

Fire Emission Production Simulator *(formerly EPM)*

DV (Sam) Sandberg

Gary Anderson (URS)

Robert Norheim (U.Washington)

Acknowledgements:

Sue Ferguson

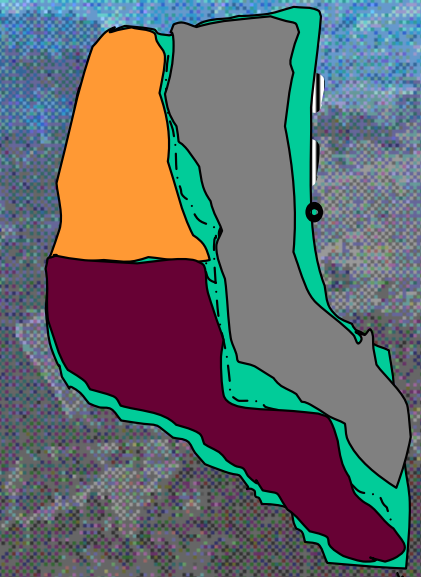
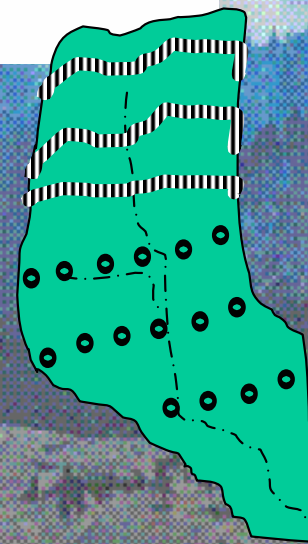
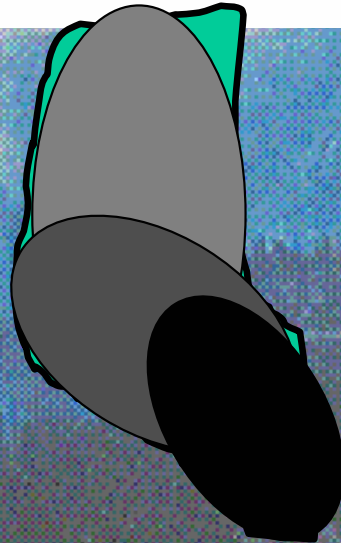
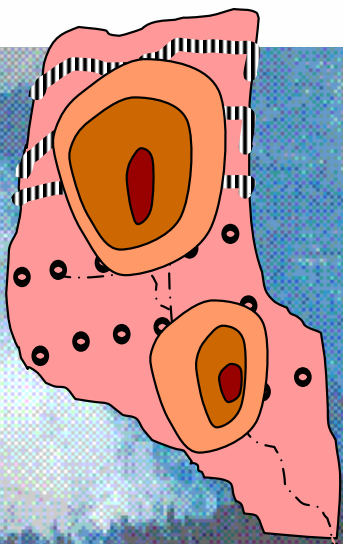
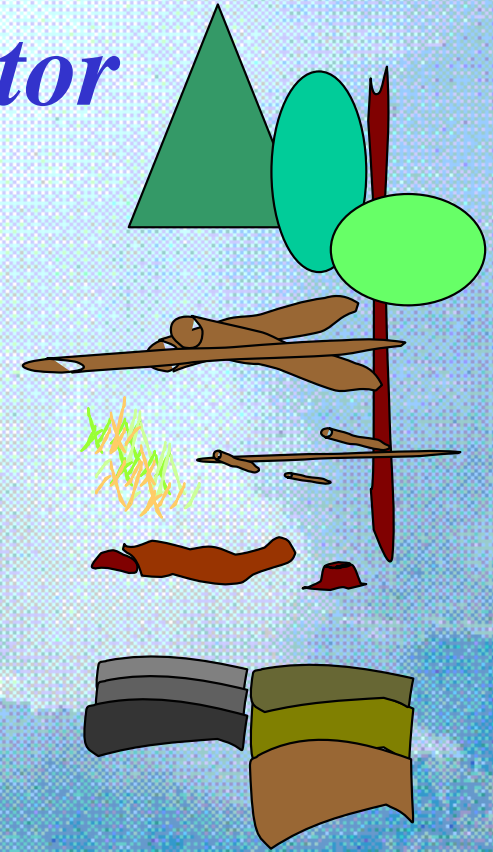
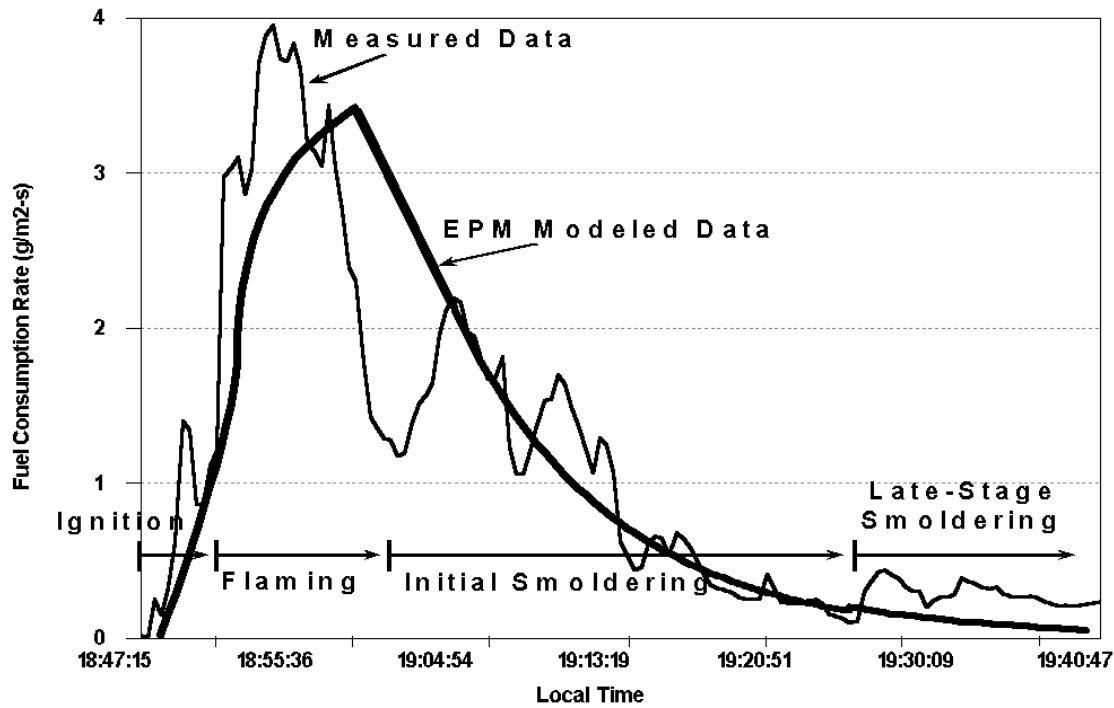
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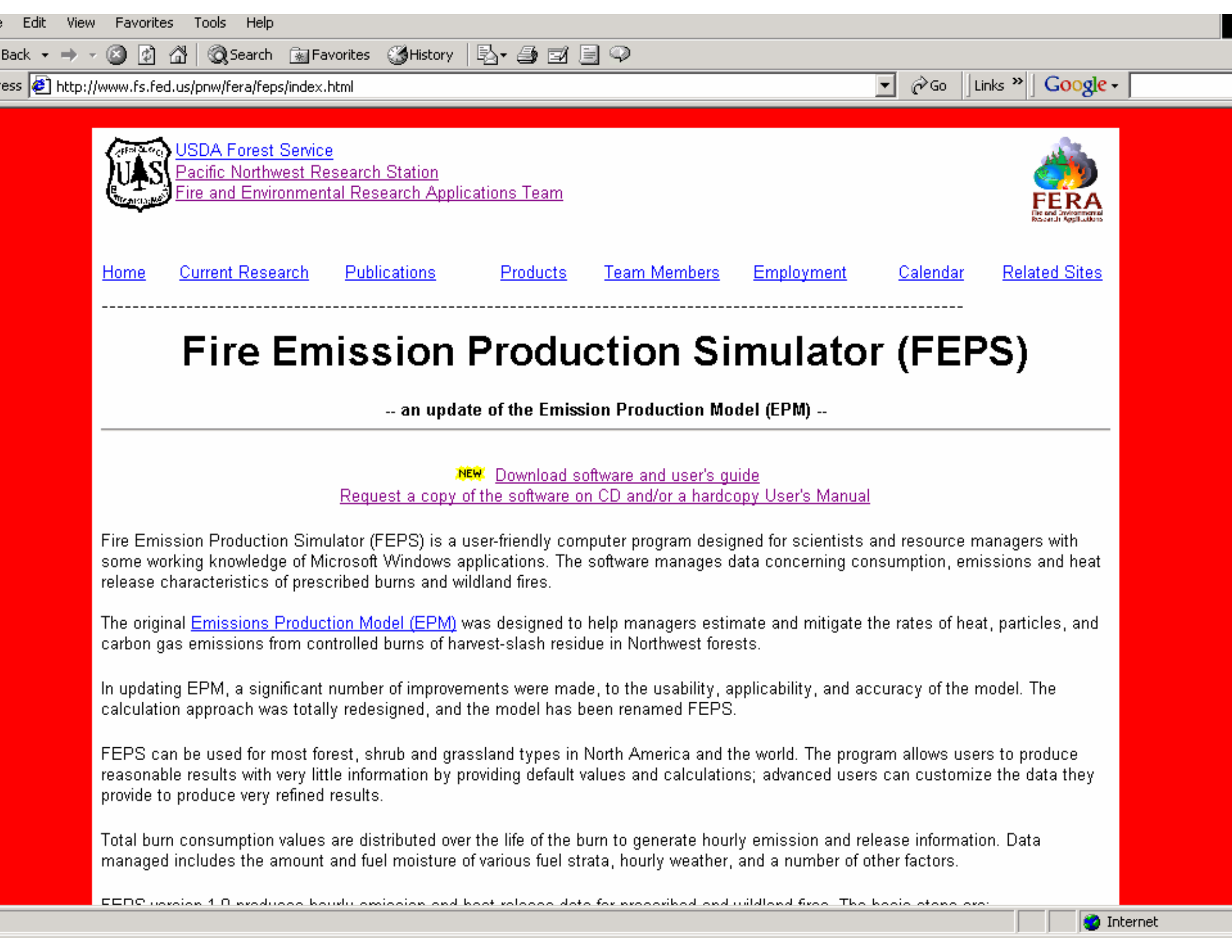
Beta testers



US Department of the Interior
Joint Fire Science Program and
USDA Forest Service

Fire Emission Production Simulator





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Fire Emission Production Simulator (FEPS)

-- an update of the Emission Production Model (EPM) --

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Fire Emission Production Simulator (FEPS) is a user-friendly computer program designed for scientists and resource managers with some working knowledge of Microsoft Windows applications. The software manages data concerning consumption, emissions and heat release characteristics of prescribed burns and wildland fires.

The original [Emissions Production Model \(EPM\)](#) was designed to help managers estimate and mitigate the rates of heat, particles, and carbon gas emissions from controlled burns of harvest-slash residue in Northwest forests.

In updating EPM, a significant number of improvements were made, to the usability, applicability, and accuracy of the model. The calculation approach was totally redesigned, and the model has been renamed FEPS.

FEPS can be used for most forest, shrub and grassland types in North America and the world. The program allows users to produce reasonable results with very little information by providing default values and calculations; advanced users can customize the data they provide to produce very refined results.

Total burn consumption values are distributed over the life of the burn to generate hourly emission and release information. Data managed includes the amount and fuel moisture of various fuel strata, hourly weather, and a number of other factors.

FEPS version 1.0 produces hourly emission and heat release data for prescribed and wildland fires. The basic steps are:

FEPS Users Guide (.pdf, CD)

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FEPS User Guide Operating Instructions

Note Tool (S)

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FEPS User's Guide

Data Entry

You enter data and produce reports in FEPS by using the following primary screens:

- Use the **Manage Events** screen to create a new Event, delete an existing Event, select an existing Event, or export an Event.
- Once an Event is created/selected use the five data entry screens, or tabs, to enter/edit Event information. Use the **Event Information** tab to initially define and enter information about an Event and define the period over which the Event occurs. Use the **Fuel Loading**, **Fuel Moisture**, **Consumption** and **Hourly Input Data** tabs to enter fuel loading, fuel moisture, fuel consumption and hourly data for the Event, and
- Use the **Reports and Charts** screen to view and print reports and charts.

Before discussing the details of data entry in these screens, basic methods for adding, editing and deleting information must be understood. All screens use consistent methods for adding, editing, and deleting information.

Creating a New Event	All Events must be created from a System Default, User Default, or valid User Event. First select the Event to be copied. From the menu, select File → Manage Events (or press Ctrl-E). From the Manage Events screen, select "the basis for your Event" (i.e. Event Type). Select an available Event. Click Create (or press Alt-T .) Enter a new Event name and click Save . If no User Events are available, you must create one from a System Default or User Default.
Loading an existing Event	From the menu, select File → Manage Events (or press Ctrl-E). This will display the Manage Events screen. Select "the basis for your Event" (i.e. Event Type). Select the Event. Click Load or press Alt-L . If no User Events are available, you must create one from a System Default or User Default. When initially installed, FEPS will only contain System Default Events.
Editing an Event	After loading an existing Event or creating a new one, make the desired changes in the five data entry tabs. The status bar at the bottom of the window will indicate that the Event is being edited. Edits must be completed or canceled before navigating to other tabs. Details on the use of the five data entry tabs is given in the FEPS Details section starting on page 17. Note: System Default Events can be reviewed, but not changed.
Saving Edits to an Event	While editing, the status bar at the bottom of the window will indicate that the Event is being edited. In addition, the Save button becomes active. To save changes, click on the Save button, click on the Save Event icon on the toolbar, select File → Save Event from the menu, or press Ctrl-S . Note: Saving changes may result in calculations and changes to other tabs. For Events longer than a few days, this may take a few seconds.
Canceling Changes	While editing, the status bar at the bottom of the window will indicate that the Event is being edited. In addition, the Cancel button becomes active. To cancel changes on the current tab, click on the Cancel button, click on the Cancel icon on the toolbar, or select Actions → Cancel Changes from the menu. Canceling changes will return the Event information to the last time the Event was saved.

FEPS Basics

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Deleting an Event	From the menu, select File → Manage Events (or press Ctrl-E). Select "the basis for your Event" (i.e. Event Type). Select the Event to be deleted. Click Delete (or press Alt-D .)
Copying an Event	To make a copy of an existing Event, follow the instructions for creating a new Event. Note: You may not create a copy of an invalid Event.
Converting a User Event to a User Default	First load a valid User Event. From the menu, select File → Convert Event to User Default... The status bar will reflect the change.
Reports and Charts	Reports for valid Events may be accessed from a loaded Event, or from the Manage Events screen. From a loaded Event, select the Actions → Reports/Charts menu option or click the Reports/Charts icon on the toolbar. To access reports from the Manage Events screen, select File → Manage Events (or press Ctrl-E). Select "the basis for your Event" (i.e. Event Type). Select the desired Event. Click Reports (or press Alt-R .)

Validating Data Entry

Reports and charts can be generated only for Events with valid data. Thus, knowing that data is valid is important and is closely tracked by FEPS. Data validity information is maintained for each data entry tab as well as the Event as a whole. The status bar located at the bottom of the FEPS screen indicates whether the Event and/or the currently displayed tab are valid.

If the status bar indicates that the current Event is invalid, but the current tab is valid, then you must manually view each of the other four tabs to determine where invalid data have been entered. Under certain circumstances, a change you make in the data on one tab may cause the data on another tab to become invalid. For example, if you delete a Fuel Profile you may invalidate the "% of air burning for each profile" columns in the Hourly Input Data tab.

FEPS Screen Layout

As you navigate through FEPS, each screen is specific to action required at that time. There are however specific features in FEPS that remain available at all times regardless of where you are at the moment. These include items on the:

- Menu Bar
- Tool bar, and
- Status bar.

FEPS User Guide Technical Appendix A&B

Appendix A: Conversion Factors

1 lb	453.59 g
1 lb	0.453,59 kg
1 ton	907.18 kg
1 lb/min	7.559,8 g/sec
1 lb/min	0.007,559,8 kg/sec
1 lb/min	27.215 kg/hr
1 ton/hr	251.99 g/sec
1 ton/hr	907.18 kg/hr
1 btu/hr	0.292,9 watts
1 acre	43,560 ft ²
1 acre	4,046,9 m ²
1 acre	0.004,046,9 km ²
1 acre	0.4046873 hectare
1 ton/acre	224,166,65 kg/km ²
1 ton/acre	0.224,2 kg/m ²
1 inch	2.54 cm
1 inch	0.025,4 m
1 mile/hr	0.447 m/s
1 mile/hr	1.609 km/hr
1 btu/hr	0.292,9 joules/sec
1 btu/hr	1.0544 kJ/hr
1 btu/hr	0.000,292,9 kilowatts

Appendix B: Installation and System Configuration

Installing, Uninstalling and Reinstalling FEPS

FEPS requires about 12.5 MB of hard disk space. Installing and reinstalling FEPS is done from the FEPS installation file *FEPS.msi*. If you are reinstalling FEPS for any reason, you must completely uninstall it first.

Note: When uninstalling FEPS, the database of Events is not automatically deleted. If you need to reinstall FEPS and wish to retain your library of Events and User Defaults, make a backup copy of the *FEPS.mdb* file from the FEPS application directory to another location on your hard drive before you begin the reinstall process. After reinstalling the application, you can recover your User Events by manually replacing the reinstalled *FEPS.mdb* file with your saved backup.

To Install FEPS:

1. Obtain the latest version of FEPS from <http://www.fs.fed.us/pnw/fera/feps/>.
2. Save the installation file "FEPS.msi" to a temporary location,
3. Double click on the FEPS.msi icon,
4. After the install program starts, click on the **N**ext button,
5. Select the location on your computer where you would like the FEPS files to reside, and click the **N**ext button,
6. On the "Confirm Installation" screen, click the **N**ext button, and
7. After the installation is complete, click the **C**lose button.

To Uninstall FEPS in Windows® 95, 98 or NT:

1. Click the Windows Start button,
2. Select the **S**ettings menu item,
3. Click the **C**ontrol Panel menu item,
4. Double click the Add/Remove Programs icon,
5. Click on Fuel Emission Production Simulator,
6. Click the **A**dd/**R**emove button,
7. Click the **R**emove Fuel Emission Production Simulator radio button,
8. Click the **F**inish button, and
9. After the uninstallation is complete, click the **C**lose button.

To Uninstall FEPS in Windows® XP:

1. Click the Windows Start button,

Windows XP includes a revised version of the Control Panel. To maintain similarity between versions, it is recommended that you access the control panel through the "classic view."

2. Click the **S**witch to Classic View hypertext link on the left of the screen to view the control panel dialog in classic view.
3. Double click the Add/Remove Programs icon,

FEPS User Guide Technical Appendix C documentation of equations

Appendix C: Model Equations

This appendix provides equations used by the FEPS model. It presents equations used to calculate both intermediate and final results.

Introduction

The Emissions Production Model (EPM) was designed over a decade ago to help managers estimate and mitigate the rates of heat, particles, and carbon gas emissions from controlled burns of harvest-slash residue in Northwest forests.

In updating EPM, a significant number of improvements were made, to the usability, applicability, and accuracy of the model. The calculation approach was totally redesigned, and the model has been renamed FEPS.

FEPS incorporates a flexible user interface that allows the user to customize a burning Event. Furthermore, many intermediate results are exposed to the user. The user may accept these results, or insert values of their own.

The user enters data using five tabbed data entry screens, starting with (1) basic Event information and (2) fuel loadings. When (3) fuel moisture information is defined, FEPS calculates (4) total consumption. The results of the total consumption calculation may be accepted by the user or replaced with specific values. Next, the user enters (5) hourly fire size and meteorological information. Finally all data and intermediate results are combined to calculate hourly consumption, emissions and heat release information, which are presented in charts and tabular reports.

This technical section presents equations in the order they are applied. Calculations that are used in the data entry tabs are described first, followed by intermediate calculations, and lastly the overall consumption, emission and heat release calculations.

The documentation for each equation includes a table that describes each variable of the equation, its units, and a code that describes where the variable can be viewed or modified in FEPS, and whether it is a result of a previously calculated equation. The location code for the result of the equation is also given, and represents where the result can be viewed. The codes are defined in the following table.

Location Codes

Code	Description
FL	- Fuel Loading Tab
FM	- Fuel Moisture Tab
	a Values are entered on the Fuel Moisture tab as part of the fuel moisture profiles.
C	- Consumption Tab
HI	- Hourly Input Data Tab
	a Values are entered on the Hourly Data portion of the Hourly Input Data Tab
	b Values are entered on the Daily Temperature and Humidity Extremes portion of the Hourly Input Data Tab
	c Value is set indirectly by choosing a Pasquill Stability Class
Admin	- Values are set by FEPS and may only be changed by manually resetting the values in the FEPS.mdb database
	a table tblConstants
	b table tblEmpiricalEF

CBE	- Cannot be entered or edited
	a Values may not be entered, but the category and resulting values are selected by assigning a fuel moisture profile to each fuel profile.
	b Values are populated by the system.
Eq. #	- The parameter is a result of the specified equation.
ND	- This intermediate result is not displayed by FEPS
Report	- This result is displayed on a FEPS report.

FEPS Algorithms

FEPS allows the user to define up to five fuel profiles for each Event. By allowing multiple fuel profiles, FEPS can simulate burn Events over varying vegetation types. Each profile is defined independently. Intermediate calculations are carried out separately for each profile. On the Hourly Data Input tab, the user specifies the percentage of each fuel profile involved during each hour. For the final Event results, individual fuel profile results are combined by weighted average.

Calculations Made for Fuel Moisture tab

Equations (1) through (3) are used to calculate the data displayed on the bottom table of the Fuel Moisture tab, based on data on the Fuel Loading tab and in the top table of the Fuel Moisture tab.

Percent of Loading Consumed

FEPS allows the user to specify up to six moisture profiles. The moisture profiles range from very dry to very wet. Each moisture profile defines fuel moisture percentages by fuel size class. Each fuel profile in an Event is assigned one moisture profile. FEPS then calculates the percent of loading consumed in each fuel layer.

Percent Canopy, Shrub, Grass, or Duff Loading Consumed

The fraction of canopy, shrub, grass or duff loading consumed is calculated using equation (1). It is used in equations (4) and (16).

$$LC_L = 100 * (1 - e^{-mcf})^{mcf} \quad (1)$$

Where:

Variable	Definition	Units	Location
LC_L	The percent of loading consumed, for layer L.	%	FM
mcf	Moisture category factor.	--	CBE ^a

Moisture category factors are:

Moisture	Canopy	Shrub	Grass	Duff
Very Dry	0.33	0.25	0.125	0.33
Dry	0.5	0.33	0.25	0.5
Moderate	1	0.5	1	1
Moist	2	1	2	2
Wet	4	2	4	4
Very Wet	5	4	5	5

Two special notes apply to canopy consumption: (1) Canopy is consumed only if the Fire type set in the Event Information tab is Wildland Fire – Severe; and (2) if the fraction Woody fuel loading consumed is equal to zero then the fraction Canopy loading consumed is assumed to equal zero.



Welcome to the Fire Emission Production Simulator

Version 1.0 Beta Build:6



OK

FEPS Opening Screen



Select the basis for your Event from the list below.

- User Event
- User Default
- System Default

Event Name	Fire Type	Event Type	
EquationTest1	Broadcast Natural Fuel	Emission Inventory	Valid ▲
nnOAB	Broadcast Natural Fuel	Emission Inventory	Valid
sams range fire example	Broadcast Natural Fuel	Emission Inventory	Valid
SamTest	Broadcast Natural Fuel	Emission Inventory	Valid
Test2	Broadcast Slash	Emission Inventory	Valid ▼

- Load
- Create
- Delete
- Export
- Reports
- Cancel

Mar 26 2004

man 24 B I U A A

FEPS Run Mode selection

Fire Emission Production Simulator

File Actions Help



Select the basis for your Event from the list below.

- User Event
- User Default
- System Default

Event Name	Fire Type	Event Type	Valid	
EquationTest1	Broadcast Natural Fuel	Emission Inventory	Valid	▲
nnOAB	Broadcast Natural Fuel	Emission Inventory	Valid	
sams range fire example	Broadcast Natural Fuel	Emission Inventory	Valid	
SamTest	Broadcast Natural Fuel	Emission Inventory	Valid	
Test2	Broadcast Slash	Emission Inventory	Valid	▼

FEPS Event Description, Purpose

Fire Emission Production Simulator - SamTest

File Actions Help

Fuel Profiles Moisture Profiles Consumption Prof. Hourly Input Data

Event Information (required)

Event Name	<input type="text" value="SamTest"/> (25 char)	Location	Degree	Minutes	Seconds
Start Date	<input type="text" value="7/21/2003"/>	Longitude	<input type="text" value="40"/>	<input type="text" value="7"/>	<input type="text" value="2"/>
End Date	<input type="text" value="7/23/2003"/>	Latitude	<input type="text" value="40"/>	<input type="text" value="4"/>	<input type="text" value="2"/>

Additional Information (required)

Fire Shape	<input type="text" value="Linear progression"/>	Fire Type	<input type="text" value="Broadcast Natural Fuel"/>
Event Type	<input type="text" value="Emission Inventory"/>		

Descriptive Information

Permit or Fire #	<input type="text" value=""/> (25 char)
Description	<input type="text" value=""/> (50 char)
Comment	<input type="text" value=""/>

Save Cancel

FEPS Fuelbed(s) Description

Fuel Profile		Fuel Loading Profiles (tons per acre)										
Name	Natural Fuels					Slash Fuels		Duff	NFDR	Reference	Clear	
	Canopy	Shrub	Grass	Woody	Litter	Bdcast	Piles					
1	Med Forest	0.0	5.0	1.0	10.0	5.0	0.0	0.0	25.0		X	
2	So. Rough	0	3	0.75	1	2	0	0	7.7	D	NFDR:D	X
3	Unused	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		X	
4	Unused	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		X	
5	Unused	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		X	

To view suggested values for different levels of loading (none, light, medium, and heavy), double click on the profile and column of interest (or select a profile and column and press F7). A worksheet with suggested loading values will appear. You can select a loading value from the worksheet to populate the profile and column selected above.

Values from an NFDR profile are displayed in blue.
 Values entered by the user or chosen from the worksheet are displayed in red. Choose an NFDR profile to reset these values.

Save Cancel

FEPS Fuel Moisture and Consumption %

Fire Emission Production Simulator - SamTest



File Actions Help



Event Information

Fuel Profiles

Moisture Profiles

Consumption Prof.

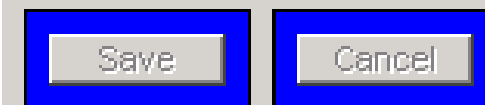
Hourly Input Data

Fuel Moisture Profiles (Percent Moisture)

Fuel Moisture Profile	1-hr	10-hr	100-hr	1000-hr	Live	Duff
Very Dry	4	6	8	8	60	25
Dry	7	9	11	12	80	40
Moderate	8	12	12	18	100	70
Moist	10	12	12	22	130	150
Wet	18	20	22	31	180	250
Very Wet	28	30	32	75	300	400

Values originally from the system default are displayed in blue.

Default values overwritten by user are displayed in red.



Changes in fuel moisture profiles (upper table) will not affect percent consumed (lower table) until saved.

Percent of Fuel Loading Consumed

Fuel Profile	Fuel Moisture Profile	Canopy	Shrub	Grass	Woody	Litter	Bdcast	Piles	Duff
Med Forest	Dry	80	86	89	88	100	88	95	80
So. Rough	Very Dry	35	89	94	100	100	100	99	86
Unused	Very Dry	86	89	94	100	100	100	99	86
Unused	Very Dry	86	89	94	100	100	100	99	86
Unused	Very Dry	86	89	94	100	100	100	99	86

SamTest

User Event

Broadcast Natural Fuel

Mar 26 2004

Event: Valid

Tab: Valid

FEPS Fuel Consumed Calculation

Fuel Consumption (tons per acre)								Total Cons. (T/A)		
Fuel Profile	Can	Shrub	Grass	Wdly	Litter	Bdcast	Pile	A/G	Duff	Total
Med Forest	0.0	4.3	0.9	8.8	5.0	0.0	0.0	19.0	20.0	39.0
So. Rough	0.0	2.7	0.7	1.0	2.0	0.0	0.0	6.4	10	13.0
Unused	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unused	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unused	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Values that are calculated by FEPS from fuel and moisture data are displayed in blue.

Calculated values overwritten by user are displayed in red.

To reset a value of a red cell to the value calculated by FEPS, select the cell and press F5.

Fuel Profile	Flaming					Short Term Smoldering < 2 hrs					Long Term Smoldering				
	Inv %	Cons. T/A	Dep inch	ResT hrs	Next day	Inv %	Cons. T/A	Dep inch	ResT hrs	Next day	Inv %	Cons. T/A	Dep inch	ResT hrs	Next day
Med Forest	85	13.5	0.8	0.16	0.00	85	13.5	1.1	0.38	0.07	63	12.0	2.0	16.14	0.94
So. Rough	47	4.5	2	.6	0.00	47	4.5	0.4	0.22	0.01	63	4.0	2.0	8.95	0.89
Unused	0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.00	0.00	63	0.0	1.0	0.00	0.00
Unused	0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.00	0.00	63	0.0	0.8	0.00	0.00
Unused	0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.00	0.00	63	0.0	1.2	0.00	0.00

Hover over the column headings for an explanation of abbreviations.

FEPS Event Timing and Fuel Involved

Date and Time			% of area burning for each fuel profile					Meteorology		
Date	Time	Area (acres)	Med Forest	So. Rough	Unused	Unused	Unused	Trans W/ind	Wind @ Flame	Pasquill Stability
6/1/2000	07	0	100	0	0	0	0	15	2	E
6/1/2000	08	0	100	0	0	0	0	15	5	D
6/1/2000	09	10	100	0	0	0	0	15	5	D
6/1/2000	10	100	100	0	0	0	0	15	5	D
6/1/2000	11	200	100	0	0	0	0	15	5	C
6/1/2000	12	300	100	0	0	0	0	15	5	C
6/1/2000	13	400	50	50	0	0	0	15	5	C
6/1/2000	14	500	50	50	0	0	0	15	5	D
6/1/2000	15	500	100	0	0	0	0	15	5	D

User-specified burn areas are displayed in red. To delete a user-specified burn area and have the area for that time-step to be interpolated by FEPS, select the cell and press F5.

Press F6 to copy percentage area or meteorology information from the selected cell to the bottom of the column.

Hover over or click on column headings for an explanation of abbreviations and usage.

- Hourly Data
- Daily Temperature and Humidity Extremes

Save

Cancel

FEPS Diurnal Weather

Fire Emission Production Simulator - SamTest

File Actions Help



Event Information

Fuel Profiles

Moisture Profiles

Consumption Prof.

Hourly Input Data

Daily Extremes

Date	Extremes	Hour	Temp F	RH%
6/1/2000	Min Temp/Max RH	05	59	80
6/1/2000	Max Temp/Min RH	17	86	35
6/2/2000	Min Temp/Max RH	05	59	80
6/2/2000	Max Temp/Min RH	17	86	35
6/3/2000	Min Temp/Max RH	05	59	80
6/3/2000	Max Temp/Min RH	17	86	35

Hourly Data

Daily Temperature and Humidity Extremes

Save

Cancel

SamTest

User Event

Broadcast Natural Fuel

Mar 26 2004

Event: Valid

Tab: Valid

FEPS Tabular Report

Fire Emission Production Simulator - SamTest



File Actions Help



Elapsed Time Hour	Date	Hour	Temp F	RH	Fire Size acres	Fire Rate acres/hr	Flaming Cons tph	STS Cons tph	LTS Cons tph	Total Cons tph	CO Emis lb/min	CH4 Emis lb/min	PM2.5 Emis lb/min
0	6/1/2000	0	59	80	0	0.0	0	0	0	0	0	0	0
1	6/1/2000	1	59	80	0	0.0	0	0	0	0	0	0	0
2	6/1/2000	2	59	80	0	0.0	0	0	0	0	0	0	0
3	6/1/2000	3	59	80	0	0.0	0	0	0	0	0	0	0
4	6/1/2000	4	59	80	0	0.0	0	0	0	0	0	0	0
5	6/1/2000	5	59	80	0	0.0	0	0	0	0	0	0	0
6	6/1/2000	6	63	74	0	0.0	0	0	0	0	0	0	0
7	6/1/2000	7	66	68	0	0.0	0	0	0	0	0	0	0
8	6/1/2000	8	69	63	0	0.0	0	0	0	0	0	0	0
9	6/1/2000	9	72	58	10	10.0	115	59	5	178	267	15	31
10	6/1/2000	10	75	53	100	90.0	1,031	658	45	1,734	2,727	149	310
11	6/1/2000	11	78	48	200	100.0	1,147	901	88	2,136	3,602	194	398
12	6/1/2000	12	80	44	300	100.0	1,147	1,039	128	2,315	4,104	220	445
13	6/1/2000	13	82	41	400	100.0	781	711	161	1,652	3,083	163	328

Select the report:

Consumption / Emission Results - Report

Select the units:

- English
- Metric (SI)

Print Preview

Export Report

Modify Data

SamTest

User Event

Broadcast Natural Fuel

Mar 26 2004

FEPS Consumption Graphic

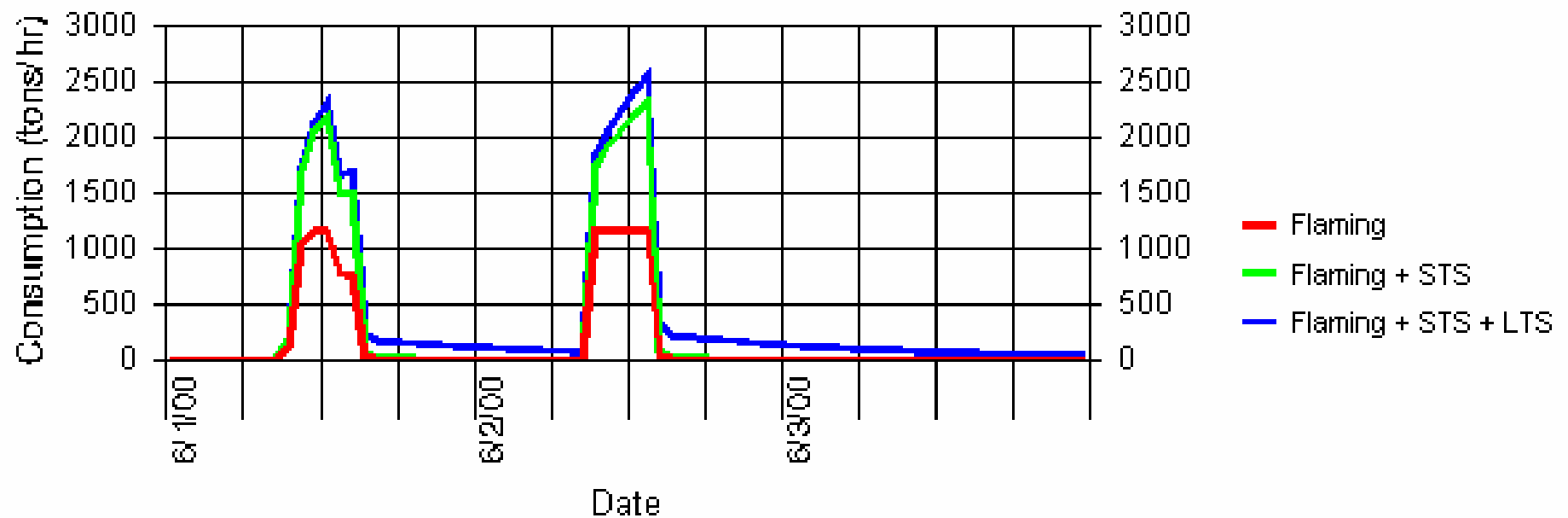
Fire Emission Production Simulator - SamTest



File Actions Help



Consumption by Combustion Stage



Select the report:

Consumption by Combustion Stage - Chart

Select the units:

- English
 Metric (SI)

Print Chart

Export Chart

Modify Data

FEPS Source Strength and Convective Lift

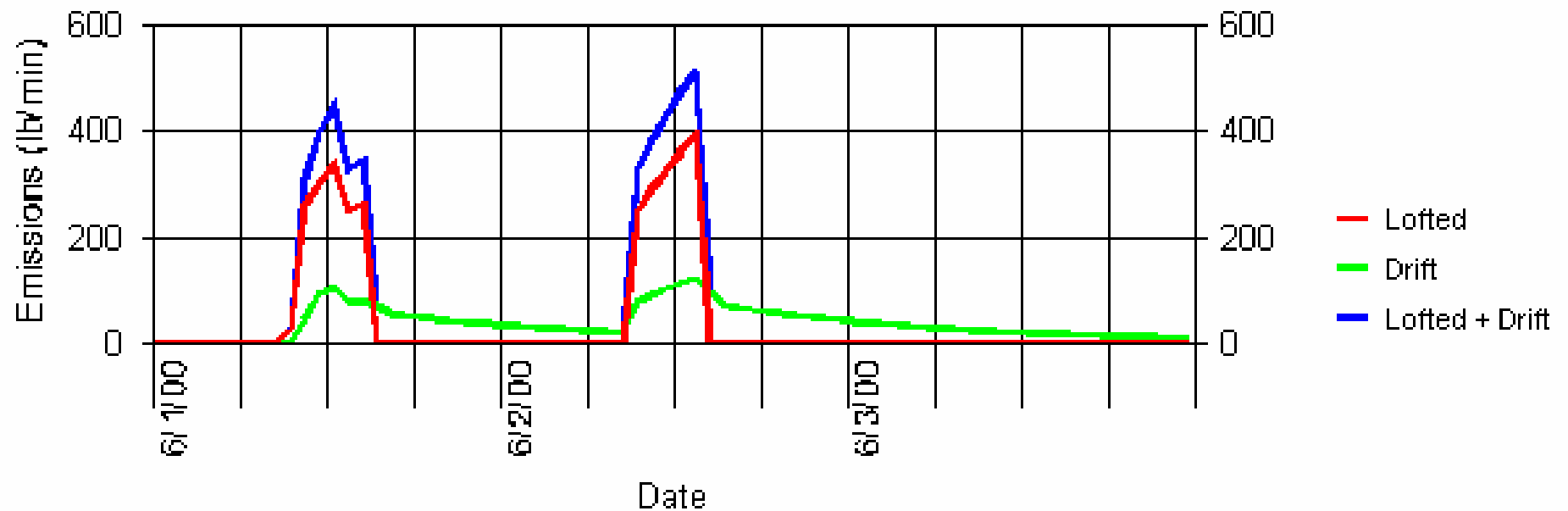
Fire Emission Production Simulator - SamTest



File Actions Help



PM2.5 Emissions by Combustion Stage



Select the report:

PM 2.5 Emissions by Combustion Stage - Chart

Select the units:

- English
- Metric (SI)

Print Chart

Export Chart

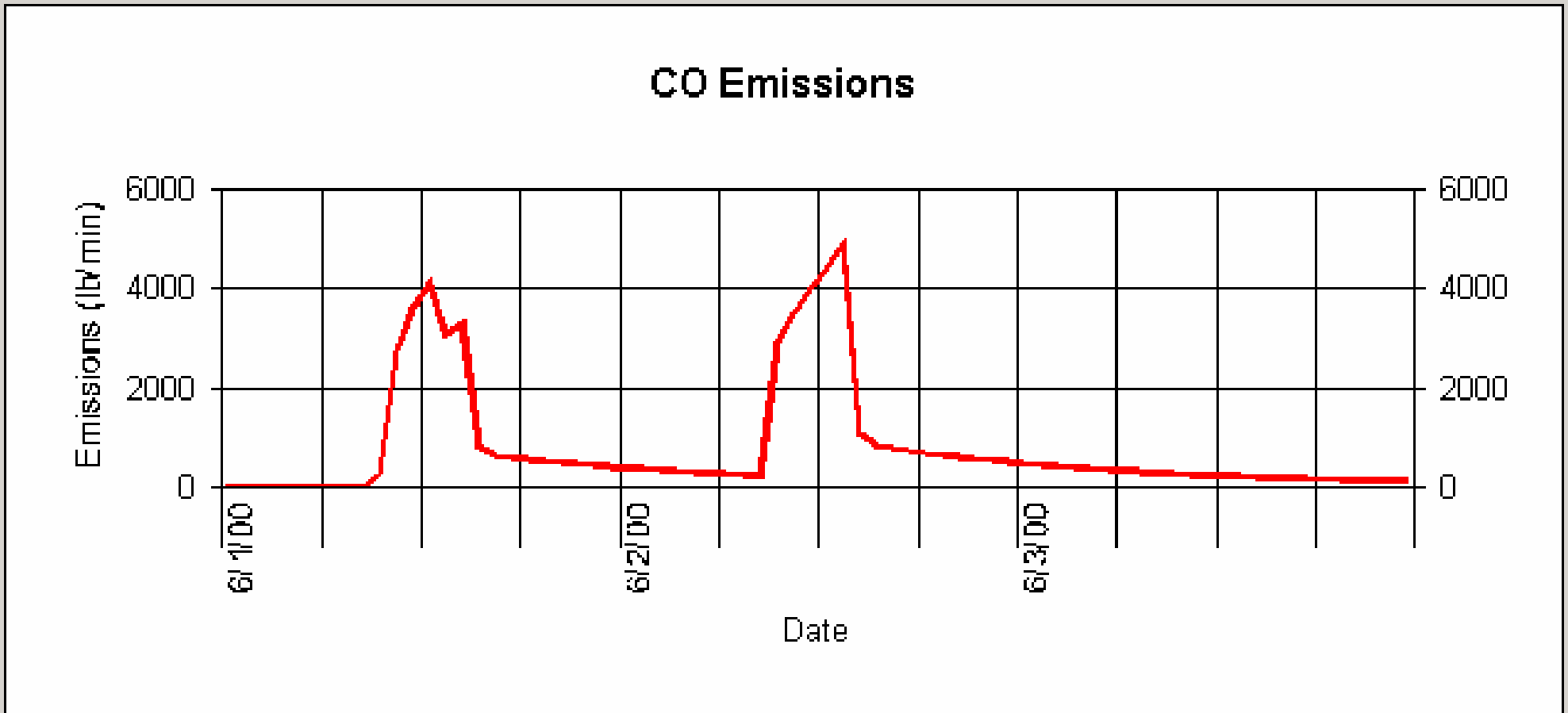
Modify Data

FEPS CO Source Strength

Fire Emission Production Simulator - SamTest



File Actions Help



Select the report:

CO Emissions - Chart

Select the units:

- English
- Metric (SI)

Print Chart

Export Chart

Modify Data

SamTest

User Event

Broadcast Natural Fuel

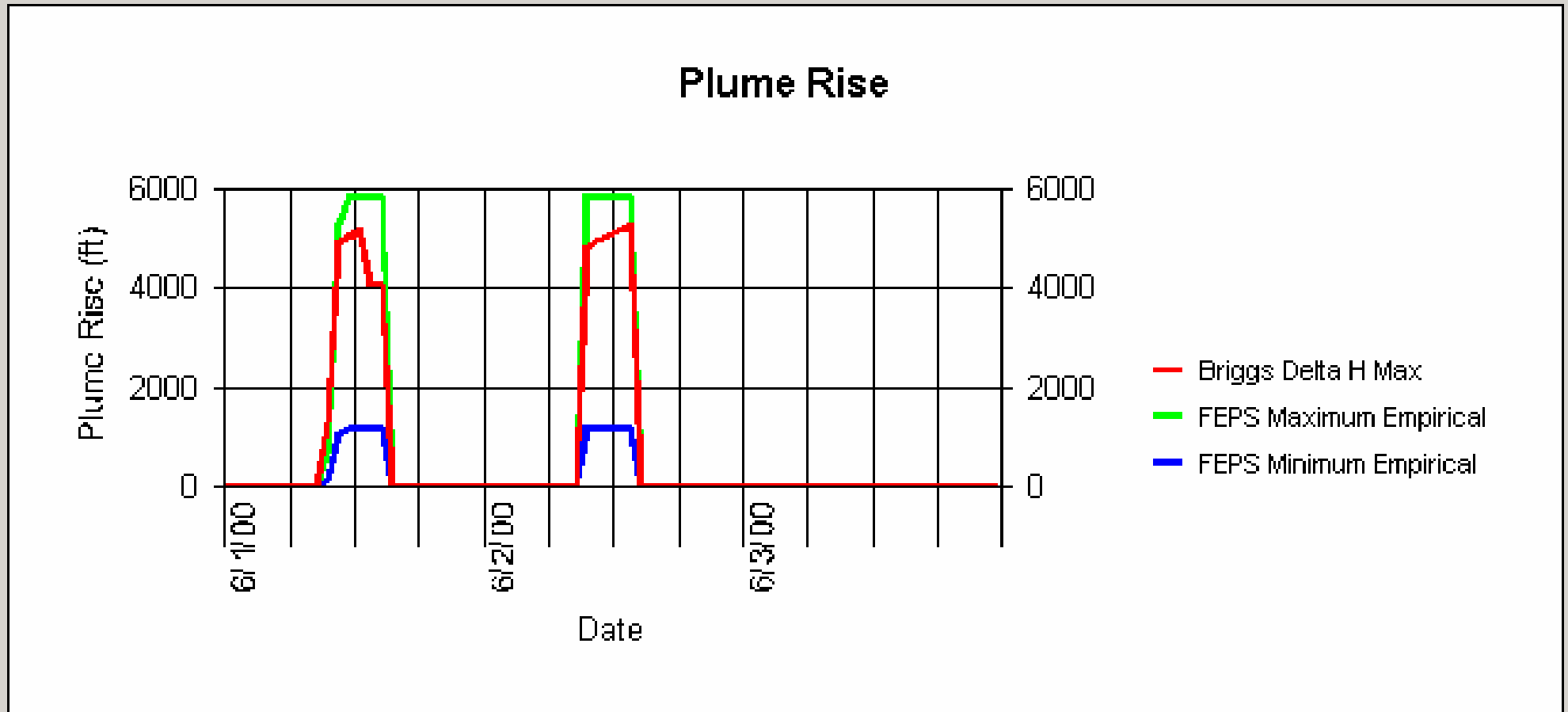
Mar 26 2004

FEPS Plume Rise

Fire Emission Production Simulator - SamTest



File Actions Help



Select the report:

Plume Rise - Chart

Select the units:

- English
- Metric (SI)

Print Chart

Export Chart

Modify Data

Emission Production Model vs. Fire Emission Production Simulator

- EPM

- FORTRAN
- 1 fuelbed
- <10 burn periods, 1 day
- Flame, Smolder stage
- Linked with CONSUME

- FEPS

- Visual Basic (C++)
- 5 fuelbeds
- n burn periods, days
- + Residual Smoldering
- Consumption
 - Internal calculation
 - Input file
 - User input
- Plume rise
- Defaults

Fire Emission Production Simulator, FEPS

What's left to be done?

- 1) maintenance & feedback**
- 2) updates to lookup tables**
- 3) revision in January**
- 4) Batch mode**
- 5) program in C++**
- 6) better linkages**

