APPENDIX F – Industrial Recycling Data and Projections

Instructions for Completing Table F.1 (remove these instructions for the SWMD's solid waste management plan)

[Note: Ohio EPA encourages SWMDs to conduct a survey of industries within their boundaries to gather at least recycling data for the reference year. Sample survey forms and survey methodologies for both a full scale survey for waste data (disposal and recycling) and a targeted survey for recycling data are provided in Appendix R.]

For All Tables – Ohio EPA has created an *Excel* Workbook that will be used to generate the tables for this appendix. Each table has a dedicated spreadsheet in the workbook. The document preparer will complete each table for this Appendix using the *Excel* Spreadsheet for that table (i.e. the table will completed outside of this *Word* document). After completing the table in the *Excel* spreadsheet, the preparer will copy the table from the *Excel* spreadsheet and paste it into this *Word* document. Specific instructions for completing each table in the *Excel* spreadsheet will be provided in this appendix. Examples of those instructions are provided below. However, the instructions will change once the overall content of this appendix is finalized.

Table F.1 – Industrial Survey Results

Enter information into Table F.1 as follows:

Note: Table F.1 is organized by the SIC codes that comprise the targeted industrial sector and by material type.

SIC Code – These codes are provided.

[Note: Because the survey results are aggregated by SIC code and material type, the SWMD needs to be able to identify the survey(s) that contributed to the quantities entered into a particular cell (e.g. ferrous metals for a particular SIC code). If Ohio EPA has questions about a quantity in Table F.1, then the SWMD can verify the quantity by looking at the specific surveys that reported the quantity.]

Survey Year – In the cell reserved by "Enter Survey Year Here" enter the calendar year that the data represents.

If data from multiple years were used, provide a brief explanation in text after Table F.1 to describe the process undertaken to verify the data.. Ohio EPA encourages the policy committee to communicate with the planner assigned to the SWMD regarding the use of survey data from multiple years.

[EXAMPLE: If a given industrial company did not respond to a survey for the reference year but did respond to a previous survey, it may be acceptable to use data from the

earlier survey. To use data from an earlier survey, verify: that the industrial company was operating in the reference year; that the owner did not significantly change the nature of the business, its production process, production level, number of employees, and that the facility still produces the types of recyclables as were reported in the earlier survey. Then, provide text to briefly explain the verification process.]

Quantities of Materials Diverted - Quantities must be based on actual reported data.

Sum the quantities of a material reported by all respondents in a SIC category and enter that quantity in the cell corresponding to the SIC code and material. [Example: 10 industrial businesses in SIC code 22 returned surveys. The surveys from seven of those businesses reported quantities of glass. The entry for glass for SIC code 22 would be the sum of the glass reported by the seven businesses.]

If no businesses in a specific SIC code responded to a survey or if respondents did not divert all listed materials, leave the appropriate cells blank.

Materials not typically generated by or credited to the industrial sector are highlighted in gray. To maintain consistency with tables in other parts of the solid waste management plan, please do not delete the rows corresponding to these materials.

"Other" Materials – There are blank rows to enter quantities of materials that do not have dedicated listings. Enter the first type of "other" material in row 23 and provide quantities by SIC code as directed. If an explanation of an "other" waste is needed, then provide that explanation in the space indicated with "[replace text to explain materials/quantities entered as "Other"]".

Totals – The total weight of material by SIC and the total weight of each material are automatically calculated in the row and column labeled "Totals". There is no need to perform any calculations in Table F.1.

In the space indicated with "[replace with text to explain the survey methodology and data analysis]" after Table F.1, provide text describing the SWMD's survey methodology. Also, as instructed earlier, provide text explaining how the SWMD evaluated its data, including the process and criteria the SWMD used to verify reported data and the process used to verify data from previous survey cycles used for the plan.

Include a blank copy of the SWMD's survey instrument and a description of the survey methodology in Appendix R

Format Instructions

Last Print: 5/15/2014
Last Update 6/17/2014

Table F-1: Industrial Survey Results

Enter Survey Year Here	INDUSTRIAL SURVEY RESULTS: MATERIAL TYPE by SIC																			
	20	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	49	Totals
1. Appliances / "White Goods"																					
2. Lead-Acid Batteries																					
3. Dry Cell Batteries																					
4. Food (Composting)																					
5. Food (Other)																					
6. Glass																					
7. Household Hazardous Waste																					
8. Ferrous Metals																					
9. Non-Ferrous Metals																					
10. Corrugated Cardboard																					
11. All Other Paper																					
12. Plastics																					
13. Scrap Tires (tons)																					
14 Textiles																					
15. Used Motor Oil																					
16. Wood																					
17. Yard Waste																					
18. Commingled Recyclables																					
19. Electronics																					
20. Ash (recycled ash only)																					
21. Non-Excluded Foundry Sand																					
22. Rubber																					
23.																					
24																					
Totals																					

[replace with text to explain materials/quantities entered as "Other"]

[replace with text to explain the survey methodology and data analysis]

Table F.2: Data from Buybacks, Scrap Yards, Processors, Materials Recovery Facilities, and Recycling Centers (remove these instructions for the SWMD's solid waste management plan)

Table F.2 summarizes reference year survey data from respondents that reported having recycled industrial material during the reference year. Table F.2 is to be used specifically for buybacks, scrap yards, processors, material recovery facilities and other recycling centers that reported materials for the industrial sector.

Instructions for completing Table F.2:

Survey Year – In the cell reserved with "Enter Survey Year Here", enter the calendar year that the data represents.

If data from multiple years were used, please provide a brief explanation in text after Table F.2 to describe the process undertaken to verify the data. Ohio EPA encourages the policy committee to communicate with the planner assigned to the SWMD regarding the use of survey data from multiple years.

[EXAMPLE: If a buyback did not respond to a survey for the reference year but did respond to a previous survey, it may be acceptable to use data from the earlier survey. To use data from an earlier survey, verify: that the buyback was operating in the reference year; that the owner did not significantly change the nature of the business, that the facility still accepts the same types of materials that were reported in the earlier survey, etc. Then, provide text to briefly explain the verification process.]

Name/ID - [NOTE: To maintain anonymity, assign an id number to a respondent and use the id number instead of the respondent's name.] In the space provided, replace "Name/ID" with either the name of the respondent or an ID number assigned to that respondent.

Material Quantities - Quantities must be based on actual reported data.

Provide quantities of each material reported by the entity in the appropriate rows. If a survey respondent did report quantities for all materials, then leave the appropriate cells blank.

Other Materials – There are blank rows to enter quantities of materials that do not have dedicated listings. Enter the first type of "other waste" in row 23 and provide quantities as directed. If an explanation of an "other" waste is needed, then provide that explanation in the space indicated with "[replace with text to explain materials/quantities entered as "Other"]" after Table F.2.

Add and delete rows/columns as necessary.

Totals – The total weight of material by entity name, or ID, and the total weight of each material is automatically calculated in the row and column labeled “Totals”. There is no need to perform any calculations in Table F.2.

In the space indicated with “[replace with text to explain the survey methodology and data analysis]” after Table E.2, provide text describing the survey methodology. Also, as instructed earlier, provide text explaining how the data was evaluated, including the process and criteria used to verify reported data and the process used to verify data from previous survey cycles.

Last Print: 5/15/2014
Last Update 6/17/2014

Table F-2: Data From Buybacks, Scrap Yards, Processors, MRF's and Other Recycling Facilities

Survey Year: [….]	DATA FROM BUYBACKS, SCRAP YARDS, PROCESSORS, MATERIALS RECOVERY FACILIES and RECYCLING CENTERS														
Industrial	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	Name/ID	**Totals**
1. Appliances / "White Goods"															
2. Lead-Acid Batteries															
3. Dry Cell Batteries															
4. Food (Composting)															
5. Food (Other)															
6. Glass															
7. Household Hazardous Waste															
8. Ferrous Metals															
9. Non-Ferrous Metals															
10. Corrugated Cardboard															
11. All Other Paper															
12. Plastics															
13. Scrap Tires (tons)															
14 Textiles															
15. Used Motor Oil															
16. Wood															
17. Yard Waste															
18. Commingled Recyclables															
19. Electronics															
20. Ash (recycled ash only)															
21. Non-Excluded Foundry Sand															
22. Rubber															
23.															
24															

Totals															

[replace with text to explain materials/quantities entered as "Other"]

[replace text to explain the survey methodology and data analysis]

Instructions for Completing Table F.3 (Sources of Diversion (remove these instructions for the SWMD's solid waste management plan)

The purpose of Table F-3 is to associate the quantities of materials being credited to the SWMD's industrial waste reduction and recycling rate with the programs through which the materials were recovered. The table will list all industrial programs that generated the quantities being credited to total diversion. In this way, the table will account for all of the quantities being credited.

This table will also present any adjustments made to eliminate materials that may have been counted more than once (i.e. "double counted"). Double counting occurs when the same material is reported by more than one survey respondent, typically by both the generator and the processor of the material. Material is "double counted" if the quantities from both respondents are credited to total recovery.

Do not report the following materials for the industrial sector:

- Train boxcars.
- Metals and other materials from construction or demolition activities (i.e. construction and demolition debris).
- Metals from vehicle salvage operations.

Also ensure that all credited material was generated within the SWMD during the data year.

Complete Table F.3 as follows:

Add or delete rows as necessary

Source/Program Name: Enter the name or description of the program or source that a quantity of material is associated with.

Common programs/sources that quantities can be associated with are listed below. Provide entries for all of the programs/sources listed and any other programs/sources not listed to capture all quantities of materials recovered.

If there are multiple programs or sources for a particular category (such as buybacks), either provide individual listings for each program/source (i.e. each buyback that provided data) or provide an entry for the combined quantities for that category (i.e. buybacks).

For quantities identified through surveys, use an entry such as "industrial recycling identified through surveys" as the source name.

Common programs/sources to list include but are not limited to:

- Buybacks
- Scrap Yards
- Processors/material recovery facilities
- Industrial recycling identified through surveys (i.e.. a "catch all" for industrial survey results) as identified through surveys)
- Industrial "milk runs"
- Material-specific drop-offs/collection programs (such as for paper (ex. Abitibi), glass, etc.)
- Any other sources that quantities can be associated with

Quantities Reported: Provide weights in tons. This will be the unadjusted quantity of material recovered through the program/source (i.e quantities have not been adjusted to correct for double counting). For "catch all" listings, provide the total amount of material recovered through all of programs/opportunities included in the listing (e.g. materials recovered through all industrial business programs identified through surveys, etc.).

- Quantities for industrial programs identified through surveys will come from Table F.1
- Quantities for buybacks, scrap yards, processors, etc. will come from Table F.2
- Quantities for other SWMD programs will come from Appendix X

Adjustments: The quantities entered into Table F.3 need to be adjusted to remove material that was counted more than once (i.e. "double counted"). Provide separate listings for each correction made to adjust for material being counted more than once. Provide a brief explanation of each adjustment in the space provided.

[Note: Adjustments are necessary if multiple entities reported the same material or if an entity reported non-creditable material. As an example, an industrial generator reported the quantity of material collected through its in-house program and the processor that received the material from the generator returned a survey that also accounts for the material. Account for the quantity through one source or the other but not both. Include an entry in Table F.3 to explain the adjustment that was made and show the quantity that was subtracted to make the adjustment.

Adjusted Total: After entering all adjustments, calculate the adjusted total by subtracting the total adjustments from the unadjusted total. The Adjusted Total in Table F.3 should match the Grand Total into Table F.4.

In the space indicated with "[replace with text to explain data in Table F.3]" after Table F.3, provide text to describe the survey methodology. Also provide text explaining how data was evaluated, including the process and criteria used to verify reported data, the process used to verify any data from previous survey cycles that was used for the plan, the process used to eliminate double counting, and any text necessary to explain quantities of materials discredited due to double counting.

[*NOTE*: Calculations for Table F.3 are not automatic. Manually calculate the "unadjusted total", the "total adjustments" and the "adjusted total".]

Table: F-3 Quantities of Materials Diverted by Program or Source

Program/Source	Quantities Reported (tons)
Quantities Reported by Program or Source (Unadjusted)	
Unadjusted Total	
Adjustments	
Total Adjustments	
Adjusted Total	

[replace with text to explain data in Table F.3]

Instructions for completing Table F.4 (remove these instructions for the SWMD's solid waste management plan)

Table F.4 will show the quantity of each material that was recovered from the industrial sector in the reference year. The table is the same as the table from the annual district report

Provide the following information:

For each material, enter the quantity, corrected for double counting, that was recovered.

List materials that do not fit into one of the material categories under the heading "Other". Add rows as necessary.

The Grand Total in Table F.4 should match the Adjusted Total in Table F.3.

All data and calculations will automatically be performed after completing the tables above.

In the space indicated with "[replace with text to explain the data in Table F.4]" Enter any text necessary to qualify the quantities presented in Table F.4

Table F-4 Reference Year Waste Reduction

Recyclable Categories	Industrial (tons)
1. Appliances / "White Goods"	
2. Lead-Acid Batteries[1]	
3. Dry Cell Batteries[1]	
4. Food (Composting)*	
5. Food (Other)*	
6. Glass	
7. Household Hazardous Waste[1]	
8. Ferrous Metals	
9. Non-Ferrous Metals	
10. Corrugated Cardboard	
11. All Other Paper	
12. Plastics	
13. Scrap Tires (tons)	
14. Textiles	
15. Used Motor Oil[1]	
16. Wood	
17. Yard Waste	
18. Commingled Recyclables	
19. Electronics[1]	
20. Ash (recycled ash only)	
21. Non-Excluded Foundry Sand	
22. Rubber	
23.	
24.	
25.	
26.	
27.	
28.	
29. Recycling Subtotals	*0*
Volume Reduction and Incineration	
31. Incineration	
32. Subtotal of lines 32 and 33	*0*
33. Grand Totals	**0**
PLACE FOOT NOTES HERE	
PLACE FOOT NOTES HERE	

[replace with text to explain the data in Table F.4]

Instructions for completing Table F.5: Industrial Recovery Projections (remove these instructions for the plan)

Complete Table F.5 as follows:

Program/Source Name - Include a listing for each program/source that will result in recovered material being credited to the reduction/recycling rate(include existing programs being continued and new programs to be implemented during the planning period). Enter the name/id number that was assigned to the program/source in Appendix B or Appendix I.

Year – Enter the reference year in the cell labeled "1". All subsequent years will automatically populate.

Recovery Projections:

For each program or source listed, provide projections for the amount of material to be recovered through the program for each year of the planning period.

For SWMDs that met the industrial recycling goal in the reference year (as calculated in Appendix K):

If the SWMD met the industrial reduction/recycling goal of 66 percent during the reference year, then it is acceptable to project a constant quantity of industrial material to be recovered at the reference year quantity throughout the planning period. [This option goes along with projecting industrial generation constant in Appendix G]. In this way, the recycling/recovery rate will also stay the same.

If, based on the industrial analysis conducted in Appendix H, the SWMD will implement programs to increase industrial recovery (described in Appendix I), then it would be appropriate to project increases in quantities to be recovered at least for the first five years. Doing so will require the policy committee to also project increases in generation (as recovered quantities go up so will generation even if disposal remains constant)

For SWMDs that did not meet the industrial recycling goal in the reference year (as calculated in Appendix K:

If the SWMD did not meet the industrial recycling/recovery goal of 66 percent during the reference year, then the policy committee will use the results of its diversion analysis (from Appendix H) to develop programs and/or other measures to improve recovery (these will be described in Appendix I). These programs/measures must allow the plan to demonstrate that the SWMD will achieve the goal within the first three years of the planning period. Once decisions regarding programs have been made, the policy

committee will then project quantities to be recovered and present those in Table F.5.

For each program or source listed, provide projections for the amount of material to be recovered through the program/source for at least the first five years of the planning period. After the fifth year, keep the quantity to be recovered constant, calculate as a constant percentage of generation, or provide annual projections.

Programs/Sources

For quantities to be recovered though programs (such as waste audits, industrial recycling routes (e.g. "milk runs", etc.), below are some suggestions for methods of making projections:

- Tie projections to the effects of planned new or changes to existing programs and data collection methods on recovery
    - For example, the plan projects increases in the quantities of material recycled as a result of aggressively marketing waste audit services to industrial generators.
- Use the SWMD's trends from the past five years
- Use data from similar programs in other SWMDs

Non-program sources

Project the quantities to be recovered through third party/non-program sources (such as buybacks, scrap yards, processors materials recovery facilities, etc.) as a constant percentage of generation. Determine the percentage that quantities from those sources comprised of total generation in the reference year and then assume quantities from those sources will be recovered at that percentage of generation throughout the planning period.

Example:
In the reference year, buybacks recovered 500 tons of material from the industrial sector. The residential/commercial sector generated 25,000 tons of waste. Material recovered by buybacks made up 2 percent of generation. In the first year of the planning period the SWMD will generate 25,750 tons of industrial waste. Thus, the buybacks are projected to recover 515 tons of material (25,750 x 0.2).

Use the same methodology to project quantities to be recovered by industrial businesses (as quantified through surveys) unless the SWMD will implement new programs to increase quantities recovered by industrial businesses or identify quantities (such as through improved survey efforts). In that case, base projections on expected results from the new programs.

In the space indicated by "[replace with text to explain industrial recovery projections]" after Table F.5, include text explaining how projections were developed, including assumptions made, the programs that will contribute to projected quantities, factors

considered, sources consulted, sample calculations, as appropriate, and narrative to explain how any planned changes will affect recovery.

Format Instructions

Last Print: 5/15/2014
Last Update 6/17/2014

Table: F-5 Industrial Recovery Projections by Program

PROGRAM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Totals																		

[replace with text to explain industrial recovery projections]