

CORRESPONDENCE/MEMORANDUM

DATE: October 15, 2021

TO: Permit and Compliance Staff

FROM: Stationary Source Modeling Team

SUBJECT: Processed Meteorological Data (2016-2020) for Use in AERMOD

On May 11, 2021 USEPA released a new version of the meteorological data processor, AERMET. WDNR obtained raw meteorological data from the National Centers for Environmental Information (NCEI) via file transfer protocol (FTP) for the period 2016-2020 and developed processed data for use in the regulatory dispersion model, AERMOD.

Air permits public noticed after October 31, 2021, where dispersion modeling was performed, will use the 2016-2020 processed meteorological data. Permits already in public comment on October 31, 2021, or waiting to be issued, can be re-evaluated for modeling on a case-by-case basis.

To develop the surface and profile files, the most recent regulatory versions of the tools were used:

- AERMET version 21112 (2112)
- AERMINUTE version 15272
- AERSURFACE version 20060, with airport-specific sectors chosen by land-use

Table 1 lists the AERMOD-pertinent details of the 19 stations.

Table 1

<i>USAF</i> <i>ID</i>	<i>WBAN</i> <i>ID</i>	<i>FAA</i> <i>ID</i>	<i>STATION</i>	<i>Upper Air</i> <i>(WBAN)</i>	<i>LAT</i>	<i>LON</i>	<i>ELEV</i> <i>(m)</i>
726419	94929	ASX	ASHLAND	MPX (94983)	46.55	-90.92	250
726463	14897	AUW	WAUSAU	GRB (14898)	44.93	-89.63	366
725470	94908	DBQ	DUBUQUE	DVN (94982)	42.40	-90.71	317
727456	04919	DYT	SKY HARBOR	INL (72747)	46.72	-92.04	186
726435	14991	EAU	EAU CLAIRE	MPX (94983)	44.87	-91.49	269
726505	04845	ENW	KENOSHA	GRB (14898)	42.60	-87.94	223
726506	04840	FLD	FOND DU LAC	GRB (14898)	43.77	-88.49	242
726450	14898	GRB	GREEN BAY	GRB (14898)	44.48	-88.14	208
726508	94973	HYR	HAYWARD	MPX (94983)	46.03	-91.44	369
726452	04826	ISW	WISCONSIN RAPIDS	GRB (14898)	44.36	-89.84	309
726416	14921	LNR	LONE ROCK	DVN (94982)	43.21	-90.19	218
726430	14920	LSE	LA CROSSE	MPX (94983)	43.88	-91.25	198
726574	94985	MFI	MARSHFIELD	GRB (14898)	44.64	-90.19	382
726400	14839	MKE	MILWAUKEE	GRB (14898)	42.95	-87.90	203
726410	14837	MSN	MADISON	GRB (14898)	43.14	-89.35	262
726456	94855	OSH	OSHKOSH	GRB (14898)	43.97	-88.56	239
726438	94994	OVS	BOSCOBEL	DVN (94982)	43.16	-90.68	203
727415	04803	RHI	RHINELANDER	GRB (14898)	45.63	-89.48	503
726425	04841	SBM	SHEBOYGAN	GRB (14898)	43.77	-87.85	229

Table 2 lists the missing and calm hours for 2016-2020. All stations satisfy the USEPA and WDNR requirements for number of available hours. The stations are grouped by similar climatology.

Table 2

FAA ID	STATION	Calm Hours	Missing Hours	Total	% Available
ASX	ASHLAND	467	410	877	98
DYT	SKY HARBOR	3858	2807	6665	84.79
AUW	WAUSAU	557	993	1550	96.46
HYR	HAYWARD	346	435	781	98.22
RHI	RHINELANDER	237	710	947	97.84
EAU	EAU CLAIRE	283	337	620	98.59
MFI	MARSHFIELD	245	812	1057	97.59
ISW	WISCONSIN_RAPIDS	281	841	1122	97.44
FLD	FOND DU LAC	108	545	653	98.51
GRB	GREEN BAY	189	608	797	98.18
OSH	WITTMAN	153	617	770	98.24
MSN	MADISON	305	662	967	97.79
DBQ	DUBUQUE	174	360	534	98.78
OVS	BOSCOBEL	802	361	1163	97.35
LNR	LONE_ROCK	140	547	687	98.43
LSE	LA_CROSSE	293	192	485	98.89
MKE	MILWAUKEE	157	556	713	98.37
ENW	KENOSHA	102	607	709	98.38
SBM	SHEBOYGAN	184	592	776	98.23

Sky Harbor, MN (DYT)

The 2016-20 Sky Harbor (DYT) data had a large number of both calm and missing hours, particularly for year 2019. The State of Minnesota Pollutant Control Agency (MN-PCA) used the Superior, Wisconsin (SUW) station to fill in missing and calm hours through the data period. MN-PCA were unable to satisfactorily adjust year 2019 so, with consultation with U.S. EPA Region 5, created a five-year data set comprised of years 2015, 2016, 2017, 2018, and 2020. Minnesota provided a copy of their data on 08JUL2021, and the MN-PCA processed files are what is available via the Wisconsin DNR web site.