

## Updates to Sites 2005.0 since CCE Certification:

- 10/13/2005 – Damsite.exe correction: This version changes the wording where full orifice flow occurs to "TRANSITION TO FULL ORIFCE FLOW, ELEV. XXXX.XX", eliminates the STEPSTP control word (prints "\*\*\*\*\* MESSAGE - 'STEPSTP' IS NO LONGER USED WITH THIS HYDROGRAPH PROCEDURE", and corrects the problem with the "SHUTOFF" control word.
- 10/24/2005 – Damsite.exe correction: This corrects Larry's minor problem of not plotting FBH in .out file.
- 10/26/2005 – Sites IDE: Added the ability to resize grid column width in Summary Table as requested by end users.
- 10/26/2005 – Sites IDE: Updated output file management to allow \*.dat files to be built from the IDE – still need to add GRAPHICS I record to \*.dat files to generate graphical output.
- 10/27/2005- Sites IDE: Corrected retention of design class field when switching between upstream and downstream structures as reported by Helen.
- 10/27/2005 -- Good Point. As output, the vol would appear to be associated with the 7.5 sq. mi. Should we be outputting both the total vol and that associated with the local drainage area? Don, how difficult is it to get to these? Original message from Larry: Here's a minor item to consider, noticed by the folks in Iowa. It applies to watersheds with subareas. The attached selection of SJ5 output shows the difference. For example, the SDH VOL reported is 8611.9 AF, which is associated with the total DA of 18 SM. S2000.5 reports a VOL associated with the uncontrolled DA of 7.5 SM. Do we want to return to the old way of reporting VOL? Or perhaps change "VOL" to "SYSTEM VOL"? Fixed.
- 10/28/2005 – Sites IDE: Updated output graphics to correctly plot AS Rating and AS Erosion after resizing. Updated default color for background. Any changes to default colors?
- 11/3/2005 – From Larry: I noticed this when editing old file(attached) for dam in PA. Running 9/14/05sites: 1. At Global W/S screen, click off "SDH and FBH", 2. At schematic, click dam symbol to begin editing, 3. First input screen to appear is the unexpected "AS Crest"- a screen not needed for TR60, PSH run. Fixed.
- 11/14/2005 – Sites 2005.0.2 – certified by George Foster.
- 11/15/2005 – Sites 2005.0.x – version information from George Foster:
  - 12/2004 – base version – 2005.0.0
  - 9/2005 – 2005.0.1
  - 11/2005 – 2005.0.2 - finds 2005.0.1 as though it is the same product installed and asks if you want to upgrade itself. This is not exactly what we expected but replacing itself in the same spot may effectively be just what we wanted. It would be like a deinstall, reinstall. If we had changed the actual files we are installing I might be more worried. Version 2005.0.2 finds 2005 as a different product and runs through a routine to find the directory or a registry entry that indicate a previous version and complains and stops.
- 11/17/2005 – Morris sent the attached d2c file (ML1146.D2C). It runs on the 2000.5 version, but not on the 2005 version. Appears to be crashing in the middle of damsite run. What started this was a question of whether the elevation to start

routing information was being properly used for the data set. Since PSH is not being run, the elevation to start routing should be picked up from the GO,DESIGN record and used. Fixed.

- 12/14/2005 -- Matt Piazza, NRCS Engineer at Vernon, TX sent this one in. 378noPS.D2C.
  - It shows two integrity check messages that don't apply.
  - Seems the routing start for the "design" storm is the AS crest, 87.5, while the routing start for the "secondary design" storm is the PS crest, 78.4. The text output showed routing start of 78.4.

Suggested fixes needed at the next go-round:

1. Fix the integrity checker. Fixed.
  2. The text output needs to clearly show the routing start elevation for the "design" storm and for the "secondary design" storm, especially when the routing starts are different, as they are in this case. CHECKING.
- Follow-up 12/15: Larry discussed the issue of elev to start routing with Morris. Their preference is to stay with the current operation, where the routing start for the "design" storm is the AS crest and a different routing start is possible for "secondary design" storm. The routing start for the "design" storm is what should be reported at the Summary Table, Initial Reservoir Elevation. And the text output should show the routing start for each storm.

The current operation of different possible routing starts was useful in the Vernon, TX application at an ag waste storage lagoon, where a 25-yr runoff volume is maintained in the lagoon by means other than an ungated outlet. Different routing starts may also be useful for a pond-trickle tube routing.

- 1/24/2006 -- Updated Special Auxiliary Spillway Run to correctly save Material Data by moving Material Data section above Basic Data in the \*.OUT file on 3/13/06. This corrects the error noted by Larry (see pk200yrT.d2c).
- 1/18/2006-1/21/2006 -- Data integrity checking updates.
- 3/13/06 -- Added Summary Table field, "Number of PS Conduits" – existing projects will need to be rebuilt to see the changes and fields between the new Field (Number of PS Conduits) down to the next to last field (Number of Errors) will appear as N/A until the project is rebuilt. There are now a total of 47 fields that can be selected as denoted in the Summary.ids file in the Application Installation Directory. Need to add note to not change integer (I8) to real (F8.0) format specifications, and vice versa, in the Summary.ids file. Most fields are fixed as real, but some (number of errors, etc.) are integers.

(updated Summary.ids 7/20/2006)

- 3/20/06 - Elevation to start routing for 378 jobs; Darrel wrote: Add an elevation to start routing to the Rainfall Screen + Auxiliary Spillway Tab for all conditions including when the principal spillway hydrograph is run. Make this an optional entry. If entered, this value would be used for the design and, if used, the secondary design storms. If the the field is left blank and there is no principal spillay hydrograph: Elevation to start routing for the design storms is: The greater of the principal spillway crest or the sediment pool elevation if there is a principal spillway regardless of spillway size - message is printed in output that this is the source of the elevation to start routing: printed as message if a pipe diameter is entered greater than 10 inches or is not specified and as a warning if the pipe diameter is less than 10 inches. We would need to review the present warnings and messages to see if there are presently consistent ones or if new ones are required. The crest of the auxiliary spillway if there is no prinicipal spillway and a message is printed in output that this is the source of the elevation to start routing. Sediment pool elevation not considered. For the condition of having a principal spillway run, I am on uncertain ground. I am unclear about what the present program and the criteria call for. If the present program does drawdown computations to determine an elevation to start routing for 378 jobs, I would think that that is the way we should continue to operate. If it is not presently doing drawdown compuations to determine an elevation to start routing, I would have it operate the same as when no principal spillway hydrograph is run. As we discussed, programming of criteria is difficult because of variations state to state. Therefore, I think the primary concern is that the national criteria not be violated as such, even though we might allow the user to violate it to maintain the flexibility needed.

#### TO DO

- 3/30/2006 - This is one of those items that when the user selects let the program do areal corrections he or she must also select a Climate Area Zone. The program defaults to 0. The 0 option does not do areal corrections. If it defaulted to 2 for Climate Area Zone for this case it would cover about 90 - 95% of the SITES runs that would require the areal corrections. I think a note on the screen and a warning in the output might also be an option.

Defaults to 2 now (7/20/2006).

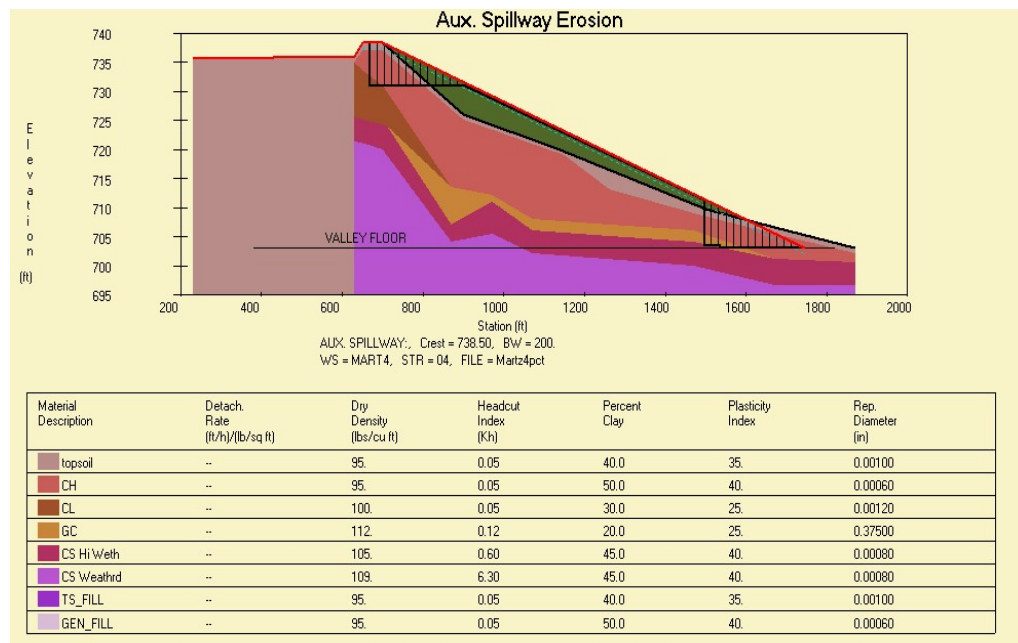
- 3/30/2006 – 6 hr. vs. 24 hr. raintable problem: Here is what Laurel did to get the 6 hr to display with the 24 hr raintable. She had a 24 hr raintable data set she was revising. She opened it. On the screen with the dist. She clicked the 6 hr std dist. She made a change to the FB rainfall. She clicked back on the raintable. She then went back and saved the data set. This had a data set with a raintable and no number in the GODESIGN card. The data set ran as she sent us.

Fixed.

- 3/30/2006 – Integrity Checker Update: The program has been updated and uploaded to SharePoint. The warning message number is 2061. Mitch, I'm not sure I have the right field number for it, so if it's wrong, let me know.

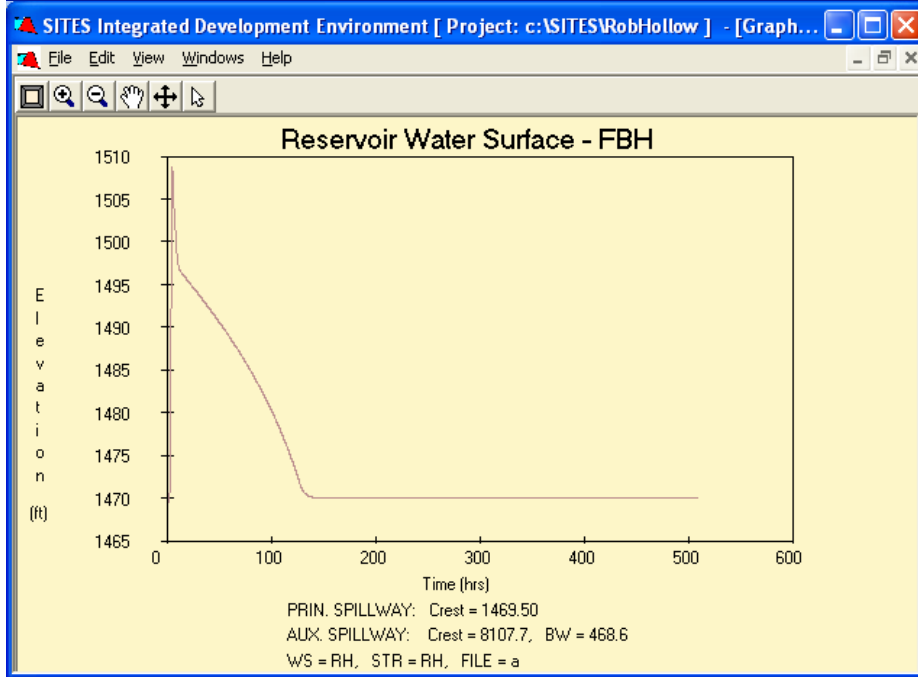
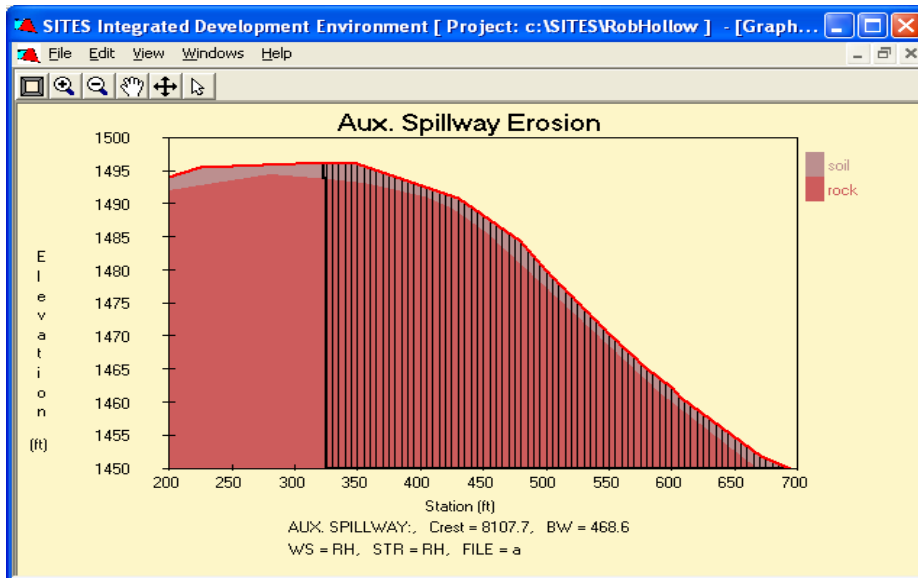
Updated. Need to check that we jump to correct tab and field for each.  
**NEED TO SPECIFY ERR FILE FORMAT**

- 4/5/06 – Output Graph Colors: The default colors for fill are not correct. See example.



Colors for TS\_FILL and GEN\_FILL corrected. (7/20/2006).

- 4/7/2006 -- With the attached data set, we seem to have a problem bringing in the auxiliary spillway crest elevation and bed width for use on the plots (used a couple for example in attached) (ref. RHTest.d2c)



BW=20 and Crest = 1496

Fixed. (7/20/2006).

- 4/20/2006 – Robinson Hollow Example: Mel sent me the principal spillway routing. They have a 24" conduit that is 304' long. He assumed a  $n = 0.014$ , The HGL at the outlet is 1451. He is using a single stage standard Dx3D riser with a crest at 1469.5. He used a  $K_e$  for the riser of 0.7. Morris (ref. RStor\_RobHolPSONly\_Rain.D2C). Mitch note: Is there anything to fix? No according to Darrel.
- 4/21/2006 -- In checking this, however, I did note a minor glitch: When you have first checked only the SDH and FBH (example is CASB.d2c in our test files), then

go back and check PSH on the global data screen, the input screens retain the option of the entered crest elevation for the auxiliary spillway. The data is not parsed, so that the PSH portion of the run is not displayed in the summary table. For consistency and clarity of what is being computed, the only option that should be available with PSH checked on the global data screen is "Let SITES program set crest of AS." This is the only option available when you start with a new data file and check PSH. With the crest given, it is not clear what the PSH is being used for when this is not the case, although it may be being used to determine the elevation to start routing. The crest elevation is going in the first field on the ASCREST record, so the PSH may not actually even be run.

The ASCREST record is used to trigger the Input Options on the ASCrest Screen, need to clarify cases when options should not be available; e.g., DAMS2.Global = 1,3,5, or 7 (e.g., PS checked)? Ok, just need to check.

- 4/24/2006 – Reagan2YR.d2c -- Larry, ran this a suggested that the top of dam not be reported for this case. I think we should add another message to use another type of spillway -- (one that uses WSPVRT where supercritical flow is expected.)  
Morris

Morris, Input and output files attached where "ERROR 26" was generated. The error occurred because the AS has supercritical flow when a precomputed rating with reference number 30 (assumes subcritical flow) was used. The top-of-dam was reported in the summary table. It seems to me the top-of-dam should be given an "N/A" in this case because the minimum 378 criteria hadn't been applied as usual. Larry

Follow-up by Darrel –I would agree that we should refine the current error message or add a message indicate that an alternate rating computation needs to be used. At a minimum, the Action for error 26 in the user guide needs to be extended (see suggested added action wording below).

We probably have a some choices on what to do on the summary table info. I believe that the logic that we have used overall was that when an error was generated, we retained the values that had been written to output with the idea that they might assist the user in identifying the needed error correction, but recognized that any time an error has been generated, the output is questionable. We could kill the \*.DIS file information entirely except for the error and warning information when a fatal error is generated, but, in some instances, that loses information that might help the user interpret issues associated with the error. We could also just kill the value stored for Top of Dam when error 26 is generated, but I would consider all values output questionable when errors are present in the output file. Is this worthwhile?

As to the specifics: I would recommend adding to both the error statement in the output and the action item in the User Guide as follows.

-----

PASS STOPPED. SUPERCRITICAL FLOW IN RETARDANCE  
COMPUTATIONS WITH RATING FROM ASFILE: ALTERNATE RATING  
INFORMATION REQUIRED.

Remarks: The retardance procedure will not allow supercritical flow in the  
auxiliary spillway exit channel. The slope of the exit channel is too steep.

Action: Decrease slope of exit channel, widen the spillway, or provide the input  
required to allow SITES to compute the auxiliary spillway rating using the  
WSPVRT procedure.

-----

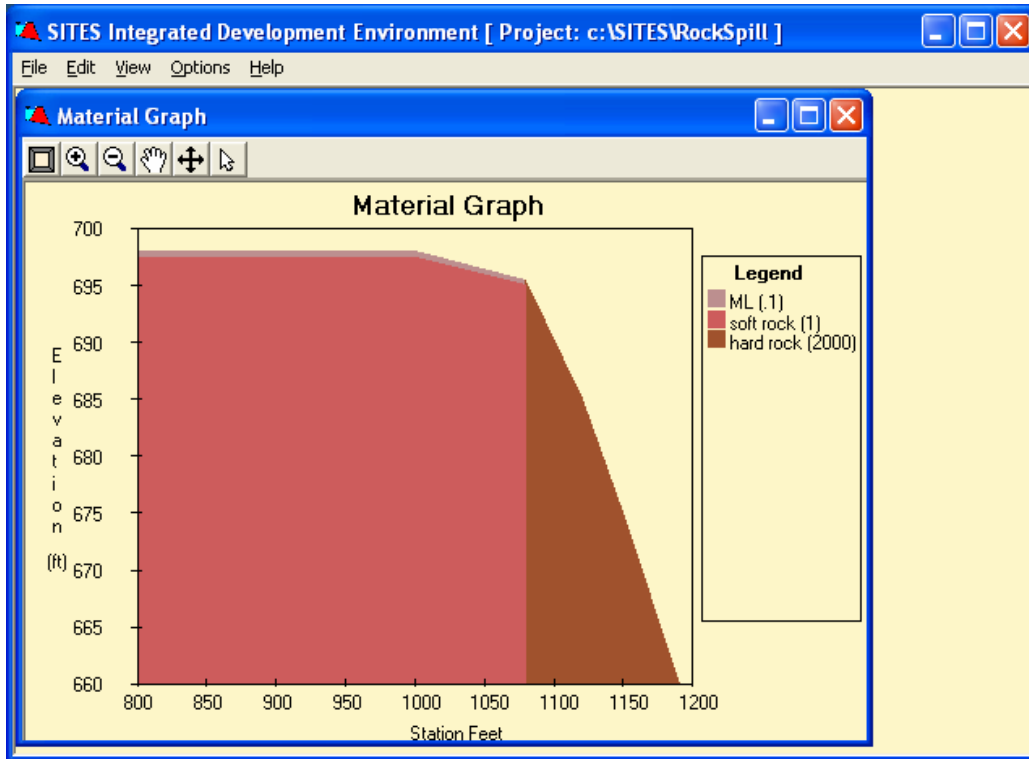
I did a quick variation on data file with the additional information pulled out of  
the air as a test (good bermuda grass with inlet similar to outlet conditions).  
Example attached.

Darrel

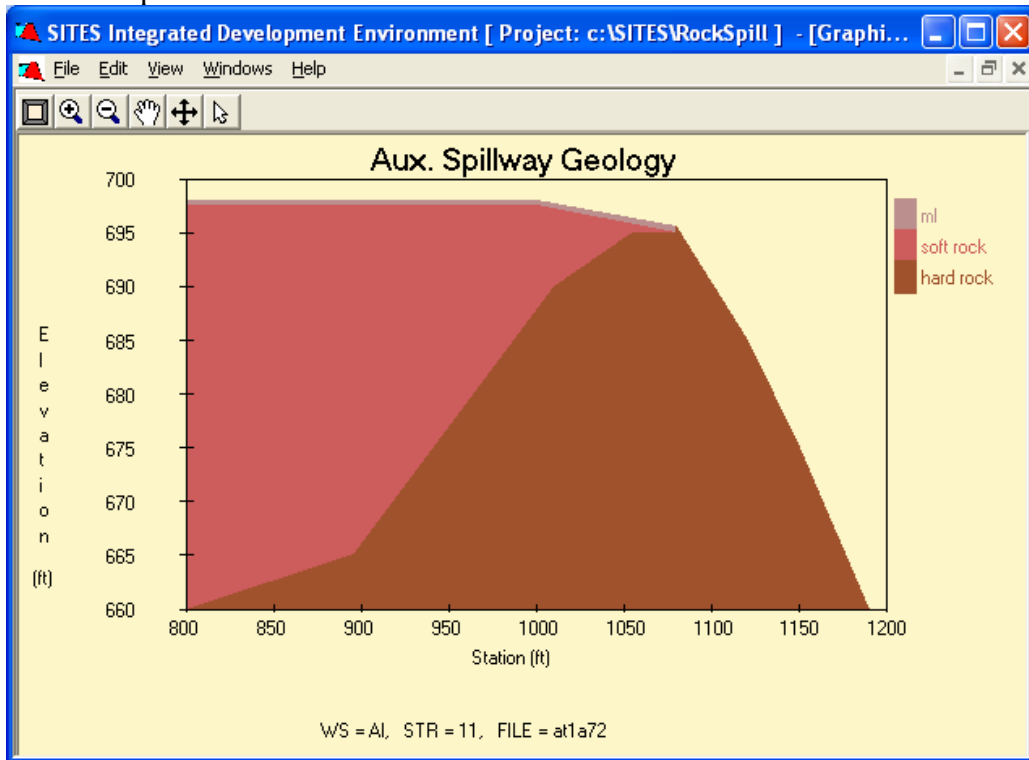
I've updated the source and executable on SharePoint to print the message  
Darrel suggested.  
Don

- 5/26/2006 -- The geology plot from the materials input screen is not properly  
displaying the materials. Apparently overwriting which suggests  
questionable ordering. Output plots OK. Darrel (ref. at172.D2C)

Plot from data entry is not correctly picking up the profile of the hard rock.



Plot in output is correct.



This is mostly just a bad data input problem, in material 3, the user entered coordinates (1080,695) followed by (1080,695.5) followed by

(1120,685). We could add a check to look for vertical lines as well, but this is basically just bad input that is fixed by the simulator. Note that in the output graph, the coordinate (1080,695.5) is automatically changed to (1080.01, 695.5). If you adjust the second, supposedly erroneous coordinate (1080,695.5), then the graph shown on the input side is the same as the output graph. Hope that helps, Mitch

- 6/29/2006 -- I've added Error 3020 to Integrity Checker. The description is:

3020 The elevation at the maximum ASCOORD station is greater than the Valley Floor.

If this isn't what's wanted, let me know and I'll modify accordingly. I'll put the revised source and executable on SharePoint. Don

--

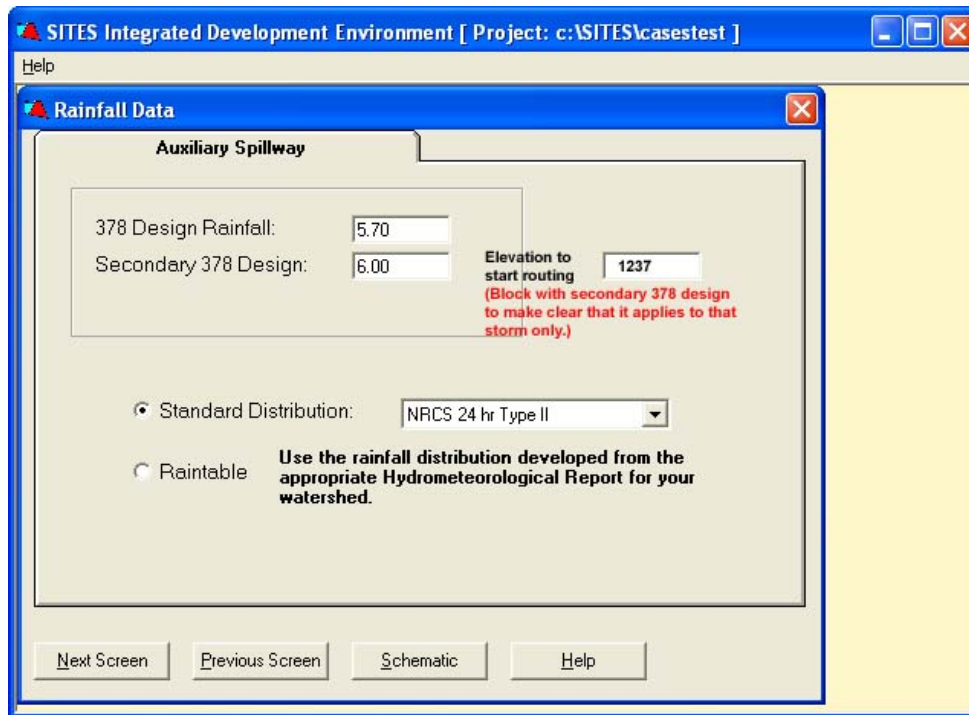
Hi Don, The attached data set generates the error that last point on the surface is above the elevation of the valley floor. To find this requires that we put the surface together to evaluate. Are we currently doing that in the integrity checker? If so, should we be catching this? If not, how difficult do you think it would be to work from the simulator to find this error in the integrity checker? Darrel

Just need to check.

- 6/29/2006 -- Mitch, Don, Morris and I have been going over the 378 elevation to start routing issue and believe we have it clear now. (Larry, you might want to check us.)

It appears that the NRCS 378 Design storm is working properly, but that the secondary should have the option of entering the the elevation to start routing. The changes proposed are to add an elevation to start routing field for that storm only as indicated in the attached. Don, you will need to look at where we can bring this in to the simulator - I'm not certain we can do that in the usual fields without confusing the design storm elevation to start routing. As indicated, we need this to be grouped with the rainfall entry for the secondary storm on the input screen to indicate that it is for that storm only.

Please take a look at it and see what other implications this might have. Thanks. Darrel



(ref. CASHnpstest6.D2C)

- 7/12/2006 -- In doing some testing, I started with a file that had both "378 Design" and "Secondary Design" clicked at the Global input screen and changed to just "378 Design" clicked. But the interface did not clear the Secondary Design storm rainfall of 6 inches from the input file. Larry

I've updated the IDE to clear the secondary design storm rainfall if the user unclicks "Secondary Design" and revisits the structure from the topological model -- note that data for a given element is only changed after revisiting the element after making changes to the global data screen.

The new version (executables only) is posted online with the latest version of DamSite.exe at the usual location:

<http://www.cis.ksu.edu/sites/sites2005/>.

This brings up another question though, should the Secondary Design Rainfall and Elevation to Start Routing fields be blanked out if the user does not select "Secondary Design"?

Yes. I think it would be good to blank out the Secondary Design Rainfall and Elevation to Start Routing fields with non-selection of Secondary Design at the Global data screen. Larry

- 7/25/2006 – test file dead.D2C runs on debug version of damsite.exe, but not on 7/10/2006 release version.

- 7/26/2006 – ESR Notes: No user input for ESR. Prevent user from inputting PS selected on Global Data, then No PS is not available on Principal Spillway Type Screen. When No PS is checked, then use AS Crest Elevation as the PS Crest Elevation on POOLDATA record (col. 31-40) only for Case “H”; e.g., 378s. H4 and H6.

#### Feature Creep Requested

- 1/1/06 – Began migrating code base to Visual Studio .Net. Should have updated version available in October 2006.
- 3/13/06 -- Feature creep request on updating screen resolution to adapt for higher resolution screens – need to investigate work required in VS.Net.
- 3/22/06 - Is there a way to make a change of the font in the Text Editor so that it will stay selected when Sites 2005 is executed in the future?

Added feature on 7/25/2006.