Quick reference for AERMOD – Version 24142

SUMMARY OF <u>CONTROL</u> PATHWAY KEYWORDS AND PARAMETERS

Keyword	Parameters	
TITLEONE	Title1	
where:	Title1	First line of title for output, character string of up to 68 characters (additional characters can be included on the TITLEONE keyword, but only the first 68 characters are printed in the output files).
TITLETWO	Title2	
where:	Title2	Optional second line of title for output, character string of up to 68 characters (any additional characters are not printed).
MODELOPT	<u>DFAULT ALPHA BETA CONC AREADPLT FLAT NOSTD NOCHKD NOWARN SCREEN SCIM NOMINO3 RLINEFDH ELEV WARNCHKD NOURBTRAN VECTORWS PSDCREDIT FASTALL FASTAREA GSRM TTRM TTRM2 PVMRM OLM ARM2 DEPOS DDEP WDEP DRYDPLT WETDPLT NODRYDPLT NOWETDPLT AREAMNDR HBP</u>	
where:	<u>DFAULT</u>	Specifies that the regulatory default options will be used; note that specification of the DFAULT option will override some non-DFAULT options that may be specified in the input file, while other non-DFAULT options will cause fatal errors when DFAULT is specified (see below for details).
	<u>ALPHA</u>	Non-regulatory option flag that allows the input control file to include research/experimental options for review and evaluation by the user community; (e.g., LOW_WIND, PSDCREDIT, ORD_DWNW, AWMADWNW, PLATFORM, METHOD 2 particle deposition, gas deposition, RLINEFDH, and RLINEXT with options for modeling barriers and depressed roadways) and cannot be used with DFAULT keyword.
	<u>BETA</u>	Non-regulatory option flag that allows the input control file to include options that have been vetted through the scientific community and are waiting to be promulgated as regulatory options. Prior to promulgation, BETA options require alternative model approval for use in regulatory applications and cannot be used with DFAULT keyword.
	<u>CONC</u>	Specifies that concentration values will be calculated.
	<u>DEPOS</u>	Specifies that total deposition flux values will be calculated.
	<u>DDEP</u>	Specifies that dry deposition flux values will be calculated.
	<u>WDEP</u>	Specifies that wet deposition flux values will be calculated.
	<u>AREADPLT</u>	Specifies use of non-regulatory method for optimized plume depletion due to dry removal mechanisms for area sources (cannot be used when the DFAULT keyword is specified).
	<u>FLAT</u>	Specifies that the non-regulatory option of assuming flat terrain will be used; Note that FLAT and ELEV may be specified in the same model run to allow specifying the non-regulatory FLAT terrain option on a source-by-source basis; FLAT sources are identified by specifying the keyword <u>FLAT</u> in place of the source elevation field on the SO LOCATION keyword (cannot be used simultaneously with the DFAULT keyword)..
	<u>ELEV</u>	Specifies that the default option of assuming elevated terrain will be used; Note that FLAT and ELEV may be specified in the same model run to allow specifying the non-regulatory FLAT terrain option on a source-by-source basis (the ELEV option is set as a regulatory option with the DFAULT keyword).
	<u>NOSTD</u>	Specifies that the non-regulatory option of no stack-tip downwash will be used (cannot be used with the DFAULT keyword).
	<u>NOCHKD</u>	Specifies that the non-regulatory option of suspending date checking will be used for non-sequential meteorological data files (cannot be used with the DFAULT keyword).
	<u>WARNCHKD</u>	Specifies that the option of issuing warning messages rather than fatal errors will be used

Keyword	Parameters	
		for non-sequential meteorological data files.
	NOWARN	Specifies that the option of suppressing the detailed listing of warning messages in the main output file will be used (the number of warning messages is still reported, and warning messages are still included in the error file controlled by the CO ERRORFIL keyword).
	SCREEN	Non-regulatory option for running AERMOD in a screening mode for AERSCREEN will be used (cannot be used when the DFAULT keyword is specified).
	SCIM	Sampled Chronological Input Model – non-regulatory option used only with the ANNUAL average option to reduce runtime by sampling meteorology at a user-specified regular interval; SCIM sampling parameters must be specified on the ME pathway (cannot be used with the DFAULT keyword).
	PVMRM	Specifies that the Plume Volume Molar Ratio Method (PVMRM) for NO_2 conversion will be used (regulatory option, can be used simultaneously with DFAULT); cannot be used with OLM, ARM2, or GRSM; cannot be used with TTRM without TTRM2.
	OLM	Specifies that the Ozone Limiting Method (OLM) for NO_2 conversion will be used (regulatory option, can be used simultaneously with DFAULT keyword); cannot be used with PVMRM, ARM2, or GRSM; cannot be used with TTRM without TTRM2.
	ARM2	Specifies that the Ambient Ratio Method - 2 (ARM2) for NO_2 conversion will be used (regulatory option, can be used with DFAULT keyword); cannot be used with PVMRM, OLM, or GRSM; cannot be used with TTRM without TTRM2.
	TTRM	Specifies that the non-regulatory Travel Time Reaction Method (TTRM) will be used for NO_2 conversion (non-regulatory alpha option, requires the ALPHA keyword and cannot be used with the DFAULT keyword); cannot be used with PVMRM, OLM, ARM2 without TTRM2; cannot be used with GRSM; cannot be used with TTRM2 without PVMRM, OLM, or ARM2.
	TTRM2	Specifies that the non-regulatory Travel Time Reaction Method (TTRM) will be paired with OLM, PVMRM, or ARM2 for NO_2 conversion (non-regulatory alpha option, requires the ALPHA keyword and cannot be used with the DFAULT keyword); cannot be used with TTRM alone or GRSM; must be paired with one of PVMRM, OLM, or ARM2
	GRSM	Specifies that the Generic Reaction Set Method (GRSM) will be used for NO_2 conversion; cannot be used with PVMRM, OLM, TTRM, TTRM2, or ARM2.
	PSDCREDIT	Specifies that the non-regulatory ALPHA option will be used to calculate the increment consumption with PSD credits using the PVMRM option (cannot be used with the DFAULT keyword).
	FASTALL	Non-regulatory option to optimize model runtime through use of an alternative implementation of horizontal meander for POINT and VOLUME sources; also optimizes model runtime for AREA/AREAPOLY/AREACIRC/LINE, OPENPIT, RLINE, and RLINEXT sources (formerly associated with TOXICS option, now controlled by the FASTAREA and FASTALL option, cannot be used with the DFAULT keyword).
	FASTAREA	Non-regulatory option to optimize model runtime through hybrid approach for AREA/ AREAPOLY/AREACIRC and OPENPIT sources (formerly associated with TOXICS option, cannot be used with the DFAULT keyword).
	DRYDPLT	Option to incorporate dry depletion (removal) processes associated with dry deposition algorithms; this requires specification of dry deposition source parameters and additional meteorological variables; dry depletion will be used by default if dry deposition algorithms are invoked; cannot be used with NODRYDPLT.
	NODRYDPLT	Option to disable dry depletion (removal) processes associated with dry deposition algorithms; cannot be used with DRYDPLT.
	WETDPLT	Option to incorporate wet depletion (removal) processes associated with wet deposition algorithms; this requires specification of wet deposition source parameters and additional meteorological variables; wet depletion will be used by default if wet deposition algorithms are invoked; cannot be used with NOWETDPLT.
	NOWETDPLT	Option to disable wet depletion (removal) processes associated with wet deposition algorithms; cannot be used with WETDPLT.
	NOURBTRAN	Non-regulatory option to ignore the transition from nighttime urban boundary layer to daytime convective boundary layer (i.e., to revert to the urban option as implemented prior to version 11059) (cannot be used with the DFAULT keyword).

Keyword	Parameters	
	VECTORWS	Option to specify that input wind speeds are vector mean (or resultant) wind speeds, rather than scalar means. Under the VECTORWS option, the adjustments to wind speeds based on Equation 112 of the AERMOD Model Formulation document (EPA, 2024a) will be applied (can be used with the DFAULT keyword).
	NOMINO3	Option to remove the minimum ozone used for Tier 2 & 3 NO$_2$ options. Without this option, AERMOD will use a minimum value of 40 ppb of ozone for nighttime stable conditions, regardless of the value in an hourly input file (can be used with the DFAULT keyword).
	RLINEFDH	Option to have wind profile calculations without a displacement height for RLINE and RLINEXT source types. This makes the wind profile closer to other AERMOD source types, which do not use a displacement height in wind profile (requires the ALPHA keyword and cannot be used with the DFAULT keyword).
	AREAMNDR	Option to apply plume meander to AREA. AREAPOLY, AREACIRC, and LINE source types. Note that AREAMNDR and FASTAREA or FASTALL can be specified in the same model run, but in that case, meander will not be applied to those source types listed.
	HBP	Option for highly buoyant plumes (HBP) when plume penetrates the top of the convective mixed layer. Limited to point source types (POINT, POINTHOR, POINTCAP). Compares convective mixing height for the current hour and next hour to determine how much of the penetrated plume has been captured by the CBL by the end of the current hour (requires the ALPHA keyword and cannot be used with the DFAULT keyword).
AVERTIME	Time1 Time2 ... Time*N* MONTH PERIOD or ANNUAL	
where:	Time*N* MONTH PERIOD ANNUAL	*Nth* optional averaging time (1, 2, 3, 4, 6, 8, 12, or 24-hr) Option to calculate MONTHly averages. Option to calculate averages for the entire data PERIOD; for the MULTYEAR option, the summary of highest PERIOD averages is based on the highest PERIOD average across the individual years processed with MULTYEAR. Option to calculate ANNUAL averages (assumes complete years); for multi-year meteorological data files, with and without the MULTYEAR option, the multi-year average of the ANNUAL values is reported.
URBANOPT	For multiple urban areas: UrbanID Urbpop (Urbname) (UrbRoughness) For single urban area: Urbpop (Urbname) (UrbRoughness)	
where:	UrbanID UrbPop (UrbName) (UrbRoughness)	Specifies the alphanumeric urban ID (up to eight characters). Specifies the population of the urban area. Specifies the name of the urban area (optional). Specifies the urban surface roughness length, meters (optional, defaults to 1.0m; value other than 1.0m treated as non-DFAULT).
POLLUTID	Pollut (H1H or H2H or INC)	
where:	Pollut	Identifies type of pollutant being modeled. Any name of up to eight characters may be used, e.g., SO2, NOX, CO, PM25, PM-2.5, PM10, PM-10, TSP or OTHER. NOTE: Some processing options are pollutant-specific, and require the user to specify the appropriate pollutant ID. For example, use of PM10, PM-10, PM25, PM2.5, PM-2.5, PM-25, LEAD, NO2, SO2, or OTHER allows for the use of the MULTYEAR option. Use of PM25, PM2.5, PM-2.5, or PM-25, triggers special processing for the PM-2.5 NAAQS, based on values averaged across the number of years processed (see Section **Error! Reference source not found.**).

Keyword	Parameters	
	H1H or H2H or INC	Use of NO2 or SO2 triggers special processing for their respective 1-hr NAAQS based on daily maximum 1-hr concentrations, averaged across the number of years modeled if the CO AVERTIME keyword includes 1-hr averages (see Section **Error! Reference source not found.**). Use of NO2 is required in order to use the OLM and PVMRM options for simulating conversion of NO to NO_2. Use of SO2 also triggers the use of a 4-hour half-life for SO_2 decay for urban applications under the regulatory default option. Use of the H1H or H2H or INC keyword (not case-specific) disables the special processing requirements associated the 1-hr NO_2 and SO_2 NAAQS and the 24-hr $PM_{2.5}$ NAAQS. Specifying one of these keywords would allow for modeling $PM_{2.5}$ 24-hr increments which are based on the H2H value and allow evaluating NO_2 options in AERMOD based on incomplete years of field measurements.
HALFLIFE	Haflif	
where:	Haflif	Half-life used for exponential decay (s).
DCAYCOEF	Decay	
where:	Decay	Decay coefficient for exponential decay (s^{-1}) = 0.693/HAFLIF
GASDEPDF	React F_Seas2 F_Seas5 (Refpoll) **The ALPHA option must be specified as a MODELOPT on the CO pathway to use the GASDEPDF keyword.**	
where:	React F_Seas2 F_Seas5 (Refpoll)	Value for pollutant reactivity factor (f_o). Fraction (F) of maximum green LAI for seasonal category 2. Fraction (F) of maximum green LAI for seasonal category 5. Optional name of reference pollutant.
GASDEPVD	Uservd **The ALPHA option must be specified as a MODELOPT on the CO pathway to use the GASDEPVD keyword.**	
where:	Uservd	User-specified dry deposition velocity (m/s) for gaseous pollutants.
GDLANUSE	Sec1 Sec2 ... Sec36 **The ALPHA option must be specified as a MODELOPT on the CO pathway to use the GDLANUSE keyword.**	
where:	Sec1 Sec2 . . . Sec36	Land use category for winds blowing toward sector 1 (10 degrees). Land use category for winds blowing toward sector 2 (20 degrees). Land use category for winds blowing toward sector 36 (360 degrees).
GDSEASON	Jan Feb ... Dec **The ALPHA option must be specified as a MODELOPT on the CO pathway to use the GDSEASON keyword.**	

where:	Jan
	.
		Seasonal category for January:
		    1 = Midsummer/Lush vegetation;
		    2 = Autumn/Unharvested cropland;

Keyword	Parameters	
	. . . Dec	3 = Late autumn after harvest or Winter with no snow; 4 = Winter with continuous snow cover; or 5 = Transitional spring/partial green coverage/short annuals) Seasonal category for December.
LOW_WINd	SVmin (WSmin) or SVmin WSmin (FRANmax) or SVmin WSmin FRANmax (SWmin) or SVmin WSmin FRANmax SWmin (BigT) or SVmin WSmin FRANmax SWmin BigT (FRANmin) or SVmin WSmin FRANmax SWmin BigT FRANmin (PBAL) **The ALPHA option must be specified as a MODELOPT on the CO pathway to use the LOW_WIND keyword**	
where:	SVmin WSmin FRANmax SWmin BigT FRANmin PBAL	Minimum value of sigma-v, within a range of 0.01 to 1.0 m/s. Minimum value of wind speed, within a range of 0.01 to 1.0 m/s. Maximum value for meander factor, within a range of 0.0 to 1.0. Minimum value of sigma-w, within a range of 0.0 to 3.0 m/s. Time period (BigT) used to calculate the time scale TRAN, within a range of 0.5 to 48.0 hours. Minimum value for meander factor, within a range of 0.0 to 1.0 but must be less than or equal to FRANmax. Alternate momentum balance approach to determine plume meander which overrides the default energy balance approach.
AWMADWNW	AWMAUEFF and/or AWMAENTRAIN and/or ((AWMAUTURB or AWMAUTURBHX) w/wo STREAMLINE(D)) **The ALPHA option must be specified as a MODELOPT on the CO pathway to use the AWMADWNW keyword.**	
where:	AWMAUEFF AWMAENTRAIN AWMAUTURB AWMAUTURBHX STREAMLINE	Redefines the height at which the wind speed is taken from the profile wind speed used in the calculation of concentrations from the primary plume. Changes beta (B) entrainment coefficient for PRIME downwash from default value of 0.60 to 0.35. Uses alternative formulations for turbulence enhancement and velocity deficit calculations. Uses distance-based plume rise at the downwind distance X for calculations. Reduces dispersion in the wake of streamlined structures such as storage tanks and cooling towers.
ORD_DWNW	ORDUEFF and/or ORDTURB and/or ORDCAV **The ALPHA option must be specified as a MODELOPT on the CO pathway to use the ORD_DWNW keyword.**	
where:	ORDUEFF ORDTURB ORDCAV	Redefines the height at which the wind speed is taken from the profile wind speed used in the calculation of concentrations from the primary plume. Redefines the maximum value of the ambient turbulence intensity in the wake, reduced from 0.07 to 0.06. Redefines the initial vertical dispersion, σz, of the re-emitted plume at the cavity boundary to equal the σz of the cavity plume.
NO2EQUIL	NO2Equil	
where:	NO2Equil	Equilibrium ratio of NO_2/NO_x for the PVMRM, OLM, and TTRM options; between 0.1 and 1.0, inclusive (default is 0.9).
NO2STACK	NO2Ratio	

5

Keyword	Parameters	
where:	NO2Ratio	Default in-stack ratio of NO_2/NO_x for PVMRM, OLM, TTRM, and GSRM options, which may be overridden by the NO2RATIO keyword on SO pathway. NOTE: Beginning with version 11059, AERMOD no longer assumes a default in-stack ratio of 0.1 for the OLM option.
ARMRATIO	ARM2_Min ARM2_Max	For ARM2 Option
where:	ARM2_Min ARM2_Max	Minimum ARM2 ambient ratio, with a default value of 0.50. Maximum ARM2 ambient ratio, with a default value of 0.90.
O3SECTOR	StartSect1 StartSect2 . . . StartSect$N$, where N is ≤ 6	
where:	StartSect1 StartSect2 . . StartSect$N$	Starting direction for the first sector. Starting direction for the second sector. . . Starting direction for the last sector. NOTE: The minimum sector width allowed is 30 degrees, and warning messages will be issued for sector widths less than 60 degrees. Sector-varying O_3 concentrations will be selected based on the flow vector, i.e., the downwind direction based on the wind direction specified in the surface meteorological data file.
OZONEFIL	O3FileName (O3Units) (O3Format) (without O3SECTORs) or SECTx O3FileName (O3Units) (O3Format) (with O3SECTORs)	
where:	SECTx O3FileName (O3Units) (O3Format)	Applicable sector (x = 1 to 6) defined on the CO O3SECTOR keyword, if specified. Filename for hourly ozone data file (YR, MN, DY, HR, O3Value). Units of ozone data (PPM, PPB, or UG/M3); default is UG/M3. Fortran format statement to read ozone file; default is FREE-format, i.e., comma or space-delimited data fields (Yr Mn Dy Hr O3Value). The O3Format parameter must include open and close parentheses, the date variables must be read as integers (Fortran I format), and the O3Value must be read as real (Fortran F, E, or D format), e.g., '(4I2,F8.3)'. The year may be specified as a 2-digit or 4-digit year, and the data period in the OZONEFIL must match the data period in the meteorological data files.
OZONEVAL	O3Value (O3Units) (without O3SECTORs) or SECTx O3Value (O3Units) (with O3SECTORs)	
where:	SECTx O3Value (O3Units)	Applicable sector (x = 1 to 6) defined on the CO O3SECTOR keyword, if specified. Background ozone concentration; also used to substitute for missing data in OZONEFIL. Units of ozone value (PPM, PPB, or UG/M3); default is UG/M3.
O3VALUES	O3Flag O3values(i), i=1, n (without O3SECTORs) or SECTx O3Flag O3values(i), i=1, n (with O3SECTORs)	
where:	SECTx O3Flag	Applicable sector (x = 1 to 6) defined on the CO O3SECTOR keyword, if specified. Background ozone values flag: ANNUAL for annual; SEASON for seasonal; MONTH for monthly; HROFDY for hour-of-day; WSPEED for wind speed category; SEASHR for season-by-hour; HRDOW for emission rates vary by hour-of-day, and day-of-week [M-F, Sat, Sun]; HRDOW7 for emission rates vary by hour-of-day, and the seven days of the week [M, Tu, W, Th, F, Sat, Sun]; SHRDOW for season by hour-of-day by day-of-week (M-F,Sat,Sun); SHRDOW7 for season by hour-of-day by day-of-week (M,Tu,W,Th,F,Sat,Sun); MHRDOW for month by hour-of-day by day-of-week (M-F,Sat,Sun); MHRDOW7 for month by hour-of-day by day-of-week (M,Tu,W,Th,F,Sat,Sun). Array of background concentrations, for: ANNUAL, n=1;

Keyword	Parameters	
	O3values	SEASON, n=4; MONTH, n=12; HROFDY, n=24; WSPEED, n=6; SEASHR, n=96; HRDOW, n=72; HRDOW7, n=168; SHRDOW, n=288; SHRDOW7, n=672; MHRDOW, n=864; MHRDOW7, n=2016. NOTE: Background ozone values input through the O3VALUES keyword are assumed to be in units of PPB, unless modified by the OZONUNIT keyword.
OZONUNIT	OzoneUnits	
where:	OzoneUnits	Ozone concentration units for O3VALUES, specified as PPB for parts-per-billion, PPM for parts-per-million, or UG/M3 for micrograms/cubic-meter.
The following keywords: NOXSECTR, NOX_FILE, NOXVALUE, NOX_VALS, and NOX_UNIT, are only applicable to the GRSM NO-to-NO₂ Conversion Option.		
NOXSECTR	StartSect1 StartSect2 . . . StartSect$N$, where N is ≤ 6	
where:	StartSect1 StartSect2 . . StartSect$N$	Starting direction for the first sector. Starting direction for the second sector. . . Starting direction for the last sector. NOTE: The minimum sector width allowed is 30 degrees, and warning messages will be issued for sector widths less than 60 degrees. Sector-varying NOX concentrations will be selected based on the flow vector, i.e., the downwind direction based on the wind direction specified in the surface meteorological data file.
NOX_FILE	NOXFileName (NOXUnits) (NOXFormat)　　　　　(without NOXSECTRs) 　or SECTx NOXFileName (NOXUnits) (NOXFormat)　　　(with NOXSECTRs)	
where:	SECTx NOXFileName (NOXUnits) (NOXFormat)	Applicable sector (x = 1 to 6) defined on the CO O3SECTOR keyword, if specified. Filename for hourly NOX data file (YR, MN, DY, HR, NOXValue). Units of NOX data (PPM, PPB, or UG/M3); default is UG/M3. Fortran format statement to read NOX file; default is FREE-format, i.e., comma or space-delimited data fields (Yr Mn Dy Hr NOXValue). The NOXFormat parameter must include open and close parentheses, the date variables must be read as integers (Fortran I format), and the NOXValue must be read as real (Fortran F, E, or D format), e.g., '(4I2,F8.3)'. The year may be specified as a 2-digit or 4-digit year, and the data period in the NOX_FILE must match the data period in the meteorological data files.
NOXVALUE	NOXValue (NOXUnits)　　　　　　　　(without NOXSECTRs) 　or SECTx NOXValue (NOXUnits)　　　　　(with NOXSECTRs)	
where:	SECTx NOXValue (NOXUnits)	Applicable sector (x = 1 to 6) defined on the CO NOXSECTR keyword, if specified. Background ozone concentration; also used to substitute for missing data in OZONEFIL. Units of ozone value (PPM, PPB, or UG/M3); default is UG/M3.
NOX_VALS	NOXFlag NOXvalues(i), i=1, n　　　　　(without NOXSECTRs) 　or SECTx NOXFlag NOXvalues(i), i=1, n　　　(with NOXSECTRs)	
where:	SECTx NOXFlag	Applicable sector (x = 1 to 6) defined on the CO O3SECTOR keyword, if specified. Background ozone values flag: ANNUAL for annual; SEASON for seasonal; MONTH for monthly; HROFDY for hour-of-day; WSPEED for wind speed category; SEASHR for season-by-hour; HRDOW for emission rates vary by hour-of-day, and day-of-week [M-F, Sat, Sun]; HRDOW7 for emission rates vary by hour-of-day, and the seven days of the week [M, Tu, W, Th, F, Sat, Sun]; SHRDOW for season by hour-of-day by day-of-week (M-F,Sat,Sun); SHRDOW7 for season by hour-of-day by day-of-week

Keyword	Parameters	
	NOXvalues	(M,Tu,W,Th,F,Sat,Sun); MHRDOW for month by hour-of-day by day-of-week (M-F,Sat,Sun); MHRDOW7 for month by hour-of-day by day-of-week (M,Tu,W,Th,F,Sat,Sun). Array of background concentrations, for: ANNUAL, *n*=1; SEASON, *n*=4; MONTH, *n*=12; HROFDY, *n*=24; WSPEED, *n*=6; SEASHR, *n*=96; HRDOW, *n*=72; HRDOW7, *n*=168; SHRDOW, *n*=288; SHRDOW7, *n*=672; MHRDOW, *n*=864; MHRDOW7, *n*=2016. NOTE: Background NOX values input through the NOXVALUES keyword are assumed to be in units of PPB, unless modified by the NOX_UNIT keyword.
NOX_UNIT	NOXUnits	
where:	NOXUnits	NOX concentration units for NOX_VALS, specified as PPB for parts-per-billion, PPM for parts-per-million, or UG/M3 for micrograms/cubic-meter.
FLAGPOLE	(Flagdf)	
where:	(Flagdf)	Default value for height of (flagpole) receptors above local ground, a default value of 0.0 m is used if this optional parameter is omitted.
ARCFTOPT	(AirportID)	
where:	(AirportID)	Optional alphanumeric character string to identify the airport where aircraft sources are located.
RUNORNOT	RUN or NOT	
where:	RUN NOT	Indicates to run full model calculations. Indicates to process setup data and report errors, but to not run full model calculations.
EVENTFIL	(Evfile) (Evopt)	
where:	(Evfile) (Evopt)	Identifies the filename to be used to generate a file for input to EVENT model (Default=EVENTFIL.INP). Optional parameter to specify the level of output detail selected for the EVENT model: either SOCONT or DETAIL (default is DETAIL if this parameter is omitted).
SAVEFILE	(Savfil) (Dayinc) (Savfl2)	
where:	(Savfil) (Dayinc) (Savfl2)	Specifies name of disk file to be used for storing intermediate results (default = SAVE.FIL); file is overwritten after each dump. Number of days between dumps (optional: default is 1). Optional second disk filename to be used on alternate dumps - eliminates risk of system crash during the dump. If blank, file is overwritten each time.
INITFILE	(Inifil)	
where:	(Inifil)	Specifies name of disk file of intermediate results to be used for initializing run (default = SAVE.FIL).
MULTYEAR	(H6H) Savfil (Inifil)	
where:	(H6H) Savfil (Inifil)	Optional field formerly used to specify that High-Sixth-High is being calculated for use in PM10 processing; no longer required. Specifies name of file to be used for storing results at the end of the year. Optional name of file used for initializing the results arrays from previous year(s). The Inifil parameter is not used for the first year in the multi-year run.
DEBUGOPT	MODEL (Dbgfil) and/or METEOR (Dbmfil) and/or PRIME (Prmfil) and/or AWMADW (AwmaDwfil) and/or PLATFORM (PlatfmDbgFil)	

Keyword	Parameters	

	and/or
	DEPOS (Dbgfil)
	  and/or
	[AREA (AreaDbFil) or LINE (LineDbFil)]
	  and/or
	RLINE (RlineDbgFil)
	  and/or
	BLPDBUG (BLPDbFil)
	  and/or
	URBANDB (UrbanDbFil)
	  and/or
	[PVMRM (Dbpvfil) (and TTRM2) or
	  OLM (OLMfil) (and TTRM2) or
	  ARM2 (ARM2fil) (and TTRM2) or
	  TTRM (TTRMfil) or GSRM (GSRMfil)]
	  and/or
	 SWPOINT (SWfil)
	  and/or
	HBPDBG (HBPfil)
	  and/or
	AIRCRAFT (DbARCFTfil)	

where:	MODEL (Dbgfil) METEOR (Dbmfil) PRIME (Prmfil) AWMADW (AwmaDwfil) PLATFORM (PlatfmDbgfil) DEPOS AREA or LINE (AreaDbfil) RLINE (RLineDbgFil) BLPDBUG (BLPDbFil) URBANDB (UrbanDbFil) PVMRM (Dbpvfil)	Specifies that MODEL debugging output will be generated. Optional filename for the model calculation debug file (a default filename of 'MODEL.DBG' will be used if omitted). Specifies that METEORological profile data file will be generated. Optional filename for the meteorological profile data file (a default filename of 'METEOR.DBG' will be used if omitted). Specifies that PRIME debugging output will be generated. Optional filename for PRIME debug file (a default filename of 'PRIME.DBG' will be used if omitted). Specifies the debug out will be generated for AWMA Downwash options. Optional filename for AWMADW debug file (a default filename of 'AWMADW.DBG' will be used if omitted). Specifies the debug out will be generated for PLATFORM Downwash options. Optional filename for PLATFORM downwash debug file. (a default filename of 'PLATFORM.DBG' will be used if omitted). Specifies that DEPOSition debugging output will be generated, using default filenames of 'GDEP.DAT' for gas deposition and 'PDEP.DAT' for particle deposition. Specifies that AREA or LINE debugging output will be generated, including debugging outputs for OPENPIT sources, if included in the modeling. Optional filename for AREA debug file (a default filename of 'AREA.DBG' will be used if omitted). Specifies that RLINE debugging output will be generated. Optional filename for RLINE debug file (a default filename of 'RLINE.DBG' will be used if omitted). Debug information for the BUOYLINE source. Optional filename for BLPDBUG debug file (a default filename of 'BLPDBUG.DBG' will be used if omitted). Debug information from the URBANDB option. This will produce 3 output files, one for the surface meteorology and two for the profile meteorology. Optional filename for URBANDB debug files This will produce three output files, one for the surface meteorology, two for the profile meteorology. If the filename is specified by the user, then the filename will be used for the surface meteorology debug file. The same name will be assigned for the two profile debug files with a "1" and "2" appended to the filename, respectively. Default filenames: URBDBUG.DBG, URBDBUG1.DBG, and URBDBUG2.DBG. Specifies that PVMRM debugging output will be generated Optional filename for PVMRM debug file (a default filename of 'PVMRM.DBG' will be

9

Keyword	Parameters	
	OLM	used if omitted).
		Specifies that <u>OLM</u> debugging output will be generated
	(OLMfil)	Optional filename for OLM debug file (a default filename of 'OLM.DBG' will be used if omitted).
	ARM2	Specifies that <u>ARM2</u> debugging output will be generated
	(ARM2fil)	Optional filename for ARM2 debug file (a default filename of 'ARM2.DBG' will be used if omitted).
	TTRM	Specifies that <u>TTRM</u> debugging output will be generated
	(TTRMfil)	Optional filename for TTRM debug file (a default filename of 'TTRM.DBG'will be used if omitted).
	TTRM2	Specifies that TTRM2 debugging output will be generated. TTRM2 can only be used with ARM2, PVMRM, or OLM and only if specified with the MODELOPT keyword along with one of those options. A user-defined debug filename cannot be specified for the TTRM2 debug option.
	GRSM	Specifies that <u>GRSM</u> debugging output will be generated.
	(GSRMfil)	Optional filename for GRSM debug file (a default filename of 'GRSM.DBG' will be used if omitted).
	SWPOINT	Specifies debugging output for the SWPOINT (sidewash) source type will be generated.
	(SWfil)	Optional filename for SWPOINT debug file (a default filename of SWPOINT.DBG will be used if omitted).
		Note: The user can specify any of the applicable debug options for a particular model run, and the options can be specified in any order. However, the optional filenames must be specified immediately after the keyword option associated with the filename. Also note that debugging information that was written to the main 'aermod.out' file for the <u>MODEL</u> debug option prior to version 13350 is now written to the applicable debug file (either <u>MODEL</u> or <u>PRIME</u>) and beginning with version 14134 debug information for AREA/LINE/OPENPIT sources is written to the <u>AREA</u> debug file.
	HBPDBG	Specifies debugging output for the HBP (highly buoyant plume) sources will be generated.
	(HBPfil)	Optional filename for HBP debug file (a default filename of HBP_DEBUG.DBG will be used if omitted).
	AIRCRAFT	Specifies debugging output for AREA and VOLUME aircraft sources.
	(DbARCFTfil)	Optional filename for the AIRCRAFT debug file (a default filename of AIRCRAFT.DBG will be used if omitted).
ERRORFIL	(Errfil)	
where:	(Errfil)	Specifies name of detailed error listing file (default = ERRORS.LST).

SUMMARY OF <u>SOURCE</u> PATHWAY KEYWORDS AND PARAMETERS

Keyword	Parameters	
ELEVUNIT	<u>METERS</u> or <u>FEET</u>	
where:	<u>METERS</u> <u>FEET</u>	Specifies input units for source base elevations of meters (default if ELEVUNIT is omitted). Specifies input units for source elevations of feet. <u>Note</u>: This keyword applies to source base elevations only.

LOCATION	SrcID Srctyp Xs Ys (Zs) [for all Srctyps except <u>LINE</u>,
	                                   <u>BUOYLINE</u>, <u>RLINE</u>, and <u>RLINEXT</u>]
	              or
	        (<u>FLAT</u>) [for '<u>FLAT</u> & <u>ELEV</u>' option]
	  or
	
	SrcID Srctyp Xs1 Ys1 Xs2 Ys2 (Zs) [for <u>LINE</u>, <u>RLINE</u>, or <u>BUOYLINE</u> Srctyp]
	                   or
	        (<u>FLAT</u>) [for '<u>FLAT</u> & <u>ELEV</u>' option]
	  or
	
	SrcID Srctyp Xs1 Ys1 Zs1 Xs2 Ys2 Zs2 (Zs) [for <u>RLINEXT</u> Srctyp]
	                       or
	         (<u>FLAT</u>) [for '<u>FLAT</u> & <u>ELEV</u>' option]	

where:	SrcID Srctyp Xs Ys Xs1, Xs2 Ys1, Ys2 Zs1, Zs2 (Zs) (<u>FLAT</u>)	Source identification code (unique alphanumeric string of up to 12 characters). Source type: <u>POINT</u>, <u>POINTCAP</u>, <u>POINTHOR</u>, <u>VOLUME</u>, <u>AREA</u>, <u>AREAPOLY</u>, <u>AREACIRC</u>, <u>OPENPIT</u>, <u>LINE</u>, <u>BUOYLINE</u>, <u>RLINE</u>, or <u>RLINEXT</u>. x-coord of source location, corner for <u>AREA</u>, <u>AREAPOLY</u>, and <u>OPENPIT</u>, center for <u>AREACIRC</u> (m). y-coord of source location, corner for <u>AREA</u>, <u>AREAPOLY</u>, and <u>OPENPIT</u>, center for <u>AREACIRC</u> (m). x-coords of midpoint for start and end of <u>LINE</u>, <u>RLINE</u>, <u>RLINEXT</u>, or <u>BUOYLINE</u> source (m). y-coords of midpoint for start and end of <u>LINE</u>, <u>RLINE</u>, <u>RLINEXT</u>, or <u>BUOYLINE</u> source (m). z-coords of midpoint for start and end of <u>RLINEXT</u> source (m). Optional z-coord of source location (elevation above mean sea level, defaults to 0.0 if omitted). Optional keyword to indicate non-DFAULT option to specify source to model with FLAT terrain.

SRCPARAM	SrcID Ptemis Stkhgt Stktmp Stkvel Stkdia (<u>POINT</u>, <u>POINTCAP</u>,
	                                            <u>POINTHOR</u> source)
	        Vlemis Relhgt Syinit Szinit (<u>VOLUME</u> source)
	        Aremis Relhgt Xinit (Yinit) (Angle) (Szinit) (<u>AREA</u> source)
	        Aremis Relhgt Nverts (Szinit) (<u>AREAPOLY</u> source)
	        Aremis Relhgt Radius (Nverts) (Szinit) (<u>AREACIRC</u> source)
	        Lnemis Relhgt Width (Szinit) (<u>LINE</u> or <u>RLINE</u> source)
	        Opemis Relhgt Xinit Yinit Pitvol (Angle) (<u>OPENPIT</u> source)
	        Blemis Relhgt (BUOYLINE source)
	        Rlemis DCL Width Szinit (RLINEXT source)	

where:	SrcID Emis Hgt Stktmp Stkvel	Source identification code. Source emission rate: in g/s for Ptemis, Vlemis, and Blemis; g/(s-m^2) for Aremis, Lnemis, and Opemis; g/m/s for Rlemis. Source physical release height above ground (center of height for <u>VOLUME</u>, height above base of pit for <u>OPENPIT</u>). Stack gas exit temperature (K). Stack gas exit velocity (m/s).

Keyword	Parameters	
	Stkdia	Stack inside diameter (m).
	Syinit	Initial lateral dimension of <u>VOLUME</u> source (m).
	Szinit	Initial vertical dimension of <u>VOLUME</u>, <u>AREA</u>, <u>LINE</u>, <u>RLINE</u>, or <u>RLINEXT</u> source (m).
	Xinit	Length of side of <u>AREA</u> source in X-direction (m).
	Yinit	Length of side of <u>AREA</u> source in Y-direction (m) (optional parameter, assumed to be equal to Xinit if omitted).
	Angle	Orientation angle (deg) of <u>AREA</u> or <u>OPENPIT</u> source relative to N measured positive clockwise, rotated around the source location, (Xs,Ys) (optional parameter, assumed to be 0.0 if omitted).
	Nverts	Number of vertices used for <u>AREAPOLY</u> or <u>AREACIRC</u> source (optional for <u>AREACIRC</u> sources).
	Radius	Radius of circular area for <u>AREACIRC</u> source (m).
	Width	Width of <u>LINE, RLINE,</u> or <u>RLINEXT</u> source (m).
	Pitvol	Volume of <u>OPENPIT</u> source (m^3).
	Blemis	Buoyant line emission rate in g/s for the individual line of <u>BUOYLINE</u> source.
	DCL	Distance from roadway centerline for <u>RLINEXT</u> source (m).
BUILDHGT	SrcID (or SrcRange) Dsbh(i), i=1, 36	
where:	SrcID	Source identification code.
	SrcRange	Range of sources (inclusive) for which building dimensions apply, entered as two alphanumeric strings separated by a '-'.
	Dsbh	Array of direction-specific building heights (m) beginning with 10-degree flow vector and incrementing by 10 degrees clockwise.
BUILDLEN	SrcID (or SrcRange) Dsbl(i), i=1, 36	
where:	SrcID	Source identification code.
	SrcRange	Range of sources (inclusive) for which building dimensions apply.
	Dsbl	Array of direction-specific building lengths (m) beginning with 10 degree flow vector and incrementing by 10 degrees clockwise.
BUILDWID	SrcID (or SrcRange) Dsbw(i), i=1, 36	
where:	SrcID	Source identification code.
	SrcRange	Range of sources (inclusive) for which building dimensions apply.
	Dsbw	Array of direction-specific building widths (m) beginning with 10 degree flow vector and incrementing by 10 degrees clockwise.
XBADJ	SrcID (or SrcRange) Xbadj(i), i=1, 36	
where:	SrcID	Source identification code.
	SrcRange	Range of sources (inclusive) for which XBADJ distances apply.
	Xbadj(i)	Array of direction-specific along-wind distances beginning with 10 degree flow vector and incrementing by 10 degrees clockwise.
YBADJ	SrcID (or SrcRange) Ybadj(i), i=1, 36	
where:	SrcID	Source identification code.
	SrcRange	Range of sources (inclusive) for which YBADJ distances apply.
	Ybadj(i)	Array of direction-specific across-wind distances beginning with 10 degree flow vector and incrementing by 10 degrees clockwise.
AREAVERT	SrcID Xv(1) Yv(1) Xv(2) Yv(2) ... Xv(i) Yv(i)	
where:	SrcID	Source identification code.
	Xv(1)	X-coordinate of the first vertex of an AREAPOLY source (must be the same as the value of Xs for that source defined on the SO LOCATION card).
	Yv(1)	Y-coordinate of the first vertex of an AREAPOLY source (must be the same as the value of Ys for that source defined on the SO LOCATION card).
	Xv(i)	X-coordinate for the ith vertex of an AREAPOLY source.
	Yv(i)	Y-coordinate for the ith vertex of an AREAPOLY source.

Keyword	Parameters	
RBARRIER	SrcID Htwall DCLwall (Htwall2 DCLwall2)	
where:	SrcID Htwall DCLwall Htwall2 DCLwall2	Source identification code. Height of the wall (or barrier 1) near roadway (m). Distance from the roadway centerline to the wall (m). Height of the second wall (or barrier 2) near roadway (m). Distance from the roadway centerline to the second wall (m).
RDEPRESS	SrcID Htwall DCLwall Depth Wtop Wbottom	
where:	SrcID Depth Wtop Wbottom	Source identification code. Depth of the depression containing the roadway (m). Width of the top of the depression containing the roadway (m). Width of the bottom of the depression containing the roadway (m).
BLPINPUT	(BLPGrpID) Blavgllen Blavgbhgt Blavgbwid Blavglwid Blavgbsep Blavgfprm	
where:	BLPGrpID Blavgllen Blavgbhgt Blavgbwid Blavglwid Blavgsep Blavgfprm	Buoyant line group ID following parameters apply to Average buoyant line length (m) Average building height (m) Average building width (m) Average buoyant line width (m) Average building separation (m) Average buoyancy parameter (m^4/s^3)
URBANSRC	<u>For multiple urban areas:</u> UrbanID SrcID's and/or SrcRng's <u>For single urban areas:</u> SrcID's and/or SrcRng's User may also specify 'ALL' for SrcID's to assign all sources as urban.	
where:	UrbanID SrcID SrcRange	Specifies the alphanumeric urban ID (up to eight characters). Specifies which source(s) will be modeled with urban effects. Specifies a range of sources that will be modeled with urban effects.
EMISFACT	SrcID (or SrcRange) Qflag Qfact(i), i=1,n	

where:	SrcID
	SrcRange
	Qflag
	
	Qfact
		Source identification code.
		Range of sources (inclusive) for which emission rate factors apply.
		Variable emission rate flag:
		    <u>SEASON</u> for seasonal; <u>MONTH</u> for monthly; <u>HROFDY</u> for hour-of-day;
		    <u>WSPEED</u> for wind speed category; <u>SEASHR</u> for season-by-hour; <u>HRDOW</u> for
		    emission rates vary by hour-of-day, and day-of-week [M-F, Sat, Sun]; <u>HRDOW7</u>
		    for emission rates vary by hour-of-day, and the seven days of the week [M, Tu, W,
		    Th, F, Sat, Sun]; <u>SHRDOW</u> for season by hour-of-day by day-of-week
		    (M-F,Sat,Sun); <u>SHRDOW7</u> for season by hour-of-day by day-of-week
		    (M,Tu,W,Th,F,Sat,Sun); <u>MHRDOW</u> for month by hour-of-day by day-of-week
		    (M-F,Sat,Sun); <u>MHRDOW7</u> for month by hour-of-day by day-of-week
		    (M,Tu,W,Th,F,Sat,Sun).
		Array of scalar emission rate factors, for:
		    <u>SEASON</u>, n=4; <u>MONTH</u>, n=12; <u>HROFDY</u>, n=24;
		    <u>WSPEED</u>, n=6; <u>SEASHR</u>, n=96; <u>HRDOW</u>, n=72;
		    <u>HRDOW7</u>, n=168; <u>SHRDOW</u>, n=288; <u>SHRDOW7</u>, n=672;
		    <u>MHRDOW</u>, n=864; <u>MHRDOW7</u>, n=2016

EMISUNIT	Emifac Emilbl Outlbl	

where:	Emifac	Emission rate factor used to adjust units of output (default value is 1.0E06 for CONC
		    for grams to micrograms; default value is 3600 for grams/sec to grams/m^2/hr for
		    deposition).

Keyword	Parameters	
	Emilbl	Label to use for emission units (default is grams/sec).
	Outlbl	Label to use for output units; applies to first output type if more than one output type is generated (default is micrograms/m**3 for concentration and grams/m**2 for deposition).
RLEMCONV	*No parameters or secondary keywords* Changes the expected emission units for the RLINE (Lemis) and RLEINXT (Rlemis)emissions to grams/hour/link.	
CONCUNIT	Emifac Emilbl Conlbl	
where:	Emifac	Emission rate factor used to adjust units of output (default value is 1.0E06 for concentration for grams to micrograms).
	Emilbl	Label to use for emission units (default is grams/sec).
	Conlbl	Label to use for concentrations (default is micrograms/m^3).
DEPOUNIT	Emifac Emilbl Deplbl	
where:	Emifac	Emission rate factor used to adjust units of output for deposition (default value is 3600 for grams/sec to grams/m^2/hr).
	Emilbl	Label to use for emission units (default is grams/sec).
	Deplbl	Label to use for deposition (default is grams/m^2).
PARTDIAM	SrcID (or SrcRange) Pdiam(i), i=1,Npd	
where:	SrcID	Source identification code.
	SrcRange	Range of sources (inclusive) for which size categories apply.
	Pdiam	Array of particle diameters (microns).
MASSFRAX	SrcID (or SrcRange) Phi(i), i=1,Npd	
where:	SrcID	Source identification code.
	SrcRange	Range of sources (inclusive) for which mass fractions apply.
	Phi	Array of mass fractions for each particle size category.
PARTDENS	SrcID (or SrcRange) Pdens(i), i=1,Npd	
where:	SrcID	Source identification code.
	SrcRange	Range of sources (inclusive) for which particle densities apply.
	Pdens	Array of particle densities (g/cm^3) for each size category.
METHOD_2	SrcID (or SrcRange) FineMassFraction Dmm	
where:	SrcID	Source identification code.
	FineMassFraction	Fraction (between 0 and 1) of particle mass emitted in fine mode, less than 2.5 microns.
	Dmm	Representative mass mean particle diameter in microns.
GASDEPOS	SrcID (or SrcRange) Da Dw rcl Henry	
where:	SrcID	Source identification code.
	Da	Diffusivity in air for the pollutant being modeled (cm^2/s).
	Dw	Diffusivity in water for the pollutant being modeled (cm^2/s).
	rcl	Cuticular resistance to uptake by lipids for individual leaves (s/cm).
	Henry	Henry's Law constant (Pa m^3/mol).
NO2RATIO	SrcID (or SrcRange) NO2Ratio	
where:	SrcID	Source identification code.
	SrcRange	Source ID range for specified ratio.
	NO2Ratio	In-stack ratio of NO_2/NO_x.
HOUREMIS	Emifil SrcID's SrcRange's	
where:	Emifil	Specifies name of the hourly emission rate file.

Keyword	Parameters	
	SrcID's SrcRange's	Discrete source IDs that are included in the hourly emission file. Source ID ranges that are included in the hourly emission file.
BGSECTOR	StartSect1 StartSect2 . . . StartSect*N*, where *N* is ≤ 6	
where:	StartSect1 StartSect2 . . . StartSect*N*	Starting direction for the first sector. Starting direction for the second sector. . . . Starting direction for the last sector. NOTE: The minimum sector width allowed is 30 degrees, and warning messages will be issued for sector widths less than 60 degrees. Sector-varying background concentrations will be selected based on the flow vector, i.e., the downwind direction, based on the wind direction specified in the surface meteorological data file.

BACKGRNd	BGflag BGvalue(i), i=1, *n* (without BGSECTORs)
	    and/or
	HOURLY BGfilnam (BGformat)
	
	   or
	
	SECT*x* BGflag BGvalue(i), i=1, *n* (with BGSECTORs)
	    and/or
	SECT*x* HOURLY BGfilnam (BGformat)	

where:	SECT*x*
	
	BGflag
	
	BGvalue
	
	HOURLY
	
	BGfilnam
	(BGformat)
		Applicable sector (*x* = 1 to 6) defined on the SO BGSECTOR keyword, if specified.
		
		Variable background concentration flag:
		    ANNUAL for annual; SEASON for seasonal; MONTH for monthly; HROFDY for hour-of-day; WSPEED for wind speed category; SEASHR for season-by-hour; HRDOW for emission rates vary by hour-of-day, and day-of-week [M-F, Sat, Sun]; HRDOW7 for emission rates vary by hour-of-day, and the seven days of the week [M, Tu, W, Th, F, Sat, Sun]; SHRDOW for season by hour-of-day by day-of-week (M-F,Sat,Sun); SHRDOW7 for season by hour-of-day by day-of-week (M,Tu,W,Th,F,Sat,Sun); MHRDOW for month by hour-of-day by day-of-week (M-F,Sat,Sun); MHRDOW7 for month by hour-of-day by day-of-week (M,Tu,W,Th,F,Sat,Sun).
		Array of background concentrations; for:
		    ANNUAL, *n*=1; SEASON, *n*=4; MONTH, *n*=12;
		    HROFDY, *n*=24; WSPEED, *n*=6; SEASHR, *n*=96;
		    HRDOW, *n*=72; HRDOW7, *n*=168; SHRDOW, *n*=288; SHRDOW7, *n*=672;
		    MHRDOW, *n*=864;
		    MHRDOW7, *n*=2016
		
		Flag indicating that hourly background concentrations are specified in a separate data file; data period must match the meteorological data period being processed; no missing values are allowed in the hourly file, unless temporally varying background concentrations are also specified through the BGflag parameter, which are used to substitute for missing hourly values.
		Filename for hourly background concentrations.
		Optional Fortran format of hourly background concentration file; the default format is FREE format, i.e., comma or space-delimited data fields (Yr Mn Dy Hr BGvalue). The BGformat parameter must include open and close parentheses, the date variables must be read as integers (Fortran I format), and the BGvalue must be read as real (Fortran F, E, or D format), e.g., '(4I2,F8.3)'. The year may be specified as a 2-digit or 4-digit year, and the data period in the HOURLY background file must match the data period in the meteorological data files. The BGformat parameter cannot include any blank spaces, unless the field in enclosed by double quotes.

15

Keyword	Parameters	
		NOTE: Background concentrations specified on the BACKGRND keyword are currently assumed to be in units of PPB for NO$_2$ and SO$_2$, PPM for CO, and UG/M3 for all other pollutants, unless otherwise specified on the SO BACKUNIT keyword. Background concentrations can be included with any source group, including group 'ALL', by including a "SrcID" of 'BACKGROUND' on the SRCGROUP keyword. **Note that background concentrations are automatically included with group ALL by default; however, background concentrations can be excluded from group ALL by including NOBACKGROUND (or NOBACKGRND) on the SRCGROUP ALL keyword.**
BACKUNIt	BGunits	
where:	BGunits	Background concentration units, specified as PPB for parts-per-billion, PPM for parts-per-million, or UG/M3 for micrograms/cubic-meter. Background concentrations input in units of PPB or PPM are converted to micrograms/cubic-meter based on reference temperature (25 C) and pressure (1013.25 mb). Note: Units of PPB and PPM can only be used with the NO2, SO2, and CO POLLUTID.
INCLUDED	Incfil	
where:	SrcIncFile	Filename for the included source file, up to 200 characters in length; double quotes (") may be used as delimiters for the filename to allow for embedded spaces; and quotes don't count toward the limit of 200.
OLMGROUP	OLMGrpID SrcID's SrcRange's or ALL	
where:	OLMGrpID SrcID's SrcRange's	Group ID (Grpid = ALL specifies group including all sources). Discrete source IDs to be included in group. Source ID ranges to be included in group. Note: Card may be repeated with same Grpid if more space is needed to specify sources.
BLPGROUP	BLPGrpID SrcID's SrcRange's	
where:	BLPGrpID SrcID's SrcRange's	Buoyant line group ID. Discrete BUOYLINE source IDs to be included in group. BUOYLINE source ID ranges to be included in group.
PSDGROUP	PSDGrpID SrcID's SrcRange's	
where:	PSDGrpID SrcID's SrcRange's	PSD GrpID for PSDCREDIT option, must be one of the following: 　INCRCONS – increment-consuming sources, 　NONRBASE – non-retired baseline sources, or 　RETRBASE – retired (increment-expanding) baseline sources. Discrete source IDs to be included in group. Source ID ranges to be included in group. Note: Card may be repeated with same PSDGrpID if more space is needed to specify sources
HBPSRCID	SrcID's and/or SrcRange's or ALL	
where:	SrcID's	Discrete source IDs to be included.

16

Keyword	Parameters	
	SrcRange's	Source ID ranges to be included. <u>Note</u>: Card may be repeated if more space is needed to specify sources. Includes all sources modeled that are source type POINT, POINTHOR, and POINTCAP.
	ALL	
ARCFTSRC	SrcID's and/or SrcRange's or ALL	
where:	SrcID's	Discrete source IDs to be included.
	SrcRange's	Source ID ranges to be included. <u>Note</u>: Card may be repeated if more space is needed to specify sources.
	ALL	Applies aircraft plume rise option (ARCFTOPT) to all AREA and VOLUME source types modeled.
SRCGROUP	SrcGrpID SrcID's SrcRange's	
where:	SrcGrpID SrcID's	Group ID (Grpid = ALL specifies group including all sources). Discrete source IDs to be included in group; a "SrcID" of 'BACKGROUND' (or 'BACKGRND') can be used to include background concentrations, based on the BACKGRND keyword. Also note that background concentrations are automatically included with group ALL; however, background concentrations can be excluded from group ALL by specifying 'NOBACKGROUND' on the SRCGROUP ALL keyword.
	SrcRange's	Source ID ranges to be included in group. <u>Note</u>: Card may be repeated with same Grpid if more space is needed to specify sources.
BLPINPUT	Blavgblen Blavgbhgt Blavgbwid Blavglwid Blavgbsep Blavgfprm	
where:	Blavgblen Blavgbhgt Blavgbwid Blavglwid Blavgbsep Blavgfprm	Average building length (m). Average building height (m). Average building width (m). Average line source width (m) (of the individual lines). Average building separation (m) (between the individual lines). Average buoyancy parameter (m4/s3).

SUMMARY OF <u>RECEPTOR</u> PATHWAY KEYWORDS AND PARAMETERS

Keyword	Parameters	
ELEVUNIT	<u>METERS</u> or <u>FEET</u>	
where:	<u>METERS</u> <u>FEET</u>	Specifies input units for receptor elevations of meters. Specifies input units for receptor elevations of feet. Note: This keyword applies to receptor elevations only.
GRIDCART	Netid <u>STA</u> <u>XYINC</u> Xinit Xnum Xdelta Yinit Ynum Ydelta or <u>XPNTS</u> Gridx1 Gridx2 Gridx3 .... GridxN, and <u>YPNTS</u> Gridy1 Gridy2 Gridy3 .... GridyN <u>ELEV</u> Row Zelev1 Zelev2 Zelev3 ... ZelevN <u>HILL</u> Row Zhill1 Zhill2 Zhill3 ... ZhillN <u>FLAG</u> Row Zflag1 Zflag2 Zflag3 ... ZflagN <u>END</u>	
where:	Netid STA XYINC Xinit Xnum Xdelta Yinit Ynum Ydelta XPNTS Gridx1 GridxN YPNTS Gridy1 GridyN ELEV Row Zelev HILL Row Zhill FLAG Row Zflag END	Receptor network identification code (up to eight alphanumeric characters). Indicates <u>STA</u>rt of GRIDCART subpathway, repeat for each new Netid. Keyword identifying grid network generated from x and y increments. Starting local x-axis grid location in meters. Number of x-axis receptors. Spacing in meters between x-axis receptors. Starting local y-axis grid location in meters. Number of y-axis receptors. Spacing in meters between y-axis receptors. Keyword identifying grid network defined by series of x and y coordinates. Value of first x-coordinate for Cartesian grid. Value of 'nth' x-coordinate for Cartesian grid. Keyword identifying grid network defined by series of x and y coordinates. Value of first y-coordinate for Cartesian grid. Value of 'nth' y-coordinate for Cartesian grid. Keyword to specify that receptor elevations follow. Indicates which row (y-coordinate fixed) is being input. An array of receptor terrain elevations for a particular Row. Keyword to specify that hill height scales follow. Indicates which row (y-coordinate fixed) is being input. An array of hill height scales for a particular Row. Keyword to specify that flagpole receptor heights follow. Indicates which row (y-coordinate fixed) is being input. An array of receptor heights above local terrain elevation for a particular Row (flagpole receptors). Indicates <u>END</u> of GRIDCART subpathway, repeat for each new Netid.

GRIDPOLR	Netid <u>STA</u>
	    <u>ORIG</u> Xinit Yinit,
	  or <u>ORIG</u> Srcid
	    <u>DIST</u> Ring1 Ring2 Ring3 ... RingN
	    <u>DDIR</u> Dir1 Dir2 Dir3 ... DirN,
	  or <u>GDIR</u> Dirnum Dirini Dirinc
	    <u>ELEV</u> Dir Zelev1 Zelev2 Zelev3 ... ZelevN
	    <u>HILL</u> Dir Zhill1 Zhill2 Zhill3 ... ZhillN
	    <u>FLAG</u> Dir Zflag1 Zflag2 Zflag3 ... ZflagN
	    <u>END</u>	

where:	Netid STA ORIG Xinit	Receptor network identification code (up to eight alphanumeric characters). Indicates <u>STA</u>rt of GRIDPOLR subpathway, repeat for each new Netid Optional keyword to specify the origin of the polar network (assumed to be at x=0, y=0 if omitted). local x-coordinate for origin of polar network (m).

Keyword	Parameters	
	Yinit	local y-coordinate for origin of polar network (m).
	Srcid	Source ID of source used as origin of polar network.
	DIST	Keyword to specify distances for the polar network.
	Ring1	Distance to the first ring of polar coordinates (m).
	RingN	Distance to the 'nth' ring of polar coordinates (m).
	DDIR	Keyword to specify discrete direction radials for the polar network.
	Dir1	First direction radial in degrees (1 to 360).
	DirN	The 'nth' direction radial in degrees (1 to 360).
	GDIR	Keyword to specify generated direction radials for the polar network.
	Dirnum	Number of directions used to define the polar system.
	Dirini	Starting direction of the polar system.
	Dirinc	Increment (in degrees) for defining directions.
	ELEV	Keyword to specify that receptor elevations follow.
	Dir	Indicates which direction is being input.
	Zelev	An array of receptor terrain elevations for a particular direction radial.
	HILL	Keyword to specify that hill height scales follow.
	Row	Indicates which row (y-coordinate fixed) is being input.
	Zhill	An array of hill height scales for a particular Row Keyword to specify that flagpole receptor heights follow.
	FLAG	Keyword to specify that flagpole receptor heights follow.
	Dir	Indicates which direction or direction number is being input.
	Zflag	An array of receptor heights above local terrain elevation for a particular direction (flagpole receptors).
	END	Indicates END of GRIDPOLR subpathway, repeat for each new Netid.
DISCCART	Xcoord Ycoord (Zelev Zhill) (Zflag)	
where:	Xcoord	local x-coordinate for discrete receptor location (m).
	Ycoord	local y-coordinate for discrete receptor location (m).
	(Zelev)	Elevation above sea level for discrete receptor location (optional), used only for ELEV terrain.
	(Zhill)	Hill height scale (optional), used only for ELEV terrain.
	(Zflag)	Receptor height (flagpole) above local terrain (optional), used only with FLAGPOLE keyword.
DISCPOLR	Srcid Dist Direct (Zelev Zhill) (Zflag)	
where:	Srcid	Specifies source identification for which discrete polar receptor locations apply (used to define the origin for the discrete polar receptor).
	Dist	Downwind distance to receptor location (m).
	Direct	Direction to receptor location, in degrees clockwise from North.
	(Zelev)	Elevation above sea level for receptor location (optional), used only for ELEV terrain.
	(Zhill)	Hill height scale (optional).
	(Zflag)	Receptor height (flagpole) above local terrain (optional), used only with FLAGPOLE keyword.
EVALCART	Xcoord Ycoord Zelev Zhill Zflag Arcid (Name)	
where:	Xcoord	Local x-coordinate for discrete receptor location (m).
	Ycoord	Local y-coordinate for discrete receptor location (m).
	Zelev	Elevation above sea level for discrete receptor location, used only for ELEV terrain.
	Zhill	Hill height scale (m), used only for ELEV terrain.
	Zflag	Receptor height (flagpole) above local terrain, used only with FLAGPOLE keyword.
	Arcid	Receptor arc ID used to group receptors along an arc or other grouping (up to eight characters).
	(Name)	Optional name for receptor (up to eight characters).
INCLUDED	RecIncFile	
where:	RecIncFile	Identifies the filename for the included receptor file, up to 200 characters in length; double quotes (") may be used as delimiters for the filename to allow for embedded spaces; quotes don't count toward the limit of 200.

SUMMARY OF <u>METEOROLOGY</u> PATHWAY KEYWORDS AND PARAMETERS

Keyword	Parameters	
SURFFILE	Sfcfil	
where:	Sfcfil	Specify filename for surface meteorological input file <u>Note:</u> FREE format is used for all SURFFILE reads beginning with version 09292.
PROFFILE	Profil	
where:	Profil	Specify filename for profile meteorological input file <u>Note:</u> FREE format is used for all PROFFILE reads beginning with version 09292.
SURFDATA	Stanum Year (Name) (Xcoord Ycoord)	
where:	Stanum Year (Name) (Xcoord) (Ycoord)	Station number, e.g., 5-digit WBAN number for NWS station. Year of data being processed (four digits). Station name (optional). x-coordinate of station location (m) (optional). y-coordinate of station location (m) (optional).
UAIRDATA	Stanum Year (Name) (Xcoord Ycoord)	
where:	Stanum Year (Name) (Xcoord) (Ycoord)	Station number, e.g., 5-digit WBAN number for NWS station. Year of data being processed (four digits). Station name (optional). x-coordinate of station location (m) (optional). y-coordinate of station location (m) (optional).
SITEDATA	Stanum Year (Name) (Xcoord Ycoord)	
where:	Stanum Year (Name) (Xcoord) (Ycoord)	Station number for on-site meteorological data station. Year of data being processed (four digits). Station name (optional). x-coordinate of station location (m) (optional). y-coordinate of station location (m) (optional).
PROFBASE	BaseElev (Units)	
where:	BaseElev (Units)	Base elevation (above MSL) for the potential temperature profile. Units of BaseElev: <u>METERS</u> or <u>FEET</u> (default is <u>METERS</u>).
STARTEND	Strtyr Strtmn Strtdy (Strthr) Endyr Endmn Enddy (Endhr)	
where:	Strtyr Strtmn Strtdy (Strthr) Endyr Endmn Enddy (Endhr)	Year of first record to be read. Month of first record to be read. Day of first record to be read. Hour of first record to be read (optional). Year of last record to be read. Month of last record to be read. Day of last record to be read. Hour of last record to be read (optional). <u>Note:</u> File read begins with hour 1 of the start date and ends with hour 24 of the end date if Stahr and Endhr are omitted.
DAYRANGE	Range1 Range2 Range3 ... Range*N*	
where:	Range1 Range*N*	First range of days to process, either as individual day (XXX) or as range (XXX-YYY); days may be input as Julian dates (XXX) or as month and day (XX/YY). The 'N-th' range of days to process.

Keyword	Parameters	
NUMYEARS	NumYrs	
where:	NumYrs	Specifies the number of years of meteorological data being processed for purposes of allocating array storage for the OU MAXDCONT option. A default value of 5 years is assumed if the optional NUMYEARS keyword is omitted.
NOSA or NOSACO or NOSAST or NOSW or NOSWCO or NOSWST or NOTURB or NOTURBCO or NOTURBST	*No parameters or secondary keywords*	
SCIMBYHR	NRegStart NRegInt (SfcFilnam PflFilnam)	
where:	NRegStart NRegInt (SfcFilnam) (PflFilnam)	Specifies the first hour to be sampled with the SCIM option; required to have a value from 1 to 24. Specifies the sampling interval, in hours. Optional output file name to list the surface meteorological data for the sampled hours. Optional output file name to list the profile meteorological data for the sampled hours.
WDROTATE	Rotang	
where:	Rotang	Specifies angle (in degrees) to rotate wind direction measurements to correct for alignment problems; value of Rotang is subtracted from WD measurements, i.e., rotation is counterclockwise.
WINDCATS	Ws1 Ws2 Ws3 Ws4 Ws5	
where:	Ws1 Ws2 Ws3 Ws4 Ws5	Upper bound of first wind speed category (m/s). Upper bound of second wind speed category (m/s). Upper bound of third wind speed category (m/s). Upper bound of fourth wind speed category (m/s). Upper bound of fifth wind speed category (m/s). (sixth category is assumed to have no upper bound).

SUMMARY OF <u>EVENT</u> PATHWAY KEYWORDS AND PARAMETERS

Keyword	Parameters	
EVENTPER	Evname Aveper Grpid Date Conc	
where:	Name	Specify name of event to be processed (e.g., H002H24ALL), (up to ten alphanumeric characters)
	Grpid	Specify source group ID for event
	Aveper	Specify averaging period for event
	Date	Specify data period for event (ending YYMMDDHH for averaging period)
	Conc	Specifies the concentration value generated during the initial non-EVENT processing
EVENTLOC	Evname <u>XR=</u> Xr <u>YR=</u> Yr (Zelev Zhill) (Zflag) or <u>RNG=</u> Rng <u>DIR=</u> Dir (Zelev Zhill) (Zflag)	
where:	Evname	Specify name of event to be processed (e.g., H002H24ALL), (up to ten alphanumeric characters)
	<u>XR=</u>	X-coordinate for event (discrete Cartesian receptor)
	<u>YR=</u>	Y-coordinate for event (discrete Cartesian receptor)
	<u>RNG=</u>	Distance range for event (discrete polar receptor)
	<u>DIR=</u>	Radial direction for event (discrete polar receptor)
	(Zelev)	Terrain elevation for event (optional)
	(Zhill)	Hill height scale (optional)
	(Zflag)	Receptor height above ground for event (optional)
INCLUDED	EventIncFile	
where:	EventIncFile	Identifies the filename for the included EVENT file, up to 200 characters in length; double quotes (") may be used as delimiters for the filename to allow for embedded spaces; and quotes don't count toward the limit of 200

Note: EVENT locations can be input as either discrete Cartesian receptors (<u>XR=</u>, <u>YR=</u>) or as discrete polar receptors (<u>RNG=</u>, <u>DIR=</u>). Events that are specified in the file generated by the AERMOD model (CO EVENTFIL card) are always given as discrete Cartesian coordinates. Discrete polar receptors are assumed to be relative to an origin of (0,0).

SUMMARY OF <u>OUTPUT</u> PATHWAY KEYWORDS AND PARAMETERS

Keyword	Parameters	
RECTABLE	Aveper <u>FIRST</u> <u>SECOND</u> . . . <u>SIXTH</u> . . . <u>TENTH</u> and/or Aveper <u>1ST</u> <u>2ND</u> . . . <u>6TH</u> . . . <u>10TH</u> and/or Aveper <u>1</u> 2 . . . 6 . . . 10 . . . <u>N</u> . . . <u>999</u>	

where:	Aveper
	
	FIRST
	SECOND
	SIXTH
	1ST
	2ND
	6TH
	<u>N</u>
		Averaging period to summarize with high values (keyword <u>ALLAVE</u> specifies all
		    short-term averaging periods).
		Select summaries of <u>FIRST</u> highest values by receptor.
		Select summaries of <u>SECOND</u> highest values by receptor.
		Select summaries of <u>SIXTH</u> highest values by receptor.
		Select summaries of <u>1ST</u> highest values by receptor.
		Select summaries of <u>2ND</u> highest values by receptor.
		Select summaries of <u>6TH</u> highest values by receptor.
		Select summaries of <u>N</u>-th highest values by receptor (up to <u>999</u>-th highest values).
		
		<u>Note:</u>
		    If two parameters are input separated by a dash (e.g.
		    <u>FIRST-THIRD</u> or <u>4-12</u>), then summaries of all high
		    ranked values within that range (inclusive) are provided.
		
		    If the CO EVENTFIL keyword is exercised, then the
		    events generated by the RECTABLE keyword are included
		    in the input file for EVENT model.
		
		    The range of ranks specified on the RECTABLE keyword
		    (but not the individual ranks specified) also determines
		    the range of ranks that may be considered with the
		    MAXDCONT option.

MAXTABLE	Aveper Maxnum	
where:	Aveper Maxnum	Averaging period to summarize with overall maximum values (keyword ALLAVE specifies all averaging periods). Specifies number of overall maximum values to summarize .
DAYTABLE	Avper1 Avper2 Avper3 . . .	

where:	Avper1	Averaging period, e.g., <u>24</u> for 24-hr averages, to summarize with values by
		    receptor for each day of data processed (keyword ALLAVE for first parameter
		    specifies all averaging periods).

MAXIFILE	Aveper GrpID Thresh Filnam (Funit)	

where:	Aveper
	
	GrpID
	Thresh
	Filnam
	Funit
		Specifies averaging period for list of values equal to or exceeding a threshold
		    value.
		Specifies source group to be output to file.
		Threshold value (e.g., NAAQS) for list of exceedances.
		Name of disk file to store maximum values.
		Optional parameter to specify the file unit.
		
		<u>Note:</u>
		    If the CO EVENTFIL keyword is exercised, then the events generated by the
		    MAXIFILE keyword are included in the input file for EVENT processing.

POSTFILE	Aveper GrpID Format Filnam (Funit)	
where:	Aveper GrpID Format	Specifies averaging period to be output to file, e.g., <u>24</u> for 24-hr averages, <u>PERIOD</u> for period averages. Specifies source group to be output to file. Specifies format of file, either <u>UNFORM</u> for unformatted files or <u>PLOT</u> for

Keyword	Parameters	
	Filnam Funit	formatted files for plotting. Specifies filename for output file. Optional parameter to specify the file unit.
PLOTFILE	Aveper GrpID Hivalu Filnam (Funit) (Short-Term values) Aveper GrpID Filnam (Funit) (PERIOD or ANNUAL averages)	
where:	Aveper GrpID Hivalu Filnam Funit	Specifies averaging period to be output to file, e.g., <u>24</u> for 24-hr averages, <u>PERIOD</u> for period averages, etc. Specifies source group to be output to file. Specifies rank to be included in high value summary (e.g., <u>FIRST</u>, <u>SECOND</u>, <u>1ST</u>, <u>2ND</u>, etc.) to be output to file (the rank must be included on the RECTABLE card). Specifies filename for output file. Optional parameter to specify the file unit.
TOXXFILE	Aveper Cutoff Filnam (Funit)	
where:	Aveper Cutoff Filnam Funit	Specifies averaging period to be output to file, e.g., <u>1</u> for 1-hr averages. Specifies cutoff (threshold) value in g/m^3 for outputting results for AERMOD model. Specifies filename for output file. Optional parameter to specify the file unit.
RANKFILE	Aveper Hinum Filnam (Funit)	
where:	Aveper Hinum Filnam Funit	Specifies averaging period to be output to file, e.g., <u>24</u> for 24-hr averages. Specifies the number of high values to be ranked. Specifies filename for output file. Optional parameter to specify the file unit.
EVALFILE	SrcID Filnam (Funit)	
where:	SrcID Filnam Funit	Specifies the source ID to be output to file. Specifies filename for output file. Optional parameter to specify the file unit.
SEASONHR	GrpID FileName (FileUnit)	
where:	GrpID FileName (FileUnit)	Specifies the source group ID to be output to file. Specifies filename for output file. Optional parameter to specify file unit.
MAXDAILY	GrpID FileName (FileUnit)	
where:	GrpID FileName (FileUnit)	Specifies the source group ID to be output to file. Specifies filename for output file. Optional parameter to specify file unit.
MXDYBYYR	GrpID FileName (FileUnit)	
where:	GrpID FileName (FileUnit)	Specifies the source group ID to be output to file. Specifies filename for output file. Optional parameter to specify file unit.
MAXDCONT	GrpID UpperRank LowerRank FileName (FileUnit) or GrpID UpperRank <u>THRESH</u> ThreshValue FileName (FileUnit)	
where:	GrpID UpperRank LowerRank	Specifies the source group ID to be output to file. Upper bound of ranks to evaluate for contributions. Lower bound of ranks to evaluate for contributions (note that lower rank refers to lower concentrations and higher rank refers to higher concentrations). <u>NOTE:</u> The UpperRank and LowerRank values must be within the range of

Keyword	Parameters	
		ranks specified on the RECTABLE keyword. AERMOD will analyze each rank within the range, regardless of whether the rank is specified explicitly on the RECTABLE keyword.
	THRESH	Indicates that a threshold concentration (ThreshValue) will be specified as a limit on the lower bound rank to process.
	ThreshValue	Lower threshold value for evaluating contributions; processing will stop after the first ranked value that is below ThreshValue NOTE: The ThreshValue analysis will be limited to the range of ranks specified on the RECTABLE keyword (but not the individual ranks that are specified). A warning message is generated if the ThreshValue is not reached within the range of ranks analyzed.
	FileName (FileUnit)	Specifies filename for output file. Optional parameter to specify file unit. Note: The range of ranks specified on the RECTABLE keyword (but not the individual ranks specified) also determines the range of ranks that may be considered with the MAXDCONT option, even with the THRESH option.
SUMMFILE	SummFileName	
where:	SummFileName	Specifies filename of output summary file
FILEFORM	EXP or FIX	
where:	EXP FIX	Specifies that the output results files will use EXPonential-formatted values. Specifies that the output results files will use FIXed-formatted values (fixed-formatted values will be used if FILEFORM is omitted).
NOHEADER	FileType1 FileType2 FileType3 . . . FileTypeN or ALL	
where:	FileTypeN ALL	Specifies the output file type(s) for which header records will be suppressed; includes the following file types: POSTFILE, PLOTFILE, MAXIFILE, RANKFILE, SEASONHR, MAXDAILY, MXDYBYYR, and MAXDCONT. Specifies that header records will be suppressed for ALL applicable output file types.
EVENTOUT	SOCONT or DETAIL	[EVENT Only]
where:	SOCONT DETAIL	Provide source contribution information only in the event output. Include hourly concentrations for each source and hourly meteorological data in the event output