MEMORANDUM

DATE: August 2013

TO: Docket EPA-HQ-OAR-2010-0929

FROM: Lisa Grogan-McCulloch

SUBJECT: Evaluation of Competitive Harm from Disclosure of "Inputs to Equations" Data Elements Deferred to March 31, 2015

Introduction and Purpose of Analysis

In the August 25, 2011 final rule deferring reporting of certain inputs to emission equations under 40 CFR part 98 (76 FR 53057) (hereafter referred to as "'inputs to equations' data elements") until March 31, 2015, The EPA expressed its intent to further evaluate the "inputs to equations" data elements to determine which, if any, could result in competitive harm if made publicly available. The EPA outlined a four-step process for this evaluation in the final rule and in a supporting memorandum entitled "Process for Evaluating and Potentially Amending Part 98 Inputs to Emission Equations" (docket EPA-HQ-OAR-2010-0929).

The purpose of this memorandum is to describe the review undertaken for the second step of this evaluation process: the EPA's analysis of the competitive harm that would likely result from reporting of "inputs to equations" data elements. This review was undertaken for 27 of the 28 subparts of the Greenhouse Gas Reporting Program (GHGRP) with "inputs to equations." [1]

This analysis of competitive harm includes:

- Part One: An evaluation of the current market structures for sectors required to report "inputs to equations" data elements, to determine whether conditions exist within the market structures such that the release of the data could result in competitive harm, and
- Part Two: For those sectors for which the market structure analysis determined that reporting of the "inputs to equations" data elements could result in competitive harm, an evaluation of each individual "inputs to equations" data elements to determine whether its release would be likely to cause competitive harm.

[1] The review was not conducted for 2015 data inputs in subpart I because reporting of the "inputs to equations" data elements for that subpart was addressed in a separate proposed action [see 77 FR 63538]. Additionally, the evaluation of the subpart C "inputs to equations" in this memorandum encompasses the one subpart A "input to equation" data element. As a result, the one subpart A "input to equation" is not listed explicitly in this memorandum.

The EPA's evaluation of current market structures is presented in Part One of this memorandum. For all sectors in which the market structure analysis summarized in Part One determined that the conditions exist within the market such that firms could use released "inputs to equations" data elements to gain a competitive advantage, the EPA proceeded to evaluate each individual "inputs to equations" data element. Part Two of this memorandum presents an evaluation of each individual "inputs to equations" data element to determine whether potential release would be likely to cause substantial competitive harm.

Part 1: Evaluation of Market Structures

1.0 Introduction

The following section describes the overall process used to assess the market structures that exist within the different subparts of 40 CFR part 98 with “inputs to equations” data elements, to determine whether conditions exist within the market such that competitive harm could occur should “inputs to equations” data elements be released to the public. Section 2.0 summarizes the connection between market structure and the potential for information to cause competitive harm. Section 3.0 presents the process used for the assessment. Section 4.0 presents the results of the market structure assessment for each subpart evaluated. Section 5.0 presents a summary of the overall results of this analysis.

2.0 Importance of Market Structure

Market structure affects firms’ ability to use information about other firms in their market. Market structure is defined in terms of the number of firms supplying a commodity in the market, and the degree of control that individual firms have over the price they obtain for their product. The market, in turn, is defined in terms of the commodity marketed and the geographic scope of the market.

Competitive markets are characterized by many suppliers and products that are identical or nearly identical, in terms of product characteristics that users value. In such markets, firms are “price takers”; that is, they are unable to influence the market price, and must determine their profit-maximizing production level as a function of the price set by the market. In such markets, strategic behavior is not possible because there are too many competitors, making it impossible for them to make decisions based on their competitors’ actions, and thereby affect market price.

Thus, for firms to be able to use information either to cause competitive harm or to coordinate their pricing with competitors, the number of firms in the market must be small enough that firms can identify their competitors, and identify critical information about their competitors’ operations. Markets with a relatively small number of firms are termed "concentrated."

In the following section, we describe methods for assessing whether markets are concentrated. We then examine several sectors covered by the GHGRP, to determine their level of concentration.

3.0 Process for Assessing Market Structures and Potential for Competitive Harm

Economists assess market concentration using measures that characterize the share of the market served by the largest firms. Specific tools used include the Herfindahl-Hirschman Index (HHI).

For a given market, the HHI is calculated by squaring the market share of each firm competing in the market, then summing the squared shares.

$$HHI = \Sigma_i s_i^2 \text{, where } s_i = \text{the market share of the } i^{th} \text{ firm.}$$

Potential values of the HHI range from near zero (if each of the top 50 firms has one-50th if the output of the group (50*(1/50^2)), to 10,000, if one firm has 100 percent of the value (100^2=10,000). The HHI reflects both the number of firms in the market and the relative size of the firms, and assumes larger values, (1) the smaller the number of firms in the market and (2) the greater the disparity in size between the firms. The U.S. Department of Justice (DOJ) and the Federal Trade Commission (FTC)[2] use the HHI to identify markets where there are potential anti-trust concerns. They consider markets with an HHI below 1,000 to be unconcentrated; markets with HHI between 1,000 and 1,800 are considered moderately concentrated, and markets with HHI above 1,800 to be highly concentrated. The Census Bureau computes and publishes HHI for the manufacturing sectors, defined using North American Industry Classification System codes or NAICS codes.[3]

Economists define markets at the product or process level because customers make purchasing decisions for specific products or services. While identifying a concentrated or moderately concentrated NAICS is sufficient to identify subparts in which facilities are aware of their competitors, and thus subparts for which revealing sensitive information would have the potential to lead to competitive harm, it is not the only indicator that a market may have the potential to lead to competitive harm should sensitive information be released. Some sectors (defined at the 6-digit NAICS code level) that are not concentrated at the national sector level may produce some products for which there are sufficiently few firms producing the product that they are aware of each other's operations and may behave strategically. In these cases, publication of some data could result in either reduced competition or competitive harm. Similarly, some products are traded in regional, rather than national markets; for these, even if the sector does not appear concentrated or moderately concentrated at the national level based upon its HHI, regional markets, which have fewer firms on the supply side compared to the national sector, may be concentrated. In addition, some NAICS may include multiple industry sectors, only one of which is covered by a subpart. If this is the case, the industry sector may have concentrated or moderately concentrated markets even if the overall NAICS is not concentrated or moderately concentrated. As a result, for subparts for which the national-level NAICS assessment indicates that the sector may be unconcentrated, the EPA performed additional assessments.

Thus, the EPA's analysis followed a tiered approach:

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[2] Department of Justice. Use of HHI. http://www.justice.gov/atr/public/divisionmanual.html , and Federal Trade Commission (FTC), 2004. *The Petroleum Industry: Mergers, Structural Change, and Antitrust Enforcement.* http://www.ftc.gov/opa/2004/08/oilmergersrpt.shtm

[3] Census Bureau. Economic Census, Concentration Ratios, 2007. http://www.census.gov/econ/concentration.html

1. For each subpart, the EPA examined associated NAICS codes to determine if the entire NAICS is concentrated or moderately concentrated at the national level.
2. If multiple NAICS are associated with a subpart, and not all NAICS are in the same concentration category, the EPA determined whether a majority of the facilities reported concentrated or moderately concentrated NAICS.
3. If all the national NAICS associated with a subpart are unconcentrated, or a majority of facilities report under unconcentrated NAICS, the EPA determined whether:
    a. The markets for the goods produced by firms in the subpart are regional, or
    b. The NAICS is broader than the affected market, or there are sub-sector markets within a sector, such as markets for specialty products.

If the EPA found that either of the criteria under the third tier above is true for a subpart, the EPA examined the market itself (either regional or sub-sector/product-specific) to determine if it is concentrated or moderately concentrated. If the EPA found that none of the above criteria is true for a subpart, the EPA determined that the market is unconcentrated, and that the risk of competitive harm or diminished competition resulting from the release of "inputs to equations" data elements for the subpart would be minimal. If the EPA found that any of the above criteria is true for a subpart, the EPA determined that the market is concentrated, such that the firms subject to the subpart are likely able to identify their competitors. For each such subpart, the EPA proceeded to evaluate each "inputs to equations" data elements within the subpart to determine if its release would be likely to cause competitive harm. Refer to Part 2 of this memorandum for this analysis.

For three of the subparts, subparts C (Combustion), II (Industrial Wastewater Treatment), and TT (Industrial Landfills), the subparts represent a process that may take place at facilities in a number of industry sectors. Another subpart, subpart U (Miscellaneous Uses of Carbonates), also includes a variety of industry sectors. The markets in which these facilities compete, and for which concentration must be assessed, are the markets for the goods or services they produce. To evaluate the concentration in these markets, therefore, the EPA identified the NAICS codes for the industry sectors reported by these facilities, and examined their concentration.

For sectors that did not have manufacturing NAICS codes, subparts W (Petroleum and Natural Gas Systems) and CC (Soda Ash), HHI values were not available. As a result, the EPA conducted a qualitative analysis of the market structure.

4.0 Results of Analysis

The EPA calculated HHI values using NAICS codes reported by facilities for reporting year 2011. For the 27 subparts for which this analysis was conducted, the EPA identified 296 unique NAICS codes that facilities reported. Of these 296, 200 are manufacturing sector NAICS codes,

for which HHI information is compiled by the Census Bureau. Subparts CC and W[4] did not have manufacturing NAICS reported, and thus HHI values were not available. As a result, for these subparts, the EPA conducted a qualitative analysis.

Section 4.1 presents the results of the analysis of concentration at the national sector (NAICS code) level. Section 4.2 presents the results of the analysis of concentration at the regional, product, or process level. Section 4.3 presents the results of the analysis of subparts representing processes from many Sectors (i.e., subparts C, U, II, and TT). Section 4.4 presents the results of the analysis of non-manufacturing Sectors (i.e., subparts W and CC).

4.1 Analysis of Concentration at the National Sector (NAICS-code) Level

To begin its assessment of the potential for the release of the "inputs to equations" data elements to lead to reduced competition or competitive harm, the EPA determined the level of sector concentration at the national NAICS code level. If the EPA determined that the NAICS code identified by a majority of firms in a subpart is concentrated or moderately concentrated at the national NAICS code level, the EPA concluded that the firms in the subpart are likely are aware of each other's actions. The EPA focused its assessment on the 200 manufacturing sector NAICS codes associated with GHG reporting facilities.

Appendix A lists concentration ratios for the 6-digit NAICS codes cited by facilities, as well as values of the Herfindahl-Hirschman Index (HHI) published by the U.S. Census Bureau for affected manufacturing NAICS codes. In addition, Appendix A presents information about the number of reporting facilities in a subpart that identified each NAICS. This information allowed the EPA to identify which NAICS codes within a subpart represent the majority of reporting facilities.[5]

At the subpart level, the EPA considered a subpart to be associated with concentrated or moderately concentrated markets if a majority of the firms reporting under that subpart identified themselves with NAICS codes that are concentrated or moderately concentrated. Recognizing that it is actually the market or the sector that is concentrated, for convenience throughout the rest of this document, the EPA refers to such subparts as concentrated or moderately concentrated. Using this criterion, the EPA found that the following subparts are at least moderately concentrated based on the NAICS codes associated with them: subparts F, G, L, N, O, S, V, Z, AA, BB, and EE. As a result, the EPA further evaluated these subparts by examining individual data elements to determine if harm would be likely to occur. Refer to the Part 2 of this memorandum for this evaluation.

[4] Three of the 1,549 facilities reporting under subpart W in 2011 reported manufacturing NAICS codes. See section 4.4 for further discussion.

[5] Some facilitiesreported multiple NAICS; thus, facilities may be counted several times within a subpart, and the sum of NAICS cited by facilities within a subpart may exceed the number of facilities reporting under that subpart.

4.2 Analysis of Concentration at the Regional, Product, or Process Level

For sectors for which the Census Bureau data indicates HHI in the unconcentrated range, the EPA undertook further analysis. The markets for the goods they produce were examined to determine if the markets for some or all of the goods are concentrated within a particular NAICS, or if the goods are traded in regional markets, which would have fewer firms than the national markets and thus are more likely to be concentrated; see the analysis below.

Subpart E, Adipic Acid Producers. Production of adipic acid falls under NAICS 325199, All Other Basic Inorganic Chemical Manufacturing; this is a very broad NAICS code, encompassing production of many different inorganic chemicals. Adipic acid production is a small subset of the overall NAICS. Thus, the EPA examined adipic acid producers specifically, rather than relying on a NAICS-level assessment. Three facilities reported under subpart E for Reporting Year 2011. Even without firm-level data, the HHI is useful because with only three plants, the lowest value the HHI could have is 3,267.[6] Because this source category does not have a threshold for applicability, all adipic acid producers in the U.S. are reporting under the GHGRP. Thus, the EPA concluded that the market for adipic acid is concentrated at the national level. As a result, the EPA further evaluated the "inputs to equations" data elements in Subpart E by examining individual data elements to determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

Subpart H: Portland Cement Sector. Subpart H is the Portland cement industry. Nationally, the HHI for the cement industry is 609.9; the four largest firms produce 40.8% of value of shipments, according to the 2007 Economic Census. In addition, Appendix 1 shows that the NAICS codes reported by GHGRP facilities in 2011 are unconcentrated. Therefore, the EPA proceeded to assess whether regional markets are concentrated.

High cement transportation cost relative to product value leads to regional cement markets with a small number of competing firms. In previous analyses supporting the EPA rule making, the cement industry has been modeled as regional, and imperfectly competitive.[7] That is, market concentration within a regional market is sufficiently high that firms are aware of competitors. For example, this analysis identified 20 regional markets for gray cement (a subset of this sector), with the number of plants in each market ranging from one to nine[6]; such markets are clearly concentrated at the regional level.

In such markets, firms may have the ability to influence market prices by their production choices. In addition, firms are more likely to behave strategically based on their knowledge of other (competing) producers' behavior. In addition, they would be aware of their competitors' identity and interested in production and market information about their competitors. It is

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[6] Assuming each firm has an equal one-third share of the market results in an HHI of 3,267 (3×33^2). In fact,the threshold of 1,000 for moderately concentrated markets translates to a minimum of 10 firms.

[7] See EPA's Regulatory Impact Analysis: Amendments to the National Emissions Standards for Hazardous Air Pollutants and New Source Performance Standards for the Portland Cement Industry, August 2010, Section 2.3. http://www.epa.gov/ttnecas1/regdata/RIAs/portlandcementfinalria.pdf, EPA-HQ-OAR-2002-0051-3477.

important to note that facilities in the cement industry may produce a variety of cement products. Some cement products are homogeneous (e.g. gray cement) and are traded in regional markets; others such as white, Type III and Type V represent niche products with different markets, with few firms but possibly serving a larger geographic area.[8]

As a result of these assessments, the EPA concluded that the structure of the markets that exist within this source category warrant further evaluation of the "inputs to equations" data elements in subpart H. Therefore, the EPA further evaluated the "inputs to equations" data elements by examining each individual data element to determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

Subpart K, Ferroalloys. According to the 2010 Statistics of U.S. Business[9], there are 19 firms nationwide that produce ferroalloys. Of the 10 firms reporting under subpart K, nine selected NAICS 331112, for which no HHI information is available from the Census. As a result, we conducted a qualitative assessment of the market structure. Firms in an industry with only 19 firms would be aware of their competitors. In addition, if a sector that has 19 firms nationwide includes a few firms with relatively large market share (as opposed to a sector where all firms are similar size, and each has roughly 1/19 share of the market), the sector is likely to be concentrated. As a result, the EPA concluded that the structure of the market that exists within this source category warrants further evaluation of the "inputs to equations" in subpart K. Therefore, the EPA further evaluated the "inputs to equations" data elements by examining each individual data element to determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

Subpart P: Hydrogen Production. Most hydrogen is produced at petroleum refineries and ammonia production facilities, generally for captive use. Because these sectors are considered at least moderately concentrated (see discussion for subpart Y, below), we concluded that the structure of the markets that exist within this source category warrant further evaluation of the "inputs to equations" data elements in subpart P. Therefore, the EPA further evaluated the "inputs to equations" data elements by examining each individual data element to determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

Subpart Q: Iron and Steel Sector. The EPA assessed the market structure of the iron and steel sector, using HHI data from the Census Bureau and other information. Steel production is generally characterized by economies of scale, resulting in markets dominated by a few large firms. Economies of scale favor large furnaces (high capital investment costs) and pose entry barriers. High transportation cost relative to product value is associated with regional steel

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[8] EPA's Regulatory Impact Analysis: National Emissions Standards for Hazardous Air Pollutants from the Portland Cement Industry, April 2009, shows that only 4 plants nationwide produced white cement in 2005. See Appendix A of the 2009 RIA for list of plants in each cement market in 2005. http://www.epa.gov/ttnecas1/regdata/RIAs/portlandcementria_4-20-09.pdf.

[9] U.S. Census Bureau. 2010 Statistics of U.S. Businesses. http://www.census.gov/econ/susb/. Accessed March 5, 2013.

markets with a small number of competing firms. As a result, firms may have the ability to influence market prices by their production choices. In addition, firms are more likely to behave strategically based on their knowledge of other (competing) producers' behavior. Nationally, the majority of facilities reporting under this source category had a NAICS code that was unconcentrated. , for the reasons mentioned above, the national NAICS-level assessment may be misleading. Some steel products are homogeneous and are traded in regional markets; others represent niche products with relatively few firms, serving different markets (possibly different geographic dimensions). Both regional markets and niche markets have relatively small numbers of producers, indicating at least moderate market concentration.

The EPA computed HHI at the process, region, and parent company level, using data from the American Iron and Steel Institute. The American Iron and Steel Institute provides limited steel production and process data available on its website[10]. The data show a total of almost 124 million tons of steel produced, 73 million tons in EAFs and 50 million tons in basic oxygen furnaces (BOFs). The EPA constructed HHI values using this production data, disaggregating by state, parent company, and process. The results indicated that there are 116 facilities located in 31 states, and production is not concentrated nationally, as indicated by relatively low HHI values. However, when data are grouped by state or parent company, the HHI values show at least moderate concentration, with the exception of EAFs, which are unconcentrated even at the state level. As a result, when the EPA accounted for the distinctions of region, parent company ownership, and steelmaking process the EPA concluded that the structure of the markets that exists within this source category warrant further evaluation of the "inputs to equations" data elements in subpart Q. Therefore, the EPA further evaluated the "inputs to equations" data elements by examining each individual data element to determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

Subparts R (Lead Smelting) and GG (Zinc Smelting). The EPA determined that markets served by firms reporting under subparts R and GG are concentrated at the national level. Both subpart R (lead smelting) and subpart GG (zinc smelting) fall under NAICS 331410, Nonferrous Metal (except Aluminum) Smelting and Refining. In addition to lead and zinc, many other nonferrous metals are included under NAICS 331410. Thus, the EPA examined the markets for lead and zinc individually. For subpart R, there is only one primary lead smelter, and seven firms with 14 secondary smelters nationwide (USGS, 2010a). For subpart GG, there is only one primary zinc smelter and two secondary smelters nationwide (USGS, 2010b). Thus, firms in both of these subparts produce commodities whose markets are concentrated nationally. As a result, the EPA concluded that the structure of the markets that exist within these source categories warrant further evaluation of the "inputs to equations" data elements. Therefore, the EPA further evaluated the "inputs to equations" data elements by examining each individual data element to

[10] http://www.steel.org/en/Making%20Steel/Where%20Its%20Made.aspx

determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

Subpart X: Petrochemicals. In 2011, 64 petrochemical manufacturing facilities identified 14 NAICS codes. Of these, two NAICS, identified by 19 facilities, are concentrated based on their HHI values. Facilities within this subpart produce one of six products: carbon black, methane, acrylonitrile, ethylene, ethylene oxide, and ethylene dichloride. The EPA examined the markets for these products, and found that none of them had more than 17 firms, and most had ten or fewer.[11] As a result, the EPA concluded that the structure of the markets that exist within this source category warrant further evaluation of the "inputs to equations" data elements in subpart X. Therefore, the EPA further evaluated the "inputs to equations" data elements by examining each individual data element to determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

Subpart Y: Petroleum Refinery Sector. There are two types of barriers to entry facing firms wanting to enter the refining industry. First, there are significant economies of scale in refinery operations, so firms would need to start a fairly large-scale operation or they would face higher unit costs than their competitors. Second, legal barriers may also present obstacles (e.g., patented processes).

Nationally, the HHI for the refinery industry is 807; the four largest firms produce 47.5% of value of shipments, according to the 2007 Economic Census. While 807 is not considered concentrated, the industry has become more concentrated over time, even when considered nation-wide (HHI in 1996 was 412, in 2000 the HHI was 611, and in 2007 it was 807). Concentration has occurred through mergers, which has reduced the number of refinery companies in the U.S. Examining HHIs by the five PADDs (Petroleum Administrative Districts for Defense"[12], the Federal Trade Commission (FTC, 2004) found that PADD V (the West Coast including Alaska and Hawaii) was moderately concentrated (HHI=1,246 in 2003).

Individual petroleum products are relatively homogeneous, although different firms produce a different mix of products, and some produce specialty products for which there are few other producers. The U.S. Department of Energy collects data on refineries in a petroleum supply survey which is published as an annual Petroleum Capacity Report. [13] The EPA reviewed the latest data (2012) containing 31 separate products and processes at 95 different facilities owned by 63 different firms. To better characterize the petroleum market, the EPA analyzed this data at the product/process level, applying the HHI measure to test for market concentration. The result of calculating the HHI at the product/process level for petroleum refineries shows that activity for several key products/processes is at least moderately concentrated. The data includes

[11] U.S. Environmental Protection Agency. Technical Support Document for the Petrochemical Production Sector: Proposed Rule for Mandatory Reporting of Greenhouse Gases. September 9, 2008. http://www.epa.gov/ghgreporting/documents/pdf/archived/tsd/TSD%20PetroChem_EPA_09-09-08.pdf

[12] http://www.eia.gov/oog/info/twip/padddef.html

[13] http://www.eia.gov/petroleum/refinerycapacity/

capacity data for 3 thermal cracking processes (visbreaking, fluid coking, other) and together there are only 9 facilities nationwide with this capability (HHI = 5,568, 2,463, and 10,000 respectively). Similarly, desulfurization and catalytic hydrocracking are processes where there is at least moderate concentration (HHI 1,023, 5,109 respectively). Additionally, production of isooctane (isomerization) is concentrated with a HHI of 7,813. Overall, of the 31 products/processes captured in the DOE data, 7 of them are at least moderately concentrated.

Because the petroleum refinery industry is moderately concentrated in PADD V and because the markets for some petroleum products were at least moderately concentrated, the EPA concluded that the structure of the markets that exist within this source category warrant further evaluation of the "inputs to equations" data elements in subpart Y. Therefore, the EPA further evaluated the "inputs to equations" data elements by examining each individual data element to determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

4.3 Analysis of Subparts Representing Processes from Many Sectors

Subparts C, II, TT, and U have reporters from a large number of sectors. As opposed to many of the other source categories reporting under the Greenhouse Gas Reporting Program, these source categories are not defined by the types of products manufactured, or produced, at the facility. Instead, these subparts are defined by production processes or waste management processes (C, II, and TT) or inputs used (U). As a result, it is not possible to make a determination based on the subpart as a whole. Instead, whether information related to these source categories has the potential to cause competitive harm depends on the concentration of the markets in which the facilities sell their products rather than on the total number of facilities reporting under each source category. Thus, the EPA determined that it would be necessary to identify the markets affected, and examine their market structure.

For these subparts, the EPA was able to conduct the first step of the evaluation, to examine the national-level HHI for the NAICS codes reported by facilities. However, for the NAICS codes where the national level 6-digit NAICS indicated unconcentrated HHIs, EPA did not proceed with evaluating each of the NAICS codes to determine whether regional or product-specific concentration occurred. Because these facilities come from a wide variety of sectors for which the EPA does not have specific information beyond the 6-digit NAICS code provided, and because many of the NAICS reported for these sectors are not manufacturing NAICS codes, further analysis of each of these sectors would be resource-intensive, and would be likely to have a large uncertainty without obtaining additional information from the facilities on the specific markets in which these facilities operate.

A summary of the results for the HHIs computed for these subparts is provided, by subpart, in Table 1. Refer to Appendix A for a complete list of the HHIs for NAICS codes reported by these facilities. The EPA's analysis of HHIs for manufacturing NAICS codes listed by facilities in these subparts shows that some of the affected markets for goods produced by facilities in each of these subparts are concentrated or moderately concentrated. For these facilities, therefore,

publishing the information contained in the "inputs to equations" data elements could potentially cause competitive harm or reduce competition. Due to the limitations of the market structure analysis for these subparts, and because the results of the analysis demonstrate that some of the facilities that report under these subparts are in sectors that are at least moderately concentrated at the national level, the EPA proceeded to evaluate the individual data elements to determine if harm would likely occur (refer to Part Two of this memorandum).

Table 1. Summary of National Level Herfindahl-Hirschman Index (HHI) for the Industry Sectors Subject to Subparts C, II, TT, and U

Subpart	# of NAICS Reported	# of Reporters	# of Facility Reports of NAICS with HHIs,[1,2]	# of Facility Reports of NAICS with at Least Moderately Concentrated HHIs[1]
Subpart C	295	5,780	2,382	985
Subpart II	24	155	181	39
Subpart TT	52	173	196	117
Subpart U	13	18	20	8

[1]The number of facility reports may exceed the number of facilities, because some facilities report multiple NAICS codes.

[2]Includes only facility reports of NAICS codes with non-missing HHI values.

4.4 Analysis of Non-Manufacturing Sectors

As shown in Appendix A, HHIs were not available for subpart W[14] (Petroleum and Natural Gas) and subpart CC (soda ash manufacturing). As a result, a qualitative analysis of the market structures that exist within these source categories was conducted.

Subpart W: Petroleum and Natural Gas.

Subpart W includes facilities operating in eight related segments of the petroleum and natural gas sector. Because subpart W is not a manufacturing sector, HHIs were not available for the vast

[14] Of the 1,549 facilities that reported under subpart W in 2011, three facilities reported manufacturing NAICS codes for which HHIs are available and were moderately concentrated. Of these, one facility with a NAICS of 325181 (alkalies and chlorine manufacturing), reported a small amount of emissions under LNG storage. EPA determined that this LNG storage process is separable from the remainder of the facility and is unrelated to the alkalies and chlorine manufacturing market. EPA believes that the NAICS for the remaining two facilities were reported in error.

majority of facilities. As a result, the EPA conducted a qualitative analysis of the segments within this sector.

For each segment, the EPA examined the market structure to determine if revelation of "inputs to equations" data elements by firms in that segment had the potential to cause competitive harm or reduce competition. For source categories that are in the manufacturing sector, as shown in Sections 4.1 and 4.2 of this memorandum, the EPA examined concentration at the national level, as well as at the regional, product, or process level. Because of the unique nature of the subpart W source category with a relatively large number of producers selling a relatively homogeneous product, the EPA determined that it would not be appropriate to assess the market structure at the product or process level. As a result, the EPA considered the market structure of each segment as well as the types of information that are collected through this source category. The EPA's findings for each subpart W segment are reported below.

Onshore Petroleum and Natural Gas Production

The onshore petroleum and natural gas production segment covers emissions related to onshore production wellheads. The market structure for petroleum and natural gas was considered separately for this segment. Onshore petroleum production is a regionally concentrated market, with wells located in fixed geological formations. Decisions on where to drill wells may be based on proprietary information during the early development of a formation when lease prices have not stabilized and operators are taking risks by drilling explorations wells in formations that do not have proven production records. After several wells have been drilled in an area, information about production becomes publically available and the advantage incurred by the operator drilling exploration wells is lost. However, once a well has been drilled, decisions to produce are based on market prices and the ability to control flow from the well. Although this could pose a potential data sensitivity with respect to exploration wells, this issue is addressed by the fact that onshore production data is reported at a sub-basin level, as defined by county boundaries, and which is a large enough scale that disclosure of the data collected under subpart W would not reveal any proprietary information about the facility or cost to do business. As the likelihood of harm can be characterized for all information collected for this segment, the EPA did not proceed to evaluate each "input to equation" data element in this segment.

The onshore natural gas production market overlaps many of the geological formations of petroleum production. Furthermore, the market itself is structured the same, with a large number of operators within each formation. Like onshore oil production, disclosure of data for onshore natural gas production at the sub-basin level would also not reveal any proprietary information about the facility or cost to do business. As the likelihood of harm can be characterized for all information collected for this segment, the EPA did not proceed to evaluate each "input to equation" data element in this segment.

Offshore Petroleum and Natural Gas Production

Offshore petroleum and natural gas production includes emissions from offshore production platforms and does not include emissions from drilling and exploration that is not associated with production platforms. The products created on offshore production platforms are delivered into the same market as onshore petroleum and natural gas production, which is a competitive market. The reported data is specific to a latitude and longitude as identified by the facility but the data reported in offshore production does not include information specific to the formations from which hydrocarbons are being extracted and only information concerning the operations of the platform are reported. The operational information does not include information that the operator will find proprietary to the well and as a result, the information reported under offshore petroleum and natural gas production would not reveal any proprietary information about the facility or cost to do business. As the likelihood of harm can be characterized for all information collected for this segment, the EPA did not proceed to evaluate each "input to equation" data element in this segment.

Natural Gas Processing

Natural gas processors are regionally located close to production wellheads. The market itself is large, with roughly 500 firms. These firms are located in close proximity to given natural gas plays. However, we do not believe that this regional concentration would pose data sensitivity issues because the "inputs to equations" data elements in this segment would not reveal any proprietary information about the facility, cost of natural gas, or cost to do business. As the likelihood of harm can be characterized for all information collected for this segment, the EPA did not proceed to evaluate each "input to equation" data element in this segment.

Natural Gas Transmission Compression

Natural gas transmission compression operators transport natural gas from processors to end users. Firms are regionally concentrated, having control over particular segments of the pipeline infrastructure. Although the number of firms and the regional concentration could pose data sensitivity issues, we do not believe this is an issue for three reasons: (1) there are few technological secrets related to pipeline construction and natural gas transmission; technological innovation is mainly in the area of pipeline security; (2), the rate charged for transport is highly regulated, preventing use of the data for strategic price competition; and (3) once pipeline and compression are built in a given corridor, there is little incentive for a competitor to build additional pipeline and compression along the same route. As a result, the "inputs to equations" data elements in this segment would not reveal any proprietary information about the facility or cost to do business. As the likelihood of harm can be characterized for all information collected for this segment, the EPA did not proceed to evaluate each "input to equation" data element in this segment.

Natural Gas Distribution

Natural gas distributers own and operate the distribution mains and services and function as the middle man between transmission lines and end-users. This market is regionally located with distributers having exclusive access to specific cities and other localities. Both publicly- and privately-owned companies are highly regulated, unable to charge market based rates for service. The regulation by government and the monopoly rights distributors hold over given regions prevents competitors' use of the data for strategic purposes. As a result, the "inputs to equations" data elements in this segment would not reveal any proprietary information about the facility or cost to do business. As the likelihood of harm can be characterized for all information collected for this segment, the EPA did not proceed to evaluate each "input to equation" data element in this segment.

Underground Natural Gas Storage

Underground natural gas storage is used to smooth out volatility in consumption and use of natural gas. The market is regional; facilities are located either near major distribution centers or near oil and gas fields. Even with the regional market structure, competitors are not known to engage in strategic competition in building storage facilities. First, facilities are built in response to other upstream factors, such as increased gas supply coming to distributors, not to undermine other competitors. Second, storage firms are constrained by the geographical and geological requirements needed for underground storage, preventing firms from moving in and increasing their market share. Finally, storage technology is widely known and not used to garner a competitive advantage. As a result, the "inputs to equations" data elements in this segment would not reveal any proprietary information about the facility or cost to do business. As the likelihood of harm can be characterized for all information collected for this segment, the EPA did not proceed to evaluate each "input to equation" data element in this segment.

Liquefied Natural Gas Storage

Liquefied Natural Gas (LNG) storage operates much the same as underground natural gas storage, with storage used to smooth volatility related to consumption. The small size of the LNG storage market could create the possibilities for disruptive competitive undercutting; however, there we determined that this is unlikely for the following two reasons. First, LNG storage is primarily owned by highly regulated distributors, preventing competitive firms from undercutting the market. Second, LNG storage occurs in response to increase supply upstream or decreased demand downstream, and is not responsive to cost advantages. As a result, the "inputs to equations" data elements in this segment would not reveal any proprietary information about the facility or cost to do business. As the likelihood of harm can be characterized for all information collected for this segment, the EPA did not proceed to evaluate each "input to equation" data element in this segment.

Liquefied Natural Gas Import/Export

Currently the U.S. has only twelve LNG import terminals and one LNG export terminal. There are nine onshore import terminals and three offshore import terminals. LNG technology is not proprietary. The technology is relatively simple and has been around for many years. The market is regional and small with import terminals located along the Gulf and East coasts. Although there are a small number of facilities that import and/or export LNG, they may be viewed as a part of the larger natural gas supply sector that is a much larger market. The product delivered or consumed by LNG Import/Export is identical to the product generated in onshore and offshore natural gas production. Functionally, Import and Export terminals may be considered as a large producer or consumer of natural gas. Import and Export terminals are generally located in regions of supply restrictions or excess to maximize price margins. However, the trading prices of natural gas is publically available and the building of new import and export terminals is limited by capital and permitting, not by market structure. Therefore, release of information about import/export terminals would not change the operations of other firms in the market. As a result, the "inputs to equations" data elements in this segment would not reveal any proprietary information about the facility or cost to do business. As the likelihood of harm can be characterized for all information collected for this segment, the EPA did not proceed to evaluate each "input to equation" data element in this segment.

In summary, the EPA determined that, for all of the industry segments within Subpart W, either the data are reported at a level of geographical aggregation that protects individual well information, or the markets in which the affected firms operate are structured in ways that disclosure of "inputs to equations" data elements would not be likely to cause competitive harm. As a result, the EPA did not further evaluate the "inputs to equations" data elements in Subpart W.

Subpart CC, Soda Ash. The four facilities reporting under subpart CC in 2011 identified NAICS 212391, Potash, Soda, and Borate Mineral Mining. This is not a manufacturing NAICS, so HHI is not published for it. However, there are only 18 firms in this sector nationwide.[15] If a sector that has 18 firms nationwide includes a few firms with relatively large market share (as opposed to a sector where all firms are similar size, and each has roughly 1/18 share of the market), it is likely to be concentrated. As a result, the EPA concluded that the structure of the markets that exist within this source category warrant further evaluation of the "inputs to equations" data elements in subpart CC. Therefore, the EPA further evaluated the "inputs to equations" data elements by examining each individual data element to determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

5.0 Summary

[15] U.S.Census Bureau. Statistics of U.S. Businesses, 2010. NAICS 212391. http://www.census.gov/econ/susb/

In this part, the EPA examined the market structures for subparts with "inputs to equations" data elements to determine whether conditions exist within the market structure such that release of these data could result in competitive harm. The EPA determined that such conditions exist within the market structures for all of the subparts examined except for facilities reporting under subpart W. As a result, the EPA did not further evaluate competitive harm for facilities reporting under subpart W. For the "inputs to equations" data elements in the remaining 26 subparts examined, the EPA further evaluated the data elements by examining each individual data element to determine if harm would be likely to occur. Refer to Part 2 of this memorandum for this evaluation.

Part Two: Evaluation of Individual Data Elements

1.0 Introduction

As discussed in Part One of this memorandum, the EPA determined that conditions exist within the market structures such that competitive harm could occur should certain types of information be released for all of the subparts examined in this memorandum except for facilities reporting under subpart W. As a result, no further evaluation of competitive harm was conducted for this source category. The remaining "inputs to equations" data elements in 26 subparts were further evaluated by examining individual data elements to determine if harm would be likely to occur.

2.0 Evaluation of Harm

Based on the EPA's previous consideration of competitive harm (see proposed CBI rule, 75 FR 39115 – 39116, July 7, 2010), the EPA's previous consideration of comments received on the proposed CBI rule (see final CBI rule, 76 FR 30806, May 26, 2011), and the EPA's more recent consideration of comments received on the Call for Information (75 FR 81366, December 27, 2010), the EPA identified certain types of data that would reveal information that likely cause competitive harm, if reported and publicly released. These data include:

- The quantity or composition of raw materials or products; or
- Process design, process performance and operation, and cost to do business.

Additionally, the EPA determined that many other "inputs to equations" data elements, which alone would not reveal information that could cause competitive harm, would reveal the types of data specified above if known together with certain additional data elements (i.e., multiple reported "inputs to equations" data elements would be needed to back-calculate the types of data specified above).

Under this evaluation, each individual "inputs to equations" data element was evaluated to determine whether it includes any of these types of data, as further discussed below. In all, 525 "inputs to equations" data elements (excluding "inputs to equations" for facilities subject to subpart W) were reviewed according to the process described in this section. Refer to Appendix B for results of the analysis for each of the 525 data elements.

2.1 Quantity and Composition of Raw Materials or Products

The EPA has determined in previous GHGRP actions that publicly releasing facility-specific data on the quantity or composition of raw materials or products would likely cause competitive harm. In these previous actions, the EPA finalized CBI determinations for such data currently reported under Part 98 (e.g., production rates that are currently collected under Part 98, but not used to calculate GHG emissions). As further discussed in the proposed CBI rule, disclosing a facility's production or throughput data would be detrimental to a firm's competitiveness by revealing confidential process information and operational and marketing strategies, as follows:

- Annual production quantities, used in conjunction with other publicly available data related to capacity, provide insight into a firm's operational strengths and weaknesses. Competitors could determine at what percent capacity a firm is operating, which can reveal information on the financial and competitive strength of the firm;
- Disclosing a facility's production or throughput quantities and product compositions could give competitors insight into a firm's local and regional market conditions and expansion plans, enabling competitors to devise strategies to prevent expansion and to steal market share in specific locations; and
- Disclosing a facility's feedstock quantities and composition and reactants fed into particular processes at a facility could provide insight into a facility's operational strengths and weaknesses, expose a firm's competitive and marketing strategies, or reveal a firm's suppliers and sourcing strategies.

Refer to the preamble to the proposed CBI determinations (75 FR 39115 – 39116, July 7, 2010) for a more detailed discussion on why reporting production and raw material information would be likely to cause competitive harm.

Under this evaluation, we identified all "inputs to equations" data elements that require reporting of data related to the quantity or composition of raw materials or products. We evaluated these data elements to identify any attributes in the data elements that would distinguish them as less likely to cause competitive harm if released than those data elements previously determined to be CBI (see reference above to previously proposed CBI determinations). We concluded that all such data elements identified under this analysis would be as likely to cause competitive harm as those previously identified.

Data elements determined to include a requirement to report the quantity or composition of raw materials or products are identified in Appendix B.

2.2 Data Related to Process Design, Process Performance and Operation, and Cost to Do Business

Based on a review of comments on the Call for Information (75 FR 81366, December 27, 2010) and on previous actions under the GHGRP, the EPA has determined that data related to process design, process performance and operation, and cost to do business would reveal the following information:

- Disclosing process design information could be detrimental to a firm's competitiveness by revealing design efficiency of the unit, providing insight to a firm's operational strengths and weaknesses (e.g., disclosing the ratio of the maximum rate heat input capacity to the design rated steam output capacity of a combustion unit (not connected to the electric power grid) would disclose the design efficiency of the unit;
- Disclosing process performance and operation information could be detrimental to a firm's competitiveness by revealing process efficiency, providing insight to a firm's operational strengths and weaknesses (e.g., disclosing an aluminum production facility's cell performance would disclose current production efficiency);and

- Disclosing information related to the cost to do business could be detrimental to a firm's competitiveness by providing insight to a firm's operational strengths and weaknesses (e.g., disclosing an HCFC production facility's loss factor, which accounts for the loss of HCFC-22 upstream of a measurement, would reveal the amount of product that is lost).

Data elements determined to include a requirement to report the type of information described above are identified in Appendix B.

2.3 Other Data that Would Likely Reveal the Types of Data Specified Above if Certain Additional Data Are Also Known

An additional evaluation was conducted to determine whether each "inputs to equations" data element not related to the quantity or composition of raw materials or products (see section 2.1), in combination with currently reported data elements and other "inputs to equations" data elements could be used to back-calculate the types of data specified in sections 2.1 and 2.2 (e.g., production quantity, cost to do business). For example, for a nitric acid production facility, the abatement technology destruction efficiency, if reported alone, would not reveal any information that would likely cause harm; however, if reported together with the abatement utilization factor, emission factor, and reported N_2O emissions, it could be used to back-calculate an estimate of the mass of nitric acid produced, which is the type of data identified in section 2.1 of this memorandum. Data elements determined to reveal proprietary information in this way are identified in Appendix B.

For any such data elements identified, the EPA also determined if such harm could be avoided by removing the reporting requirement for certain additional data elements. For example, if the abatement utilization factor were reported (as required under §98.226(j)), together with annual N_2O emissions from nitric acid production (in §98.3(c)(4)), the emission factor (in §98.226(m)(1)), and the destruction efficiency (in §98.226(i)), these data together could be used to calculate the mass of nitric acid produced. However, if reporting of the emission factor were removed, the abatement utilization factor could be reported without revealing proprietary information about nitric acid production. Any such "inputs to equations" data elements are identified in Appendix B.

3.0 Summary

Based on the results of Part One and Part two of this memorandum, the EPA proceeded to Step 3 of the evaluation for 25 of the 27 subparts evaluated in this memorandum. The EPA did not proceed to Step 3 of the evaluation for subpart W (Petroleum and Natural Gas Systems) and Subpart II (Industrial Wastewater Treatment).

Appendix A

Subpart Sector Concentration Assessment, National NAICS Code Level

Table A-1. Subpart Sector Concentration Assessment, National NAICS Code Level

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
C Combustion	111419	1	N/A	N/A	N/A
C Combustion	111930	1	N/A	N/A	N/A
C Combustion	112340	1	N/A	N/A	N/A
C Combustion	113310	1	N/A	N/A	N/A
C Combustion	115114	3	N/A	N/A	N/A
C Combustion	211111	453	N/A	N/A	N/A
C Combustion	211112	232	N/A	N/A	N/A
C Combustion	212111	6	N/A	N/A	N/A
C Combustion	212112	28	N/A	N/A	N/A
C Combustion	212113	2	N/A	N/A	N/A
C Combustion	212210	8	N/A	N/A	N/A
C Combustion	212221	5	N/A	N/A	N/A
C Combustion	212222	1	N/A	N/A	N/A
C Combustion	212231	2	N/A	N/A	N/A
C Combustion	212234	5	N/A	N/A	N/A
C Combustion	212311	1	N/A	N/A	N/A
C Combustion	212312	7	N/A	N/A	N/A
C Combustion	212313	1	N/A	N/A	N/A
C Combustion	212322	2	N/A	N/A	N/A
C Combustion	212324	14	N/A	N/A	N/A
C Combustion	212325	9	N/A	N/A	N/A
C Combustion	212391	10	N/A	N/A	N/A
C Combustion	212392	2	N/A	N/A	N/A
C Combustion	212399	8	N/A	N/A	N/A
C Combustion	213112	81	N/A	N/A	N/A
C Combustion	213113	1	N/A	N/A	N/A
C Combustion	213115	1	N/A	N/A	N/A
C Combustion	221111	2	N/A	N/A	N/A
C Combustion	221112	1008	N/A	N/A	N/A
C Combustion	221113	3	N/A	N/A	N/A
C Combustion	221119	37	N/A	N/A	N/A
C Combustion	221121	1	N/A	N/A	N/A
C Combustion	221122	11	N/A	N/A	N/A
C Combustion	221210	222	N/A	N/A	N/A
C Combustion	221310	9	N/A	N/A	N/A
C Combustion	221320	7	N/A	N/A	N/A

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
C Combustion	221330	72	N/A	N/A	N/A
C Combustion	237120	2	N/A	N/A	N/A
C Combustion	311119	6	285.4	290.2	Unconcentrated
C Combustion	311213	6	N/A	N/A	N/A
C Combustion	311221	23	2,338.2	2,291.2	Concentrated
C Combustion	311222	41	1,930.8	2,496.1	Concentrated
C Combustion	311223	3	2,752.7	2,221.5	Concentrated
C Combustion	311225	11	1,030.3	950.2	Moderately Concentrated
C Combustion	311230	10	2,425.5	2,909.0	Concentrated
C Combustion	311311	2	N/A	N/A	N/A
C Combustion	311312	5	N/A	N/A	N/A
C Combustion	311313	22	N/A	N/A	N/A
C Combustion	311330	1	1,547.6	1,730.0	Moderately Concentrated
C Combustion	311411	23	586.6	648.1	Unconcentrated
C Combustion	311421	22	254.8	295.2	Unconcentrated
C Combustion	311422	7	2,885.1	D	Concentrated
C Combustion	311423	4	486.3	500.3	Unconcentrated
C Combustion	311511	3	1,075.3	1,265.7	Moderately Concentrated
C Combustion	311512	2	2,283.3	2,170.1	Concentrated
C Combustion	311513	6	379.3	308.2	Unconcentrated
C Combustion	311514	13	651.8	1,548.8	Moderately Concentrated
C Combustion	311611	33	1,046.5	644.0	Moderately Concentrated
C Combustion	311612	13	258.1	330.3	Unconcentrated
C Combustion	311613	39	645.6	800.5	Unconcentrated
C Combustion	311615	18	737.6	937.0	Unconcentrated
C Combustion	311711	1	1,254.9	1,107.8	Moderately Concentrated
C Combustion	311821	1	1,607.2	1,987.3	Concentrated
C Combustion	311911	1	413.4	716.1	Unconcentrated
C Combustion	311919	7	D	D	N/A
C Combustion	311920	3	763.1	939.2	Unconcentrated
C Combustion	311942	9	479.5	701.5	Unconcentrated
C Combustion	311991	1	273.0	257.4	Unconcentrated
C Combustion	311999	7	168.2	161.7	Unconcentrated
C Combustion	312120	19	D	D	N/A
C Combustion	312130	1	584.0	595.1	Unconcentrated
C Combustion	312140	8	1,519.4	2,373.6	Concentrated
C Combustion	312221	2	N/A	N/A	N/A
C Combustion	312229	1	2,744.6	D	Concentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
C Combustion	313210	1	253.9	259.0	Unconcentrated
C Combustion	313230	1	778.2	1,043.9	Moderately Concentrated
C Combustion	313311	5	209.5	247.3	Unconcentrated
C Combustion	313312	3	277.2	292.9	Unconcentrated
C Combustion	314110	5	1,649.7	1,728.5	Moderately Concentrated
C Combustion	315191	1	537.5	633.9	Unconcentrated
C Combustion	316110	2	560.3	466.8	Unconcentrated
C Combustion	321113	9	98.3	59.8	Unconcentrated
C Combustion	321114	1	385.7	293.7	Unconcentrated
C Combustion	321211	2	415.1	311.8	Unconcentrated
C Combustion	321212	3	1,233.3	1,408.3	Moderately Concentrated
C Combustion	321219	13	345.0	322.8	Unconcentrated
C Combustion	321999	1	65.1	90.1	Unconcentrated
C Combustion	322110	58	1,023.5	1,235.7	Moderately Concentrated
C Combustion	322121	122	758.9	1,036.2	Moderately Concentrated
C Combustion	322122	9	X	X	N/A
C Combustion	322130	69	713.1	768.6	Unconcentrated
C Combustion	322213	1	696.2	527.7	Unconcentrated
C Combustion	322222	3	630.1	1,274.5	Moderately Concentrated
C Combustion	322224	1	1,043.0	1,117.7	Moderately Concentrated
C Combustion	322291	7	1,317.8	1,789.4	Moderately Concentrated
C Combustion	322299	1	187.7	256.3	Unconcentrated
C Combustion	323110	3	96.6	86.6	Unconcentrated
C Combustion	323111	3	1,359.5	1,430.7	Moderately Concentrated
C Combustion	324110	146	806.5	811.6	Unconcentrated
C Combustion	324121	2	188.4	206.4	Unconcentrated
C Combustion	324191	4	794.5	1,902.5	Concentrated
C Combustion	324199	31	739.8	617.1	Unconcentrated
C Combustion	325110	45	2,535.2	D	Concentrated
C Combustion	325120	37	1,415.2	1,377.8	Moderately Concentrated
C Combustion	325131	7	1,265.0	1,293.6	Moderately Concentrated
C Combustion	325132	3	837.6	803.9	Unconcentrated
C Combustion	325181	13	2,391.7	2,428.2	Concentrated
C Combustion	325182	16	N/A	N/A	N/A
C Combustion	325188	63	223.5	303.4	Unconcentrated
C Combustion	325191	6	2,389.8	D	Concentrated
C Combustion	325192	19	2,328.9	D	Concentrated
C Combustion	325193	172	275.1	298.0	Unconcentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
C Combustion	325199	111	360.5	289.0	Unconcentrated
C Combustion	325211	96	400.4	546.4	Unconcentrated
C Combustion	325212	10	727.8	717.4	Unconcentrated
C Combustion	325221	2	N/A	N/A	N/A
C Combustion	325222	12	2,071.1	2,246.5	Concentrated
C Combustion	325311	36	1,135.6	1,214.9	Moderately Concentrated
C Combustion	325312	17	D	2,777.2	Concentrated
C Combustion	325320	9	1,109.1	1,632.2	Moderately Concentrated
C Combustion	325411	12	1,423.7	1,299.9	Moderately Concentrated
C Combustion	325412	26	456.8	532.6	Unconcentrated
C Combustion	325413	2	759.9	792.3	Unconcentrated
C Combustion	325414	9	946.9	890.5	Unconcentrated
C Combustion	325510	4	539.8	504.9	Unconcentrated
C Combustion	325520	2	234.8	276.6	Unconcentrated
C Combustion	325611	6	2,025.3	2,362.8	Concentrated
C Combustion	325612	3	1,164.4	1,346.0	Moderately Concentrated
C Combustion	325613	8	2,353.1	859.5	Concentrated
C Combustion	325620	1	1,220.6	751.2	Moderately Concentrated
C Combustion	325910	1	906.0	1,188.8	Moderately Concentrated
C Combustion	325920	2	920.7	1,037.2	Moderately Concentrated
C Combustion	325991	2	290.0	313.0	Unconcentrated
C Combustion	325992	3	1,888.0	2,202.9	Concentrated
C Combustion	325998	19	158.4	212.6	Unconcentrated
C Combustion	326113	8	185.7	228.4	Unconcentrated
C Combustion	326121	3	333.3	409.6	Unconcentrated
C Combustion	326130	1	485.9	666.1	Unconcentrated
C Combustion	326140	3	783.5	667.2	Unconcentrated
C Combustion	326191	1	356.8	320.3	Unconcentrated
C Combustion	326199	2	26.3	26.7	Unconcentrated
C Combustion	326211	19	1,734.7	1,893.2	Concentrated
C Combustion	326291	1	274.5	254.6	Unconcentrated
C Combustion	326299	1	292.8	89.4	Unconcentrated
C Combustion	327111	2	D	D	N/A
C Combustion	327121	2	616.0	681.5	Unconcentrated
C Combustion	327122	6	1,542.2	1,824.0	Concentrated
C Combustion	327125	2	819.2	932.7	Unconcentrated
C Combustion	327211	27	N/A	N/A	N/A
C Combustion	327212	23	516.8	582.6	Unconcentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
C Combustion	327213	44	2,506.6	2,468.8	Concentrated
C Combustion	327215	5	332.0	341.6	Unconcentrated
C Combustion	327310	81	609.9	651.3	Unconcentrated
C Combustion	327390	1	127.7	140.7	Unconcentrated
C Combustion	327410	49	1,424.1	1,394.2	Moderately Concentrated
C Combustion	327420	43	1,553.6	1,492.1	Moderately Concentrated
C Combustion	327910	3	1,662.4	2,197.7	Concentrated
C Combustion	327992	10	615.8	648.0	Unconcentrated
C Combustion	327993	22	936.4	1,031.9	Moderately Concentrated
C Combustion	327999	5	651.8	666.0	Unconcentrated
C Combustion	331111	117	785.6	906.8	Unconcentrated
C Combustion	331112	11	N/A	N/A	N/A
C Combustion	331210	8	435.6	741.5	Unconcentrated
C Combustion	331221	13	402.1	441.8	Unconcentrated
C Combustion	331222	2	296.9	312.4	Unconcentrated
C Combustion	331311	6	N/A	N/A	N/A
C Combustion	331312	11	2,250.3	D	Concentrated
C Combustion	331314	22	930.8	2,019.9	Concentrated
C Combustion	331315	14	1,995.3	1,852.0	Concentrated
C Combustion	331316	6	433.3	394.7	Unconcentrated
C Combustion	331319	2	1,119.8	1,391.6	Moderately Concentrated
C Combustion	331411	4	N/A	N/A	N/A
C Combustion	331419	9	598.6	1,080.3	Moderately Concentrated
C Combustion	331421	3	1,134.3	910.9	Moderately Concentrated
C Combustion	331423	2	1,217.4	1,849.4	Concentrated
C Combustion	331491	4	818.3	727.7	Unconcentrated
C Combustion	331492	21	344.0	345.6	Unconcentrated
C Combustion	331511	28	337.5	324.7	Unconcentrated
C Combustion	331513	3	458.1	542.1	Unconcentrated
C Combustion	331521	7	371.7	364.5	Unconcentrated
C Combustion	331522	2	366.2	417.3	Unconcentrated
C Combustion	331524	5	288.8	306.4	Unconcentrated
C Combustion	331528	2	624.4	763.8	Unconcentrated
C Combustion	332111	7	203.0	194.2	Unconcentrated
C Combustion	332112	4	888.4	1,034.3	Moderately Concentrated
C Combustion	332211	1	1,373.0	1,571.5	Moderately Concentrated
C Combustion	332323	1	93.1	70.5	Unconcentrated
C Combustion	332618	1	65.6	57.9	Unconcentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
C Combustion	332811	2	264.5	186.8	Unconcentrated
C Combustion	332812	5	181.9	140.0	Unconcentrated
C Combustion	332813	2	61.0	19.6	Unconcentrated
C Combustion	332913	1	1,532.2	1,810.9	Concentrated
C Combustion	332991	1	1,834.1	1,893.2	Concentrated
C Combustion	332992	2	2,446.7	D	Concentrated
C Combustion	332993	1	2,015.9	2,220.3	Concentrated
C Combustion	332996	1	215.5	197.2	Unconcentrated
C Combustion	332998	1	1,312.0	1,611.5	Moderately Concentrated
C Combustion	332999	2	25.3	23.9	Unconcentrated
C Combustion	333111	2	1,828.5	2,371.9	Concentrated
C Combustion	333120	4	1,143.3	1,076.5	Moderately Concentrated
C Combustion	333131	2	546.1	624.3	Unconcentrated
C Combustion	333315	1	1,831.1	1,873.4	Concentrated
C Combustion	333415	1	510.7	527.4	Unconcentrated
C Combustion	333511	1	21.0	17.9	Unconcentrated
C Combustion	333514	1	53.1	34.2	Unconcentrated
C Combustion	333516	2	1,139.4	1,066.8	Moderately Concentrated
C Combustion	333611	1	1,937.0	1,464.6	Concentrated
C Combustion	333612	2	352.0	347.9	Unconcentrated
C Combustion	333618	6	1,022.1	1,089.4	Moderately Concentrated
C Combustion	333992	1	1,051.7	1,127.5	Moderately Concentrated
C Combustion	334411	3	1,402.1	1,535.7	Moderately Concentrated
C Combustion	334413	49	1,283.6	1,929.1	Concentrated
C Combustion	334515	1	544.5	623.3	Unconcentrated
C Combustion	335224	2	N/A	N/A	N/A
C Combustion	335313	3	718.8	693.8	Unconcentrated
C Combustion	335929	1	479.8	423.3	Unconcentrated
C Combustion	335991	2	620.6	650.3	Unconcentrated
C Combustion	336111	18	1,448.8	1,548.7	Moderately Concentrated
C Combustion	336112	19	2,679.5	D	Concentrated
C Combustion	336211	1	243.0	202.1	Unconcentrated
C Combustion	336312	3	931.4	712.4	Unconcentrated
C Combustion	336330	2	541.1	626.3	Unconcentrated
C Combustion	336350	7	554.3	560.7	Unconcentrated
C Combustion	336360	1	1,369.8	864.2	Moderately Concentrated
C Combustion	336370	4	385.8	456.6	Unconcentrated
C Combustion	336399	4	80.9	71.2	Unconcentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
C Combustion	336411	11	D	D	N/A
C Combustion	336412	6	2,421.8	2,304.8	Concentrated
C Combustion	336413	5	674.4	752.7	Unconcentrated
C Combustion	336414	1	N/A	N/A	N/A
C Combustion	336415	3	N/A	N/A	N/A
C Combustion	336510	3	951.6	1,177.7	Moderately Concentrated
C Combustion	336611	2	1,545.7	1,838.9	Concentrated
C Combustion	336992	4	2,477.1	2,575.9	Concentrated
C Combustion	337211	1	550.7	565.8	Unconcentrated
C Combustion	337214	1	1,285.2	1,442.8	Moderately Concentrated
C Combustion	339112	1	245.2	267.4	Unconcentrated
C Combustion	339999	4	274.5	386.1	Unconcentrated
C Combustion	423110	2	N/A	N/A	N/A
C Combustion	423120	1	N/A	N/A	N/A
C Combustion	423320	1	N/A	N/A	N/A
C Combustion	423720	1	N/A	N/A	N/A
C Combustion	423990	1	N/A	N/A	N/A
C Combustion	424690	2	N/A	N/A	N/A
C Combustion	424710	5	N/A	N/A	N/A
C Combustion	424910	1	N/A	N/A	N/A
C Combustion	481111	2	N/A	N/A	N/A
C Combustion	484220	1	N/A	N/A	N/A
C Combustion	486110	5	N/A	N/A	N/A
C Combustion	486210	504	N/A	N/A	N/A
C Combustion	486990	3	N/A	N/A	N/A
C Combustion	488119	4	N/A	N/A	N/A
C Combustion	488190	2	N/A	N/A	N/A
C Combustion	488210	1	N/A	N/A	N/A
C Combustion	488310	1	N/A	N/A	N/A
C Combustion	493110	1	N/A	N/A	N/A
C Combustion	493190	2	N/A	N/A	N/A
C Combustion	525920	1	N/A	N/A	N/A
C Combustion	531110	2	N/A	N/A	N/A
C Combustion	531120	1	N/A	N/A	N/A
C Combustion	541380	3	N/A	N/A	N/A
C Combustion	541611	1	N/A	N/A	N/A
C Combustion	541711	6	N/A	N/A	N/A
C Combustion	541712	15	N/A	N/A	N/A

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
C Combustion	541940	1	N/A	N/A	N/A
C Combustion	541990	1	N/A	N/A	N/A
C Combustion	551114	1	N/A	N/A	N/A
C Combustion	561210	4	N/A	N/A	N/A
C Combustion	561990	1	N/A	N/A	N/A
C Combustion	562111	1	N/A	N/A	N/A
C Combustion	562211	6	N/A	N/A	N/A
C Combustion	562212	595	N/A	N/A	N/A
C Combustion	562213	74	N/A	N/A	N/A
C Combustion	562910	2	N/A	N/A	N/A
C Combustion	562920	3	N/A	N/A	N/A
C Combustion	562998	1	N/A	N/A	N/A
C Combustion	611310	113	N/A	N/A	N/A
C Combustion	611610	1	N/A	N/A	N/A
C Combustion	621111	1	N/A	N/A	N/A
C Combustion	622110	25	N/A	N/A	N/A
C Combustion	713110	1	N/A	N/A	N/A
C Combustion	721120	4	N/A	N/A	N/A
C Combustion	722110	1	N/A	N/A	N/A
C Combustion	811111	2	N/A	N/A	N/A
C Combustion	812921	1	N/A	N/A	N/A
C Combustion	813990	2	N/A	N/A	N/A
C Combustion	921120	2	N/A	N/A	N/A
C Combustion	921150	1	N/A	N/A	N/A
C Combustion	921190	3	N/A	N/A	N/A
C Combustion	922140	3	N/A	N/A	N/A
C Combustion	923110	3	N/A	N/A	N/A
C Combustion	924110	1	N/A	N/A	N/A
C Combustion	926130	1	N/A	N/A	N/A
C Combustion	926140	1	N/A	N/A	N/A
C Combustion	928110	50	N/A	N/A	N/A
E Adipic Acid	325120	1	1,415.2	1,377.8	Moderately Concentrated
E Adipic Acid	325199	3	360.5	289.0	Unconcentrated
E Adipic Acid	325211	1	400.4	546.4	Unconcentrated
E Adipic Acid	325311	1	1,135.6	1,214.9	Moderately Concentrated
F Aluminum	221112	1	N/A	N/A	N/A
F Aluminum	331312	11	2,250.3	D	Concentrated
F Aluminum	331314	1	930.8	2,019.9	Concentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
F Aluminum	331316	1	433.3	394.7	Unconcentrated
F Aluminum	331319	1	1,119.8	1,391.6	Moderately Concentrated
G Ammonia	221210	1	N/A	N/A	N/A
G Ammonia	221330	1	N/A	N/A	N/A
G Ammonia	325120	1	1,415.2	1,377.8	Moderately Concentrated
G Ammonia	325188	1	223.5	303.4	Unconcentrated
G Ammonia	325199	1	360.5	289.0	Unconcentrated
G Ammonia	325311	20	1,135.6	1,214.9	Moderately Concentrated
G Ammonia	325312	1	D	2,777.2	Concentrated
H Cement	212312	3	N/A	N/A	N/A
H Cement	327310	96	609.9	651.3	Unconcentrated
H Cement	327999	1	651.8	666.0	Unconcentrated
H Cement	562211	2	274.5	386.1	Unconcentrated
K Ferroalloy	325120	1	N/A	N/A	N/A
K Ferroalloy	325199	1	360.5	289.0	Unconcentrated
K Ferroalloy	331112	9	N/A	N/A	N/A
L Fluorinated Gas	325110	1	2,535.2	D	Concentrated
L Fluorinated Gas	325120	12	1,415.2	1,377.8	Moderately Concentrated
L Fluorinated Gas	325188	3	223.5	303.4	Unconcentrated
L Fluorinated Gas	325199	1	360.5	289.0	Unconcentrated
L Fluorinated Gas	325211	7	400.4	546.4	Unconcentrated
L Fluorinated Gas	325222	1	2,071.1	2,246.5	Concentrated
L Fluorinated Gas	325613	2	2,353.1	859.5	Concentrated
L Fluorinated Gas	325998	4	158.4	212.6	Unconcentrated
L Fluorinated Gas	326113	1	185.7	228.4	Unconcentrated
L Fluorinated Gas	326121	1	333.3	409.6	Unconcentrated
L Fluorinated Gas	327910	1	1,662.4	2,197.7	Concentrated
L Fluorinated Gas	562211	1	N/A	N/A	N/A
N Glass	325613	1	2,353.1	859.5	Concentrated
N Glass	325998	1	158.4	212.6	Unconcentrated
N Glass	326113	2	185.7	228.4	Unconcentrated
N Glass	326121	1	333.3	409.6	Unconcentrated
N Glass	326299	1	292.8	89.4	Unconcentrated
N Glass	327111	1	D	D	N/A
N Glass	327211	27	N/A	N/A	N/A
N Glass	327212	23	516.8	582.6	Unconcentrated
N Glass	327213	44	2,506.6	2,468.8	Concentrated
N Glass	327215	1	332.0	341.6	Unconcentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
N Glass	327910	1	1,662.4	2,197.7	Concentrated
N Glass	327993	15	936.4	1,031.9	Moderately Concentrated
N Glass	331511	1	337.5	324.7	Unconcentrated
N Glass	332913	1	1,532.2	1,810.9	Concentrated
N Glass	332998	1	1,312.0	1,611.5	Moderately Concentrated
N Glass	333618	1	1,022.1	1,089.4	Moderately Concentrated
N Glass	562211	1	N/A	N/A	N/A
O HCFR-22, HCFC-23	325110	1	2,535.2	D	Concentrated
O HCFR-22, HCFC-23	325120	5	1,415.2	1,377.8	Moderately Concentrated
O HCFR-22, HCFC-23	325188	2	223.5	303.4	Unconcentrated
O HCFR-22, HCFC-23	325211	3	400.4	546.4	Unconcentrated
O HCFR-22, HCFC-23	325222	1	2,071.1	2,246.5	Concentrated
O HCFR-22, HCFC-23	325998	1	158.4	212.6	Unconcentrated
P Hydrogen	324110	57	806.5	811.6	Unconcentrated
P Hydrogen	324191	1	794.5	1,902.5	Concentrated
P Hydrogen	324199	1	739.8	617.1	Unconcentrated
P Hydrogen	325110	2	2,535.2	D	Concentrated
P Hydrogen	325120	45	1,415.2	1,377.8	Moderately Concentrated
P Hydrogen	325188	1	223.5	303.4	Unconcentrated
P Hydrogen	325199	4	360.5	289.0	Unconcentrated
P Hydrogen	325211	1	400.4	546.4	Unconcentrated
P Hydrogen	325311	1	1,135.6	1,214.9	Moderately Concentrated
P Hydrogen	325613	1	2,353.1	859.5	Concentrated
P Hydrogen	325998	1	158.4	212.6	Unconcentrated
P Hydrogen	424710	1	N/A	N/A	N/A
Q Iron &Steel	212210	8	N/A	N/A	N/A
Q Iron &Steel	324199	12	739.8	617.1	Unconcentrated
Q Iron &Steel	331111	102	785.6	906.8	Unconcentrated
Q Iron &Steel	331112	1	N/A	N/A	N/A
Q Iron &Steel	331221	7	402.1	441.8	Unconcentrated
Q Iron &Steel	331222	2	296.9	312.4	Unconcentrated
Q Iron &Steel	331419	1	598.6	1,080.3	Moderately Concentrated
Q Iron &Steel	331511	1	337.5	324.7	Unconcentrated
Q Iron &Steel	332618	1	65.6	57.9	Unconcentrated
Q Iron &Steel	333516	2	1,139.4	1,066.8	Moderately Concentrated
Q Iron &Steel	336611	1	1,545.7	1,838.9	Concentrated
R Lead	331419	1	598.6	1,080.3	Moderately Concentrated
R Lead	331492	12	344.0	345.6	Unconcentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
S Lime	212312	4	N/A	N/A	N/A
S Lime	212391	1	N/A	N/A	N/A
S Lime	311313	21	N/A	N/A	N/A
S Lime	327125	1	819.2	932.7	Unconcentrated
S Lime	327410	49	1,424.1	1,394.2	Moderately Concentrated
S Lime	331111	1	785.6	906.8	Unconcentrated
U Carbonate	212392	1	N/A	N/A	N/A
U Carbonate	212399	1	N/A	N/A	N/A
U Carbonate	221112	1	N/A	N/A	N/A
U Carbonate	325181	1	2,391.7	2,428.2	Concentrated
U Carbonate	325188	5	223.5	303.4	Unconcentrated
U Carbonate	325199	2	360.5	289.0	Unconcentrated
U Carbonate	325311	3	1,135.6	1,214.9	Moderately Concentrated
U Carbonate	325312	2	D	2,777.2	Concentrated
U Carbonate	327211	3	N/A	N/A	N/A
U Carbonate	327213	2	2,506.6	2,468.8	Concentrated
U Carbonate	331511	2	337.5	324.7	Unconcentrated
U Carbonate	331524	1	288.8	306.4	Unconcentrated
U Carbonate	333612	1	352.0	347.9	Unconcentrated
V Nitric Acid	325110	1	2,535.2	D	Concentrated
V Nitric Acid	325120	1	1,415.2	1,377.8	Moderately Concentrated
V Nitric Acid	325188	1	223.5	303.4	Unconcentrated
V Nitric Acid	325192	1	2,328.9	D	Concentrated
V Nitric Acid	325199	4	360.5	289.0	Unconcentrated
V Nitric Acid	325211	1	400.4	546.4	Unconcentrated
V Nitric Acid	325311	30	1,135.6	1,214.9	Moderately Concentrated
V Nitric Acid	325920	1	920.7	1,037.2	Moderately Concentrated
V Nitric Acid	424690	1	N/A	N/A	N/A
V Nitric Acid	424910	1	N/A	N/A	N/A
W Petroleum & Natural Gas	211111	689	N/A	N/A	N/A
W Petroleum & Natural Gas	211112	201	N/A	N/A	N/A
W Petroleum & Natural Gas	213112	21	N/A	N/A	N/A
W Petroleum & Natural Gas	221111	1	N/A	N/A	N/A
W Petroleum & Natural Gas	221112	6	N/A	N/A	N/A
W Petroleum & Natural Gas	221121	3	N/A	N/A	N/A
W Petroleum & Natural Gas	221122	5	N/A	N/A	N/A
W Petroleum & Natural Gas	221210	193	N/A	N/A	N/A
W Petroleum & Natural Gas	237120	1	N/A	N/A	N/A

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
W Petroleum & Natural Gas	325110	2	2,535.2	D	Concentrated
W Petroleum & Natural Gas	325181	1	2,391.7	2,428.2	Concentrated
W Petroleum & Natural Gas	486210	471	N/A	N/A	N/A
X Petrochem	221112	3	N/A	N/A	N/A
X Petrochem	221330	1	N/A	N/A	N/A
X Petrochem	324110	5	806.5	811.6	Unconcentrated
X Petrochem	324191	1	794.5	1,902.5	Concentrated
X Petrochem	325110	21	2,535.2	D	Concentrated
X Petrochem	325120	2	1,415.2	1,377.8	Moderately Concentrated
X Petrochem	325181	7	2,391.7	2,428.2	Concentrated
X Petrochem	325182	16	N/A	N/A	N/A
X Petrochem	325188	4	223.5	303.4	Unconcentrated
X Petrochem	325199	25	360.5	289.0	Unconcentrated
X Petrochem	325211	13	400.4	546.4	Unconcentrated
X Petrochem	325212	1	727.8	717.4	Unconcentrated
X Petrochem	325998	1	158.4	212.6	Unconcentrated
X Petrochem	424710	1	N/A	N/A	N/A
Y Petroleum Refineries	211111	2	N/A	N/A	N/A
Y Petroleum Refineries	237120	1	N/A	N/A	N/A
Y Petroleum Refineries	324110	143	806.5	811.6	Unconcentrated
Y Petroleum Refineries	324121	2	188.4	206.4	Unconcentrated
Y Petroleum Refineries	324191	2	794.5	1,902.5	Concentrated
Y Petroleum Refineries	324199	2	739.8	617.1	Unconcentrated
Y Petroleum Refineries	325110	6	2,535.2	D	Concentrated
Y Petroleum Refineries	325120	1	1,415.2	1,377.8	Moderately Concentrated
Y Petroleum Refineries	325212	1	727.8	717.4	Unconcentrated
Y Petroleum Refineries	424710	3	N/A	N/A	N/A
Y Petroleum Refineries	561210	1	N/A	N/A	N/A
Z Phosphoric Acid	311119	1	285.4	290.2	Unconcentrated
Z Phosphoric Acid	325188	1	223.5	303.4	Unconcentrated
Z Phosphoric Acid	325311	2	1,135.6	1,214.9	Moderately Concentrated
Z Phosphoric Acid	325312	12	D	2,777.2	Concentrated
AA Pulp & Paper	321113	1	98.3	59.8	Unconcentrated
AA Pulp & Paper	321999	1	65.1	90.1	Unconcentrated
AA Pulp & Paper	322110	52	1,023.5	1,235.7	Moderately Concentrated
AA Pulp & Paper	322121	53	758.9	1,036.2	Moderately Concentrated
AA Pulp & Paper	322122	4	N/A	N/A	N/A
AA Pulp & Paper	322130	36	713.1	768.6	Unconcentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
AA Pulp & Paper	322222	1	630.1	1,274.5	Moderately Concentrated
AA Pulp & Paper	325191	1	2,389.8	D	Concentrated
AA Pulp & Paper	325998	1	158.4	212.6	Unconcentrated
AA Pulp & Paper	423990	1	274.5	386.1	Unconcentrated
BB Silicon Carbide	327910	1	1,662.4	2,197.7	Concentrated
CC Soda Ash	212391	4	N/A	N/A	N/A
EE Titanium Dioxide	325131	6	1,265.0	1,293.6	Moderately Concentrated
EE Titanium Dioxide	325188	1	223.5	303.4	Unconcentrated
GG Zinc	331492	6	344.0	345.6	Unconcentrated
HH Municipal Landfills	221112	1	N/A	N/A	N/A
HH Municipal Landfills	221119	2	N/A	N/A	N/A
HH Municipal Landfills	562111	6	N/A	N/A	N/A
HH Municipal Landfills	562211	2	N/A	N/A	N/A
HH Municipal Landfills	562212	1194	N/A	N/A	N/A
HH Municipal Landfills	562213	4	N/A	N/A	N/A
HH Municipal Landfills	562920	2	N/A	N/A	N/A
HH Municipal Landfills	921190	1	N/A	N/A	N/A
HH Municipal Landfills	924110	2	N/A	N/A	N/A
HH Municipal Landfills	928110	6	N/A	N/A	N/A
II Industrial Wastewater	112340	1	N/A	N/A	N/A
II Industrial Wastewater	221112	1	N/A	N/A	N/A
II Industrial Wastewater	311119	1	285.4	290.2	Unconcentrated
II Industrial Wastewater	311221	8	2,338.2	2,291.2	Concentrated
II Industrial Wastewater	311222	1	1,930.8	2,496.1	Concentrated
II Industrial Wastewater	311225	1	1,030.3	950.2	Moderately Concentrated
II Industrial Wastewater	311411	7	586.6	648.1	Unconcentrated
II Industrial Wastewater	311421	2	254.8	295.2	Unconcentrated
II Industrial Wastewater	311422	1	2,885.1	D	Concentrated
II Industrial Wastewater	311611	21	1,046.5	644.0	Moderately Concentrated
II Industrial Wastewater	311612	5	258.1	330.3	Unconcentrated
II Industrial Wastewater	311613	17	645.6	800.5	Unconcentrated
II Industrial Wastewater	311615	14	737.6	937.0	Unconcentrated
II Industrial Wastewater	311919	1	N/A	N/A	N/A
II Industrial Wastewater	312120	1	N/A	N/A	N/A
II Industrial Wastewater	312140	2	1,519.4	2,373.6	Concentrated
II Industrial Wastewater	316110	1	560.3	466.8	Unconcentrated
II Industrial Wastewater	322110	2	1,023.5	1,235.7	Moderately Concentrated
II Industrial Wastewater	322121	2	758.9	1,036.2	Moderately Concentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
II Industrial Wastewater	322130	8	713.1	768.6	Unconcentrated
II Industrial Wastewater	325191	1	2,389.8	D	Concentrated
II Industrial Wastewater	325193	87	275.1	298.0	Unconcentrated
II Industrial Wastewater	562219	2	N/A	N/A	N/A
II Industrial Wastewater	811111	1	N/A	N/A	N/A
TT Industrial Landfills	111930	1	N/A	N/A	N/A
TT Industrial Landfills	212234	1	N/A	N/A	N/A
TT Industrial Landfills	221112	6	N/A	N/A	N/A
TT Industrial Landfills	221113	1	N/A	N/A	N/A
TT Industrial Landfills	311221	2	2,338.2	2,291.2	Concentrated
TT Industrial Landfills	311223	1	2,752.7	2,221.5	Concentrated
TT Industrial Landfills	311311	1	N/A	N/A	N/A
TT Industrial Landfills	311313	9	N/A	N/A	N/A
TT Industrial Landfills	321113	1	98.3	59.8	Unconcentrated
TT Industrial Landfills	321212	1	1,233.3	1,408.3	Moderately Concentrated
TT Industrial Landfills	321219	2	345.0	322.8	Unconcentrated
TT Industrial Landfills	321999	1	65.1	90.1	Unconcentrated
TT Industrial Landfills	322110	38	1,023.5	1,235.7	Moderately Concentrated
TT Industrial Landfills	322121	51	758.9	1,036.2	Moderately Concentrated
TT Industrial Landfills	322122	4	N/A	N/A	N/A
TT Industrial Landfills	322130	30	713.1	768.6	Unconcentrated
TT Industrial Landfills	322222	1	630.1	1,274.5	Moderately Concentrated
TT Industrial Landfills	322291	2	1,317.8	1,789.4	Moderately Concentrated
TT Industrial Landfills	324110	4	806.5	811.6	Unconcentrated
TT Industrial Landfills	325110	3	2,535.2	D	Concentrated
TT Industrial Landfills	325120	2	1,415.2	1,377.8	Moderately Concentrated
TT Industrial Landfills	325181	1	2,391.7	2,428.2	Concentrated
TT Industrial Landfills	325188	1	223.5	303.4	Unconcentrated
TT Industrial Landfills	325191	1	2,389.8	D	Concentrated
TT Industrial Landfills	325192	1	2,328.9	D	Concentrated
TT Industrial Landfills	325193	1	275.1	298.0	Unconcentrated
TT Industrial Landfills	325199	11	360.5	289.0	Unconcentrated
TT Industrial Landfills	325211	9	400.4	546.4	Unconcentrated
TT Industrial Landfills	325221	1	N/A	N/A	N/A
TT Industrial Landfills	325311	1	1,135.6	1,214.9	Moderately Concentrated
TT Industrial Landfills	325320	1	1,109.1	1,632.2	Moderately Concentrated
TT Industrial Landfills	325412	1	456.8	532.6	Unconcentrated
TT Industrial Landfills	325998	3	158.4	212.6	Unconcentrated

Subpart	NAICS	Number of Subpart C Facilities Affected by 2015 Deferral [1]	HHI, VOS [2]	HHI, VA [2]	Finding
TT Industrial Landfills	327111	1	D	D	N/A
TT Industrial Landfills	331111	5	785.6	906.8	Unconcentrated
TT Industrial Landfills	331311	1	N/A	N/A	Concentrated
TT Industrial Landfills	331312	3	2,250.3	D	Concentrated
TT Industrial Landfills	331314	2	930.8	2,019.9	Unconcentrated
TT Industrial Landfills	331316	1	433.3	394.7	Moderately Concentrated
TT Industrial Landfills	331319	1	1,119.8	1,391.6	Moderately Concentrated
TT Industrial Landfills	331411	1	N/A	N/A	N/A
TT Industrial Landfills	331511	5	337.5	324.7	Unconcentrated
TT Industrial Landfills	331513	1	458.1	542.1	Unconcentrated
TT Industrial Landfills	331521	1	371.7	364.5	Unconcentrated
TT Industrial Landfills	331524	1	288.8	306.4	Unconcentrated
TT Industrial Landfills	332112	1	888.4	1,034.3	Moderately Concentrated
TT Industrial Landfills	332913	1	1,532.2	1,810.9	Concentrated
TT Industrial Landfills	332998	1	1,312.0	1,611.5	Moderately Concentrated
TT Industrial Landfills	333315	1	1,831.1	1,873.4	Concentrated
TT Industrial Landfills	333618	1	1,022.1	1,089.4	Moderately Concentrated
TT Industrial Landfills	562212	16	N/A	N/A	N/A
TT Industrial Landfills	562910	1	N/A	N/A	N/A

[1] Facilities may report more than one NAICS code; thus, the sum of the number of NAICS codes reported by facilities in a subpart may exceed the total number of facilities reporting under that subpart.

[2] **HHI: Herfindahl-Hirschman index** This index is calculated by summing the squares of the individual company percentages for the 50 largest companies or the universe, whichever is lower. Values less than 1000 are considered unconcentrated, values between 1000 and 1800 are considered moderately concentrated, and values over 1800 are considered concentrated. **VOS** is Value of Shipments; **VA** is Value Added.

Appendix B

Results of the Evaluation of Competitive Harm from Disclosure of Data Elements Deferred to March 31, 2015

Table B-1. Results of the Evaluation of Competitive Harm from Disclosure of Data Elements Deferred to March 31, 2015

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.3(d)(3)(v)	For any facility who submitted an abbreviated emissions report under §98.3(d)(3)(v), any facility operating data or process information used for the GHG emission calculations.		Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, indicates the quantity of fuel used in the process, which could reveal information about the cost to produce products. For specialty fuels that are byproducts of the production process, information about fuel characteristics indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(b)(9)(iii)	Estimate of the heat input from each type of fuel listed in Table C-2 that was combusted in the unit during the report year.	C-10	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, for specialty fuels that are byproducts of the production process, indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(c)(2)(ix)	The flue gases from two or more stationary fuel combustion units at a facility are combined together and discharged through a common stack or duct before exiting to the atmosphere and if CEMS are used to continuously monitor CO_2 mass emissions at the common stack or duct according to the Tier 4 Calculation Methodology, you may report the combined emissions from the units sharing the common stack or duct, in lieu of separately reporting the GHG emissions from the individual units. This monitoring and reporting alternative may also be used when process off-gases or a mixture of combustion products and process gases are combined together in a common stack or duct before exiting to the atmosphere. An estimate of the heat input from	C-10	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, indicates the quantity of fuel used in the process, which could reveal information about the cost to produce products.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
		each type of fuel listed in Table C-2 combusted during the reporting year.		
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(i)§98.36(e)(2)(ii)(A) §98.36(e)(2)(iv)(A)	Total quantity of each type of fuel combusted in each unit or group of aggregated units (as applicable).	C-1,C-1a,C-1b,C-8,C-2b,C-13,C-3,C-4,C-5,C-8,C-8a,C-8b	In certain cases provides production or raw material data described in section 2.1 of Part Two of this memorandum. Also, in certain cases provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal information about the cost to produce products.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(ii)(C)	High heat values used in the CO_2 emissions calculations for each fuel combusted during the reporting year. Report a HHV value for each calendar month in which HHV determination is required. If multiple values are obtained in a given month, report the arithmetic average value for the month.	C-2b	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, for specialty fuels that are byproducts of the production process, indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(ii)(D)	If Eq. C-2c is used: Ratio of the maximum rate heat input capacity to the design rated steam output capacity of the unit.	C-2c	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, indicates the efficiency of the unit, which could reveal information about the cost to produce the steam.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(ii)(D)	If Eq. C-2c is used: Total quantity (i.e., pounds) of steam produced from MSW or solid fuel combustion during each month of the reporting year.	C-2c	Provo process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, indicates the energy generated from MSW or solid fuel, which could reveal information about the cost to produce energy for the process.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(iv)(C)	The carbon content used in the emission calculations (including both valid and substitute data values). For each calendar month of the reporting year in which carbon content and, if applicable, molecular weight determination is required, report a value of each parameter. If multiple values of a parameter are obtained in a given month, report the arithmetic average value for the month. (CC).	C-3	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, for specialty fuels that are byproducts of the production process, indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(iv)(C)	The carbon content used in the emission calculations (including both valid and substitute data values). For each calendar month of the reporting year in which carbon content and, if applicable, molecular weight determination is required, report a value of each parameter. If multiple values of a parameter are obtained in a given month, report the arithmetic average value for the month. (CC).	C-4	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, for specialty fuels that are byproducts of the production process, indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(iv)(C)	The carbon content used in the emission calculations (including both valid and substitute data values). For each calendar month of the reporting year in which carbon content and, if applicable, molecular weight determination is required, report a value of each parameter. If multiple values of a parameter are obtained in a given month, report the arithmetic average value for the month. (CC).	C-5	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, for specialty fuels that are byproducts of the production process, indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(iv)(C)	Gas molecular weight values used in the emission calculations (including both valid and substitute data values). For each calendar month of the reporting year in which carbon content and, if applicable, molecular weight determination is required, report a value of each parameter. If multiple values of a parameter are obtained in a given month, report the arithmetic average value for the month.	C-5	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, for specialty fuels that are byproducts of the production process, indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(iv)(F)	The annual average HHV, when measured HHV data, rather than a default HHV from Table C-1 of this subpart, are used to calculate CH4 and N2O emissions for a Tier 3 unit, in accordance with §98.33(c)(1).	C-8	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, for specialty fuels that are byproducts of the production process, indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(ix)(D)	For units that combust both fossil fuel and biomass, when biogenic CO_2 is determined according to §98.33(e)(2), report the carbon-based F-factor used in Equation C-13 of this subpart.	C-13	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, for specialty fuels that are byproducts of the production process, indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(ix)(E)	For units that combust both fossil fuel and biomass, when biogenic CO_2 is determined according to §98.33(e)(2), report the annual average HHV value used in Equation C-13 of this subpart.	C-13	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, for specialty fuels that are byproducts of the production process, indicates the composition of the process byproduct, which could reveal information about process efficiency and cost to produce a product.
C (Stationary fuel combustion sources at industrial sources, excluding stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid) [1]	§98.36(e)(2)(ix)(F)	For units that combust both fossil fuel and biomass, when biogenic CO_2 is determined according to §98.33(e)(2), report the total quantity of fossil fuel combusted during the reporting year.	C-13	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, indicates the quantity of fuel used in the process, which, in certain cases, could reveal information about the cost to produce products.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.3(d)(3)(v)	For any facility who submitted an abbreviated emissions report under §98.3(d)(3)(v), any facility operating data or process information used for the GHG emission calculations.		Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics for these units do not vary significantly from publicly-known average values. For facilities with these combustion units, certain fuel use and fuel characterization data for the units are reported and publicly released via the EIA. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(b)(9)(iii)	Estimate of the heat input from each type of fuel listed in Table C-2 that was combusted in the unit during the report year.	C-10	For facilities with these types of combustion units, facility-level heat input from each type of fuel is publicly available because it can be calculated based on other data reported and publicly released via EIA. As required to be reported under Part 98, an estimate of the heat input from each type of fuel for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics for these units do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(c)(2)(ix)	The flue gases from two or more stationary fuel combustion units at a facility are combined together and discharged through a common stack or duct before exiting to the atmosphere and if CEMS are used to continuously monitor CO_2 mass emissions at the common stack or duct according to the Tier 4 Calculation Methodology, you may report the combined emissions from the units sharing the common stack or duct, in lieu of separately reporting the GHG emissions from the individual units. This monitoring and reporting alternative may also be used when process off-gases or a mixture of combustion products and process gases are combined together in a common stack or duct before exiting to the atmosphere. An estimate of the heat input from each type of fuel listed in Table C-2 combusted during the reporting year.	C-10	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(i)	Total quantity of each type of fuel combusted in each unit or group of aggregated units (as applicable) during the reporting year, in short tons for solid fuels, gallons for liquid fuels and standard cubic feet for gaseous fuels, or, if applicable, therms or mmBtu for natural gas.	C-1	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(i)	Total quantity of each type of fuel combusted in each unit or group of aggregated units (as applicable) during the reporting year, in short tons for solid fuels, gallons for liquid fuels and standard cubic feet for gaseous fuels, or, if applicable, therms or mmBtu for natural gas.	C-1a	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(i)	Total quantity of each type of fuel combusted in each unit or group of aggregated units (as applicable) during the reporting year, in short tons for solid fuels, gallons for liquid fuels and standard cubic feet for gaseous fuels, or, if applicable, therms or mmBtu for natural gas.	C-1b	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(i)	Total quantity of each type of fuel combusted in each unit or group of aggregated units (as applicable) during the reporting year, in short tons for solid fuels, gallons for liquid fuels and standard cubic feet for gaseous fuels, or, if applicable, therms or mmBtu for natural gas.	C-8	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(ii)(A)	For Tier 2: Total quantity of each type of fuel combusted in the unit or group of aggregated units (as applicable) during each month of the reporting year. Express the quantity of each fuel combusted during the measurement period in short tons for solid fuels, gallons for liquid fuels, and scf for gaseous fuels.	C-2b	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(ii)(C)	High heat values used in the CO_2 emissions calculations for each fuel combusted during the reporting year. Report a HHV value for each calendar month in which HHV determination is required. If multiple values are obtained in a given month, report the arithmetic average value for the month.	C-2b	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(ii)(D)	If Eq. C-2c is used: Total quantity (i.e., pounds) of steam produced from MSW or solid fuel combustion during each month of the reporting year.	C-2c	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. MSW combustors are typically operated by municipalities. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(ii)(D)	If Eq. C-2c is used: Ratio of the maximum rate heat input capacity to the design rated steam output capacity of the unit.	C-2c	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Can be determined from equipment model information that is publicly available from manufacturers of the electricity generating equipment. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(A)	Quantity of each type of fuel combusted in the unit or group of units (as applicable) during each month of the reporting year (Fuel).	C-13	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(A)	Quantity of each type of fuel combusted in the unit or group of units (as applicable) during each month of the reporting year (Fuel).	C-3	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(A)	Quantity of each type of fuel combusted in the unit or group of units (as applicable) during each month of the reporting year (Fuel).	C-4	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(A)	Quantity of each type of fuel combusted in the unit or group of units (as applicable) during each month of the reporting year (Fuel).	C-5	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(A)	Quantity of each type of fuel combusted in the unit or group of units (as applicable) during each month of the reporting year (Fuel).	C-8	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(A)	Quantity of each type of fuel combusted in the unit or group of units (as applicable) during each month of the reporting year (Fuel).	C-8a	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(A)	Quantity of each type of fuel combusted in the unit or group of units (as applicable) during each month of the reporting year (Fuel).	C-8b	For facilities with these types of combustion units, facility-level quantity of each type of fuel combusted is publicly released by EIA. As required to be reported under Part 98, quantity of each type of fuel combusted for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(C)	The carbon content used in the emission calculations (including both valid and substitute data values). For each calendar month of the reporting year in which carbon content and, if applicable, molecular weight determination is required, report a value of each parameter. If multiple values of a parameter are obtained in a given month, report the arithmetic average value for the month. (CC)	C-3	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(C)	The carbon content used in the emission calculations (including both valid and substitute data values). For each calendar month of the reporting year in which carbon content and, if applicable, molecular weight determination is required, report a value of each parameter. If multiple values of a parameter are obtained in a given month, report the arithmetic average value for the month. (CC)	C-4	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(C)	The carbon content used in the emission calculations (including both valid and substitute data values). For each calendar month of the reporting year in which carbon content and, if applicable, molecular weight determination is required, report a value of each parameter. If multiple values of a parameter are obtained in a given month, report the arithmetic average value for the month. (CC)	C-5	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(C)	Gas molecular weight values used in the emission calculations (including both valid and substitute data values). For each calendar month of the reporting year in which carbon content and, if applicable, molecular weight determination is required, report a value of each parameter. If multiple values of a parameter are obtained in a given month, report the arithmetic average value for the month.	C-5	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(iv)(F)	The annual average HHV, when measured HHV data, rather than a default HHV from Table C-1 of this subpart, are used to calculate CH4 and N2O emissions for a Tier 3 unit, in accordance with §98.33(c)(1).	C-8	For facilities with these types of combustion units, facility-level HHV data are publicly available because they can be calculated based on other data reported and publicly released via EIA. As required to be reported under Part 98, the HHV data for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(ix)(D)	For units that combust both fossil fuel and biomass, when biogenic CO_2 is determined according to §98.33(e)(2), report the carbon-based F-factor used in Equation C-13 of this subpart.	C-13	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(ix)(E)	For units that combust both fossil fuel and biomass, when biogenic CO_2 is determined according to §98.33(e)(2), report the annual average HHV value used in Equation C-13 of this subpart.	C-13	For facilities with these types of combustion units, facility-level HHV data are publicly available because they can be calculated based on other data reported and publicly released via EIA. As required to be reported under Part 98, the HHV data for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
C (Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid)[1]	§98.36(e)(2)(ix)(F)	For units that combust both fossil fuel and biomass, when biogenic CO_2 is determined according to §98.33(e)(2), report the total quantity of fossil fuel combusted during the reporting year.	C-13	For facilities with these types of combustion units, facility-level HHV data are publicly available because they can be calculated based on other data reported and publicly released via EIA. As required to be reported under Part 98, the HHV data for the combustion unit(s) would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Site-specific fuel characteristics do not vary significantly from publicly-known average values. Additionally for the electric utilities, this sector has experienced a high level of transparency due to the practice of passing fuel costs through to paying customers.
E	§98.56(b)	Total annual adipic acid production from unit "z" (Pz).	E-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
E	§98.56(b)	Total annual adipic acid production from unit "z" (Pz).	E-3a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
E	§98.56(b)	Total annual adipic acid production from unit "z" (Pz).	E-3b	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
E	§98.56(b)	Total annual adipic acid production from unit "z" (Pz).	E-3c	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
E	§98.56(b)	Total annual adipic acid production from unit "z" (Pz).	E-3d	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
E	§98.56(c)	Annual adipic acid production during which N_2O abatement technology (located after the test point) is operating (Pz,N) .	E-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
E	§98.56(g)	Abatement technology destruction efficiency for each abatement technology (DF).	E-3a	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], EFs (as required to be reported in 40 CFR 40 CFR 98.56(j)(1)), and AF (as required to be reported in 40 CFR 98.56(h)). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
E	§98.56(g)	Abatement technology destruction efficiency for each abatement technology (DF).	E-3b	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], EFs (as required to be reported in 40 CFR 98.56(j)(1)), and AF (as required to be reported in 40 CFR 98.56(h)). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
E	§98.56(g)	Abatement technology destruction efficiency for each abatement technology (DF).	E-3c	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N_2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], EFs (as required to be reported in 40 CFR 98.56(j)(1)), the AF (as required to be reported in 40 CFR 98.56(h)), and the fraction control factor (as required to be reported in 40 CFR 98.56(l). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
E	§98.56(h)	Abatement utilization factor for each abatement technology (AF).	E-3a	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], EFs (as required to be reported in 40 CFR 98.56(j)(1)), and the DF (as required to be reported in 40 CFR 98.56(g)). However, if the DF were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
E	§98.56h	Abatement utilization factor for each abatement technology (AF).	E-3b	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], EFs (as required to be reported in 40 CFR 98.56(j)(1)), and the DF (as required to be reported in 40 CFR 98.56(g)). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
E	§98.56(h)	Abatement utilization factor for each abatement technology (AF).	E-3c	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N2O mass emissions from adipic acid production (as currently reported under 98.3(c)(4) and made publicly available) [5], EFs (as required to be reported in 40 CFR 98.56(j)(1)), the DF (as required to be reported in 40 CFR 98.56(g)), and the fraction control factor (as required to be reported in 40 CFR 98.56(l). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
E	§98.56(j)(1)	Emission factor for each unit (EFN2Oz).	E-3a	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N_2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], DF (as required to be reported in 40 CFR 98.56(g)), and AF (as required to be reported in 40 CFR 98.56(h)). However, if the DF or AF were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
E	§98.56(j)(1)	Emission factor for each unit (EFN2O).	E-3b	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N_2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], DF (as required to be reported in 40 CFR 98.56(g)), and AF (as required to be reported in 40 CFR 98.56(h)). However, if the DFN or AF were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
E	§98.56(j)(1)	Emission factor for each unit (EFN2O).	E-3c	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N_2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], DFN (as required to be reported in 40 CFR 98.56(g)), AF (as required to be reported in 40 CFR 98.56(h)), and fraction control factor (as required to be reported in 40 CFR 98.56(l). However, if the DF or AF were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
E	§98.56(j)(1)	Emission factor for each unit (EFN2O).	E-3d	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if the annual N_2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5] is also known.
E	§98.56(j)(3)	Production rate per test run during performance test for each unit (P).	E-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
E	§98.56(j)(4)	N_2O concentration per test run during performance test for each unit (CN2O).	E-1	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: EFs (as required to be reported in 40 CFR 98.56(j)(1)), volumetric flow rate of effluent gas during the performance test (as required to be reported in 40 CFR 98.56(j)(5)), and number of test runs (as required to be reported in 40 CFR 98.56(j)(6). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
E	§98.56(j)(5)	Volumetric flow rate per test run during performance test for each unit (Q).	E-1	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: EFs (as required to be reported in 40 CFR 98.56(j)(1)), N_2O concentration per test run during performance test (as required to be reported in 40 CFR 98.56(j)(4)), and number of test runs (as required to be reported in 40 CFR 98.56(j)(6). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
E	§98.56(j)(6)	Number of test runs for each unit (n).	E-1	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: EFs (as required to be reported in 40 CFR 98.56(j)(1)), N_2O concentration per test run during performance test (as required to be reported in 40 CFR 98.56(j)(4)), and volumetric flow rate per test run during performance test (as required to be reported in 40 CFR 98.56(j)(5). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
E	§98.56(l)	Fraction control factor for each abatement technology (percent of total emissions from the production unit that are sent to the abatement technology) if equation E-3c is used. (FC_N)	E-3c	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N_2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], EFs (as required to be reported in 98.56(j)(1)), DFN (as required to be reported in 40 CFR 98.56), and the abatement utilization factor (as required to be reported in 40 CFR 98.56(h)). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
F	§98.66(a)	Annual aluminum production. (MP)	F-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(a)	Annual aluminum production. (MP)	F-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(c)(2)	Anode effect minutes per cell-day. (AEM)	F-2	Could reveal information about the process efficiency. Also, provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of aluminum produced if both the slope coefficient (as required to be reported in 40 CFR 98.66(c)(3) or using a default value provided in Table F-1 and reported GHG emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5] are also known.
F	§98.66(c)(2)	Anode effect overvoltage factor. (EFCF4)	F-3	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of aluminum produced if reported GHG emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5] are also known.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
F	§98.66(c)(2)	Anode effect frequency.	Used to calculate AEM and the slope coefficients used as an input in Eq. F-2	Provides data related to process efficiency, as described in section 2.2 of Part Two of this memorandum. Also, provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of aluminum produced if both the slope coefficient (as required to be reported in 40 CFR 98.66(c)(3)) or using a default value provided in Table F-1) and reported GHG emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] are also known.
F	§98.66(c)(2)	Anode effect duration.	Used to calculate AEM and the slope coefficients used as an input in Eq. F-2	Provides data related to process efficiency, as described in section 2.2 of Part Two of this memorandum. Also, provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of aluminum produced if the both the slope coefficient (as required to be reported in 40 CFR 98.66(c)(3) or using a default value provided in Table F-1) and reported GHG emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] are also known.
F	§98.66(c)(2)	Potline overvoltage.	Used to calculate the overvoltage factor used as an input in Eq. F-3	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of aluminum produced if reported GHG emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] are also known.
F	§98.66(c)(2)	Current efficiency.	Used to calculate the overvoltage factor used as an input in Eq. F-3	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could provide some indication of cell performance and production efficiency.
F	§98.66(c)(3)	Smelter-specific slope coefficients. (SCF4)	F-2	Provides data related to process efficiency, as described in section 2.2 of Part Two of this memorandum. Also, provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of aluminum produced if both the AEM (as required to be reported in 40 CFR 98.66(c)(2)) and reported GHG emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] are

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
				also known.
F	§98.66(c)(3)	Overvoltage emission factors. (EFCF4)	F-3	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of aluminum produced if reported GHG emissions (as currently reported under 40 CFR98.3(c)(4) and made publicly available) [5] are also known.
F	§98.66(e)(1)	Annual anode consumption. (No CEMS) (NAC)	F-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(f)(1)	Annual paste consumption. (No CEMS) (PC)	F-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Sulfur content in baked anode (percent weight). (Sa)	F-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Ash content in baked anode (percent weight). (Asha)	F-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Binder content of paste (percent weight). (**BC)**	F-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Sulfur content of pitch (percent weight). (Sp)	F-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Ash content of pitch (percent weight). (Ashp)	F-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Hydrogen content of pitch (percent weight). (Hp)	F-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Sulfur content in calcined coke (percent weight). (Sc)	F-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Ash content in calcined coke (percent weight). (Ashc)	F-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
F	§98.66(g)	Carbon in skimmed dust from Soderberg cells (metric ton C/metric ton Al) (CD).	F-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Initial weight of green anodes (metric tons) (GA).	F-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Annual hydrogen content in green anodes (metric tons) (Hw).	F-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Annual baked anode production (metric tons) (BA).	F-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Annual waste tar collected (metric tons) (WT).	F-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Annual packing coke consumption (metric tons/metric ton baked anode) (PCC).	F-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Annual baked anode production (metric tons) (BA).	F-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Sulfur content in packing coke (percent weight) (SPc).	F-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
F	§98.66(g)	Ash content in packing coke (percent weight) (Ashpc).	F-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
G	§98.76(b)(2)	Monthly quantity of each type of feedstock consumed for ammonia manufacturing - Gaseous Feedstock.	G-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
G	§98.76(b)(2)	Monthly quantity of each type of feedstock consumed for ammonia manufacturing - Liquid Feedstock.	G-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
G	§98.76(b)(2)	Monthly quantity of each type of feedstock consumed for ammonia manufacturing - Solid Feedstock.	G-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
G	§98.76(b)(7)	Carbon content of the gaseous feedstock.	G-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
G	§98.76(b)(8)	Molecular weight of the gaseous feedstock.	G-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
G	§98.76(b)(9)	Molar volume conversion factor of the gaseous feedstock.	G-1	Is a constant value widely known within the industry and publicly available. Otherwise, does not include, and could not be used to calculate, data or information about facility or process performance, design, and operation; cost to do business; raw material usage; or

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
				production .
G	§98.76(b)(10)	Carbon content of the liquid feedstock, for month n.	G-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
G	§98.76(b)(11)	Carbon content of the solid feedstock, for month n.	G-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(2)	Monthly clinker production for each kiln (No CEMS).	H-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(5)	Quarterly quantity of CKD not recycled to the kiln.	H-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(6)	Monthly fraction of total CaO in clinker.	H-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(6)	Monthly fraction of total MgO in clinker.	H-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(6)	Monthly fraction of non-calcined CaO in clinker.	H-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(6)	Monthly fraction of non-calcined MgO in clinker.	H-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(8)	Quarterly fraction of total CaO in CKD not recycled to the kiln.	H-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(8)	Quarterly fraction of total MgO in CKD not recycled to the kiln.	H-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(8)	Quarterly fraction of non-calcined CaO in CKD not recycled to the kiln.	H-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(8)	Quarterly fraction of non-calcined MgO in CKD not recycled to the kiln.	H-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(10)	Monthly kiln-specific clinker CO_2 emission factors for each kiln.	H-2	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of clinker produced if reported GHG emissions (as currently reported under 40 CFR §98.3(c)(4) and made publicly available)[5], are also known.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
H	§98.86(b)(11)	Quarterly kiln-specific CKD CO_2 emission factors for each kiln.	H-2	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of clinker produced if all of the following data are also known: CKD not recycled to the kiln (as required to be reported in 40 CFR 98.86(b)(5)), CO2 emissions (as currently required to be reported under 40 CFR 98.3(c)(4) and made publicly available) [5], kiln-specific clinker emission factor (as required to be reported in40 CFR 98.86(b)(10)), and kiln-specific CKD emission factor (as required to be reported in 40 CFR 98.86(b)(11)). The CKD emission factor represents a minor portion of reported emissions and would reveal minimal information about total process output. However, if the kiln-specific clinker emission factor or kiln-specific CKD emission factor were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
H	§98.86(b)(12)	Annual organic carbon content of each raw kiln feed or annual organic carbon content of each raw material.	H-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(13)	Annual consumption of each raw kiln feed or annual consumption of each raw material.	H-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
H	§98.86(b)(13)	Name of raw kiln feed or raw material.		Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
H	§98.86(b)(15)	Monthly kiln-specific raw kiln feed to clinker produced factors (if used) for each kiln.	Used to calculate clinker production by facilities using the method in 40 CFR 98.84(d) (i.e., kiln-specific clinker-to-feed factors)	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, indicates the design efficiency of the unit.
K	§98.116(b)	Annual production by product from each EAF (tons) (used as input to Eq K-1): Mproductk= Annual mass of alloy product k tapped from EAF (tons).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
K	§98.116(b)	Annual production by product from each EAF (tons) (used as input to Eq K-3).	K-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(4)	Annual material quantity for each material included for the calculation of annual process CO_2 emissions (No CEMS): Mreducing agenti= Annual mass of reducing agent i fed, charged, or otherwise introduced into the EAF (tons).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(4)	Annual material quantity for each material included for the calculation of annual process CO_2 emissions (No CEMS): Melectrodem= Annual mass of carbon electrode m consumed in the EAF (tons).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(4)	Annual material quantity for each material included for the calculation of annual process CO_2 emissions (No CEMS): Moreh= Annual mass of ore h charged to the EAF (tons).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(4)	Annual material quantity for each material included for the calculation of annual process CO_2 emissions (No CEMS): Mfluxj= Annual mass of flux material j fed, charged, or otherwise introduced into the EAF to facilitate slag formation (tons).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(4)	Annual material quantity for each material included for the calculation of annual process CO_2 emissions (No CEMS): Mnon-product outgoingl= Annual mass of non-product outgoing material l removed from EAF (tons).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(5)	Annual average of the carbon content determinations for each material included for the calculation of annual process CO_2 emissions (No CEMS): Creducing agenti= Carbon content in reducing agent i (percent by weight, expressed as a decimal fraction).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
K	§98.116(e)(5)	Annual average of the carbon content determinations for each material included for the calculation of annual process CO_2 emissions (No CEMS): Celectrodem= Carbon content of the carbon electrode m (percent by weight, expressed as a decimal fraction).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(5)	Annual average of the carbon content determinations for each material included for the calculation of annual process CO_2 emissions (No CEMS): Coreh= Carbon content in ore h (percent by weight, expressed as a decimal fraction).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(5)	Annual average of the carbon content determinations for each material included for the calculation of annual process CO_2 emissions (No CEMS): Cfluxj= Carbon content in flux material j (percent by weight, expressed as a decimal fraction).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(5)	Annual average of the carbon content determinations for each material included for the calculation of annual process CO_2 emissions (No CEMS): Cproductk= Carbon content in alloy product k . (percent by weight, expressed as a decimal fraction).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
K	§98.116(e)(5)	Annual average of the carbon content determinations for each material included for the calculation of annual process CO_2 emissions (No CEMS): Cnon-product outgoingl= Carbon content in non-product outgoing material l (percent by weight, expressed as a decimal fraction).	K-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(1)	Elements of the sum (a, b, c, etc.) (e.g., measured variables in the sum).	L-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
L	§98.126(b)(1)	eSA (absolute error of the sum, expressed as one half of a 95 percent confidence interval). Note that where eSA = the overall absolute error calculated for the process emissions you report under §98.126(a)(2), this data element was not deferred in the inputs deferral rule (76 FR 53057, August 25, 2011), and would be required to be reported.	L-1	Does not include, and could not be used to calculate, data or information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. [2]
L	§98.126(b)(1)	ea, eb, ec = Relative error of a, b, or c, respectively, expressed as one half of a 95 percent confidence interval.	L-1	Does not include, and could not be used to calculate, data or information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. [2]
L	§98.126(b)(1)	Elements of the sum (a, b, c, etc.) (e.g., measured variables in the sum).	L-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(1)	a+b+c = Sum of the variables measured.	L-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(1)	eSR (relative error of the sum, expressed as one half of a 95 percent confidence interval). Note that where eSR = the overall relative error calculated for the process emissions you report under §§98.126(a)(2), this data element was not deferred in the inputs deferral rule (76 FR 53057, August 25, 2011), and would be required to be reported.	L-2	Does not include, and could not be used to calculate, data or information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. [2]
L	§98.126(b)(1)	eSA (absolute error of the sum, expressed as one half of a 95 percent confidence interval). Note that where eSA = the overall absolute error calculated for the process emissions you report under §98.126(a)(2), this data element was not deferred in the inputs deferral rule (76 FR 53057, August 25, 2011) , and would be required to be reported.	L-2	Does not include, and could not be used to calculate, data or information about facility or process performance, design, and operation; cost to do business; raw material usage; or production . [2]
L	§98.126(b)(1)	Elements of the sum (a, b, c, etc.) (e.g., measured variables in the sum).	L-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
L	§98.126(b)(1)	ea, eb, ec = Relative error of a, b, or c, respectively, expressed as one half of a 95 percent confidence interval.	L-3	Does not include, and could not be used to calculate, data or information (about facility or process performance, design, and operation; cost to do business; raw material usage; or production) that would reveal information that could cause competitive harm. [2]
L	§98.126(b)(1)	ePA (absolute error of the product, expressed as one half of a 95 percent confidence interval). Note that where ePA = the overall absolute error calculated for the process emissions you report under §98.126(a)(2), this data element was not deferred in the inputs deferral rule (76 FR 53057, August 25, 2011) , and would be required to be reported.	L-3	Does not include, and could not be used to calculate, data or information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. [2]
L	§98.126(b)(1)	a*b*c = Product of the variables measured.	L-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(1)	Measured variables of the product (a, b, c, etc.).	L-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(1)	a*b*c = Product of the variables measured.	L-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(1)	ePR (relative error of the product, expressed as one half of a 95 percent confidence interval). Note that where ePR = the overall relative error calculated for the process emissions you report under §98.126(a)(2), this data element was not deferred in the inputs deferral rule (76 FR 53057, August 25, 2011) , and would be required to be reported.	L-4	Does not include, and could not be used to calculate, data or information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.[2]
L	§98.126(b)(1)	ePA (absolute error of the product, expressed as one half of a 95 percent confidence interval). Note that where ePA = the overall absolute error calculated for the process emissions you report under §98.126(a)(2), this data element was not deferred in the inputs deferral rule (76 FR 53057, August 25, 2011) , and would be required to be reported.	L-4	Does not include, and could not be used to calculate, data or information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. [2]

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
L	§98.126(b)(2)	The balanced chemical equation that describes the reaction used to manufacture the fluorinated GHG product and each fluorinated GHG transformation product.		Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(6)	The mass of each fluorine-containing reactant that is fed into the process. (Rd)	L-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(7)	The mass of each fluorine-containing product produced by the process. (P)	L-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(8)(i)	The mass of each fluorine-containing product that is removed from the process and fed into the destruction device (metric tons). (Pj)	L-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(8)(ii)	The mass of each fluorine-containing by-product that is removed from the process and fed into the destruction device (metric tons). (Bkj)	L-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(8)(iii)	The mass of each fluorine-containing reactant that is removed from the process and fed into the destruction device (metric tons). (Rdj)	L-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(8)(iv)	The mass of each fluorine-containing by-product that is removed from the process and recaptured (metric tons). (Bkl)	L-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(8)(v)	The demonstrated destruction efficiency of the destruction device for each fluorinated GHG fed into the device from the process in greater than trace concentrations (fraction). (DEFGHGf= Destruction efficiency of the device that has been demonstrated for fluorinated GHG f in stream j (fraction).)	L-8	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the amount of fluorinated GHG in a waste stream removed from the process and sent to a destruction device, if the following information is also known: (1) annual emissions of each fluorinated GHG (as required to be reported under 40 CFR 98.126(a)(2)); and (2) that the emissions consist exclusively of post-destruction device emissions (information that a competitor knowledgeable of some aspects of the facility and/or of fluorine chemistry might deduce). [2]
L	§98.126(b)(9)(i)	The mass of fluorine in each stream that is fed into the destruction device (metric tons). (cTFj * Sj)	L-17	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(b)(9)(ii)	The mass of fluorine that is recaptured (metric tons). (cTFl * Sl)	L-17	Provides production or raw material data described in section 2.1 of Part Two of this

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
				memorandum.
L	§98.126(b)(9)(iii)	The weighted average destruction efficiency of the destruction device calculated for each stream under §98.123(b)(16). (DEavgj)	L-17	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the concentration of fluorine-containing reactants, products or byproducts in waste streams if the following information is also known: (1) annual emissions of each fluorinated GHG (as required to be reported under 40 CFR 98.126(a)(2)); (2) that only one stream with only one fluorine compound is sent to the destruction device; (information that a competitor knowledgeable of some aspects of the facility and/or of fluorine chemistry might deduce). [2]
L	§98.126(b)(10)	The fraction of the mass emitted that consists of each fluorine-containing reactant (FERd).	L-11	This data element is not addressed because this is a reported emissions value, which is addressed in a separate action related to subpart L of part 98.
L	§98.126(b)(10)	The fraction of the mass emitted that consists of each fluorine-containing reactant. (FERd).	L-12	This data element is not addressed because this is a reported emissions value, which is addressed in a separate action related to subpart L of part 98.
L	§98.126(b)(10)	The fraction of the mass emitted that consists of each fluorine-containing reactant (FERd).	L-13	This data element is not addressed because this is a reported emissions value, which is addressed in a separate action related to subpart L of part 98.
L	§98.126(b)(11)	The fraction of the mass emitted that consists of the fluorine-containing product (FEP).	L-11	This data element is not addressed because this is a reported emissions value, which is addressed in a separate action related to subpart L of part 98.
L	§98.126(b)(11)	The fraction of the mass emitted that consists of the fluorine-containing product. (FEP)	L-12	This data element is not addressed because this is a reported emissions value, which is addressed in a separate action related to subpart L of part 98.
L	§98.126(b)(11)	The fraction of the mass emitted that consists of the fluorine-containing product. (FEP).	L-13	This data element is not addressed because this is a reported emissions value, which is addressed in a separate action related to subpart L of part 98.
L	§98.126(b)(12)	The fraction of the mass emitted that consists of each fluorine-containing by-product (FEBk).	L-11	This data element is not addressed because this is a reported emissions value, which is addressed in a separate action related to subpart L of part 98.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
L	§98.126(b)(12)	The fraction of the mass emitted that consists of each fluorine-containing by-product. (FEBk)	L-12	This data element is not addressed because this is a reported emissions value, which is addressed in a separate action related to subpart L of part 98.
L	§98.126(b)(12)	The fraction of the mass emitted that consists of each fluorine-containing by-product. (FEBk)	L-13	This data element is not addressed because this is a reported emissions value, which is addressed in a separate action related to subpart L of part 98.
L	§98.126(c)(1)	The quantity of the process activity used to estimate emissions (e.g., tons of product produced or tons of reactant consumed). (ActivityC or ActivityU)	L-21	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(c)(1)	The quantity of the process activity used to estimate emissions (e.g., tons of product produced or tons of reactant consumed). (ActivityC or ActivityU)	L-22	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(c)(1)	The quantity of the process activity used to estimate emissions (e.g., tons of product produced or tons of reactant consumed). (Activity)	L-26	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(c)(1)	The quantity of the process activity used to estimate emissions (e.g., tons of product produced or tons of reactant consumed). (ActivityU or ActivityC)	L-27	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(c)(2)	The site-specific, process-vent-specific emission factor(s) for each process vent (EFPV).	L-20	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the mass of fluorinated GHG emitted from the process vent (as required to be reported in 40 CFR 98.126(c)(3)) is also known. [2]
L	§98.126(c)(2)	The site-specific, process-vent-specific emission factor(s) for each process vent (EFPV–C).	L-21	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the mass of fluorinated GHG emitted from the process vent (as required to be reported in 40 CFR 98.126(c)(3)) is also known. [2]

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
L	§98.126(c)(2)	The site-specific, process-vent-specific emission calculation factor for each process vent. (ECFPV-U).	L-21	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the mass of fluorinated GHG emitted from the process vent (as required to be reported in 40 CFR 98.126(c)(3)) is also known. [2]
L	§98.126(c)(2)	The site-specific, process-vent-specific emission factor(s) for each process vent (EFPV–U).	L-22	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the mass of fluorinated GHG emitted from the process vent (as required to be reported in 40 CFR 98.126(c)(3)) is also known. [2]
L	§98.126(c)(2)	The site-specific, process-vent-specific emission factor(s) for each process vent. (EFPV)	L-23	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the mass of fluorinated GHG emitted from the process vent (as required to be reported in 40 CFR 98.126(c)(3)) is also known. [2]
L	§98.126(c)(2)	The site-specific, process-vent-specific emission calculation factor for each process vent. (ECFPV).	L-25	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the mass of fluorinated GHG emitted from the process vent (as required to be reported in 40 CFR 98.126(c)(3)) is also known. [2]
L	§98.126(c)(2)	The site-specific, process-vent-specific emission calculation factor for each process vent (ECFPV).	L-26	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the mass of fluorinated GHG emitted from the process vent (as required to be reported in 40 CFR 98.126(c)(3)) is also known. [2]
L	§98.126(c)(2)	The site-specific, process-vent-specific emission calculation factor for each process vent. (ECFPV).	L-27	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the mass of fluorinated GHG emitted from the process vent (as required to be reported in 40 CFR 98.126(c)(3)) is also known. [2]

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
L	§98.126(d)	Where missing data have been estimated pursuant to §98.125 report, estimate of the missing data.	Varies	Provides data (missing data could include the data specified in 40 CFR 98.126(b) and (c)), which could be used (as specified for those citations in this table) to calculate the process feed rate, production process rate, or other process activity rate; or the mass of fluorinated GHG entering the destruction device. [2]
L	§98.126(f)(1)	Destruction efficiency (DE) of each destruction device for each fluorinated GHG whose destruction the facility reflects in §98.123, in accordance with §98.124(g)(1)(i) through (iv). (DEFGHGf)	L-8	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the amount of fluorinated GHG in a waste stream removed from the process and sent to a destruction device, if the following information is also known: (1) annual emissions of each fluorinated GHG (as required to be reported under 40 CFR 98.126(a)(2)); and (2) that the emissions consist exclusively of post-destruction device emissions (information that a competitor knowledgeable of some aspects of the facility and/or of fluorine chemistry might deduce). [2]
L	§98.126(f)(1)	Destruction efficiency (DE) of each destruction device for each fluorinated GHG whose destruction the facility reflects in §98.123, in accordance with §98.124(g)(1)(i) through (iv). (DEFGHGf)	L-18	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the amount of fluorinated GHG in a destroyed stream removed from the process and sent to a destruction device, if the following information is also known: (1) annual emissions of each fluorinated GHG (as required to be reported under 40 CFR 98.126(a)(2); (2) that only one stream with only one fluorine compound is sent to the destruction device (information that a competitor knowledgeable of some aspects of the facility and/or of fluorine chemistry might deduce). [2]
L	§98.126(f)(1)	Destruction efficiency (DE) of each destruction device for each fluorinated GHG whose destruction the facility reflects in §98.123, in accordance with §98.124(g)(1)(i) through (iv). (DE)	L-22	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the emission factor for fluorinated GHG emitted from process vents (as required to be reported in 40 CFR 98.126(c)(2)) and the mass of fluorinated GHG emitted from the process vents (as required to be reported in 40 CFR 98.126(c)(3)) are also known. [2]

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
L	§98.126(f)(1)	Destruction efficiency (DE) of each destruction device for each fluorinated GHG whose destruction the facility reflects in §98.123, in accordance with §98.124(g)(1)(i) through (iv) (DE).	L-27	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the process feed rate, production process rate, or other process activity rate if the emission factor for fluorinated GHG emitted from process vents (as required to be reported in 40 CFR 98.126(c)(2)) and the mass of fluorinated GHG emitted from the process vents (as required to be reported in 40 CFR 98.126(c)(3)) are also known.[2]
L	§98.126(f)(1)	Destruction efficiency (DE) of each destruction device for each fluorinated GHG whose destruction the facility reflects in §98.123, in accordance with §98.124(g)(1)(i) through (iv) (DE).	L-31	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of fluorinated GHGs that were previously produced (and that are fed annually into the destruction device) if the mass of fluorinated GHGs emitted annually from destruction of fluorinated GHGs that were previously produced (as required to be reported in 40 CFR 98.126(g)(2)) is also known. [2]
L	§98.126(g)(1)	The mass of the fluorinated GHG fed into the destruction device. (RE_D)	L-31	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
L	§98.126(h)(2)	If applicable, the heel factor calculated for each container size and type. (hfj)	L-34	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the number of tanks processed if the emissions from each type of container (as required to be reported in 40 CFR 98.126(h)(1)) are also known. The number of each type of tank processed and the size of the tanks could provide insight into product sales. [2]
N	§98.146(b)(2)	Annual quantity of carbonate based-raw material charged to each continuous glass melting furnace (No CEMS).	N-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
N	§98.146(b)(4)	Carbonate-based mineral mass fraction of carbonate-based raw material charged to a furnace.	N-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
N	§98.146(b)(6)	Fraction of calcination for carbonate-based raw material.	N-1	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the recipe for the glass produced (i.e., the product of the annual average mass fraction of carbonate-based mineral in carbonate-based raw material and the annual mass of carbonate-based raw material) if the CO2 emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5] are also known.
O	§98.156(a)(2)	Loss Factor used to account for the loss of HCFC– 22 upstream of the measurement (LF used in equation O-3).	O-3	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, indicates process performance and efficiency, as well as cost to do business (i.e., how much of a facility's product is lost).
O	§98.156(a)(7)	Annual mass of the HFC-23 generated (G_{23} in Eq. O-4).	O-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
O	§98.156(a)(8)	Annual mass of any HFC-23 sent off site for sale (S_{23} in Eq. O-4).	O-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
O	§98.156(a)(9)	Annual mass of any HFC-23 sent off site for destruction (OD_{23} used in Eq. O-4).	O-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
O	§98.156(a)(10)	Mass of HFC-23 in storage at the beginning of the year (used to calculate I_{23}, which is used in Eq. O-4).	O-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
O	§98.156(a)(10)	Mass of HFC-23 in storage at the end of the year (used to calculate I_{23}, which is used in Eq. O-4).	O-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
O	§98.156(b)(1)	Annual mass of HFC-23 fed into the destruction device (FD used in Eq. O-8 and O-9).	O-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
O	§98.156(b)(1)	Annual mass of HFC-23 fed into the destruction device (FD used in Eq. O-8 and O-9).	O-9	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
O	§98.156(b)(2)	Annual mass of HFC-23 destroyed (D23 used in Eq. O-8).	O-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
O	§98.156(d)(1)	If the HFC-23 concentration measured pursuant to §98.154(l) is greater than that measured during the performance test that is the basis for the destruction efficiency (DE), report flow rate of HFC-23 being fed into the destruction device in kg/hr.	No Equation - Used to calculate Destruction Efficiency	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, if the facility produces HCFC-22 onsite, information about the HCFC-23 production rate reveals information about process efficiency, revealing information about the HCFC-22 production rate.
O	§98.156(d)(2)	If the HFC-23 concentration measured pursuant to §98.154(l) is greater than that measured during the performance test that is the basis for the destruction efficiency (DE), report concentration (mass fraction) of HFC-23 at the outlet of the destruction device.	No Equation - Used to calculate Destruction Efficiency	Provides data described in section 2.3 of Part Two of this memorandum that could be used to estimate HCFC-23 production if the following data are also known: flow rate of HFC-23 being fed into the destruction device (as required to be reported in 40 CFR 98.156(d)(1)), flow rate at the outlet of the destruction device (as required to be reported in 40 CFR 98.156(d)(3) (or emission rate as required to be reported in 40 CFR 98.156(d)(4)). If the facility produces HCFC-22 onsite, this HCFC-23 production rate reveals information about process efficiency, revealing information about the HCFC-22 production rate. However, if the destruction efficiency (and flow rate of HFC-23 fed into the destruction device, which is used to calculate the destruction efficiency) were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
O	§98.156(d)(3)	If the HFC-23 concentration measured pursuant to §98.154(l) is greater than that measured during the performance test that is the basis for the destruction efficiency (DE), report flow rate at the outlet of the destruction device in kg/hr.	No Equation - Used to calculate Destruction Efficiency	Provides data described in section 2.3 of Part Two of this memorandum that could be used to estimate HCFC-23 production if the destruction efficiency (as required to be reported in 40 CFR 98.156(d)(5)) is also known. If the facility produces HCFC-22 onsite, this HCFC-23 production rate reveals information about process efficiency, revealing information about the HCFC-22 production rate. However, if the destruction efficiency (and flow rate of HFC-23 fed into the destruction device, which is used to calculate the destruction efficiency), were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
O	§98.156(d)(4)	If the HFC-23 concentration measured pursuant to §98.154(l) is greater than that measured during the performance test that is the basis for the destruction efficiency (DE), report emission rate (in kg/hour) calculated from the paragraphs (d)(2) and (d)(3) of this section.	No Equation - Used to calculate Destruction Efficiency	Provides data described in section 2.3 of Part Two of this memorandum that could be used to estimate HCFC-23 production if the destruction efficiency (as required to be reported in 40 CFR 98.156(d)(5)) is also known. If the facility produces HCFC-22 onsite, this HCFC-23 production rate reveals information about process efficiency, revealing information about the HCFC-22 production rate. However, if the destruction efficiency were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
O	§98.156(d)(5)	If the HFC-23 concentration measured pursuant to §98.154(l) is greater than that measured during the performance test that is the basis for the destruction efficiency (DE), report the destruction efficiency (DE) calculated from paragraphs (d)(1) and (d)(4) of this section.	O-9	Provides information about process efficiency, revealing information about the HCFC-22 production rate, if the facility produces HCFC-22 onsite. Also, provides data described in section 2.3 of Part Two of this memorandum that could be used to estimate HCFC-23 production if the HCFC-23 production rate is known.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
O	§98.156(e)(1)	(One time report) Destruction efficiency (DE) (by March 31, 2011 or within 60 days of commencing HFC-23 destruction).	O-9	Provides data described in section 2.3 of Part Two of this memorandum that could be used to estimate HCFC-23 production if the HCFC-23 production rate can be estimated. If the facility produces HCFC-22 onsite, this HCFC-23 production rate reveals information about process efficiency, revealing information about the HCFC-22 production rate.
P	§98.156(b)(2)	Monthly consumption of each fuel and feedstock by type used for hydrogen production (No CEMS): gaseous.	P-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
P	§98.156(b)(2)	Monthly consumption of each fuel and feedstock by type used for hydrogen production (No CEMS) (Fdstkn): Liquid.	P-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
P	§98.156(b)(2)	Monthly consumption of each fuel and feedstock by type used for hydrogen production (No CEMS) (Fdstkn): solid.	P-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
P	§98.156(b)(5)	Monthly analyses of carbon content for each fuel and feedstock used in hydrogen production: Gaseous.	P-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
P	§98.156(b)(5)	Monthly analyses of carbon content for each fuel and feedstock used in hydrogen production: Liquid.	P-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
P	§98.156(b)(5)	Monthly analyses of carbon content for each fuel and feedstock used in hydrogen production: Solid.	P-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
P	§98.156(b)(6)	Monthly analyses of the molecular weight of gaseous fuels and feedstocks.	P-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(b)	Annual quantity taconite pellets produced (No CEMS).	Q-1 or the calculation method specified in 98.273(b)(2)(iv) for the site-specific emission factor method	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(b)	Annual quantity coke produced (No CEMS).	Q-2 or the calculation method specified in 98.273(b)(2)(iv) for the site-specific emission factor method	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Q	§98.176(b)	Annual quantity iron produced (No CEMS).	Q-2 or the calculation method specified in 98.273(b)(2)(iv) for the site-specific emission factor method	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(b)	Annual quantity raw steel produced (No CEMS).	Q-2 or the calculation method specified in 98.273(b)(2)(iv) for the site-specific emission factor method	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(b)	Annual quantity sinter produced (No CEMS).	Q-4 or the calculation method specified in 98.273(b)(2)(iv) for the site-specific emission factor method	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(b)	Annual quantity raw steel produced (No CEMS).	Q-5 or the calculation method specified in 98.273(b)(2)(iv) for the site-specific emission factor method	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(b)	Annual quantity raw steel produced (No CEMS).	Q-6 or the calculation method specified in 98.273(b)(2)(iv) for the site-specific emission factor method	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(b)	Annual quantity iron produced (No CEMS).	Q-7 or the calculation method specified in 98.273(b)(2)(iv) for the site-specific emission factor method	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS) - solid fuel combusted (Csf).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS) -gaseous fuel combusted(C_{gf}).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- liquid fuel combusted (C_{lf}).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- greenball pellets produced (Co).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO2 emissions (No CEMS) - Fired pellets produced (Cp).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - air pollution control residue collected (Cr).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Iron (C_{iron}).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Scrap (C_{scrap}).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Flux (C_{flux}).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Carbonaceous material (C_{carbon}).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Steel produced (C_{steel})..	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Slag produced (C_{slag}).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Air pollution control residue collected (C_R).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Coal charged to coke battery (C_{coal}).	Q-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Coke produced by coke battery (C_{coke}).	Q-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Air pollution control residue collected from coke battery (C_R).	Q-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Gaseous fuel combusted in the sinter process (C_{gf}).	Q-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS) - sinter feed (C_{Feed}).	Q-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - sinter (C_{Sinter}).	Q-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Air pollution control residue collected from sinter process (C_R).	Q-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Iron (C_{iron}) used in EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Scrap (C_{scrap}) used in EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Flux (C_{flux}) used in EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Carbonaceous material (C_{carbon}) used in EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Electrode consumed in EAF ($C_{electrode}$).	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Steel produced (C_{steel}) in EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Slag produced (C_{slag}) in EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Air pollution control residue collected (C_R) for EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS) - molten steel before decarburization ($C_{steelout}$) in EAF.	Q-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - molten steel after decarburization ($C_{steelout}$) in EAF.	Q-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Air pollution control residue collected (C_R) for EAF.	Q-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS) - Gaseous fuel combusted in the direct reduction furnace (F_g) .	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS) - iron ore or iron ore pellets fed into the direct reduction furnace (C_{ore}) .	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS)- Carbonaceous material (C_{carbon}) used in the direct reduction furnace .	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Q	§98.176(e)(1)	Carbon content of each process input used to determine CO_2 emissions (No CEMS) - Other materials charged to the direct reduction furnace (C_{other}).	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Iron produced from direct reduction furnace (C_{iron}).	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Non-metallic materials produced from direct reduction furnace (C_{NM}).	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(1)	Carbon content of each process output used to determine CO_2 emissions (No CEMS) - Air pollution control residue collected (C_R) for direct reduction furnace.	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual volume of each type of gaseous fuel used to determine CO_2 emissions (reported separately for each type in standard cubic feet) (No CEMS) - Taconite Indurating Furnace.	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual volume of each type of liquid fuel used to determine CO_2 emissions (reported separately for each type in gallons) (No CEMS).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of greenball (taconite) pellets fed into the furnace (O).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of solid fuel combusted (Fs).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of air pollution control residue (R).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of fired pellets produced (P).	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of molten iron charged to furnace (Iron).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of scrap charged to the furnace (Scrap).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of flux charged to the furnace (Flux).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of carbon (e.g., coal, coke) charged to furnace (Carbon).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of steel produced (Steel).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of slag produced (Slag).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of air pollution control residue collected (Residue).	Q-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Coal charged to battery (Coal).	Q-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of coke produced (Coke).	Q-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of air pollution control residue collected from battery (R).	Q-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual volume of each type of gaseous fuel used to determine CO_2 emissions (reported separately for each type in standard cubic feet) (No CEMS) - Sinter process (Fg).	Q-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of sinter feed material (Feed).	Q-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of sinter Produced (Sinter).	Q-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of air pollution control residue collected from sinter process (R).	Q-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of direct reduced iron charged to the EAF (Iron).	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of Scrap charged to the EAF(Scrap).	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of flux charged to the EAF(Flux).	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of carbon electrode consumed in the EAF(Electrode).	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO2 emissions (No CEMS)- Annual mass of carbonaceous (coal or coke) material charged to the EAF(Carbon).	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of steel produced (Steel) in EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of slag produced (Slag) in EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of air pollution control residue collected (Residue) from EAF.	Q-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of steel charged to the decarburization vessel (Steel).	Q-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of air pollution control residue collected (Residue) from the decarburization vessel.	Q-6	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual volume of each type of gaseous fuel used to determine CO_2 emissions (reported separately for each type in standard cubic feet) (No CEMS) - direct reduction furnaces (Fg).	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of iron ore or iron ore pellets charged to the direct reduction furnace (Ore).	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of carbonaceous (coal or coke) material charged to the direct reduction furnace (Carbon).	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of other material charged to the direct reduction furnace (Other).	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of iron produced (Iron) in direct reduction furnace.	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process input used to determine CO_2 emissions (No CEMS)- Annual mass of non-metallic materials produced (NM) in direct reduction furnace.	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(3)	Annual mass (in metric tons) of each other process output used to determine CO_2 emissions (No CEMS) - Annual mass of air pollution control residue collected (Residue) from the direct reduction furnace.	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(4)	Molecular weight of gaseous fuels (No CEMS) - Taconite Indurating Furnace.	Q-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(4)	Molecular weight of gaseous fuels (No CEMS) - Sinter Process.	Q-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(e)(4)	Molecular weight of gaseous fuels (No CEMS) - Direct Reduction Furnace.	Q-7	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(f)(1)	Measured average hourly CO_2 emission rate during the test (No CEMS).	No Equation - Used as input to method described in §98.173(b)(2)(iii).	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate iron and steel production rate if the EF (as required to be reported in 40 CFR 98.176(f)(3)) is also known. However, if the EF were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
				production.
Q	§98.176(f)(2)	Average hourly feed rate during the test (No CEMS).	No Equation - Used as input in calc. method described in §98.173(b)(2)(iii).	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(f)(2)	Average hourly production rate during the test (No CEMS).	No Equation - Used as input in calc. method described in §98.173(b)(2)(iii).	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(f)(3)	Site-specific emission factor (No CEMS).	No Equation - Used as input in calc. method described in §98.173(b)(2)(iv).	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the iron and steel production if one of the following is also known: the measured average hourly CO_2 emission rate during the test (as required to be reported in 40 CFR 98.176(f)(1)); or CO2 mass emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5].
Q	§98.176(f)(4)	Annual feed rate used to estimate annual CO_2 emissions (No CEMS).	No Equation - Used as input in calc. method described in §98.173(b)(2)(iv).	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(f)(4)	Annual production rate used to estimate annual CO_2 emissions (No CEMS).	No Equation - Used as input in calc. method described in §98.173(b)(2)(iv).	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Q	§98.176(g)	The annual amount of coal charged to the coke ovens (in metric tons).	No Equation - Used as input in calc. method described in §98.173(c).	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
R	§98.186(b)(6)	Annual material quantity used for the calculation of annual process CO_2 emissions (No CEMS) (Ore = Annual mass of lead ore charged to the smelting furnace (tons).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
R	§98.186(b)(6)	Annual material quantity used for the calculation of annual process CO_2 emissions (No CEMS) (Scrap = Annual mass of lead scrap charged to the smelting furnace (tons).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
R	§98.186(b)(6)	Annual material quantity used for the calculation of annual process CO_2 emissions (No CEMS) (Flux = Annual mass of flux materials (e.g., limestone, dolomite) charged to the smelting furnace (tons).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
R	§98.186(b)(6)	Annual material quantity used for the calculation of annual process CO_2 emissions (No CEMS) (Carbon = Annual mass of carbonaceous materials (e.g., coal, coke) charged to the smelting furnace (tons).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
R	§98.186(b)(6)	Annual material quantity used for the calculation of annual process CO_2 emissions (No CEMS) (Other = Annual mass of any other material containing carbon, other than fuel, fed, charged, or otherwise introduced into the smelting furnace (tons).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
R	§98.186(b)(7)	Annual average of the carbon content determinations for each material used for the calculation of annual process CO_2 emissions (No CEMS) (COre= Carbon content of the lead ore, from the carbon analysis results (percent by weight, expressed as a decimal fraction).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
R	§98.186(b)(7)	Annual average of the carbon content determinations for each material used for the calculation of annual process CO_2 emissions (No CEMS). (CScrap= Carbon content of the lead scrap, from the carbon analysis (percent by weight, expressed as a decimal fraction).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
R	§98.186(b)(7)	Annual average of the carbon content determinations for each material used for the calculation of annual process CO_2 emissions (No CEMS). (CFlux= Carbon content of the flux materials, from the carbon analysis (percent by weight, expressed as a decimal fraction).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
R	§98.186(b)(7)	Annual average of the carbon content determinations for each material used for the calculation of annual process CO_2 emissions (No CEMS). (CCarbon= Carbon content of the carbonaceous materials, from the carbon analysis (percent by weight, expressed as a decimal fraction).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
R	§98.186(b)(7)	Annual average of the carbon content determinations for each material used for the calculation of annual process CO_2 emissions (No CEMS). (COther= Carbon content of the other material from the carbon analysis results (percent by weight, expressed as a decimal fraction).)	R-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
S	§98.196(b)(2)	Monthly emission factors for each lime type produced.	S-4	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the production rate for each lime product if annual CO_2 process emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] is known.
S	§98.196(b)(3)	Monthly emission factors for each calcined byproduct/waste by lime type that is sold. (EFLKD,i,n)	S-4	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the weight or mass of calcined byproducts/waste sold if annual CO_2 process emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] is known.
S	§98.196(b)(5)	Monthly results of chemical composition analysis of each type of lime product produced (CaOi,n and MgOi,n) (No CEMS).	S-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
S	§98.196(b)(5)	Monthly results of chemical composition analysis of each type of calcined lime byproducts/wastes sold (CaOLKDi,n and MgOLKDi,n) (No CEMS).	S-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
S	§98.196(b)(6)	Annual results of chemical composition analysis of each type of lime byproducts/wastes that is not sold (CaOwastei,n and MgOwastei,n) (No CEMS).	S-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
S	§98.196(b)(8)	Monthly amount of lime product sold, by type (No CEMS).	Calculation method described in §98.194(a)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
S	§98.196(b)(10)	Monthly amount of calcined lime byproduct/waste sold, by type (MLKDi,n) (No CEMS).	S-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
S	§98.196(b)(11)	Annual amount of calcined lime byproduct/waste that is not sold, by type (Mwastei) (No CEMS).	S-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
S	§98.196(b)(12)	Monthly weight or mass of each lime type produced (MLIMEi,n) (No CEMS).	S-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
U	§98.216(b)	Annual carbonate consumption by carbonate type.	U-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
U	§98.216(b)	Annual carbonate input by carbonate type.	U-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
U	§98.216(e)(1)	Annual carbonate consumption by carbonate type.	U-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
U	§98.216(e)(2)	Annual calcination fractions used in calculations.	U-1	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the annual mass of each carbonate type consumed if the CO2 emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] are also known.
U	§98.216(f)(1)	Annual carbonate input by carbonate type.	U-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
U	§98.216(f)(2)	Annual carbonate output by carbonate type.	U-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
V	§98.226(c)	Annual nitric acid production from each nitric acid train (tons, 100% acid basis) (Pt).	V-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
V	§98.226(c)	Annual nitric acid production from each nitric acid train (tons, 100% acid basis) (Pt)	V-3a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
V	§98.226(c)	Annual nitric acid production from each nitric acid train (tons, 100% acid basis) (Pt).	V-3b	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
V	§98.226(c)	Annual nitric acid production from each nitric acid train (tons, 100% acid basis) (Pt).	V-3c	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
V	§98.226(c)	Annual nitric acid production from each nitric acid train (tons, 100% acid basis) (Pt).	V-3d	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
V	§98.226(d)	Annual nitric acid production during which N_2O abatement technology is operating (tons, 100% acid basis).	V-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
V	§98.226(i)	Abatement technology destruction efficiency (DF).	V-3a	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5], EFs (as required to be reported in 40 CFR 98.226(m)(1)) and the abatement utilization factor (as required to be reported in 40 CFR 98.226(j)). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
V	§98.226(i)	Abatement technology destruction efficiency (DF).	V-3b	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5], EFs (as required to be reported in 40 CFR 98.226(m)(1)) and the abatement utilization factor (as required to be reported in 40 CFR 98.226(j)). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
V	§98.226(i)	Abatement technology destruction efficiency (DF).	V-3c	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], EFs (as required to be reported in 40 CFR 98.226(m)(1)), the abatement utilization factor (as required to be reported in 40 CFR 98.226(j)), and the fraction control factor (as required to be reported in 40 CFR 98.226(p). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
V	§98.226(j)	Abatement utilization factor (AF).	V-3a	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of nitric acid produced if all of the following data are also known: annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available) [5], EFs (as required to be reported in 40 CFR 98.226(m)(1)), and the destruction efficiency (as required to be reported in 40 CFR 98.226(i)). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
V	§98.226(j)	Abatement utilization factor (AF).	V-3b	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of nitric acid produced if all of the following data are also known: annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5], EFs (as required to be reported in 40 CFR 98.226(m)(1)), and the destruction efficiency (as required to be reported in 40 CFR 98.226(i)). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
V	§98.226(j)	Abatement utilization factor (AF).	V-3c	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the mass of adipic acid produced if all of the following data are also known: annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5], EFs (as required to be reported in 40 CFR 98.226(m)(1)), destruction efficiency (as required to be reported in 40 CFR 98.226(i)), and the fraction control factor (as required to be reported in 40 CFR 98.226(p). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
V	§98.226(m)(1)	Emission factor calculated for each nitric acid train (EFN2Ot).	V-3a	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of nitric acid produced if all of the following data are also known: annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5], destruction efficiency (as required to be reported in 40 CFR 98.226(i)), and abatement utilization factor (as required to be reported in 40 CFR 98.226(j)). However, if the destruction efficiency or abatement utilization factor were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
V	§98.226(m)(1)	Emission factor calculated for each nitric acid train (EFN2Ot).	V-3b	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of nitric acid produced if all of the following data are also known: annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5], destruction efficiency (as required to be reported in 40 CFR 98.226(i)), and abatement utilization factor (as required to be reported in 40 CFR 98.226(j)). However, if the destruction efficiency or abatement utilization factor were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
V	§98.226(m)(1)	Emission factor calculated for each nitric acid train (EFN2Ot).	V-3c	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of nitric acid produced if all of the following data are also known: annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5], destruction efficiency (as required to be reported in 40 CFR 98.226(i)), abatement utilization factor (as required to be reported in 40 CFR 98.226(j)), and fraction control factor (as required to be reported in 40 CFR 98.226(p)). However, if the destruction efficiency or abatement utilization factor, were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
V	§98.226(m)(1)	Emission factor calculated for each nitric acid train (EFN2Ot).	V-3d	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of nitric acid produced if the annual N2O mass emissions from nitric acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] is also known.
V	§98.226(m)(3)	Production rate per test run during performance test for each train.	V-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
V	§98.226(m)(4)	N_2O concentration per test run during performance test for each train.	V-1	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the production rate of nitric acid if all of the following data are also known: EFs (as required to be reported in 40 CFR 98.226(m)(1)), volumetric flow rate of effluent gas during the performance test (as required to be reported in 40 CFR 98.226(m)(5)), and number of test runs (as required to be reported in 40 CFR 98.226(m)(6). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
V	§98.226(m)(5)	Volumetric flow rate per test run during performance test each train.	V-1	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the production rate of nitric acid if the all following data are also known: EFs (as required to be reported in 40 CFR 98.226(m)(1)), N_2O concentration per test run during performance test (as required to be reported in 40 CFR 98.226(m)(4)), and number of test runs (as required to be reported in 40 CFR 98.56(m)(6). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
V	§98.226(m)(6)	Number of test runs during performance test each train.	V-1	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the production rate of nitric acid if all of the following data are also known: EFs (as required to be reported in 40 CFR 98.226(m)(1)), N_2O concentration per test run during performance test (as required to be reported in 40 CFR 98.226(m)(4)), and volumetric flow rate per test run during performance test (as required to be reported in 40 CFR 98.226(m)(5). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
V	§98.226(p)	Fraction control factor for each abatement technology (percent of total emissions from the production unit that are sent to the abatement technology) if equation V-3c is used.	V-3c	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the production rate of nitric acid if all of the following data are also known: annual N2O mass emissions from adipic acid production (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5], EFs (as required to be reported in 40 CFR 98.226(m)(1)), destruction efficiency (as required to be reported in 40 CFR 98.226(i)), and the abatement utilization factor (as required to be reported in 40 CFR 98.226(j)). However, if the EFs were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
X	§98.246(a)(4)	Indicate whether you used the alternative to sampling and analysis.	X-1	Provides data related to production/raw materials, process design; process performance, and operation; and/or cost to do business, as described in sections 2.1 and 2.2 of Part Two of this memorandum. Specifically, indicates whether the concentration of a specific compound in a feedstock, byproduct, or product of a petrochemical process is greater than 99.5%.
X	§98.246(a)(4)	Monthly volume values (used in Equations X-1 to X-3) - Volume of gaseous feedstock I introduced in month "n" $((F_{gf})_{n)}$.	X-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly volume values (used in Equations X-1 to X-3) - Volume of gaseous product i produced in month "n" $((P_{gf})_{n)}$	X-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly carbon content values (used in Equations X-1 to X-3) - Average carbon content of the gaseous feedstock I for month "n" ((CCgf)n).	X-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly carbon content values (used in Equations X-1 to X-3) - Average carbon content of the gaseous product i for month "n" ((CCgp)n).	X-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Molecular weights for gaseous feedstocks (used in Equation X-1).	X-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
X	§98.246(a)(4)	Molecular weights for gaseous products (used in Equation X-1).	X-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Indicate whether you used the alternative to sampling and analysis.	X-2	Provides data related to production/raw materials, process design; process performance, and operation; and/or cost to do business, as described in sections 2.1 and 2.2 of Part Two of this memorandum. Specifically, indicates whether the concentration of a specific compound in a feedstock, byproduct, or product of a petrochemical process is greater than 99.5%.
X	§98.246(a)(4)	Monthly volume values (used in Equations X-1 to X-3) - Volume of liquid feedstock i for month "n" ($(F_{lf})_n$).	X-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly volume values (used in Equations X-1 to X-3) - Volume of liquid product i for month "n" ($(P_{lp})_n$) .	X-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly mass values (used in Equations X-1 to X-3) - Mass of liquid feedstock i for month "n" ($(F_{lf})_n$).	X-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly mass values (used in Equations X-1 to X-3) - Mass of liquid product i for month "n" ($(P_{lp})_n$).	X-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly carbon content values (used in Equations X-1 to X-3) - Average carbon content of the liquid feedstock i for month "n" ($(CC_{lf})n$).	X-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly carbon content values (used in Equations X-1 to X-3) - Average carbon content of the liquid product i for month "n" ((CClp)n).	X-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Indicate whether you used the alternative to sampling and analysis.	X-3	Provides data related to production/raw materials, process design; process performance, and operation; and/or cost to do business, as described in sections 2.1 and 2.2 of Part Two of this memorandum. Specifically, indicates whether the concentration of a specific compound in a feedstock, byproduct, or product of a petrochemical process is greater than 99.5%.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
X	§98.246(a)(4)	Monthly mass values (used in Equations X-1 to X-3) - Mass of solid feedstock I for month "n" ($(F_{sf})_n$).	X-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly mass values (used in Equations X-1 to X-3) - Mass of solid product i for month "n" ($(P_{sp})_n$).	X-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly carbon content values (used in Equations X-1 to X-3) - Average carbon content of the solid feedstock i for month "n" ($(CC_{lf})n$).	X-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(a)(4)	Monthly carbon content values (used in Equations X-1 to X-3) - Average carbon content of the solid product i for month "n" ((CClp)n).	X-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(b)(5)(iii)	Quantity of each type of fuel used in equation C-8 in §98.33(c) for each stationary combustion unit or group of units (as applicable) during the reporting year, expressed in short tons for solid fuels, gallons for liquid fuels, and scf for gaseous fuels.	C-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
X	§98.246(b)(5)(iv)	The HHV (either default or annual average from measured data) used in equation C-8 in §98.33(C) for each stationary combustion unit or group of units (as applicable).	C-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(e)(6)	If using Equation Y-1a: report the molar volume conversion factor (in scf/g-mole) for each flare.	Y-1a	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a constant value widely known within the industry and publicly available.
Y	§98.256(e)(7)	If using Equation Y-1b: report molar volume conversion factor for each flare.	Y-1b	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a constant value widely known within the industry and publicly available.
Y	§98.256(e)(7)(ii)	If using Equation Y-1b: report the carbon mole number of each carbon containing compound other than CO_2 in the flare gas stream for each flare.	Y-1b	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Y	§98.256(e)(9)	Annual volume of flare gas combusted during normal operations.	Y-3	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the volume of gas flared during an SSM event if the following additional data are also known: the higher heating value, molecular weight, and carbon content of the flare gas (all required to be reported under 40 CFR 98.256(e)(9)). This information could reveal information on the performance and operation of process units.
Y	§98.256(e)(9)	Annual average higher heating value of the flare gas (normal).	Y-3	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the amount of gas flared during an SSM event if the following additional data are also known: the volume of gas flared during normal operations, carbon content, and molecular weight of the flare gas (all required to be reported under 40 CFR 98.256(e)(9)). This information could reveal information on the performance and operation of process units.
Y	§98.256(e)(9)	Volume of gas flared during SSM event.	Y-3	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, reveals information about amount of waste gas sent to the flare for combustion during an SSM event, which could reveal information on the performance and operation of process units.
Y	§98.256(e)(9)	Average molecular weight (SSM).	Y-3	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the amount of gas flared during an SSM event if the following additional data are also known: the volume of gas flared during normal operations, the higher heating value, and the carbon content of the flare gas (all required to be reported under 40 CFR 98.256(e)(9)).

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Y	§98.256(e)(9)	Carbon content of the flare gas (SSM).	Y-3	Provides data described in section 2.3 in Part Two of this memorandum that could be used to calculate the volume of gas flared during an SSM event if the following additional data are also known: the amount of gas flared during normal operations, the higher heating value, and the molecular weight of the flare gas (all required to be reported under 40 CFR 98.256(e)(9)).
Y	§98.256(e)(9)	If using Equation Y-3: report the molar volume conversion factor for each flare.	Y-3	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a constant value widely known within the industry and publicly available.
Y	§98.256(e)(10)	Fraction of carbon in the flare gas contributed by methane (used in Equation Y-4).	Y-4	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a default value provided in 40 CFR 98.256(b)(2), a measured value, or an engineering estimate.
Y	§98.256(f)(7)	If using Equation Y-6: report the molar volume conversion factor.	Y-6	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a constant value widely known within the industry and publicly available.
Y	§98.256(f)(10)	Coke burn-off factor.	Y-8	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the annual production from catalytic cracking unit regenerators and fluid coking units if CO_2 mass emissions (as currently required to be reported under 40 CFR 98.252(b) and made publicly available)[5], are also known.
Y	§98.256(f)(10)	Annual throughput of unit.	Y-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(f)(10)	Average carbon content of coke.	Y-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Y	§98.256(f)(11)	If you use a unit-specific emission factor for CH4: report the unit-specific emission factor for CH4 each catalytic cracking units, traditional fluid coking units, and catalytic reforming units.	Used in method specified in §98.253(c)(4)	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate either production or raw material consumption (depending on whether the facility uses an emission factor based on production throughput or raw material consumption) if the N_2O emissions (as currently required to be reported under 40 CFR 98.252(e) and made publicly available)[5] are also known.
Y	§98.256(f)(11)	Units of measure for the unit-specific CH_4 emission factor.	Used in method specified in §98.253(c)(4)	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Provides only the units of measure for the emission factor.
Y	§98.256(f)(11)	Activity data for calculating emissions (input).	Used in method specified in §98.255(c)(4)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(f)(11)	Activity data for calculating emissions (product).	Used in method specified in §98.255(c)(4)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(f)(12)	Activity data for calculating emissions (input).	Used in method specified in §98.255(c)(5)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(f)(12)	Activity data for calculating emissions (production).	Used in method specified in §98.255(c)(5)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(f)(12)	If a unit-specific emission factor for N2O was used: report the unit-specific emission factor for N2O each catalytic cracking units, traditional fluid coking units, and catalytic reforming units.	Used in method specified in §98.253(c)(5)	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate either production or raw material consumption (depending on whether the facility uses an emission factor based on production throughput or raw material consumption) if the N2O emissions (as currently required to be reported under 40 CFR §98.252(e) and made publicly available)[5] are also known.
Y	§98.256(f)(12)	Units of measure for the unit-specific N_2O emission factor.	Used in method specified in 9§8.253(c)(5)	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Provides only the units of measure for the emission factor.
Y	§98.256(f)(13)	Average carbon content of coke.	Y-11	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Y	§98.256(h)(4)	If Equation Y-12 is used: report the molar volume conversion factor.	Y-12	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a constant value widely known within the industry and publicly available.
Y	§98.256(h)(4)	If Equation Y-12 is used: Annual volumetric flow to the sulfur recovery plant.	Y-12	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(h)(4)	If Equation Y-12 is used: Annual average mole fraction of carbon in the sour gas.	Y-12	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(h)(5)	Annual volume of recycled tail gas (if used to calculate recycling correction factor).	If a correction for CO2 emissions in the tail gas was used in Eq. Y-12, used in method specified in §98.253(f)(5)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(h)(5)	Annual average mole fraction of carbon in the tail gas (if used to calculate recycling correction factor).	If a correction for CO2 emissions in the tail gas was used in Eq. Y-12, used in method specified in §98.253(f)(5)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(h)(5)	Value of the correction.	If a correction for CO2 emissions in the tail gas was used in Eq. Y-12, used in method specified in §98.253(f)(5)	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Provides only information about quantity of carbon in tail gas recycled to the sulfur recovery plant.
Y	§98.256(i)(5)	If you use Eq. Y-13, report the annual mass of green coke fed to the for each coke calcining unit	Y-13	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(i)(5)	If you use Eq. Y-13, report the carbon content of green coke fed to the for each coke calcining unit.	Y-13	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(i)(5)	If you use Eq. Y-13, report the annual mass of marketable coke produced for each coke calcining unit.	Y-13	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(i)(5)	If you use Eq. Y-13, report the carbon content of marketable coke produced for each coke calcining unit.	Y-13	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Y	§98.256(i)(5)	If Equation Y-13 used for coke calcining units: report the annual mass of coke dust removed from the process through collected in dust collection systems.	Y-13	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(i)(7)	For coke calcining: Activity data for calculating emissions (input data).	Used in method specified in §98.253(c)(4)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(i)(7)	For coke calcining: Activity data for calculating emissions (production data).	Used in method specified in §98.253(c)(4)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(i)(7)	For coke calcining: The unit-specific CH_4 emission factor.	Used in method specified in §98.253(c)(4)	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate either production or raw material consumption (depending on whether the facility uses an emission factor based on production throughput or raw material consumption) if the CH_4 emissions (as currently required to be reported under 40 CFR 98.252(e) and made publicly available)[5] are also known.
Y	§98.256(i)(7)	For coke calcining: Units of measure for the unit-specific CH_4 emission factor.	Used in method specified in §98.253(c)(4)	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Provides only the units of measure for the emission factor.
Y	§98.256(i)(8)	For coke calcining: If a unit specific emission factor was used for the N2O factor: report the activity data used for calculating emissions.	Used in method specified in §98.253(c)(5)	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(i)(8)	For coke calcining: If a unit-specific emission factor for N2O was used, report the site-specific emission factor.	Used in method specified in §98.253(c)(5)	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate either production or raw material consumption (depending on whether the facility uses an emission factor based on production throughput or raw material consumption) if the N_2O emissions (as currently required to be reported under 40 CFR 98.252(e) and made publicly available)[5] are also known.
Y	§98.256(i)(8)	For coke calcining: If a unit specific emission factor was used for the N2O factor: report the units of measure for the unit-specific factor .	Used in method specified in §98.253(c)(5)	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Provides only the units of measure for

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
				the emission factor.
Y	§98.256(j)(2)	Quantity of asphalt blown for each for each asphalt blowing unit.	Y-14	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(j)(2)	Quantity of asphalt blown for each for each asphalt blowing unit.	Y-15	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(j)(2)	Quantity of asphalt blown for each for each asphalt blowing unit.	Y-16a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(j)(2)	Quantity of asphalt blown for each for each asphalt blowing unit.	Y-16b	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(j)(2)	Quantity of asphalt blown for each for each asphalt blowing unit.	Y-17	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(j)(5)	CO_2 emission factor for each asphalt blowing unit.	Y-14	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the annual asphalt production if the CO_2 emissions (as currently required to be reported under 40 CFR 98.252(f) and made publicly available)[5] are also known.
Y	§98.256(j)(6)	CH_4 emission factor for each asphalt blowing unit.	Y-15	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the annual asphalt production if the CH_4 emissions (as currently required to be reported under 40 CFR 98.252(f) and made publicly available)[5] are also known.
Y	§98.256(j)(7)	If Equation Y-16 is used: report the carbon emission factor.	Y-16a	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the annual asphalt production if the CO_2 emissions (as currently required to be reported under 40 CFR 98.252(f) and made publicly available)[5] are also known.
Y	§98.256(j)(8)	If Equation Y-16b is used: report the CO_2 emission factor used.	Y-16b	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the annual asphalt production if both the CO_2 emissions (as currently required to be reported under 40 CFR 98.252(f) and made publicly available)[5]and the carbon emission factor "CEF_{AB}" (required to be

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
				reported under 40 CFR 98.256(j)(8)) are also known.
Y	§98.256(j)(8)	If Equation Y-16b is used: report the carbon emission factor.	Y-16b	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the annual asphalt production if both the CO_2 emissions (as currently required to be reported under 40 CFR 98.252(f) and made publicly available)[5] and the CO_2 emission factor "$EF_{AB,CO2}$" (required to be reported under 40 CFR 98.256(j)(8)) are also known. Additionally, if the uncontrolled emissions represented by the CO_2 emission factor "$EF_{AB,CO2}$" are very low, could estimate annual asphalt production if only this carbon factor and the CO_2 emissions are known.
Y	§98.256(j)(9)	If you use Eq. Y-17: CH_4 emission factor.	Y-17	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the annual asphalt production if the CO_2 emissions (as currently required to be reported under 40 CFR 98.252(f) and made publicly available)[5] are also known.
Y	§98.256(k)(3)	For delayed coking units: Dimensions of coke drum or vessel.	Y-18	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal information about the design and operation of the coking unit.
Y	§98.256(k)(3)	For delayed coking units: Typical gauge pressure of the coking drum when first vented to the atmosphere.	Y-18	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal information about the design and operation of the coking unit.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Y	§98.256(k)(3)	For delayed coking units: Typical void fraction of coke drum or vessel.	Y-18	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal information about the design and operation of the coking unit.
Y	§98.256(k)(3)	For delayed coking units: Annual number of coke-cutting cycles of coke drum or vessel.	Y-18	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal information about the design and operation of the coking unit.
Y	§98.256(k)(3)	For delayed coking units: report the molar volume conversion factor for each coke drum or vessel.	Y-18	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a constant value widely known within the industry and publicly available.
Y	§98.256(k)(4)	For delayed coking units: Height and diameter of the coke drums.	Y-18	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal information about the design and operation of the coking unit.
Y	§98.256(k)(4)	For delayed coking units: Cumulative number of vessel openings for all delayed coking drums in the set.	Y-18	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal information about the design and operation of the coking unit.
Y	§98.256(k)(4)	For delayed coking units: Typical venting pressure.	Y-18	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal information about the design and operation of the coking unit.
Y	§98.256(k)(4)	For delayed coking units: Void fraction.	Y-18	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal information about the design and operation of the coking unit.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Y	§98.256(k)(4)	For delayed coking units: Mole fraction of methane in coking gas.	Y-18	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate various other data related to process design and operation of the coking units (e.g., typical void fraction of the coke drum, height and diameter of the coke vessel). For examples this data element could be used to calculate typical void fraction of the coke vessel if the following data are also known: CH4 emissions (as currently required to be reported under 40 CFR 98.252(f) and made publicly available)[5], cumulative number of vessel openings for all delayed coking drums in the set (as required to be reported in 40 CFR 98.256(k)(4), height and diameter of the coking vessel (as required to be reported in 40 CFR 98.256(k)(4), typical venting pressure (as required to be reported in 40 CFR 98.256(k)(4), and the void fraction (as required to be reported in 40 CFR 98.256(k)(4). However, if the cumulative number of vessel openings for all delayed coking drums in the set were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
Y	§98.256(l)(5)	For each process vent: Molar volume conversion factor.	Y-19	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a constant value widely known within the industry and publicly available.
Y	§98.256(m)(3)	Uncontrolled blowdown systems reporting under §98.253 (k): CH_4 emission factor used.	Y-20	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the quantity of crude oil and intermediate products received from offsite if the CO_2 emissions (as currently required to be reported under 40 CFR 98.252(g) and made publicly available)[5] are also known.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Y	§98.256(m)(3)	Uncontrolled blowdown systems reporting under §98.253 (k): Molar volume conversion factor.	Y-20	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a constant value widely known within the industry and publicly available.
Y	§98.256(m)(3)	Uncontrolled blowdown systems reporting under §98.253 (k): Total quantity of crude oil plus the quantity of intermediate products received from off-site that are processed at the facility in the reporting year.	Y-20	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(n)(3)	For equipment leaks: Number of each type of emission source listed in Equation Y-21 (if using Eq. Y-21).	Y-21	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. These data (e.g., types of units, number of units) are already generally publicly available in permits and permit applications, such that these reported data would not reveal any additional information.
Y	§98.256(o)(2)(ii)	Total quantity of crude oil plus the quantity of intermediate products received from off-site that are processed at the facility in the reporting year.	Y-22	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(o)(4)(ii)	For storage tanks that process unstabilized crude oil: Quantity of unstabilized crude oil received during the calendar year.	Y-23	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(o)(4)(iii)	For storage tanks that process unstabilized crude oil: Average pressure differential.	Y-23	Provides data related to process design; process performance, and operation; and/or cost to do business, as described in section 2.2 of Part Two of this memorandum. Specifically, could reveal the type of crude oil processed, which can provide information regarding the production process and business costs. Additionally, provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the quantity of unstabilized crude oil received if both the average mole fraction of CH4 in the vent gas (required to be reported under 40 CFR 98.252(g)) and the tank-specific methane composition data (required to be reported under 40 CFR 98.256(o)(4)(v)) are also

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
				known.
Y	§98.256(o)(4)(iv)	For storage tanks that process unstabilized crude oil: Molar volume conversion factor..	Y-23	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Is a constant value widely known within the industry and publicly available.
Y	§98.256(o)(4)(v)	For storage tanks that process unstabilized crude oil: Average Mole fraction of CH_4 in vent gas from the unstabilized crude oil storage tanks.	Y-23	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(o)(4)(vi)	If you did not use Equation Y-23: report the gas generation rate data used to estimate cumulative CH4 emissions for storage tanks used to process unstabilized crude oil.	Used in methods specified in §98.253(m)(2)	Gas generation data in volume per year would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production..[3]
Y	§98.256(o)(4)(vi)	If you did not use Equation Y-23: report the tank-specific methane composition data used to estimate cumulative CH4 emissions for storage tanks used to process unstabilized crude oil.	Used in methods specified in §98.253(m)(2)	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.[3]
Y	§98.256(o)(6)	Mole fraction of CH_4 in vent gas from the unstabilized crude oil storage tank.	Y-23	See analysis for 40 CFR 98.256(o)(4)(v).[4]
Y	§98.256(o)(6)	Average pressure differential.	Y-23	See analysis for 40 CFR 98.256(o)(4)(iii).[4]

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
Y	§98.256(o)(6)	Quantity of unstabilized crude oil received during the calendar year.	Y-23	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Y	§98.256(o)(7)	Tank-specific methane composition data.	Used in methods specified in §98.253(m)(2)	See analysis for 40 CFR 98.256(o)(4)(vi).[4]
Y	§98.256(o)(7)	Gas generation rate data.	Used in methods specified in §98.253(m)(2)	See analysis for 40 CFR 98.256(o)(4)(vi).[4]
Y	§98.256(p)(2)	For loading operations: Quantity of materials loaded by vessel type that have an equilibrium vapor-phase concentration of CH_4 of 0.5 volume percent or greater.	Used in methods specified in AP-42, Section 5.2 (referenced by §98.253(n))	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Z	§98.266(f)(5)	Monthly inorganic carbon content of phosphate rock for each wet-process phosphoric acid process line for which Equation Z-1a is used (percent by weight, expressed as decimal fraction) (No CEMS).	Z-1a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Z	§98.266(f)(5)	Monthly CO_2 (ton CO_2/ton of phosphate rock) for which Equation Z-1b is used (No CEMS).	Z-1b	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the amount of phosphate rock consumed if the N_2O emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] are also known.
Z	§98.266(f)(6)	Monthly mass of phosphate rock consumed by origin in production.	Z-1a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
Z	§98.266(f)(6)	Monthly mass of phosphate rock consumed by origin in production.	Z-1b	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery furnaces.	C-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery furnaces.	C-1a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery furnaces.	C-1b	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery furnaces.	C-2a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery furnaces.	C-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery combustion units.	C-4	Provides production or raw material data described in section 2.1 of Part Two of this

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
				memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery combustion units.	C-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery combustion units.	C-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery combustion units.	C-8a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery combustion units.	C-8b	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(b)	Annual quantities of fossil fuels used in chemical recovery combustion units.	C-9a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(c)	Annual mass of the spent liquor solids combusted.	AA-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(c)	Annual mass of the spent liquor solids combusted.	AA-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(d)	High heat value (HHV) of the spent liquor solids used in Equation AA-1.	AA-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(e)	Default or site specific emission factor for CO_2 used in equation AA-1.	AA-1	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of spent liquor solids combusted if the following data are also known: CO2 emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] and HHV (as required to be reported in 40 CFR 98.276(d). However, if the HHV were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
AA	§98.276(e)	Default or site specific emission factor for CH_4 used in equation AA-1.	AA-1	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of spent liquor solids combusted if the following data are also known: CH4 emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] and HHV (as required to be reported in 40 CFR 98.276(d). However, if the HHV were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
AA	§98.276(e)	Default or site specific emission factor for N_2O used in equation AA-1.	AA-1	Provides data described in section 2.3 of Part Two of this memorandum that could be used to calculate the mass of spent liquor solids combusted if the following data are also known: N2O emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] and HHV (as required to be reported in 40 CFR 98.276(d). However, if the HHV were not reported, would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
AA	§98.276(f)	Carbon content of the spent liquor solids used in Equation AA-2.	AA-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-1a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-1b	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-2a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-4	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-5	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-8	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-8a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-8b	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(g)	Annual quantities of fossil fuels used in pulp mill lime kilns.	C-9a	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(h)	Make-up quantity of $CaCO_3$ used for the reporting year used in Equation AA-3.	AA-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
AA	§98.276(i)	Make-up quantity of Na_2CO_3 used for the reporting year used in Equation AA-3.	AA-3	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
BB	§98.286(b)(1)	Monthly consumption of petroleum coke (No CEMS).	BB-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
BB	§98.286(b)(4)	Carbon content factor of petroleum coke from the supplier or as measured by the applicable method.	BB-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
BB	§98.286(b)(6)	CO_2 emissions factor for each month.	BB-2	Provides data described in section 2.3 of Part Two of this memorandum that could be used to estimate the amount of petroleum coke consumed if the CO_2 emissions (as currently reported under 40 CFR 98.3(c)(4) and made publicly available)[5] are also known.
CC	§98.296(b)(5)	Monthly consumption of trona or liquid alkaline feedstock for each manufacturing line (No CEMS) (for facilities using Equation CC-1).	CC-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
CC	§98.296(b)(6)	Monthly production of soda ash for each manufacturing line (tons) (for facilities using Equation CC-2).	CC-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
CC	§98.296(b)(7)	Inorganic carbon content factor of soda ash.	CC-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
CC	§98.296(b)(7)	Inorganic carbon content factor of trona .	CC-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
CC	§98.296(b)(10)(i)	Stack gas volumetric flow rate during performance test (dscfm) for each manufacturing line or stack.	CC-3	Provides information about the exhaust gas flow rate during the performance test and would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
CC	§98.296(b)(10)(ii)	Hourly CO_2 concentration during performance test (percent CO_2) for each manufacturing line or stack.	CC-3	Provides information about the CO_2 concentration in exhaust gas stream measured during the performance test and §98.would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
CC	§98.296(b)(10)(iii)	CO_2 emission factor of process vent flow from mine water for each manufacturing line or stack.	CC-5	Does not include, and could not be used to calculate, data or information (about facility or process performance, design, and operation; cost to do business; raw material usage; or production) that would reveal information that could cause competitive harm.
CC	§98.296(b)(10)(iv)	CO_2 emission mass emission rate during performance test (metric tons/hour) for each manufacturing line or stack.	CC-4	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Data cannot be used to calculate the annual production or raw material consumption since the production and raw material usage during the performance test is not reported.
CC	§98.296(b)(10)(v)	Average process vent flow from mine water stripper/evaporator during performance test for each manufacturing line or stack.	CC-4	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Data cannot be used to calculate annual production or raw material consumption since the production rate and raw material consumption during the performance test is not reported.
CC	§98.296(b)(10)(vi)	Annual process vent flow rate from mine stripper/evaporator for each manufacturing line or stack.	CC-5	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production. Could be used to calculate hours of operation if the average process vent flow rate measured during the performance test (reported under 40 CFR 296(b)(10)(v)) is known; however, hours of operation cannot be used to

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
				calculate production since the production rate during the performance test is not reported.
EE	§98.316(b)(6)	Monthly calcined petroleum coke consumption for each production line (No CEMS).	EE-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
EE	§98.316(b)(9)	Monthly carbon content factor of petroleum coke (percent by weight expressed as a decimal fraction) (No CEMS).	EE-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
GG	§98.336(b)(6)	Annual mass of each carbon-containing input material charged to each kiln or furnace (No CEMS) - Mass of zinc bearing material.	GG-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
GG	§98.336(b)(6)	Annual mass of each carbon-containing input material charged to each kiln or furnace (No CEMS) - Annual mass of flux materials (e.g., limestone, dolomite) charged to kiln or furnace "k" (tons).	GG-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
GG	§98.336(b)(6)	Annual mass of each carbon-containing input material charged to each kiln or furnace (No CEMS) - Annual mass of carbon electrode consumed in furnace "k".	GG-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
GG	§98.336(b)(6)	Annual mass of each carbon-containing input material charged to each kiln or furnace (No CEMS) - Annual mass of other carbonaceous material consumed in furnace "k".	GG-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
GG	§98.336(b)(7)	Carbon content of carbon-containing input materials charged to kilns or furnace (including zinc bearing material, flux materials, and other carbonaceous materials) from the annual carbon analysis or from information provided by the material supplier) for each kiln or furnace (percent by weight, expressed as a decimal fraction) (No CEMS) - zinc bearing material.	GG-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
GG	§98.336(b)(7)	Carbon content of carbon-containing input materials charged to kilns or furnace (including zinc bearing material, flux materials, and other carbonaceous materials) from the annual carbon analysis or from information provided by the material supplier) for each kiln or furnace (percent by weight, expressed as a decimal fraction) (No CEMS) - flux materials.	GG-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
GG	§98.336(b)(7)	Carbon content of carbon-containing input materials charged to kilns or furnace (including zinc bearing material, flux materials, and other carbonaceous materials) from the annual carbon analysis or from information provided by the material supplier) for each kiln or furnace (percent by weight, expressed as a decimal fraction) (No CEMS) - other carbonaceous materials.	GG-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
GG	§98.296(b)(10)	Carbon content of the carbon electrodes used in each furnace from the annual carbon analysis or from information provided by the material supplier) (percent by weight, expressed as a decimal fraction) (No CEMS).	GG-1	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
II	§98.356(d)(2)	Cumulative volumetric biogas flow for each week that biogas is collected for destruction (if using weekly sampling).	II-4	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
II	§98.356(d)(3)	Weekly average CH4 concentration for each week that biogas is collected for destruction (if using weekly sampling).	II-4	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
II	§98.356(d)(4)	Weekly average temperature at which flow is measured for biogas collected for destruction (if using weekly sampling).	II-4	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
II	§98.356(d)(5)	Weekly average moisture content for each week at which flow is measured for biogas collected for destruction (if using weekly sampling).	II-4	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.
II	§98.356(d)(6)	Weekly average pressure for each week at which flow is measured for biogas collected for destruction (if using weekly sampling).	II-4	Would not reveal any proprietary information about facility or process performance, design, and operation; cost to do business; raw material usage; or production.

Subpart	Rule Citation in 40 CFR Part 98	Data Element Description	Data Element is used as Input to Equation . . .	Analysis Results
TT	§98.466(c)(3)(i)	Total number of years (N) for which disposal and production data are both available.	TT-2	Provides data described in section 2.3 of Part Two of this memorandum that could be used to estimate either production quantities or raw material consumption if both the quantity of waste disposed in the landfill (reported under 40 CFR 98.466(c)(3)(ii) and (d)(2)) and average waste disposal factor (reported under 40 CFR 98.466(c)(3)(iii)) are also known.
TT	§98.466(c)(3)(ii)	The waste disposal quantity for each year used in Equation TT–2 of this subpart to calculate the average waste disposal factor (WDF).	TT-2	Provides production or raw material data described in section 2.1 of Part Two of this memorandum.
TT	§98.466(c)(3)(iii)	Average waste disposal factor (WDF) calculated for the waste stream.	TT-3	Provides data described in section 2.3 of Part Two of this memorandum that could be used to estimate either production quantities or raw material consumption if the amount of waste disposed of in the landfill (reported under 40 CFR 98.466(d)(2) is also known.

[1] Stationary fuel combustion sources connected to certain electric generators connected to the local or regional power grid include stationary fuel combustion sources (e.g., individual units, aggregations of units, common pipes, or common stacks) subject to subpart C of Part 98 that meet the following criteria: (1) the stationary fuel combustion source contains at least one combustion unit connected to a fuel-fired electric generators that has been granted access by the Public Utilities Commission to deliver power to the local or regional electric power grid (excluding electric generators that are connected to combustion units subject to subpart D of Part 98); and (2) the stationary fuel combustion source is located at a facility for which the sum of the nameplate capacities for all such electric generators is greater than or equal to 1 megawatt electric output.

[2] These results are based on the existing subpart L rule (e.g., requires process-specific, chemical specific reporting at 40 CFR 98.126(a)(2)), which may be amended in a future separate action related to subpart L of Part 98.

[3] EPA's intent has been to require reporting of this data element in units of scf per year, which EPA clarified in an April 2, 2013 action (78 FR 19802.)

[4] EPA proposed in an April 2, 2013 action (78 FR 19802) to remove this provision because it is redundant to a provision specified in 40 CFR 98.256(o)(4)(iii)-(vi). If this proposed change is finalized, then the specified potential harm would no longer apply.

[5] In the May 26, 2011 final CBI determination notice (76 FR 30782), EPA grouped the direct-emitter data reporting elements into 11 data categories and assigned CBI determinations on either a category or individual data elements basis. One of the categories established was "Emissions," which contains all data elements that are emission values required to be reported by direct emitters under Part 98 (e.g., annual CO2e emissions, emissions by GHG and source category, emissions by GHG pollutant). All data elements within this category were determined to be "emission data," which under CAA section 114(c) are not entitled to confidential treatment. As a result, data elements that have been assigned to the "Emissions" category (refer to the final CBI rulemakings: May 26, 2011, 76 FR 30782; August 13, 2012, 77 FR 48072; August 24, 2012, 77 FR 51477) are made publicly available on the Greenhouse Gas Reporting Program website."