



**Minnesota Pollution
Control Agency**

520 Lafayette Road North
St. Paul, MN 55155-4194

AERA-26

Refined HHRAP-Based Analysis Form

Air Emissions Risk Analysis (AERA)

Doc Type: Air Emissions Risk Assessment – External Documentation

Instructions on Page 8

Purpose: This form is **required** for AERAs that include an analysis based on U. S. Environmental Protection Agency's (EPA) Human Health Risk Analysis Protocol (HHRAP e.g. IRAP). This form serves both as the HHRAP-based AERA analysis protocol and later describes the HHRAP-based analysis. This form also documents the Minnesota Pollution Control Agency (MPCA) AERA HHRAP-based protocol and analysis review. It must be submitted pre-app with the other AERA forms and supporting documents list on the AERA-01 form, electronically, and must be approved before an air permit application is submitted. ***MPCA staff will fill out areas in italics during their review, indicating deficiencies and advising the applicant on how they can be remedied.*** Instructions on how to fill out this form are at the end of the form. Please consult the AERA website <http://www.pca.state.mn.us/tchy42b> and air dispersion modeling website <http://www.pca.state.mn.us/nwqh421> when filling out this form.

Facility Information

1. AQ Facility ID No.: _____
2. SIC Code: _____
3. Date(s) of pre-application submittal: _____
(mm/dd/yyyy)
4. Date(s) of permit application submittal: _____
(mm/dd/yyyy)
5. Facility name: _____
6. Facility location
Street address: _____
City: _____ State: MN Zip code: _____ County: _____
7. Proposer: _____ Phone: _____ E-mail: _____
8. AERA Preparer: _____ Phone: _____ E-mail: _____

Are there differences between the Refined HHRAP-based Analysis materials submitted pre-app and those submitted post-app?

☐ Yes ☐ No ☐ NA

If yes, please explain the differences (especially changes in methodology):

MPCA Review Question: Are there differences between the Refined HHRAP-based Analysis materials submitted pre-app and those submitted post-app?

☐ Yes ☐ No ☐ NA

If yes, please explain the differences (especially changes in methodology):

MPCA Overall Summary of Refined HHRAP-Based Analysis Review

Names of MPCA AERA reviewer(s): _____

Submittal date (mm/dd/yyyy)	Pre-app review date (mm/dd/yyyy)	Overall pre-app HHRAP-based analysis determination (Select Yes for adequate, No for deficient, and enter reviewer's initials)	Post-app completeness review date (mm/dd/yyyy)	Overall post-app HHRAP-based analysis completeness determination (Select Yes for substantially complete, No for incomplete, and enter reviewer's initials)	**Technical accuracy review date (mm/dd/yyyy)	**Technical accuracy determination and reviewer's initials
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____

MPCA overall pre-app refined HHRAP-based analysis review notes including comments on deficiencies and how they can be remedied:

MPCA overall post-app refined HHRAP-based analysis review notes including comments on deficiencies and how they can be remedied:

****MPCA overall refined HHRAP-based analysis technical accuracy review notes including comments on deficiencies and how they can be remedied:**

General Submittal Information

This form is being submitted as: (mark as many as are relevant to this submittal; keep dates of other submittals in the chart as a log)	Submittal date (mm/dd/yyyy)
<input type="checkbox"/> HHRAP-based analysis protocol	_____
<input type="checkbox"/> Explanation of HHRAP-based analysis results in a pre-air permit application submittal (pre-app)*	_____
<input type="checkbox"/> Explanation of HHRAP-based analysis results in an air permit application (post-app)*	_____

*If applicable, please explain any differences in methodologies between the approved protocol and the modeled results:

The MPCA AERA and modeling guidance will be/was followed? ☐ Yes ☐ No

If no, describe any deviations from the MPCA recommended guidance:

The MPCA recommends some deviations from the HHRAP guidance (e.g. different fish ingestion rates). Will there be/are there additional deviations from the HHRAP guidance that are not included the MPCA AERA guidance? ☐ Yes ☐ No

If yes, describe these deviations:

Will there be/are there any additional analysis (e.g., analysis using MPCA-suggested central tendency human exposure factors)? ☐ Yes ☐ No

If yes, describe additional analyses:

HHRAP-based analysis tools

☐ IEUBK model will be/was used for lead if greater than 10% of the lead standard

☐ AERMOD version: _____

☐ IRAP version: _____

☐ MMREM if Hg emissions are above 1 lb/year, and there are fishable water bodies within 3km of a stack under 100m high or within 10km of a stack that is 100m high or higher. If mercury is not found to be a risk driver for the inhalation or other non-fish ingestion pathways, then it can be excluded from the HHRAP-based software modeling as long as MMREM is used.

☐ Other tools - please explain: _____

MPCA general submittal information review questions:

Do you know of other tools that should be or should have been used? ☐ Yes ☐ No

MPCA general submittal information review notes:

AERA Emissions

Did emissions estimating methods follow the MPCA "Emission Estimating Guidance" at <http://www.pca.state.mn.us/index.php/view-document.html?gid=138> and general AERA guidance? ☐ Yes ☐ No

If no, please explain:

☐ The required separate AERA-05 forms were submitted for the HHRAP-based analysis and associated RASS(s).

MPCA summary of AERA emissions review from AERA-05 form

Names of MPCA AERA reviewers: _____

Submittal date (mm/dd/yyyy)	Pre-app review date (mm/dd/yyyy)	Overall pre-app AERA emissions determination (Select Yes for adequate, No for deficient, and enter reviewer's initials)	Post-app completeness review date (mm/dd/yyyy)	Overall post-app AERA emissions completeness determination (Select Yes for substantially complete, No for incomplete, and enter reviewer's initials)	Technical accuracy review date (mm/dd/yyyy)	Technical accuracy determination and reviewer's initials
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____

MPCA AERA-05 emission review notes:

AERA AERMOD Modeling Settings

☐ The required separate AERA-03 forms were submitted for each type of modeling associated with this protocol (i.e., a different form for any screening RASS(s), Q/CHI runs, or refined modeling used in HHRAP-based software).

Note: Projects using HHRAP-based software should follow up-to-date MPCA Modeling Guidance, especially when choosing building parameters, flag pole receptors, downwash parameters, meteorological data etc. The following practices will be/were followed:

- ☐ Will/has submitted all files necessary to recreate AERMOD and HHRAP-based software runs (input files), output files and plot files
- ☐ Consulted MPCA modeling staff on what meteorological data to use. Updates are on-going and the web site may not contain the latest data
- ☐ Will/has calculated chronic risk results using HHRAP-based software
- ☐ Will/has calculated acute risk results in a separate run from the chronic HHRAP-based software run
- ☐ Will/has calculated acute risk results in a RASS or Q/CHI spreadsheet
- ☐ Will/has used HHRAP-based software default options unless specifically stated otherwise below

The MPCA has done some sensitivity analyses in the past suggesting that the properties for benzo(a)pyrene will result in "conservative" (i.e., upper bound) estimates of gas deposition if applied across a range of volatile and semivolatile substances. Thus the MPCA generally suggests using the following benzo(a)pyrene characteristics:

Property	Benzo(a)pyrene default	Property	Benzo(a)pyrene default
Diffusivity in Air	5.13E 02	Cuticular Resistance	4.41E 01
Pollutant Diffusivity in Water	4.44E 06	Henry's Law Constant	4.60E 02 (unitless)

Will they be or have the benzo(a)pyrene gas deposition properties listed above been used? ☐ Yes ☐ No

If no, please explain what gas deposition properties will be/have been used and why:

The following particle distributions should be used unless more site specific data are appropriate.

Particle ranges (Use Method 1)		
Particle Diameter	Composition	Particle Density
1	0.25	1
2.5	0.25	1
10	0.5	1

Will they be or have the particle distributions listed above been used? ☐ Yes ☐ No

If no, please explain what other particle distributions will be/were used and why:

Has exponential decay been used or will it be used (not recommended)? ☐ Yes ☐ No

If yes, please explain why:

MPCA summary of air dispersion modeling review from AERA-03 Form

Names of MPCA AERA reviewers: _____

Submittal date (mm/dd/yyyy)	Pre-app review date (mm/dd/yyyy)	Overall pre-app air dispersion modeling determination (Select Yes for adequate, No for deficient, and enter reviewer's initials)	Post-app completeness review date (mm/dd/yyyy)	Overall post-app air dispersion modeling completeness determination (Select Yes for substantially complete, No for incomplete, and enter reviewer's initials)	Technical accuracy review date (mm/dd/yyyy)	Technical accuracy determination and reviewer's initials
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____

MPCA AERA-03 air dispersion modeling review notes:

HHRAP-Based Software (e.g., IRAP) Settings

Other than those exceptions specifically stated below, will any or have any non-default HHRAP-based software options been used?

☐ Yes ☐ No

If yes, explain any additional changes to default HHRAP-based software options:

- a) Will or has the drinking water pathway been turned off? ☐ Yes ☐ No Unless there are site specific conditions indicating that people in the area are expected to drink surface water instead of well water the MPCA recommends turning off the drinking water pathway.

If no, explain the site specific conditions that indicate that people in the area are expected to drink surface water instead of well water:

- b) **In addition** to risk estimates based on HHRAP default farmer assumptions, will or have they been or will risk estimates been made using more site-specific exposure assumptions, depending on the land use of the area (e.g., a non-dairy farmer or MPCA central tendency assumptions)? ☐ Yes ☐ No

If yes, explain what exposure assumptions will be /were used in the additional risk estimates and why. In either case, in order to be more easily understood by the general public, reporting ingestion rates in pounds per week is recommended:

- c) Will or have the following ingestion rates been used instead of the default HHRAP Fisher ingestion rates? ☐ Yes ☐ No

Fish ingestion rates for the Minnesota subsistence fisher are 0.00203 kg/kg day for an adult (assuming an adult body weight of 70 kg) and 0.00143 kg/kg day for a child (assuming a child body weight of 15 kg). For an adult, this is equal to a raw fish tissue ingestion rate of 142 grams per day (g/day), as listed in the EPA's Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories (EPA, 2000). This would equate to eating about a half-pound of fish 4 to 5 times a week. The adult fish ingestion rate listed in HHRAP is 0.00125 kg/kg day, which equates to 87.5 g/day assuming an adult body weight of 70 kg. The child fish ingestion rate listed in HHRAP is 0.00088 kg/kg day, which equates to 13.2 g/day assuming a child body weight of 15 kg. The child fish ingestion rate is based on the following: ratio of adult/child fish ingestion rates (87.5 g/day for adults/13.2 g/day for children) of 6.63. The EPA (2000) adult fish ingestion rate of 142 g/day was divided by 6.63 to derive a child ingestion rate of 21.4 g/day.

Fish ingestion rates for the Minnesota recreational fisher are 0.00043 kg/kg day for an adult (assuming an adult body weight of 70 kg) and 0.00030 kg/kg day for a child (assuming a child body weight of 15 kg). For an adult, this is equal to a raw fish tissue ingestion rate of 30 g/day, which is consistent with MDH fish consumption advice. Thirty grams per day is equivalent to an average of a half-pound meal of freshwater fish per week. The child ingestion rate is calculated using the HHRAP ratio of adult/child fish ingestion rates (87.5 g/day for adults/13.2 g/day for children) of 6.63. The adult fish ingestion rate of 30 g/day was divided by 6.63 to derive a child ingestion rate of 4.5 g/day. In order to be more easily understood by the general public, reporting ingestion rates in pounds per week is recommended.

If no, please explain what assumptions will be/were used and why:

MPCA review of HHRAP-based settings

Submittal date(s) (mm/dd/yyyy)	Pre-app review date(s) (mm/dd/yyyy)	Pre-app adequacy	Post-app completeness review date(s) (mm/dd/yyyy)	Post-app completeness	Technical accuracy review date(s) (mm/dd/yyyy)	Technical accuracy
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____

MPCA HHRAP-based settings review questions:

Are the assumptions presented in this section appropriate? ☐ Yes ☐ No

MPCA HHRAP-based settings review notes:

Toxicity Values

Please check the following practices that will be/were used. If a box is not checked, please provide an explanation here:

- ☐ Inhalation toxicity values from the most recent RASS will be/were used in the HHRAP-based analysis.
- ☐ Acute analysis will be/was conducted using the RASS rather than the HHRAP-based tool.
 - ☐ If the acute analysis will not be conducted using the RASS, please explain the methods:

Note: The acute analysis should use the acute toxicity values from the RASS. Most of the HHRAP-based software acute values that are not in the RASS are emergency levels issued by DOE as part of their Temporary Emergency Exposure Limits, Revision 20 (http://www.eh.doe.gov/chem_safety/teel.html) or U.S. EPA Acute Inhalation Exposure Guideline Levels - Level 1 (AEGL 1s) Database. These sources are not part of the AERA hierarchy of toxicity information sources.

- ☐ MPCA non-inhalation toxicity values will be/were used following the AERA hierarchy.
- ☐ No additional adjustments will be/were made to the toxicity values to incorporate early-life sensitivity. MPCA's current practice when conducting AERAs is to use toxicity values from the following sources listed in order of preference: specific MDH health-based values (hbvs) at <http://www.health.state.mn.us/divs/eh/risk/guidance/air/table.html>, MDH Health Risk Values (HRVs) at <http://www.health.state.mn.us/divs/eh/risk/guidance/air/table.html>, EPA's IRIS database at <http://www.epa.gov/iris/>, CalEPA's Office of Environmental Health Hazard Assessment (OEHHHA) at <http://www.arb.ca.gov/toxics/healthval/healthval.htm>, EPA's HEAST database. This practice automatically results in quantitative AERA risk results that have incorporated early-life sensitivity adjustments when the toxicity values developed by MDH, EPA, or CalEPA include such an adjustment.

If AERA risk results for a pollutant are estimated to be above 1 in a million (i.e., the pollutant is considered a risk driver) and the pollutant is a linear carcinogen with a toxicity value developed *without* considering early-life sensitivity, then the MPCA will include a qualitative discussion on what incorporating an adjustment could mean for the project and will request guidance from MDH on the adjustment. This approach is consistent with other situations where there is uncertainty associated with the toxicity information used in an AERA.

MPCA review of toxicity values

Submittal date(s) (mm/dd/yyyy)	Pre-app review date(s) (mm/dd/yyyy)	Pre-app adequacy	Post-app completeness review date(s) (mm/dd/yyyy)	Post-app completeness	Technical accuracy review date(s) (mm/dd/yyyy)	Technical accuracy
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____

MPCA toxicity review questions:

Are the assumptions presented in this section appropriate? ☐ Yes ☐ No

MPCA toxicity review notes:

Watershed and Water Body Parameters

Please check the practices below that will be/were followed:

- ☐ MMREM and general AERA guidance will be/were followed in choosing the most impacted water bodies for evaluation. Those water bodies are:
- ☐ Minnesota and site specific parameters from the sources listed in the table on the next page or others generated by the MPCA will be/were used. The parameters for an example water body are listed in the table on the next page. If these parameters were not chosen, give an example of the value to be used/used in the column titled "Site Specific Value".
- Please explain how these values were selected or calculated and why:

MPCA review of watershed and water body parameters

Submittal date(s) (mm/dd/yyyy)	Pre-app review date(s) (mm/dd/yyyy)	Pre-app adequacy	Post-app completeness review date(s) (mm/dd/yyyy)	Post-app completeness	Technical accuracy review date(s) (mm/dd/yyyy)	Technical accuracy
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____
		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Init: _____

MPCA Watershed and Water Body Parameters Review Questions:

Are the assumptions presented in this section appropriate? ☐ Yes ☐ No

MPCA watershed and water body parameters review notes:

Examples of watershed and water body parameters

Variable name	Site specific value	MN specific value	Units	Variable name	Location for quick HHRAP input	Source
MN state specific values						
Average annual wind speed		4.80	m/s	W	Risk receptor site parameters	Professional judgment. Based on meteorological data from the MSP airport. Wind speeds found at other locations around the state do not have high variability.
Fraction (percentage) of watershed that is impervious		0.05	unitless	A_I_Frac	Watershed site parameters	Professional judgment. Represents the fraction of the watershed that is impervious, such as roadways, pavement, etc. The default value is 5%, which would be appropriate for most applications. This value underestimates the amount of water delivered by watersheds located in urban areas. http://land.umn.edu/index.html
USLE erodibility factor		0.39	ton/acre	K_erode	Watershed site parameters	Value of 0.39 is typical/conservative of average soil types. Used in Universal Soil Loss Equation. Consistent with HHRAP-based software (NC DEHNR 1997, EPA 1994). This default value is based on a soil organic content of 1%.
USLE length slope factor		0.50	unitless	LS	Watershed site parameters	Value of 1.5 appropriate for moderately steep slopes; lower values likely for mildly steep slopes. Dependent on the nature of the watershed. HHRAP-based software suggests a default value consistent with NC DEHNR 1997 and EPA 1994. However, they recommend "using current guidance (U.S. Department of Agriculture 1997; U.S. EPA 1985) in determining watershed specific values for this variable based on site specific information."
Air viscosity (temp corrected)		1.72E 04	g/cm s		Risk receptor site parameters	Used in gas phase transfer coefficient. The air viscosity was calculated for a temperature of 6 °C, the estimated average air temperature of Minnesota.
Water viscosity (temp corrected)		1.31E 02	g/cm s		Watershed site parameters	Used in liquid phase transfer coefficient. The value provided is 10 °C and 1 atm, as approximately 10 °C is average temperature of water bodies in Minnesota.

Variable name	Site specific value	MN specific value	Units	Variable name	Location for quick HHRAP input	Source
Sediment delivery empirical slope coefficient		0.125	unitless	SD_X_e	Risk receptor site parameters	Vanoni 1975 Used in calculating the sediment delivery to the water body.
Dry particle deposition velocity		0.15	cm/s		Risk receptor site parameters	Greg Pratt @ MPCA. Upper range of values reported by Pratt, et al (1986) for semivolatile substances. Only use in previous versions of HHRAP-based software. Current HHRAP-based software version uses AERMOD, which calculates deposition.
Dry vapor depositional velocity		1.50	cm/s			Greg Pratt @ MPCA. Upper range of measured values for nitric acid vapor as reported by Pratt, et al (1986). Only use in previous versions of HHRAP-based software. Current HHRAP-based software version uses AERMOD, which calculates deposition.

Examples of water shed and water body parameters - *continued*

Ecoregion, county or food web specific values	Site specific value	Driftless area ecoregion value	Units	Variable name	Location for quick HHRAP input	Source
Average annual precipitation		83.82	cm/yr	P	Risk receptor site parameters	County specific values from the MN Climatology Working Group 2003 at http://climate.umn.edu/img/normals/precip/precip_norm_annual.htm
Average annual temperature		280.93	K	T_A	Risk receptor site parameters	County specific values from the MN Climatology Working Group 2003 at http://climate.umn.edu/ .
Average annual irrigation		0.01	cm/yr	I	Risk receptor site parameters	USGS 2000. County specific. Part of the water balance. Data was retrieved for the amount of irrigated land per county (acres) and the total amount of irrigation water used from the USGS, at http://water.usgs.gov/watuse/data/2000/index.html . Based on the number of gallons used each year, acres of farmland, and acres of each county (from 2000 US Census Data).
Average surface runoff from pervious areas		16.61	cm/yr	RO	Not directly input into HHRAP-based software – calculated from % pervious	Calculated average surface runoff from pervious areas. Values for surface runoff vary throughout the state. Default values for different regions were provided in Geraghty et al. (1973) – Water Atlas of the United States.
Water body temperature		14.5	°C	T_wk	Watershed site parameters	Estimated from Hondzo and Stefan (1993) study, "Regional Water Temperature Characteristics of Lakes Subjected to Climate Change. <i>Climatic Change</i> . 24:187-211." Based on the type of water body assessed and the species of fish that might be found in a similar water body.
Total suspended solids		13	mg/L	TSS	Watershed site parameters	MPCA 2005, calculated Ecoregion values for TSS were taken from the Minnesota Lake Water Quality Assessment Report: Developing Nutrient Criteria (2005). TSS values for rivers are four times the particulate organic carbon content for lakes in the same ecoregion.
Cover Management Factor (for USLE)		0.3	unit less	C_var	Watershed site parameters	MN Agricultural Statistics (2002). County specific.
USLE rainfall (erosivity) factor		175	yr ⁻¹	RF	Watershed site parameters	Determined by rainfall characteristics of ecoregion. From Wischmeier, W.H. and D.D. Smith. 1978. Predicting Rainfall Erosion Losses – A Guide to Conservation Planning. USDA Handbook 537. Washington, D.C.: U.S. GPO.
Average evapotranspiration		67.22	cm/yr	E_v	Risk receptor site parameters	USGS National Water Summary 1987. Calculated by multiplying the total precipitation for a given county by the fraction of precipitation that is evapotranspired.

Proposer/Preparer Instructions

Boxes can be checked by clicking on them. Response areas will expand as necessary to include the complete response. Multiple dates can be added by using the “Enter key” (return key) after you type the first date. All Air Emission Risk Analysis (AERA) documents must be submitted electronically whether submitted with an air permit application or alone. AERA documents submitted with an air permit application must also be submitted in a hard copy. Hard copies of spreadsheets, like the Risk Assessment Screening Spreadsheet (RASS) and lengthy modeling files should include the first summary page of the document but do not need to include subsequent pages since the electronic version will be available for review.

If **all** of the requested forms and support documents **are not included** with an air permit application needing an AERA the air permit application **will be deemed incomplete**. This includes risk estimates for pre-existing facilities. MPCA staff will return this AERA form plus any other incomplete AERA forms to the applicant with deficiencies and remedies indicated in the italicized MPCA review areas. If forms were submitted pre-app they should be updated and re-submitted post-app with any italicized MPCA comments left in and changes summarized in the appropriate areas.

Facility information: Fill in the Air Quality (AQ) Facility identification (ID) No. (Number), which is the first eight digits of the permit number for all new permits issued under the new operating permit program, Standard Industrial Classification (SIC) code, facility name and location, and submittal dates. The project proposer and AERA preparer should be people that MPCA staff can contact with general and technical questions about the AERA submittal.

MPCA Review Instructions

Specific section/document review

MPCA staff will summarize their review of specific sections/support documents by marking either “Yes” for adequate or “No” for deficient in the pre-app sections, or “Yes” for substantially complete or “No” for incomplete in the post-app sections, along with their initials. They will add comments on deficiencies and how they can be remedied in the summary section. When there are multiple submittals, include each new submittal date in the table with the corresponding review dates and comments, thus keeping a log of submittals.

Overall adequacy/completeness summary

*If **all** of the necessary sections/documents are present and follow the appropriate methods (i.e., follows the AERA, emissions and modeling guidance) MPCA staff will mark the appropriate overall summary section with either “Yes” for adequate in the pre-app section, or “Yes” for substantially complete in the post-app section. Otherwise they will mark “No” for deficient in the pre-app AERA submittal determination section or “No” for incomplete in the post-app AERA determination section. They will add comments on deficiencies and how they can be remedied in the overall summary section. If this form is being submitted as a protocol indicate in the MPCA overall review notes whether the protocol is approved or has deficiencies. Remember an AERA submitted with an air permit application is not considered “substantially complete” until **all** necessary quantitative and qualitative information has been submitted, and MPCA staff have determined that appropriate methods have been used. **Please summarize these results in the AERA-01 form.** The AERA-01 form will be shared with the permit engineer conducting the permit application completeness review. If deficiencies are noted in this form during the completeness review then this form should also be shared with the permit engineer who will share it with the applicant.*