

Test Case GFE SE Contour (sc 001-011)

**for the
AWIPS
Contract
DG133W-05-CQ-1067**

Prepared for:

U.S. Department of Commerce
NOAA/NWS Acquisition Management Division
SSMC2, Room 17364
1325 East-West Highway
Silver Spring, MD 20910

Prepared by:

Raytheon Company
STC Office
6825 Pine Street
Omaha, NE 68106

HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; GFE SE Contour (sc001-011)

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

Submitted By:

Test Engineer

Date

Approved By:

Program Manager

Date

Mission Assurance Quality

Date

HARDCOPY UNCONTROLLED

*Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.*

Revision History

Revision	Date	Affected Pages	Explanation of Change
1.0	26 July 2008	ALL	Initial Draft
2.0	8 August 2008	6-14	Redlines per PDT
3.0	4 September 2008	ALL	Redlines per DT

HARDCOPY UNCONTROLLED

*Contract DGI33W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.*

Table of Contents

1.0	SCOPE	4
2.0	APPLICABLE DOCUMENTS	5
2.1	Source Documents.....	5
2.2	Reference Documents.....	5
3.0	TEST CASE DESCRIPTION	6
3.1	Assumptions, Constraints and Preconditions	6
3.2	Recommended Hardware	6
3.3	Test Inputs	6
3.4	Test Outputs.....	6
3.4.1	GFE GUIs Tested.....	6
4.0	TEST SCENARIO	7
5.0	REQUIREMENTS VERIFICATION TRACEABILITY MATRIX (RVTM).....	16

HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

1.0 SCOPE

See Software Test Plan.

HARDCOPY UNCONTROLLED

*Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.*

2.0 APPLICABLE DOCUMENTS

2.1 Source Documents

- None

2.2 Reference Documents

- Legacy NWS GFE Acceptance Test Case ID Numbers: sc001 – sc011.
- Legacy NWS GFE Test Cases for Test Areas AC – VP.
- Section 3.1.3 of the AWIPS D-2D User's Manual Build 8.1.
- Software Test Plan for the Advanced Weather Information Processing System Project, Contract DG133W-05-CQ-1067, August 2008.
- The Silver Spring NWS AWIPS 1 test bed application.
- Release OB8.1 and OB8.2 of the Weather Event Simulator (WES).
- Rational RequisitePro.

HARDCOPY UNCONTROLLED

*Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.*

3.0 TEST CASE DESCRIPTION

This test case verifies that the edit area NWS test cases.

3.1 Assumptions, Constraints and Preconditions

- Several weather elements are loaded
- There are multiple grids available for the weather elements (at minimum T, Td, Wind, Wx, and Hazards weather elements)
- TO9 software has been installed successfully
- CAVE, EDEX and pgAdmin III are running
- Data has been ingested
- Actions, Results, and Requirements highlighted in yellow indicate requirements and/or capabilities to be included in the scope of future task orders. They are included here for purposes of continuity and traceability with the original AWIPS I test case documents.

3.2 Recommended Hardware

See Software Test Plan.

3.3 Test Inputs

Section 4.0 below contains the test procedures for this test case. Sections 2.2 – 2.9 of the Software Test Plan contain general test inputs applicable to all TO9 test cases.

3.4 Test Outputs

The results outlined in section 4.0 are met.

3.4.1 GFE GUIs Tested

- TBD

HARDCOPY UNCONTROLLED

*Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.*

4.0 TEST SCENARIO

Step	Action	Result	Pass/Fail
sc001 – Contour Tool - adding and removing contours.			
1.	In CAVE, Mouse Button (MB) 1 click on the Perspectives icon  and select 'GFE'. Then go to step 3. If 'GFE' is not in the dropdown list, select 'Other' and continue to step 2..	The Open Perspective dialog appears. The GFE Perspective loads in CAVE. The Open Perspective dialog closes. The Open Perspective dialog appears.	
2.	MB1 click 'GFE'. Then MB1 click 'OK'.	The Open Perspective dialog closes. The GFE Perspective loads in CAVE.	
3.	MB3 popup over the general area (not legend area) of the Spatial Editor (SE) and select ' Legends ' -> ' Show All Active Weather Elements '.	The product legend displays only the active weather element. Note: If GFE is already set in that mode, the user won't see this entry in the popup menu.	DR #1372
4.	MB1 click on a 'T' grid in the grid manager (that contains varying data) to make the grid visible and editable in the SE.	The temperature grid image displays in the SE.	
5.	MB3 over the 'T' grid in the product legend and select 'Display as Graphic'. Select the Contour Tool using the  toolbar button.	Lines representing the contours are drawn on the image.	
6.	MB1 click over the grid to add a contour.	The new contour is displayed in the SE. The contour value is based on the grid value in that location.	
7.	MB1 click over the grid to add another contour.	The new contour is displayed in the SE. The contour value is based on the grid value in that location.	
8.	MB2 click over one of the original contours (not the ones just added).	The contour is removed.	
9.	MB2 click over one of the contours that were added (in step 6 or 7).	The contour is removed.	
10.	MB3 popup over the SE and select 'Calculate Grid'.	The new grid is correctly calculated according to the contour values in the SE.	
sc002 – Contour Tool - removing all contours			
11.	With the 'T' grid contours displayed in the SE, MB3 popup over the 'T' product ID in the product legend and select 'Display as Image'. MB3 popup over the SE and select ' Delete All Contours '.	The contours are removed and the temperature grid image appears in the SE.	

HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

Step	Action	Result	Pass/Fail
12.	MB3 popup over the SE and select ' Calculate Grid '.	A yellow message appears in the left-hand status bar which states 'ContourTool: Please define some contours before attempting to recalculate'.	
13.	MB1 click on the color bar to set the pick up value. Draw a single contour on the image using MB1 drag .	The contour is drawn.	
14.	MB3 popup over the SE and select ' Calculate Grid '.	The grid is recalculated and contains a single value.	
sc003 – Contour Tool - drawing a new contour, crossing/not crossing existing contours			
15.	MB1 click on another 'T' grid in the Grid Manager.	Lines representing the contours are drawn on the temperature grid image.	
16.	MB1 click on the color bar to set the pick up value. Draw an open non-crossing path (i.e., does not cross an existing contour and does not close upon itself) single contour on the image using MB1 drag .	The contour is drawn.	
17.	MB3 popup over the SE and select ' Calculate Grid '.	The grid is recalculated and represents the contours.	
18.	MB1 click on the color bar to set the pick up value. Draw a closed non-crossing path (i.e., does not cross an existing contour and closes upon itself) single contour on the image using MB1 drag .	The contour is drawn.	
19.	MB3 popup over the SE and select ' Calculate Grid '.	The grid is recalculated and represents the contours.	
20.	MB1 click on the color bar to set the pick up value. Draw an open crossing path (i.e., crosses an existing contour and does not close upon itself) single contour on the image using MB1 drag .	Contours that were crossed will be segmented so that the graphical display won't indicate crossing contours.	
21.	MB3 popup over the SE and select ' Calculate Grid '.	The grid is recalculated and represents the contours.	
22.	MB1 click on the color bar to set the pick up value. Draw a closed crossing path (i.e., crosses an existing contour and closes upon itself) single contour on the image using MB1 drag .	Contours that were crossed will be segmented so that the graphical display won't indicate crossing contours.	
23.	MB3 popup over the SE and select ' Calculate Grid '.	The grid is recalculated and represents the contours.	

HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
 Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

Step	Action	Result	Pass/Fail
sc004 – <u>Contour Tool</u> - contour modification			
24.	With a ‘T’ grid image and contours displayed in the SE, clear any active edit area using the  toolbar button.	The edit areas are removed from the SE.	
25.	Draw an open path (i.e., doesn't close upon itself) on the image using <u>MB2 drag</u> .	The grid is recalculated and nearby gridpoint values are correctly updated in the SE.	
26.	Using the <u>Draw Edit Area tool</u>  , <u>MB1 draw</u> a closed figure whose start, end, and path is completely contained within the <u>SE</u> drawing area.	The edit area is created.	
27.	Select the Contour Tool using the  toolbar button.	Lines representing the contours are drawn on the image.	
28.	Draw an open path (i.e., doesn't close upon itself) on the image using <u>MB2 drag</u> . The path should start outside of the edit area, go through the edit area, and end outside of the edit area.	The grid is recalculated and the gridpoint values are correctly updated in the SE. Points both inside and outside of edit area are modified.	
sc005 – Switch from <u>Contour Tool</u> without recalculating.			
29.	<u>MB1 click</u> on a ‘QPF’ grid in the grid manager (that contains varying data) to make the grid visible and editable in the SE.	The QPF grid with overlaid contours displays.	
30.	<u>MB1 click on the color bar</u> to set the pick up value. Draw a single contour on the image using <u>MB1 drag</u> .	The contour is drawn	
31.	Switch to another tool, such as the Sample Tool  .	A dialog is displayed which asks ‘Recalculate based on edited contours before switching tools?’.	
32.	Select the ‘No’ button in the Recalculate Grid? dialog.	The QPF grid is not recalculated The Recalculate Grid dialog is dismissed. The contour lines are removed from the display.	
33.	Select the Contour Tool using the  toolbar button.	Lines representing the contours are drawn on the image.	
34.	<u>MB1 click on the color bar</u> to set the pick up value. Draw a single contour on the image using <u>MB1 drag</u> .	A Pickup Value is set. A single contour is drawn on the SE.	
35.	Switch to another tool, such as the Pencil Tool  .	A dialog displays which asks ‘Recalculate based on edited contours before switching tools?’.	

HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

Step	Action	Result	Pass/Fail
36.	Select the 'Yes' button in the Recalculate Grid? dialog.	The QPF grid is recalculated. The Recalculate Grid dialog is dismissed. The contour lines are removed from the display.	
37.	Select the Contour Tool using the  toolbar button.	Lines representing the contours are drawn on the image.	
38.	MB1 click on the color bar to set the pick up value. Draw a single contour on the image using MB1 drag .	A PickUp Value is set. A single contour is drawn on the SE.	
39.	Step to the next frame using the keypad arrow keys on your keyboard, or by MB1 clicking on another grid in the Grid Manager.	A dialog is displayed which asks 'Recalculate based on edited contours before switching grids?'.	
40.	Select the 'Yes' button in the Recalculate Grid? dialog.	The QPF grid is recalculated. The Recalculate Grid dialog is dismissed. The display changes to the selected grid. The contour lines are removed from the display. The user will have to go back to the previous frame to see whether the grid was recalculated or not, since the display changes to the new frame.	
41.	MB1 click on the color bar to set the pick up value. Draw a single contour on the image using MB1 drag .	A PickUp Value is set. A single contour is drawn on the SE.	
42.	Step to the next frame using the keypad arrow keys on your keyboard, or by MB1 clicking on another grid in the Grid Manager.	A dialog displays which asks 'Recalculate based on edited contours before switching grids?'.	
43.	Select the 'No' button in the Recalculate Grid? dialog.	The QPF grid is not recalculated. The Recalculate Grid dialog is dismissed. The display changes to the selected grid. The user will have to go back to the previous frame to see whether the grid was recalculated or not, since the display changes to the new frame.	
sc006 – Pencil Tool - scalar			
44.	MB1 click on a 'T' grid in the grid manager (that contains varying data) to make the grid visible and editable in the SE.	The temperature grid image and contours appear in the SE.	

HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

Step	Action	Result	Pass/Fail
45.	Select the Pencil Tool using the  toolbar button. Clear any active edit area using the  toolbar button.	The contours are removed from the SE. The edit areas are removed from the SE.	
46.	Draw an open path (i.e., doesn't close upon itself) on the image using MB1 drag .	The nearby gridpoint values are updated in the SE.	
sc007 – Pencil Tool - vector			
47.	MB1 click on a 'Wind' grid in the grid manager (that contains varying data) to make the grid visible and editable in the SE.	The Wind grid displays in the SE.	
48.	MB1 click ' GFE ' -> ' Editing Preferences ' -> ' Vector Edit Mode ' -> ' Magnitude Only '.	The Magnitude Only selection is set.	
49.	Draw an open path (i.e., doesn't close upon itself) on the image using MB1 drag .	The nearby wind barbs and gridpoint values update in the SE. Only the magnitude values are affected.	
50.	MB1 click ' GFE ' -> ' Editing Preferences ' -> ' Vector Edit Mode ' -> ' Direction Only '.	The Direction Only selection is set.	
51.	Draw an open path (i.e., doesn't close upon itself) on the image using MB1 drag .	The nearby wind barbs and gridpoint values update in the SE. Only the direction values are affected. Note that the Pencil Tool, when in Direction Only mode, is also known as the Streamline tool.	
52.	Draw a tight spiral on the image using MB1 drag .	The nearby wind barbs and gridpoint values update in the SE. Only the direction values are affected. Effectively (depending upon how tight you drew the spiral, and what your current Pencil Width Influence is set to, you can draw a closed circulation pattern, like a typhoon.	
53.	MB1 ' GFE ' -> ' Editing Preferences ' -> ' Vector Edit Mode ' -> ' Both '.	The Both selection is set.	
54.	Draw an open path (i.e., doesn't close upon itself) on the image using MB1 drag .	The nearby wind barbs and gridpoint values update in the SE. Both the magnitude and direction values are affected.	
sc008 – Contour Tool - Grid locking when contours are drawn.			
55.	MB1 click on another 'T' grid in the grid manager (that contains varying data) to make the grid visible and editable in the SE.	The temperature grid image displays in the SE.	

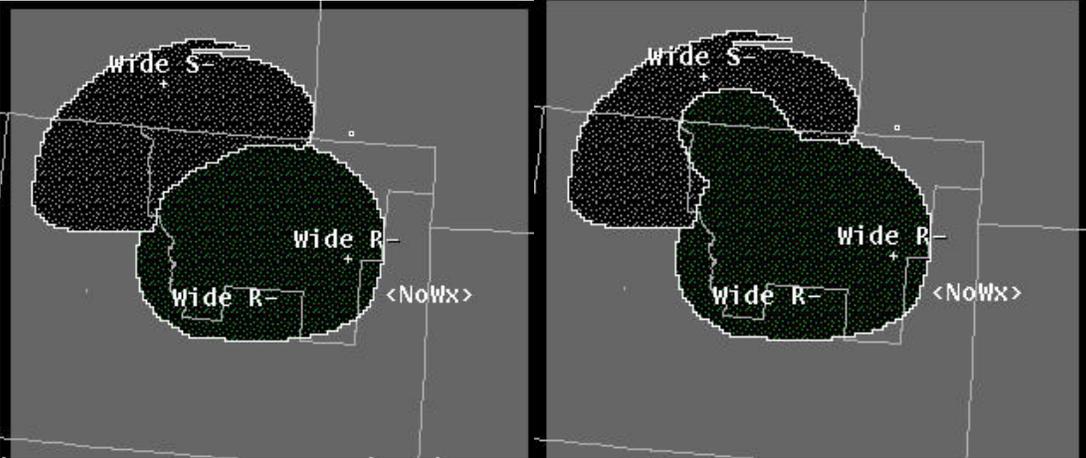
HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

Step	Action	Result	Pass/Fail
56.	Select the Contour Tool using the  toolbar button.	Lines representing the contours are drawn on the image.	
57.	Save any modified data using the  toolbar button.	The Save Forecast dialog appears.	
58.	In the Save Forecast dialog, select all weather elements and MB1 click the 'Save Forecast' button.	The forecast is saved as indicated by the removal of the green locks in the Grid Manager.	
59.	MB1 click over the grid to add a contour.	The new contour is displayed.	
60.	Save any modified data using the  toolbar button as completed in steps 57-58.	The green lock is removed after the data is saved.	
61.	MB2 click over the grid to remove a contour.	The selected contour is removed.	
62.	Examine the grid in the Grid Manager.	The grid is now locked as shown by the green lock .	
63.	Save any modified data using the  toolbar button as completed in steps 57-58.	The green lock is removed after the data is saved.	
64.	MB3 popup over the SE and select 'Delete All Contours' .	The contours are removed. The grid is now locked as shown by the green lock in the grid manager.	
65.	Save any modified data using the  toolbar button as completed in steps 57-58.	The green lock is removed after the data is saved.	
66.	MB1 click on the color bar to set the pick up value. Draw a single contour on the image using MB1 drag .	The grid is now locked as shown by the green lock in the grid manager.	
67.	Save any modified data using the  toolbar button as completed in steps 57-58.	The green lock is removed after the data is saved.	
sc009 – Pencil Tool - with an edit area selected.			
68.	MB1 click on another 'T' grid in the grid manager (that contains varying data) to make the grid visible and editable in the SE.	The temperature grid image displays in the SE.	
69.	Using the Draw Edit Area tool  , MB1 drag a closed figure whose start, end, and path is completely contained within the SE drawing area.	The edit area is created in the SE.	
70.	Select the Pencil Tool using the  toolbar button.	The Pencil Tool is activated.	

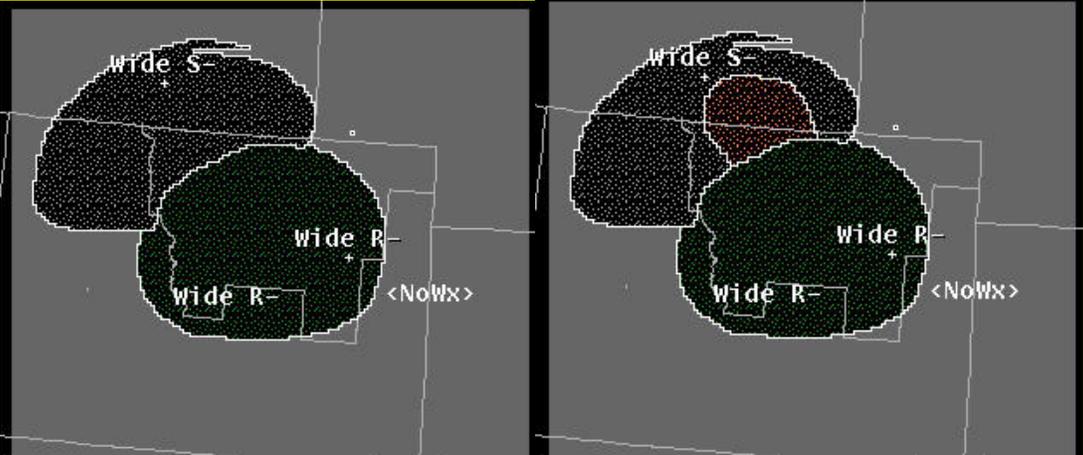
HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

Step	Action	Result	Pass/Fail
71.	MB1 drag on the temperature grid and draw an open path (i.e., doesn't close upon itself) that goes through the drawn area in step 69, but starts and ends outside of the drawn area.	The nearby gridpoint values update in the SE. Only gridpoints contained within the active edit area are modified.	
sc010 – Pencil Tool - weather/discrete			
72.	MB1 click on a 'Wx' grid in the grid manager (that contains varying data) to make the grid visible and editable in the SE.	The Wx grid displays in the SE.	
73.	Clear any active edit area using the  toolbar button.	All edit areas are removed from the SE.	
74.	If necessary, MB1 click ' GFE ' -> ' Editing Preferences ' -> ' Wx/Discrete: Combine ' to deactivate the option.	The Wx/Discrete: Combine option is deselected.	
75.	Draw a path on the image starting in one area, going outside of that area, and ending in the same area that was started using MB1 drag .	The area was pushed into another area as shown below:	
			
76.	MB1 click ' GFE ' -> ' Editing Preferences ' -> ' Wx/Discrete: Combine ' to activate the option.	The Wx/Discrete: Combine option is selected.	

HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
 Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

Step	Action	Result	Pass/Fail
77.	Draw a path on the image starting in one area, going outside of that area, and ending in the same area that was started using MB1 drag .	The area was pushed into another area but is combined with the existing values as shown below:	DR #1371
			
78.	Repeat steps 72 through 77 for a Hazards grid in the Grid Manager to test the behavior for DISCRETE data types.	Refer to the results in steps 72-77.	DR #1371
sc011 – Pencil Tool - scalar data, in ISC mode.			
<p>Note: Grids are available for both the home WFO and surrounding ISC sites. To see if there is data available from other sites, click on the ‘Show ISC Grid’  toolbar button, and MB1 clicking on various grids in the Grid Manager. If ISC data is available from other sites, then the data will appear for the CWA’s adjacent site's areas of responsibility (CWA plus marine areas). If ISC data is not available, then only data that covers the area of responsibility is visible.</p>			
79.	MB1 click on a ‘T’ grid in the grid manager (that contains varying data and has corresponding ISC data) to make the grid visible and editable in the SE.	The temperature grid image displays in the SE.	
80.	Clear any active edit area using the  toolbar button.	All edit areas are removed from the SE.	
81.	Turn on the ‘Show ISC Grid’  toolbar button.	Data is shown for the CWA as well as at least one of the surrounding CWAs.	

HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
 Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

Step	Action	Result	Pass/Fail
82.	<u>MB1 drag</u> on the SE to draw an open path (i.e., doesn't close upon itself) starting within the home CWA region and ending in a surrounding ISC region on the image.	The gridpoint values update in the SE. Changes were made inside of the CWA on the display, but no changes to the data were made outside of the CWA. In reality the changes were also made outside of the CWA but with the Show ISC Mode enabled, those portions of the Fcst grid are not visible.	
83.	Turn off the 'Show ISC Grid'  toolbar button. View the changes you made with the Pencil Tool in step 82. The pencil tool uses your starting grid point as well as the data along with path to make changes. When ISC mode is on, the data along the path consists of the composite grid (the grid or the ISC grid depending upon the location of the CWA).	The ISC button is deactivated. All modifications are viewable.	
84.	Then turn on the 'Show ISC Grid'  toolbar button.	The ISC button is activated.	
85.	<u>MB1 drag</u> on the SE to draw an open path (i.e., doesn't close upon itself) starting within a surrounding ISC region and ending in the home CWA region on the image.	The gridpoint values update in the SE. You will see changes made inside of the CWA on the display, but will not see any changes to the data made outside of the CWA. The effect is to drag in those values into the CWA.	
	End of test.		

HARDCOPY UNCONTROLLED

Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
 Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.

5.0 REQUIREMENTS VERIFICATION TRACEABILITY MATRIX (RVTM)

Number	Description	Test Step(s)
SYSR2580	The AWIPS GFESuite shall implement Contour Tool - adding and removing contours.	1-10
SYSR2581	The AWIPS GFESuite shall implement Contour Tool - removing all contours.	11-14
SYSR2582	The AWIPS GFESuite shall implement Contour Tool - drawing a new contour, crossing/not crossing existing contours.	15-23
SYSR2583	The AWIPS GFESuite shall implement Contour Tool - contour modification.	24-28
SYSR2584	The AWIPS GFESuite shall implement Switch from Contour Tool without recalculating.	29-43
SYSR2585	The AWIPS GFESuite shall implement Pencil Tool - scalar.	44-46
SYSR2586	The AWIPS GFESuite shall implement Pencil Tool - vector.	47-54
SYSR2587	The AWIPS GFESuite shall implement Contour Tool - Grid locking when contours are drawn.	55-67
SYSR2588	The AWIPS GFESuite shall implement Pencil Tool - with an edit area selected.	68-71
SYSR2589	The AWIPS GFESuite shall implement Pencil Tool - weather/discrete.	72-78
SYSR2590	The AWIPS GFESuite shall implement Pencil Tool - scalar data, in ISC mode.	79-85

HARDCOPY UNCONTROLLED

*Contract DG133W-05-CQ-1067; Test Case GFE SE Contour (sc001-011)
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.*