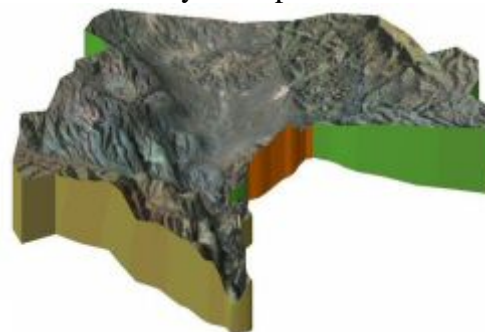
modeling, data plotting, printing, and its documentation. Check the vendor web site for detailed information at

[http://www.flowpath.com/software/aquachem/aquachem\\_prod\\_det.htm](http://www.flowpath.com/software/aquachem/aquachem_prod_det.htm) - Main.

The TIPS software manager is Mary Greene.

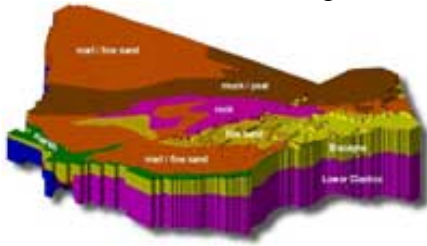
**GMS – Groundwater Modeling System – Mary Greene**

Please visit the ems-i web page to read about all the new GMS capabilities. The graphics and visualization tools are worth reviewing. As the web site states, “GMS now utilizes the OpenGL graphics engines for all 3D visualization, both wireframe and shaded. This means that all displays are rendered using hardware acceleration. Fully shaded 3D images can now be rendered instantaneously. Complex 3D



objects can be rotated in real time in either shaded or wireframe mode. A groundwater model can be displayed in plan view or 3D oblique view, and rotated interactively. Cross-sections and fence diagrams may be cut arbitrarily anywhere in the model. Hidden surface

removal, and color and light source



shading can be used to generate highly photorealistic rendered images. Contours and color fringes can be used to display the variation of input data or computed results. Cross-sections and iso-surfaces can be interactively generated from 3D meshes, grids, and solids, allowing the user to quickly visualize the 3D model.”

<http://www.ems-i.com/GMS/gms.html>

The TIPS software manager is Mary Greene.

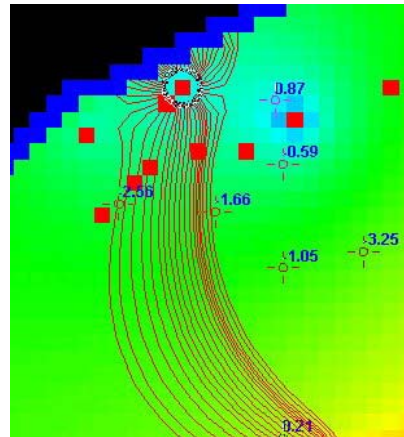
### **Groundwater Vistas – Mary Greene**

Groundwater Vistas 3.5 is offering new and advanced features for groundwater modeling including the following as described on the vendor web site:

- “Supports New Models including MODFLOW2000, MT3D99, GFLOW - 2D (steady-state analytic element model)
- Optimization Models for Wellfield and Pump and Treat Design including Brute Force (exclusive to GV3), MODOFC, REMAX
- New Calibration Features including support for PEST ASP, auto-sensitivity analysis script files and MODFLOW2000 inverse model supported
- New Windows Interfaces for MT3DMS, MODPATH Version 3.2, MODFLOW2000
- Other New Features include:
  - Export
  - EVS UCD format files

- Support for SURFER Version 7 files
- New MODFLOW2000Lake3 Package
- Enhanced file management

- Much, much more... including cool graphics”

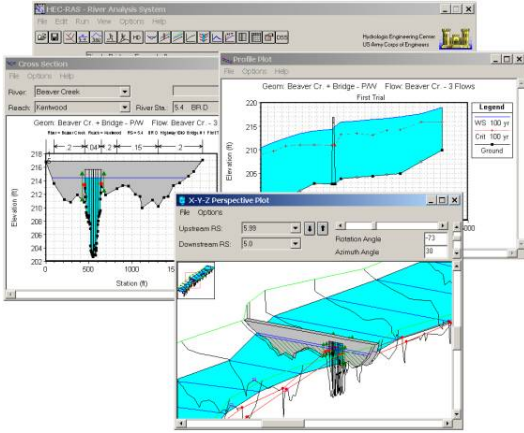


Check out the web site for more details at: [http://www.groundwater-vistas.com/html/groundwater\\_vistas\\_details.html](http://www.groundwater-vistas.com/html/groundwater_vistas_details.html). The TIPS software manager is Mary Greene.

### **HEC-RAS – Mary Greene**

Version 3.11 is available through TIPS. Profile plots can be animated to step through different flood events for steady flow or through a time series for unsteady flow.

To view a demo animations of a dam break, mixed flow, and flood inundation, go to the HEC-RAS web site demos at <http://www.hec.usace.army.mil/software/hec-ras/hecras-demo.html>.



## New Tips Core Software, ArcGIS Users – Robin Reilley

We are pleased to announce the addition of **Image Analyst for ArcGIS** by Leica-Geosystems to the TIPS Core Software. Leica-Geosystems also produces ERDAS-Imagine.

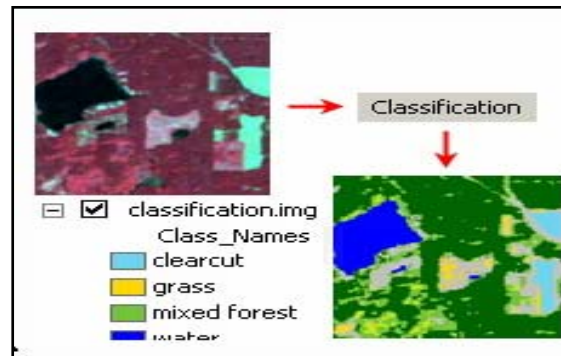
Through the familiar ArcGIS interface, image processing and analysis capabilities become possible. The ArcGIS extension provides rapid display, facilitating single frame

Additional information is available from the HEC-RAS web site at <http://www.hec.usace.army.mil/software/hec-ras/hecras-hecras.html>. The TIPS software manager is Mary Greene.

## Future Software For Distribution And Availability - Mary Greene

TIPS is planning a second distribution in the summer of 2004. We anticipate providing you with updates for ArcGIS 9.0, GMS 5.0, Groundwater Vistas 4.0 and SDPS.

RUSLE2 for windows is currently being tested. TIPS hopes to be able to provide this to you soon. The TIPS web site provides downloads of updates of KeyServer, BLEP, Galena, and Planimeter in addition to a hot link to the AMDTreat website for downloads and technical support.



orthorectification, oriented image creation, change detection, and thematic mapping among other useful capabilities. The features in ArcGIS Image Analysis substantially enhance any ArcGIS project incorporating imagery by providing for the ability to prepare and create 'GIS Ready' and for extracting and deriving new information from 'GIS Ready' imagery.

A minimum operating system of Windows 2000 or XP Professional is



required. Information is available on the TIPS web page at <http://www.tips.osmre.gov>. Robin Reilley is serving as the TIPS Software Manager ([rreilley@osmre.gov](mailto:rreilley@osmre.gov) or (303) 844-1400 ext. 1533).

## AutoCAD Products News

– *Bill Joseph*

### AutoDesk 2004 Products – Bill Joseph

The AutoDesk 2004 products provided by TIPS are now in two basic categories, Series and Non-Series. The AutoDesk Map Series has bundled AutoDesk Map 2004 (includes AutoCAD 2004), Raster Design 2004, and Envision 8.0 (formerly AutoDesk OnSite Desktop) under one licensing program. AutoDesk Map Series is a spatial data creation, analysis, and presentation tool that land use management professionals can use to help collaborate and communicate on mapping projects. If you would like more information on these AutoDesk products go to [www.AutoDesk.com](http://www.AutoDesk.com) and look under products. The Non-Series products being distributed are AutoDesk Map 2004 (includes AutoCAD 2004) and Raster Design 2004. If you have any questions on AutoDesk products distributed by TIPS please call Bill Joseph at 618-463-6463 x106 or Kevin

Garnett at 618-463-6463 x127. The TIPS software manager is Bill Joseph.

### SurvCADD Server Licenses coming....

– *Bill Joseph*

TIPS is currently testing SurvCADD license check-out from a server. We would like to change the “site-license” concept to a license server concept. This will allow TIPS to track and manage the various SurvCADD modules more efficiently.

This will also allow TIPS to provide License borrowing capabilities similar to those provided by AutoDesk . With this new feature you will be able to take the Carlson software products to the field including Tsunami. Tsunami is a mobile computing and surveying solution provided by Carlson Software. As part of the TIPS mobile computing effort Tsunami will be provided to TIPS users through this license borrowing called “commuting”. Tsunami has been tested with many GPS and surveying devices. If you would like to know more about Tsunami go to <http://www.carlsonsw.com/tsunami.htm> or contact Bill Joseph or Kevin Garnett.

TIPS anticipates that the SurvCADD license server may be ready by early summer 2004 and that we could get the TIPS users moved to this server by September of 2004. At that time this will be the main mechanism to provide SurvCADD and other Carlson products to you. We understand that some locations may want to keep some stand-alone copies of SurvCADD. Please let Bill Joseph or Kevin Garnett know if this is your situation and how many copies of stand-alone SurvCADD your location would want to maintain. TIPS may be able to negotiate a new national maintenance contract that your office

could use. Our preference would be to have as many TIPS users as possible onto the SurvCADD license server. The TIPS Software Manager is Bill Joseph.



## IMS Team News – *Bill Card*

TIPS has recently formed an Internet Map Server (IMS) team to prototype and develop IMS services. These services will deliver information to the public regarding surface coal mining operations through standard Internet browser applications. The team plans to evaluate two software products: ESRI's ArcIMS and AutoDesk's MapGuide. The team holds biweekly teleconferences to discuss plans, report progress, and provide technical support to its members. Notes from the teleconferences can be read on-line at the TIPS webpage. The TIPS contact is Bill Card at (865) 545-4103 x 134, bcard@osmre.gov.

## Mobile Computing

### Licenses

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### Enabling TIPS in the Field



### AutoDesk License Borrowing (Mobile Computing) – *Bill Joseph*

A new AutoDesk License feature that TIPS is making available is the borrowing utility (portable licenses). This allows Windows PC Notebooks/Laptops or Windows Tablet

mobile computing devices to borrow licenses and remove the computer from the network. This will allow you to take TIPS AutoDesk products **to the field**. Currently the TIPS policy will be to allow borrowing for one week at a time (7 days). If you need instructions on how to borrow a license or if longer time periods are needed please contact Bill Joseph or Kevin Garnett.

## EarthVision 7.5 – *Mike Dunn*

Besides enhancements, 7.5 is a major patch roll-up for all previous versions and users should upgrade.

Additionally, 7.5 includes a working prototype of the next generation 3-D Viewer (3D Viewer+ is available from the Utilities menu) which is the foundation for all future releases.

Version 7 retains all functionality for 2- and 3-D modeling, cross-section, editing faces file generation, GSB, etc. and introduces the Workflow Manager TM - a logical, integrated approach to using EarthVision including every needed input and modeling parameter for “one-stop” structure and property model building.

Each release (7.0, 7.0.1, and 7.5) adds new functionality and corrects glitches in previous versions. Some of the major new features are:

- Many data files can now be displayed at once in the existing 3D Viewer
- Graphics such as JPEGs can be brought into the editor and included in plots along with vector data (output must be to HPGL2 or PostScript files)
- Georeferenced raster files (like DRGs and DOQQs) can be easily

converted to RGB and imreg files through DGI Gifts

- The gridding and display mathematics have been greatly enhanced – binary files are much smaller and more accurate and display much faster

- Under Windows, file associations with routines such as the Graphic Editor are now possible

- Stereo viewing has been extended beyond the SGI platform to Windows, Linux, and SUN versions (special graphics boards and glasses are required).

- Fault tree building is easier and more logical

- Precursors to the “Geocellular Gridder ” are incorporated into property modeling in the Workflow Manager TM.

The document, *all\_7\_rls\_notes.pdf*, is included on the supplemental Earth Vision and TIPS Digitizing CD in the April 2004 TIPS software distribution. The file is a comprehensive description of each version's changes. The TIPS Software Manager is Mike Dunn.



Speed Up  
Your Earth  
Vision

## Response Time

If it takes Earth Vision more than 30 to 40 seconds to respond you may be experiencing trouble in the speed that it accesses licenses. With the help of Dynamic Graphics Corp., TIPS has developed the following work around by adding an additional environmental variable to your computer as follows:

**Name:** DGI\_SUGGESTED\_FEATURE  
**Value:** ev\_ps\_net

It is unlikely that anyone outside of OSM will need to add this variable, and if you are not experiencing serious delays you should not add it. If you have questions, contact the TIPS Earth Vision software manager, Mike Dunn at [mldunn@osmre.gov](mailto:mldunn@osmre.gov) or 412-937-2910.

## Software Installations

We encourage you to use any TIPS provided software on your individual desktops in the convenience of their own offices! Each software program is commercial software and has been successfully installed and used on computers world-wide.

TIPS assumes no responsibility for any consequences to your computers as a result of installing this software. In our testing we have found a few installation details which can be easily overlooked and may create installation issues. We have addressed each of these details in a set of custom installation **instructions** which can be found on the TIPS website ([www.tips.osmre.gov](http://www.tips.osmre.gov) then click on the *Software/Hardware Support* link at the top of the page) or go directly to <http://www.tips.osmre.gov/SWinstall/SWList.htm> . You will find it well worth the time to review these instructions carefully before beginning installation. In some cases, your software administrator will be required to actually install the software at your desktop.

## TIPS Software Managers

Software Managers are listed on the web page, to assist you with software installation problems or contact your TIPS Service Manager.



## TIPS Service Managers

Service Managers are listed on the web page. They are ready to assist you.

## TIPS TRAINING and NEEDS SURVEY - Robert

*Welsh*

TIPS will continue to provide customer support and training for items delivered. We have received our FY04 budget!! The number of courses offered in the TIPS training program has increased this year and will continue to expand during the next few years to meet the training demands for this new software. The needs survey will be conducted during May & June 2004 for the FY 2005 training year (October 2004-September 2005) for both TIPS and the National Technical Training Program (NTTP). Please look for the survey and complete it at that time so that your TIPS training needs are known. The TIPS Training Program Manager is Robert Welsh.



### AutoDesk Training Courses – Bill Joseph

The TIPS CAD Team is currently re-writing the 3 Intro/Intermediate CAD courses to update these to the 2004/2005 platform. We are also creating 3 new courses. One covers Advanced Topics in AutoCAD, another is Raster Design/AutoDesk Map course on underground Mine Mapping (Raster to vector conversion, Image manipulation, and GIS), and the last is Advanced Topics in SurvCADD.

These courses will be held as pilots this fall and will be offered as regular courses in FY05 (October 2004-September 2005).

If you are interested, watch for these courses in the upcoming training needs survey for FY05. If you would like more information on these courses please contact Bill Joseph or Kevin Garnett.

### ArcGIS Spatial Analyst Course – Alan Wilhelm

TIPS first class of the new GIS Spatial Analyst course, taught August 5-7, 2003 was a huge success. This three-day course teaches the use of the ArcGIS Spatial Analyst extension to provide cell-based raster analysis in the ArcMap interface of ArcGIS 8.3. This course serves as an introduction to the use and analysis of raster data in ArcGIS.

Topics include a study of the raster data model, Spatial Analyst tools and functionality, use of Map Algebra (a computational data manipulation language for raster analysis), geographic referencing of raster data, creation of raster surfaces (visual representations of measurement data), topographic analysis using elevation data (to produce contours, slope, aspect, curvature, hillshade, and other surfaces).

Additional topics include basic surface hydrologic modeling using raster data (to derive flow direction, calculate flow accumulations, define flow paths and flow lengths, determine watersheds, delineate stream networks, identify stream orders, etc.), distance tools (to calculate surfaces of weighted distance and least cost travel to all locations), suitability modeling (deriving optimal

locations using multiple factors), and cartographic raster display techniques.

Exercises are based on coal mining scenarios and datasets from New Mexico, Pennsylvania, Tennessee, and West Virginia.

### **Equipment Available –**

OSM Knoxville has 1 plotter available. If you are interested in obtaining this equipment for your office or program, please contact Jo Gault for details at [jgault@osmre.gov](mailto:jgault@osmre.gov) or (865) 545-4103 ext. 142.

### **Hear Ye, Hear Ye: Come One, Come All - *Bill Winters***

The TIPS GeoSpatial Conference will be held in Atlanta, Georgia December 7-9, 2004. Detailed information will be posted on the TIPS web site soon! The TIPS contact is Bill Winters. [bwinters@osmre.gov](mailto:bwinters@osmre.gov) or (412) 937-2105.

(Editor: Mary Greene)