

## CHAPTER 9

# WORKING WITH NFDRS

This chapter provides the information needed to display National Fire Danger Rating System (NFDRS) reports.

The menu options and functions available will depend on individual user access levels and not all tasks described in this chapter are available to everyone. For more information about access levels see Chapter 6, “Working with Station Information.”

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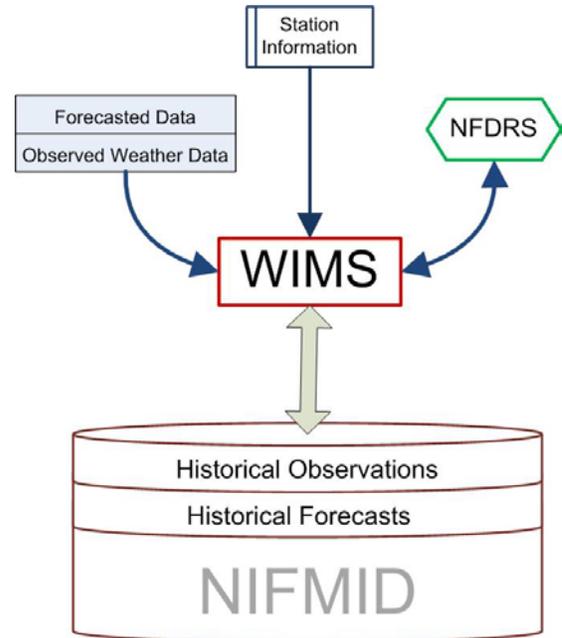
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## NATIONAL FIRE DANGER RATING SYSTEM

The National Fire Danger Rating System provides outputs on current and predicted fire danger conditions. These outputs are calculated using actual or forecasted weather observations and NFDRS mathematical models. NFDRS outputs can be based on a regular daily observation, forecasted weather data or special observations throughout the day.

WIMS houses the NFDRS processor that produces the components, indices and forecasted weather. The WIMS database stores historical forecasts for one year.

For a detailed description about NFDRS components and indices, see Appendix E, "NFDRS technical reference".



## NELSON DEAD FUEL MOISTURE IN WIMS VERSION 2.0

New WIMS RAWS Gateway Routines:

- Compute 1-hr and 10-hr dead fuel moistures using the Nelson Dead Fuel Moisture model from hourly weather observation using temperature, relative humidity, precipitation, and solar radiation.
  - Compute 100-hr, 1000-hr, live fuel moistures, and KBDI, **once daily at RS time**, using standard NFDR routines.
  - A new NFDR record type "N" allows for comparison between the Nelson derived and traditional "O" NFDR records. "N" records are created at the Stations RS time and at 6 hour intervals throughout the day and night. (i.e. 1300, 1900, 0100, 0700). Station managers will have more control of the frequency and times in the future.
- ✓ If the herbaceous fuel is pre-green, frozen, or cured, the herbaceous moisture is set to the current hour's 1-hr fuel moisture.

***"N" type records are wholly unedited by WIMS Data Managers; they do not rely on human judgment of State of Weather and Wet Flag. They rely on quality data from RAWs sensors.***

## DNFDR – DISPLAY NATIONAL FIRE DANGER RATING

You can obtain NFDRS outputs in a variety of formats and content.

DIDX – Display Index displays wind speed and all NFDRS, moistures and indexes.

DIDM – Display Moisture displays the calculated NFDRS fuel moisture variables.

DMGR – Display Manager displays several fire weather variables and many NFDRS indexes.

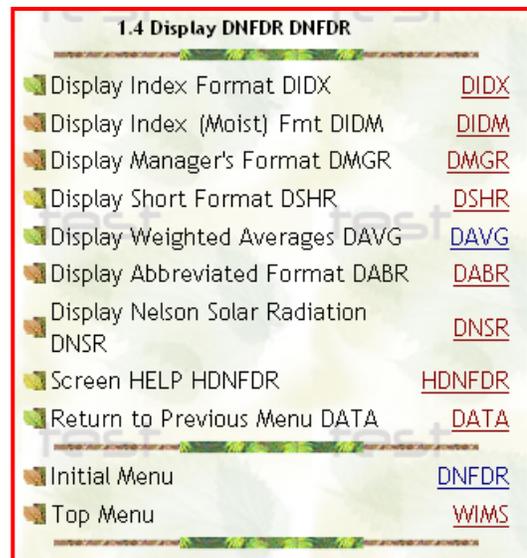
DSHR – Display Short displays precipitation, Staffing Level, and Adjective Fire Danger Rating.

DABR – Display Abbreviated displays 1000-hr fuel moisture and all NFDRS and indexes.

DAVG – Display Averaged displays station-weighted NFDRS outputs for a SIG.

DNSR – Display Nelson Solar Radiation is an analysis module to compare fuel moistures and NFDR indexes based on Nelson Dead Fuel Moisture model for 1-hour and 10-hour timelag fuels versus State of Weather based computation of 1-hour and 10-hour fuels.

The Display National Fire Danger Rating DNFDR menu is accessed from the Data Entry and Manipulation DATA menu. Select the DNFDR hyperlink to open the DNFDR menu.



Or select link from Navigation Tree



Or enter the FastPath DNFDR and select Go.



- **Remember, you can type the FASTPATH commands:**
  - DIDX, to access the Display Index Format
  - DIDM, to access the Display Moisture Format
  - DMGR, to access the Display Manager Format
  - DSHR, to access the Display Short Format
  - DAVG, to access the Display Weighted Averages form
  - DABR, to access the Display Abbreviated Format
  - DNSR, to access the Nelson Solar Radiation Analysis Module

## NFDR QUERY FIELD DESCRIPTIONS

Each Display NFDRS form has the following QUERY FIELDS.

| Field                             | Description and action to be taken   |
|-----------------------------------|--|
| Station ID: (Station number)      | Enter the number of the NFDRS weather station to display.  |
| SIG: Special Interest Group       | Enter the name of a SIG to be displayed.   |
| Type:<br>(NFDRS observation type) | <p>Define the type of NFDRS observation:</p> <p>O/R - Published (O) or Unpublished (R)</p> <ul style="list-style-type: none"> <li>➤ There will be a single <b>R</b> or <b>O</b> type record per fuel model/day, but not both types. A published R record becomes an O type. The hour of the O/R record is the regular_scheduled (RS) time for the station.</li> </ul> <p>N - Nelson Dead Fuel Model based – no human interaction</p> <ul style="list-style-type: none"> <li>➤ There can be multiple N type records at different hours of the day.</li> </ul> <p>O/R+N – Both the O/R and Ns</p> <p>S – Special NFDRS at non RS time(s)</p> <p>F – Next-Day Forecasted for RS time only</p> |
| Date:<br>(NFDRS observation date) | <p>Enter the NFDRS observation date, in the format: DD-MMM-YY</p> <p>For other date range formats see “Searching by date” in Chapter 5, “Beyond the basics.”</p>   |

| Field | Description and action to be taken                   |
|-------|--|
| Time  | Specific hour of an observation to be displayed – HH |

- Each form window contains the standard four function buttons (Find, Reset, Print and Export) as described in Chapter 4, “WIMS Basics.”
- Details of the columns displayed in each of the forms are shown in Appendix A of this chapter.
- For more information about NFDRS components, see Appendix E, “NFDRS technical reference.”

## DIDX – DISPLAY INDEX FORMAT

Display Index displays **all** NFDRS fuel moistures and indexes for **all** fuel models for a weather station. It is probably the most often used display format. Date ranges are allowed and results are sorted by:

- Station, ascending
- Date, descending
- Time, ascending
- Type, ascending
  - If type “N” is included all records for the day will be listed
- MSGC, ascending priority

DIDX query fields and columns

 Display Index Format DIDX  [Back to Menu](#)

Station ID:  or SIG  Type:  Date:  Time:

| Station ID | Obs Dt | Tm | O T | MSGC | WS | WDY | HRB | 1H | 10 | HU | TH | XH | IC | SC | EC | BI | SL | R | KBDI | FL | LR | LO | HR | HO |
|------------|--------|----|-----|------|----|-----|-----|----|----|----|----|----|----|----|----|----|----|---|------|----|----|----|----|----|
|------------|--------|----|-----|------|----|-----|-----|----|----|----|----|----|----|----|----|----|----|---|------|----|----|----|----|----|

## DIDM – DISPLAY MOISTURE FORMAT

Display Moisture displays all the fuel moisture classes and several intermediate values used in computing live fuel moistures, including X1000 (XH) and the Wet Flag (WF) for the day. This format is very useful when troubleshooting live fuel moisture values and is best used on a single station over the course of several weeks, months, or a fire season. You may display just the primary model (Pri=1) or all fuel models for a station with a radio button selection next to the **Export** button. Primary model only is the default.

The Moisture Index form makes it easy track:

- Daily progression of fuel moistures and moisture related values, and
- Stages of the live fuel moisture model.

Date ranges are allowed and results are sorted by:

- Station, ascending
- Date, descending
- Time, ascending
- Type, ascending
  - If type “N” is included all records for the day will be listed
- MSGC, ascending priority

DIDM query fields and columns

The screenshot shows the 'Display NFDRS Moisture (Index) DIDM' interface. It includes search fields for Station ID, SIG, Type, and Date, along with buttons for Find, Reset, Print, and Export. There are radio buttons for '1st' and 'All Fuel Model(s)'. Below the search area is a table header with the following columns: Station ID, Obs Date, O T, MSGC, WDY FM, HRB FM, 1H FM, 10 FM, HU FM, TH FM, XT FM, KBDI, and W F.

If a DIDM is generated for a station with at least one 1988 fuel model, columns are inserted to show parameters that control the state of the live fuel moisture model for 1988 fuel models:

- Season Code (SN CD)
- Grass Greenness Factor (Grn GR)
- Shrub Greenness Factors (Grn SH).

| Station ID | Obs Date | O T | MSGC | WDY FM | HRB FM | 1H FM | 10 FM | HU FM | TH FM | XT FM | SN CD | Grn GR | Grn SH | KBDI | W F |
|------------|----------|-----|------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|------|-----|
|------------|----------|-----|------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|------|-----|

## DMGR – DISPLAY MANAGER'S FORMAT

Display Manager's displays six fire weather variables, all dead fuel moisture values and a partial list of NFDRS information. Date ranges are allowed and results are sorted by:

- Station, ascending
- Date, descending
- Time, ascending
- Type, ascending
  - If type "N" is included all records for the day will be listed
- MSGC, ascending priority

DMGR query fields and columns

**Display Manager's Format DMGR** [Back to Menu](#)

Station ID:  or SIG  Type:  Date:

| Station ID | Obs Date | Ob TM | O T | MSGC | DBT | DPT | WS | RH | PPAMT | PD | KBDI | 1H | 10 | HU | TH | IC | SC | EC | BI | FL | SL | R |
|------------|----------|-------|-----|------|-----|-----|----|----|-------|----|------|----|----|----|----|----|----|----|----|----|----|---|
|------------|----------|-------|-----|------|-----|-----|----|----|-------|----|------|----|----|----|----|----|----|----|----|----|----|---|

## DSHR – DISPLAY SHORT FORMAT

Display Short displays precipitation amount and duration along with the commonly used NFDRS outputs of Staffing Level and Adjective Fire Danger Rating. Date ranges are allowed and results are sorted by:

- Station, ascending
- Date, descending
- Time, ascending
- Type, ascending
  - If type "N" is included all records for the day will be listed
- MSGC, ascending (model priority)

DSHR query fields and columns

**Display Short Format DSHR** [Back to Menu](#)

Station ID:  or SIG  Type:  Date:

| Station ID | Obs Date | Ob TM | O T | MSGC | PPAMT | PD | SL | R |
|------------|----------|-------|-----|------|-------|----|----|---|
|------------|----------|-------|-----|------|-------|----|----|---|

## DAVG – DISPLAY AVERAGE FORMAT

Display Average displays NFDRS indexes from individual stations within a SIG averaged into a single value, based on weights assigned to each station in the SIG.

- Outputs are based on all reporting stations of the SIG.
- User assigned station weights control the averaging process. Station weights are set or modified only in EAVG (Edit Weighted Averages) by station owners or those with station edit permissions.
- The DAVG form has a **SIG Weights** button, that when clicked will display the assigned weights of each station in a separate window.
- DAVG informs you of missing station observations within a SIG and how the weights have been redistributed.
- If stations within the SIG have different fuel models, Burning Index (BI) and Energy Release Components (ERC) are not valid outputs are not displayed. All other values, including Spread Component (SC) are displayed.

*A station's weight is a percentage between 01 and 99 and represents the influence it has in the calculation. The assigned weights are a management based decision influenced by such factors as the percent of the total area represented by the station, resource values, historic fire occurrence, and public use patterns. The total component weight for individual stations within a SIG must equal 100 percent.*

*See "Assign NFDR Weighted Averages (EAVG)" in Chapter 6, "Working with Station Information."*

*For more information on the weighted average calculations see Appendix E, "NFDRS technical reference."*

Date ranges are allowed and results are sorted by:

- Station, ascending
- Date, descending
- Time, ascending
- Type, ascending
  - If type "N" is included, **only the RS hour observation** is used in DAVG.

NFDRS Weighted Averages DAVG query fields and columns

The screenshot shows the 'Display NFDRS Weighted Averages DAVG' interface. At the top right is a 'Back to Menu' link. Below the title are search fields for 'SIG', 'Type', 'Date', and 'Time', followed by 'Find', 'Reset', 'Print', 'Export', and 'SIG Weights' buttons. At the bottom, a table lists the columns available for the query:

| Date | WS | WDY | HRB | 1H | 10 | HU | TH | IC | SC | ERC | BI | FL | SL | R | KBDI | Rgn | PAL | PV | IFPL |
|------|----|-----|-----|----|----|----|----|----|----|-----|----|----|----|---|------|-----|-----|----|------|
|------|----|-----|-----|----|----|----|----|----|----|-----|----|----|----|---|------|-----|-----|----|------|

### FOREST SERVICE REGION SPECIFIC AVERAGED OUTPUTS

US Forest Service Region's 5 and 6 (from Station Information) have additional Region specific outputs displayed **only in DAVG**.

#### REGION 5 – PROJECT ACTIVITY LEVEL (PAL)

The Region 5 PAL output is based on a SIG's using fuel model G. Once an output has been generated for a SIG in Region 5 the PAL Value (A,B,C,D,Ev or E) becomes a hyperlink within the form.

**Display NFDRS Weighted Averages DAVG** [Back to Menu](#)

SIG:  Type:  Date:  Time:

| Date      | Type | WS | WDY | HRB | TH | 10 | HU | TH | IC | SC | ERC | BI | FL | SL | R | KBDI | Rgn | PAL                | PV | IFPL |
|-----------|------|----|-----|-----|----|----|----|----|----|----|-----|----|----|----|---|------|-----|--------------------|----|------|
| 15-AUG-11 | O    | 8  | 68  | 3   | 3  | 4  | 7  | 9  | 55 | 14 | 74  | 72 | 51 | 4- | V | 519  | 5   | <a href="#">Ev</a> |    |      |

When selected a “Display Region 5 PAL” form is generated showing the outputs location within the matrix with a flashing box as well as the values for IC and ERC that generated the PAL.

**Display Region 5 PAL**

SIG: CA\_DAVG Type: O/R Date: 15-AUG-11 Time: \_\_\_\_\_

IC: 55 ERC: 74 PAL: Ev

| ERC/IC | 0-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 | 81-90 | 91-100 |
|--------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0-10   | A    | A     | A     | B     | C     | C     | C     | C     | C     | C      |
| 11-20  | A    | A     | B     | B     | C     | C     | C     | C     | C     | C      |
| 21-30  | A    | B     | B     | B     | C     | C     | C     | C     | C     | C      |
| 31-40  | A    | B     | C     | C     | C     | D     | D     | D     | D     | D      |
| 41-50  | B    | B     | C     | C     | D     | D     | D     | D     | D     | D      |
| 51-60  | B    | B     | C     | C     | D     | Ev    | Ev    | Ev    | E     | E      |
| 61-70  | B    | B     | C     | C     | D     | Ev    | Ev    | Ev    | E     | E      |
| 71-80  | B    | B     | C     | C     | D     | Ev    | Ev    | Ev    | E     | E      |
| 81-90  | C    | C     | C     | D     | D     | Ev    | Ev    | Ev    | E     | E      |
| 91-100 | C    | C     | C     | D     | D     | E     | E     | E     | E     | E      |
| >100   | C    | C     | C     | D     | D     | E     | E     | E     | E     | E      |

The Display Region 5 PAL window also contains the **PAL Value Chart** button that generates a PAL chart.

### REGION 6 – INDUSTRIAL FORESTS PRECAUTION LEVEL (IFPL)

Once an output has been generated for a SIG in Region 6 the 6 in the RGN column becomes a hyperlink within the form.

**Display NFDRS Weighted Averages DAVG** [Back to Menu](#)

SIG:  Type:  Date:  Time:

| Date      | Type | WS | WDY | HRB | 1H | 10 | HU | TH | IC | SC | ERC | BI | FL | SL | R | KBDI | Rgn               | PAL | PV   | IFPL |
|-----------|------|----|-----|-----|----|----|----|----|----|----|-----|----|----|----|---|------|-------------------|-----|------|------|
| 15-AUG-11 | O    | 7  | 80  | 72  | 4  | 6  | 9  | 10 | 31 | 8  | 13  | 26 | 18 | 3- | W | 238  | <a href="#">6</a> |     | 1.91 | 1    |

When selected, additional IFPL output is generated.

Display Region 6 Information

SIG: DAVG\_R5 Type: O/R Date: 15-AUG-11 Time:

The IFPL calculations displayed below apply to Oregon and Washington users only. IFPL users should refer to the PNWCD Interagency IFPL implementation guidelines for selection of the fuel model and other calculation considerations.

(Region 6 Only Calculation for first models of C, F and G)

Current Region: 6  
 Precaution Values: 1.91  
 Industrial Fire Precaution Level (IFPL): 1

### DABR – DISPLAY ABBREVIATED FORMAT

Display Abbreviated displays an abbreviated version of the Index form. Date ranges are allowed and results are sorted by:

- Station, ascending
- Date, descending
- Time, ascending
- Type, ascending
- MSGC, ascending priority

DABR query fields and columns

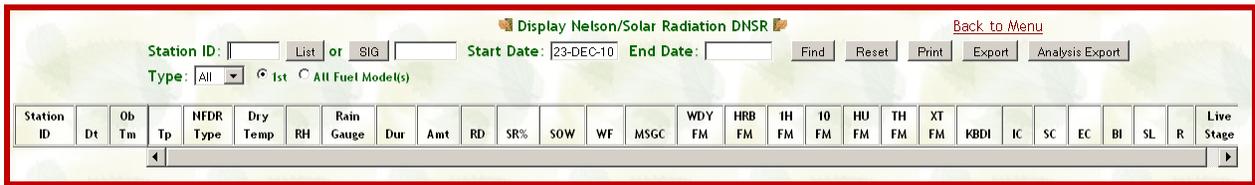
**Display Abbreviated Format DABR** [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:

| Station ID | Obs Date | Ob TM | O T | MSGC | TH | IC | LR | LO | HR | HO | SC | EC | BI | FL | SL | R |
|------------|----------|-------|-----|------|----|----|----|----|----|----|----|----|----|----|----|---|
|------------|----------|-------|-----|------|----|----|----|----|----|----|----|----|----|----|----|---|

## DNSR – DISPLAY NELSON SOLAR RADIATION FORMAT

DNSR is a new analytical module in WIMS Version 2. It facilitates comparing NFDR components based on Nelson Dead Fuel Moisture model for 1-hour and 10-hour timelag fuels versus State of Weather/Wet Flag based computation of 1-hour and 10-hour fuels. It displays weather data, fuel moistures and NFDR indexes for matched station/date/hour/fuel model sets. Within WIMS each station/date/hour/model set is displayed as a separate row. The analysis export button converts the row data to column data and exports it to a Comma Separated Value (csv) file for used in spreadsheets or other analysis programs. As a newer WIMS module it has Calendar Pop Ups for date entry and Slider Bars to view all data on the form.



All O/R & N Records

O/N – Only matched O & N NFDRS records at RS observation hour

N – Type “N” only

The screenshot shows the WIMS software interface. At the top, there are search filters: Station ID: 241595, Start Date: 04-OCT-10, End Date: 04-OCT-10. A red circle highlights the 'Analysis Export' button in the top right corner of the data view. Below the filters is a data table with columns for Station ID, Dt, Ob, NFR, Dry, Rain, Dur, Amt, RD, SR%, SOW, WF, MSGC, FM, HRB, 1H, 10, HU, TH, XT, KBOI, K, SC. The table contains several rows of data, with the second row highlighted in green. Below the table is a file save dialog box titled 'Enter name of file to save to...'. The dialog shows the current directory as 'Wims\_Training' and lists various files. The 'File name' field contains 'DNSRExport.csv', which is also circled in red. The 'Save as type' field is empty.

| Station ID | Dt        | Ob | NFR | Dry | Rain | Dur | Amt  | RD | SR%  | SOW | WF | MSGC | FM | HRB   | 1H  | 10 | HU | TH | XT | KBOI | K   | SC  |   |   |
|------------|-----------|----|-----|-----|------|-----|------|----|------|-----|----|------|----|-------|-----|----|----|----|----|------|-----|-----|---|---|
| 241595     | 04-Oct-10 | 18 | R   | N   | 56   | 85  | 7.82 | 6  | 0.24 | 1   | 0  | 3    | N  | 761P3 | 109 | 71 | 33 | 41 | 18 | 15   | 12  | 128 | 0 | 0 |
| 241595     |           | 12 | O   | O   | 57   | 89  | 7.78 | 4  | 0.2  | 104 | 12 | 5    | N  | 761P3 | 106 | 65 | 35 | 35 | 16 | 14   | 11  | 128 | 0 | 0 |
| 241595     |           |    | O   | N   | 57   | 89  | 7.78 | 4  | 0.2  | 104 | 12 | 5    | Y  | 761P3 | 109 | 71 | 60 | 46 | 18 | 15   | 12  | 128 | 0 | 0 |
| 241595     |           | 6  | R   | N   | 54   | 85  | 7.64 | 1  | 0.06 | 0   | 0  | 4    | N  | 761P3 | 103 | 66 | 25 | 16 | 14 | 11   | 123 | 0   | 0 |   |
| 241595     |           | 0  | R   | N   | 61   | 67  | 7.58 | 0  | 0.0  | 0   | 0  | 3    | N  | 761P3 | 103 | 66 | 14 | 11 | 16 | 14   | 11  | 123 | 2 | 6 |

## DNFDR QUERY EXAMPLES

- Retrieve tomorrow's (forecasted) NFDRS indices for today's observations. Note: Forecast outputs are available only after NWS inputs data into WIMS.
  - In the FastPath field, type the FastPath of the form you want to display and select Go.
  - In the Station ID field, type the number of the station you want to display, or in the SIG field, type the Special Interest Group name.
  - Leave the Type field blank.
  - In the Date field, enter current date and select Find.

The form will display next-day Forecasted (F) and current-day Observed (O) NFDR outputs.

**Display Abbreviated Format DABR** [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:

| Station ID | Obs Date | Ob TM | O T | MSGC  | TH | IC | LR | LO | HR | HO | SC | EC | BI | FL | SL | R |
|------------|----------|-------|-----|-------|----|----|----|----|----|----|----|----|----|----|----|---|
| 40520      | 092908   | 13    | F   | 7G3A3 | 8  | 42 | 0  | 0  | 0  | 0  | 8  | 72 | 57 | 41 | 3  | M |
| 40520      | 092808   | 12    | O   | 7G3A3 | 8  | 48 | 0  | 0  | 0  | 0  | 8  | 77 | 59 | 42 | 3  | H |

- Retrieve all NFDRS outputs (DIDX) for all observation types for a day. This would include the regularly scheduled observations any special observations and the forecast for tomorrows date.
  - In the FastPath field, type the FastPath DIDX and click **Go**.
  - In the Station ID field, type the number of the station you want to display, or in the SIG field, type the Special Interest Group name.
  - Leave the Type field blank.
  - In the Date field, enter current date and select Find.

**Display Index Format DIDX** [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:  Time:

| Station ID | Obs Dt | Tm | O T | MSGC  | WS | WDY | HRB | 1H | 10 | HU | TH | XH | IC  | SC | EC | BI | SL | R | KBDI | FL | LR | LO | HR | HO |
|------------|--------|----|-----|-------|----|-----|-----|----|----|----|----|----|-----|----|----|----|----|---|------|----|----|----|----|----|
| 40611      | 082908 | 13 | F   | 7C1A2 | 17 | 50  | 1   | 1  | 2  | 4  | 5  | 5  | 100 | 47 | 24 | 77 | 5  | E | 780  | 55 | 0  | 0  | 0  | 0  |
| 40611      | 082808 | 12 | O   | 7C1A2 | 20 | 60  | 1   | 1  | 2  | 3  | 9  | 5  | 100 | 55 | 25 | 83 | 5  | E | 780  | 59 | 0  | 0  | 0  | 0  |
| 40611      | 082808 | 7  | S   | 7C1A2 | 19 | 60  | 2   | 2  | 2  | 2  | 8  | 8  | 91  | 48 | 23 | 75 | 5  | E | 780  | 53 | 0  | 0  | 0  | 0  |
| 40611      | 082808 | 10 | S   | 7C1A2 | 22 | 60  | 2   | 2  | 2  | 2  | 8  | 8  | 100 | 61 | 24 | 86 | 5  | E | 780  | 61 | 0  | 0  | 0  | 0  |
| 40611      | 082808 | 13 | S   | 7C1A2 | 18 | 60  | 1   | 1  | 2  | 3  | 5  | 5  | 100 | 47 | 24 | 77 | 5  | E | 780  | 55 | 0  | 0  | 0  | 0  |

- Generate a DAVG for a SIG for today's regular observation.
  - In the FastPath field, type the FASTPATH DAVG and click **Go**.

- In the SIG field, type the name of the SIG or select the SIG button and choose a SIG from the list. Station ID field should be blank.
- Type field is O (not 0/zero).
- In the Date field, enter current date and select Find.

**Display NFDRS Weighted Averages DAVG** [Back to Menu](#)

SIG: ANF4    Type: O    Date: 10-MAY-08    Time:    Find    Reset    Print    Export    SIG Weights

| Date      | WS | WDY | HRB | 1H | 10 | HU | TH | IC | SC | ERC | BI | FL | SL | R | KBDI | Rgn | PAL | PV | IFPL |
|-----------|----|-----|-----|----|----|----|----|----|----|-----|----|----|----|---|------|-----|-----|----|------|
| 10-MAY-08 | 7  | 77  | 5   | 5  | 6  | 10 | 10 | 49 | 23 | 64  | 85 | 60 | 3+ | H | 263  | 5   | D   |    |      |

This SIG is made up of stations from Region 5; all stations have similar fuel models and the fuel model is G. Because of this the SIG will also generate a PAL value.

Clicking the **SIG Weights** button displays the stations and weights DAVG used to consolidate values from eight stations a single values for the SIG.

**Weight Percentage for SIG - ANF4**

| Station | Name              | Fcst Zone | Time | FM Prio | Fuel Model | Weight Percent |
|---------|-------------------|-----------|------|---------|------------|----------------|
| 45401   | BIG PINES         | 507       | 12   | 2       | 7G         | 12             |
| 45405   | CLEAR CREEK       | 506       | 12   | 2       | 7G         | 12             |
| 45411   | LITTLE TUJUNGA    | 509       | 12   | 2       | 7G         | 12             |
| 45421   | TANBARK           | 509       | 12   | 2       | 7G         | 16             |
| 45423   | VALYERMO          | 514       | 12   | 4       | 7G         | 12             |
| 45426   | WARM SPRINGS L.O. | 506       | 12   | 2       | 7G         | 12             |
| 45435   | MILL CREEK        | 507       | 12   | 2       | 7G         | 12             |
| 45436   | CHILAO            | 507       | 12   | 2       | 7G         | 12             |

## APPENDIX A – DESCRIPTION OF OUTPUTS FOR THE NFDRS DISPLAY MODULES

| Output Field Definitions |   | NFDRS Display Module |      |      |      |      |      |      |
|--------------------------|---|----------------------|------|------|------|------|------|------|
| Field                    | Brief description   | DIDX                 | DIDM | DMGR | DSHR | DAVG | DABR | DNSR |
| Station ID               | WIMS Station Number   | X                    | X    | X    | X    |      | X    | X    |
| Obs Date or Dt           | Date (mmddyy)   | X                    | X    | X    | X    | X    | X    | X    |
| Tm                       | Observation Time (12, 13)                                       | X                    | X    | X    | X    |      | X    | X    |
| OT or Tp                 | Observation Type (O, R, S, F, N)                                | X                    | X    | X    | X    |      | X    | X    |
| MSGC                     | Fuel Model:Slope:Grass:Climate Class                            | X                    | X    | X    | X    |      | X    | X    |
| WS                       | Wind Speed (10-minute)  | X                    |      | X    |      | X    |      |      |
| WDY                      | Live woody fuel moisture  | X                    | X    |      |      | X    |      | X    |
| HRB                      | Herbaceous moisture content                                     | X                    | X    |      |      | X    |      | X    |
| 1H                       | 1-hour timelag fuel moisture (TLFM)                             | X                    | X    | X    |      | X    |      | X    |
| 10                       | 10-hour TLFM  | X                    | X    | X    |      | X    |      | X    |
| HU                       | 100-hour TLFM   | X                    | X    | X    |      | X    |      | X    |
| TH                       | 1000-hour TLFM  | X                    | X    | X    |      | X    | X    | X    |
| XT                       | X1000 -- Live fuel moisture recovery value, used to compute HRB | X                    | X    |      |      |      |      | X    |
| IC                       | Ignition Component  | X                    |      | X    |      | X    | X    | X    |
| SC                       | Spread Component  | X                    |      | X    |      | X    | X    | X    |
| EC                       | Energy Release Component  | X                    |      | X    |      | X    | X    | X    |
| BI                       | Burning Index   | X                    |      | X    |      | X    | X    | X    |
| SL                       | Staffing Level  | X                    |      | X    | X    | X    | X    | X    |
| R                        | Adjective Fire Danger Rating                                    | X                    |      | X    | X    | X    | X    | X    |
| KBDI                     | Keetch-Byram Drought Index                                      | X                    | X    |      |      | X    |      | X    |
| FL                       | Fire Load Index   | X                    |      | X    |      | X    | X    |      |
| LR                       | Lightning Risk  | X                    |      |      |      |      | X    |      |
| LO                       | Lightning-caused fire Occurrence Index                          | X                    |      |      |      |      | X    |      |
| HR                       | Human-Caused Risk   | X                    |      |      |      |      | X    |      |
| HO                       | Human-caused fire Occurrence index                              | X                    |      |      |      |      | X    |      |
| SN CD                    | Season Code (1988 fuel models only)                             |                      | X    |      |      |      |      |      |
| Grn GR                   | Grass Greenness Factor (1988 fuel models only)                  |                      | X    |      |      |      |      |      |
| Grn SH                   | Shrub Greenness Factor (1988 fuel models only)                  |                      | X    |      |      |      |      |      |
| WF                       | Fuels Wet Flag  |                      | X    |      |      |      |      | X    |
| DBT or Dry Temp          | Dry Bulb Temperature, F   |                      |      | X    |      |      |      | X    |
| DPT                      | Dew Point Temperature, F  |                      |      | X    |      |      |      |      |
| RH                       | Relative Humidity, %  |                      |      | X    |      |      |      | X    |
| PPTAMT or Amt            | 24 Hour Precipitation, In.                                      |                      |      | X    | X    |      |      | X    |
| PD or Dur                | 24 Hour Precipitation Duration, hours                           |                      |      | X    | X    |      |      | X    |
| Rgn                      | USFS Region   |                      |      |      |      | X    |      |      |
| PAL                      | Project Activity Level, USFS Region 5 Only                      |                      |      |      |      | X    |      |      |
| PV                       | Precaution Level, USFS Region 6 Only                            |                      |      |      |      | X    |      |      |
| IFPL                     | Industrial Fire Pecautions Level, USFS Region 6 Only            |                      |      |      |      | X    |      |      |
| Rain Gauge               | RAWS Rain Gauge Reading   |                      |      |      |      |      |      | X    |
| RD                       | Solar Radiation, Watt/meter <sup>2</sup>                        |                      |      |      |      |      |      | X    |
| SR%                      | RD converted to percent of possible for station/date/time       |                      |      |      |      |      |      | X    |
| SOW                      | Estimated State of Weather                                      |                      |      |      |      |      |      | X    |
| Live State               | Current Stage of 78 Herbaceous Model                            |                      |      |      |      |      |      | X    |

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