LA-14344-SR
Status Report

Emissions Inventory Report Summary for Los Alamos National Laboratory for Calendar Year 2006

Edited by Hector Hinojosa, Group IRM-CAS.

Los Alamos National Laboratory, an affirmative action/ equal opportunity employer, is operated by Los Alamos National Security, LLC, for the National Nuclear Security Administration of the U.S. Department of Energy under contract DE-AC52-06NA25396.

LA-14344-SR
Status Report
Issued: September 2007

Emissions Inventory Report Summary for Los Alamos National Laboratory for Calendar Year 2006

Ecology and Air Quality Group

Los Alamos
NATIONAL LABORATORY
EST. 1943

CONTENTS

Figures

Tables

Acronyms

AIRS	Aerometric Information Retrieval System
AQB	Air Quality Bureau
CAS	Chemical Abstracts Service
CFR	Code of Federal Regulations
CO	carbon monoxide
ENV-EAQ	Ecology and Air Quality Group
EPA	U.S. Environmental Protection Agency
FGR	flue gas recirculation
HAP	hazardous air pollutant
HCl	hydrochloric acid
KSL	Kellogg Brown & Root, Inc, Shaw Environmental, Los Alamos Technical Associates
LANL	Los Alamos National Laboratory
lb	pound
MMBtu	Million British thermal units
MSDS	material safety data sheets
NAAQS	National Ambient Air Quality Standards
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
$PM_{2.5}$	particulate matter with diameter less than 2.5 micrometers
PM_{10}	particulate matter with diameter less than 10 micrometers
PSD	Prevention of Significant Deterioration
R&D	research and development
SO_x	sulfur oxides
TA	technical area
VOC	volatile organic compound

EMISSIONS INVENTORY REPORT SUMMARY FOR LOS ALAMOS NATIONAL LABORATORY FOR CALENDAR YEAR 2006

by

ECOLOGY AND AIR QUALITY GROUP

ABSTRACT

Los Alamos National Laboratory (LANL) is subject to annual emissions reporting requirements for regulated air pollutants under Title 20 of the New Mexico Administrative Code, Chapter 2, Part 73 (20.2.73 NMAC), Notice of Intent and Emissions Inventory Requirements. The applicability of the requirements is based on the Laboratory's potential to emit 100 tons per year of suspended particulate matter, nitrogen oxides, carbon monoxide, sulfur oxides, or volatile organic compounds. Additionally, on April 30, 2004, LANL was issued a Title V Operating Permit from the New Mexico Environment Department, Air Quality Bureau, under 20.2.70 NMAC. Modification Number 1 to this Title V Operating Permit was issued on June 15, 2006 (Permit No. P-100M1) and includes emission limits and operating limits for all regulated sources of air pollution at LANL. The Title V Operating Permit also requires semi-annual emissions reporting for all sources included in the permit. This report summarizes both the annual emissions inventory reporting and the semi-annual emissions reporting for LANL for calendar year 2006. LANL's 2006 emissions are well below the emission limits in the Title V Operating Permit.

1.0 INTRODUCTION

1.1 Regulatory Basis

Los Alamos National Laboratory (LANL or the Laboratory) has reported on air pollutants generated from its operations since the 1970s when Air Quality Control Regulation 703, Registration of Air Contaminant Sources, was promulgated. According to the regulation, the Laboratory was required to register air pollutant sources that emitted more than 2,000 lb per year of any air contaminant. This regulatory requirement later evolved into Title 20 of the New Mexico Administrative Code, Chapter 2, Part 73 (20.2.73 NMAC), Notice of Intent and Emissions Inventory Requirements. The objective of the reporting requirement is to provide emissions data to the New Mexico Environment Department (NMED)/Air Quality Bureau (AQB) so its staff can determine whether LANL meets state and federal air pollutant standards.

Annual emissions inventory reporting requirements under 20.2.73 NMAC apply to any stationary source which

- has been issued a construction permit under 20.2.72 NMAC;
- has been required to file a Notice of Intent under 20.2.73.200 NMAC; or
- emits in excess of
    - 1 ton per year of lead or
    - 10 tons per year of
        - total suspended particulates;
        - particulate matter (PM) with diameter less than 10 micrometers (PM_{10});
        - PM with diameter less than 2.5 micrometers ($PM_{2.5}$);
        - sulfur dioxide;
        - nitrogen oxides (NO_x);
        - carbon monoxide (CO); or
        - volatile organic compounds (VOC).

The annual emissions inventory must be submitted to NMED/AQB by April 1 of each year. The NMED/AQB enters the data in the Aerometric Information Retrieval System (AIRS) (EPA 2007a). This nationwide system, administered by the U.S. Environmental Protection Agency (EPA), is used to help ensure ambient air quality standards are maintained and to track the state's air pollutant emissions. AIRS is a large air pollution database that contains information, requirements, and data on air pollution and air quality in the United States and various World Health Organization member countries. The program is operated by the EPA and state/local air pollution control agencies. The AIRS database tracks each state's progress towards achieving and maintaining National Ambient Air Quality Standards (NAAQS) for criteria pollutants. The database is also used as a tool to help improve each state's air quality programs by enabling program members to access and compare past data and view data from other states. For 2006 emissions inventory reporting, NMED imported existing facility data from the AIRS database into spreadsheets and requested facilities to update the sheets with 2006 facility emissions information.

Additionally, the Laboratory operates under the requirements of their Title V Operating Permit (P-100M1) issued in April 2004, and modified on June 15, 2006, by the NMED/AQB (NMED 2006) as required under 20.2.70 NMAC. A condition of the Title V Operating Permit is that LANL must submit semi-annual emissions reports to NMED documenting that emissions from all permitted sources are below permitted emission levels. Section 4.0 of the permit states:

Reports of actual emissions from permitted sources in Section 2.0 of the permit shall be submitted on a 6 month basis. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.11 of the permit. The reports shall be submitted within 90 days from the end of the reporting period. The reporting periods are January 1 through June 30, and July 1 through December 31. This condition is pursuant to 20.2.70.302.E.1 NMAC.

Therefore, in 2004 the Laboratory began submitting the semi-annual emissions reports as well as the annual emissions inventory. There are a few differences in which sources are included in the two emissions reports. These differences are explained in the following sections.

1.2 Contents of Annual Emissions Inventory Submittal

NMED requested that LANL submit annual emissions inventory data for 2006 via electronic format for entry into AIRS. The information required for submittal includes the following:

- company name, address, and physical location for the facility;
- facility contact information;
- signed certification statement by a responsible facility official; and
- specific information for each emission unit such as stack and exhaust parameters, type and efficiency of control equipment, schedule of operation, annual process or fuel combustion rates, and estimated actual emissions for 2006.

This annual emissions inventory submittal includes air pollutant data for PM, PM_{10}, $PM_{2.5}$, CO, NO_x, sulfur oxides (SO_x), VOCs, beryllium, hazardous air pollutants (HAPs), ammonia, and aluminum.

The requirement to provide $PM_{2.5}$ and ammonia emissions data stems from recent developments by EPA on a National Ambient Air Quality Standard (NAAQS) for $PM_{2.5}$. States are developing a baseline for $PM_{2.5}$. As such, for the 2006 emissions inventory, NMED requested emissions information on $PM_{2.5}$. Further, ammonia is a precursor to $PM_{2.5}$ formation. It contributes to the secondary aerosol formation of $PM_{2.5}$ by combining with NO_x and SO_x to form ammonium nitrate and fine sulfate particles. Therefore, NMED also requested emissions information on ammonia.

In the 2006 annual emissions inventory submittal, LANL provided $PM_{2.5}$ emissions data for all combustion sources and other emission sources where $PM_{2.5}$ emission factors were readily available. In the absence of $PM_{2.5}$ emission factors, PM or PM_{10} emissions were assumed to be equivalent to $PM_{2.5}$. The Laboratory does not operate any emission units that are sources of ammonia emissions. Ammonia was included in the facility-wide emission estimates for chemical use.

1.3 Contents of the Semi-Annual Title V Operating Permit Emissions Reports

The semi-annual Title V Operating Permit emissions reports include actual emissions for the reporting period for each emission source or source category included in the Title V Operating Permit. For each source category, the actual emissions are compared to emission limits listed in the permit. The emissions are calculated using operating data from logbooks and records maintained on-site. All emission calculations are consistent with calculation methods used for the annual emissions inventory.

The semi-annual emissions report includes a few source categories not included in the annual emissions inventory. The Laboratory requested emission limits in their Title V Operating Permit for two source categories that are considered insignificant sources for the annual emissions inventory. These source categories are 1) small boilers and heaters and 2) stationary standby generators. LANL requested emission limits for these source categories to obtain federally enforceable limits that would keep the Laboratory under the major source threshold for Prevention of Significant Deterioration

(PSD) applicability (20.2.74 NMAC). LANL's actual emissions from these insignificant sources have historically been very low, however, without federally enforceable limits on their operation, the potential to emit from these sources was quite high. To demonstrate that LANL is below the PSD applicability and is in compliance with the emission limits placed on these emission sources, LANL now must include these emissions in the semi-annual Title V Operating Permit emissions reports.

2.0 REPORTED EMISSION SOURCES

Table 2.0-1 shows the emission sources included in the Laboratory's 2006 Annual Emissions Inventory (LANL 2007a) and the 2006 Semi-Annual Emissions reports (LANL 2006, 2007b). The source categories and the methodology used to calculate emissions are described in the following sections.

Table 2.0-1
Sources Included in LANL's 2006 Annual Emissions Inventory and Semi-Annual Emissions Reports

Included in Annual Emissions Inventory	Included in Semi-Annual Emissions Reports	Comment
Steam Plants (TA-3 & TA-21)	Steam Plants (TA-3 & TA-21)	n/a*
Boilers greater than 5 MMBTU/hr (11 units)	All small and large boilers and heaters (approximately 200 units)	Small boilers less than 5 MMBTU/hr are exempt from annual emissions inventory requirements (see Section 3.1).
Asphalt Plant	Asphalt Plant	n/a
Degreasers	Degreasers	n/a
Air Curtain Destructors (shut down)	Not included	Air curtain destructors were shut down before issuance of the Title V Operating Permit.
Carpenter Shops	Carpenter Shops	n/a
Oil Storage Tanks	No tanks included	Applicability of the New Source Performance Standard for storage tanks changed in 2004 and the LANL oil storage tanks were not required to be included in the Title V Operating Permit.
Permitted Beryllium Sources	Permitted Beryllium Sources	n/a
Facility-wide Chemical Use	Facility-wide Chemical Use	n/a
Process Generators	Process Generators, and Stationary standby generators (approximately 45 units)	Stationary standby generators are exempt from annual emissions inventory requirements (see Section 3.2).

* n/a = Not Applicable.

The following subsections describe emission sources included in the 2006 emissions inventory and semi-annual emissions reports and emission calculation methodology for each source type. A summary table of actual reported emissions by source is included at the end of this section (Section 2.13). Attachment A includes worksheets showing detailed emission calculations for individual emissions sources. A copy of the 2006 Emissions Inventory as submitted to NMED is presented in Attachment B. The semi-annual emissions reports are included as Attachment C.

2.1 Steam Plants

The Laboratory operates two steam plants, one located at Technical Area (TA) 3 and the other at TA-21. The TA-3 steam plant produces steam for heating and electricity for much of the Laboratory when sufficient power from outside sources is not available. The steam plant at TA-21 provides steam for heating of buildings at this technical area. The heat produced from both steam plants is used for comfort heat and hot water and to support facility processes. Each steam plant has three boilers that are fueled primarily with natural gas with No. 2 fuel oil as a backup.

For the 2006 Emissions Inventory, NMED requested that emissions from natural gas and No. 2 fuel oil be reported separately for the boilers located at each of the steam plants. The TA-3 steam plant was originally included in LANL's emissions inventory as a single unit. When a modification to the plant was made in 2001, the TA-3 steam plant was separated into three separate units for emissions reporting purposes. Because each of the three boilers has the capability of burning either natural gas or No. 2 fuel oil, the TA-3 steam plant is now reported as six units (three boilers with two operating scenarios each). The boilers at the TA-21 steam plant are included in the emissions inventory as two operating scenarios, one for natural gas and one for No. 2 fuel oil.

For the 2006 Emissions Inventory reporting year updated emission factors for fuel oil for PM, PM_{10} and $PM_{2.5}$ were used as described for the TA-3 power plant boilers. Gas use and fuel oil use for the TA-21 steam plant are provided on a monthly data deliverable from KSL (Kellogg Brown & Root, Inc., Shaw Environmental, and Los Alamos Technical Associates). As described above, emissions from natural gas and from No. 2 fuel oil are reported separately for the boilers.

Actual emissions are calculated on the basis of metered fuel consumption and emission factors. The primary source of emission factors is AP-42, the EPA's Compilation of Air Pollutant Emission Factors (EPA 1998). However, emission factors from stack tests conducted at the TA-3 steam plant when burning natural gas were also used, as appropriate.

The TA-3 steam plant has historically been the largest source of NO_x emissions at the Laboratory. In 2002, a voluntary project to install pollution control equipment on the three boilers at the TA-3 steam plant was completed. The three boilers were fitted with flue gas recirculation (FGR) equipment to reduce NO_x emissions. Stack testing for NO_x and CO was conducted before FGR equipment was installed and again after it was operational. Based on these stack test results, FGR reduced NO_x emissions by approximately 64 percent. The FGR equipment was operational for all of 2006. Figure 2.1-1 shows a picture of the TA-3 steam plant building and stacks.

2.2 Small Boilers and Heaters

The Laboratory operates approximately 200 small boilers and heaters, used primarily for seasonal comfort heat. Most of the boilers are exempt from permitting requirements because of their small size and use as comfort boilers and are not included in the annual emissions inventory. The exemption analysis applied to boilers is discussed in Section 3.1 of this report.

Figure 2.1-1 Main steam plant Technical Area 3 at LANL.

The nonexempt boilers reported in the 2006 annual emissions inventory include the following:

- one boiler at TA-16 (Eqpt 17);
- three boilers at TA-48 (Eqpt 8, 9, and 10);
- two boilers at TA-53 (Eqpt 11 and 12);
- two boilers at TA-59 (Eqpt 13 and 14);
- two boilers at TA-55 (Eqpt 29 and 30); and
- one process-related boiler at TA-50 (Eqpt 41).

All of the reported boilers burn natural gas. Operating logs of actual fuel used for the TA-55 and TA-50 boilers were used to quantify emissions from these units. Fuel use for all other boilers was estimated based on the total amount of natural gas used by the Laboratory minus the amount supplied to metered sources. The amount of natural gas left after subtracting out metered sources was apportioned to the various boilers based on their size. Since they are all seasonal boilers used for building heating, it was assumed they would all operate approximately the same amount of time over the course of the year. Some emission factors were available from stack tests (TA-55), some were provided by the boiler manufacturer (Sellers Engineering Company), and the rest were taken from AP-42 (EPA 1998). Copies of spreadsheets showing fuel use and emission factors for each boiler are included in Attachment A.

For the semi-annual emissions reports, emissions from all small boilers and heaters are included as a source category. The Title V Operating Permit includes emissions limits for this group of emission sources. To estimate emissions all un-metered fuel use was multiplied by AP-42 emission factors for small boilers burning natural gas (EPA 1998). Total emissions of each pollutant from all boilers and heaters in this source category were then summed and reported on the semi-annual emissions reports.

2.3 Asphalt Plant

The TA-60 asphalt plant began operations in July 2005. This unit replaced the TA-3 asphalt plant which has not operated since June 2003. Information on the amount of asphalt produced and the amount of asphalt oil used at the TA-60 asphalt plant was provided as part of a monthly KSL data deliverable. The total asphalt produced in 2006 was 2,008 tons.

The emissions from the asphalt plant include criteria pollutants and HAPs. None of the emissions were significant in regard to the overall laboratory emissions. The largest pollutant emitted from the asphalt plant was CO at 0.4 tons per year.

2.4 Data Disintegrator

The data disintegrator is included in the 2006 Emissions Inventory as Eqpt 89 and operation of this source started in August 2004. Emissions are calculated using the methodology described in the permit application dated June 23, 2003. Emissions of PM, PM_{10}, and $PM_{2.5}$ are calculated based on the number of boxes shredded, the amount of dust estimated to enter the exhaust (provided by the manufacturer) and the control efficiency of the cyclone and baghouse (also provided by the manufacturer). The permit application did not include $PM_{2.5}$ emission estimates. Therefore, an emission methodology was developed for the emission inventory reporting. No specific PM size distribution data were available. However, the manufacturer reported that dust into the exhaust would be in the size range of 5 to 20 µm. Based on visual observation and engineering judgment, a particle size distribution in the exhaust was estimated as follows:

- $PM_{2.5}$ 15%
- PM_{10} 90%
- Total Suspended Particulates 100%

The number of boxes of material shredded is provided on a monthly data deliverable from KSL. The total number of boxes shredded at the data disintegrator in 2006 was 10,209.

2.5 Degreasers

The halogenated solvent cleaning machine at TA-55 has a capacity of 18 liters and is registered with NMED/AQB as required under the National Emissions Standards for Hazardous Air Pollutants, 40 CFR 63 Subpart T, "Halogenated Solvent Cleaning." The solvent used in the machine, trichloroethylene (Chemical Abstracts Service [CAS] No. 79-01-6), is a VOC and a HAP. This emission unit is included in the annual emissions inventory as Eqpt 21. Logbooks are kept on the amount of solvent added and removed from the machine. Additionally, monthly tracking of solvent levels in the machine are logged. Using a mass balance approach, emissions are estimated. LANL has two additional halogenated solvent cleaning machines registered with NMED (Eqpt 29 and 30). These units were not operational in 2006. The emissions from the TA-55 degreaser for this reporting period are 22.8 lbs or 0.01 tons per year. This source category is reported in both the annual emissions inventory and the semi-annual emissions reports.

2.6 Carpenter Shop

LANL operates a carpenter shop at TA-3-38 which was operated intermittently through the year. This carpenter shop was built before 1960 and is not subject to 20.2.72 NMAC construction

permitting. However, LANL included carpenter shops in the Title V Operating Permit. Therefore, this source category is included in the annual emissions inventory as Area 3 and is included on the semi-annual emissions reports. Additionally, a carpenter shop located at TA-15 is included in the Operating Permit and began operations in June of 2005.

Emissions from the carpenter shops were calculated based on the flow rate out of the cyclone, the estimated concentration of particulate in the exhaust, AP-42 emission factors, and the hours of operation of the cyclones. In 2006, total operation of the TA-3 Carpenter Shop was 186 hours and the total operation of the TA-15 Carpenter Shop was 199 hours.

2.7 Oil Storage Tanks

Two large diesel storage tanks located at the TA-3 steam plant provide backup fuel to the boilers. These tanks are included in the annual emissions inventory as Eqpt 27 and 28. Emissions from these tanks are estimated using software developed by EPA for estimating emissions from storage tanks (EPA 2007b). The TANKS 4.0 software requires inputs for tank parameters, site-specific meteorological conditions, and actual fuel throughputs.

The Laboratory included 15 storage tanks in their Title V permit application because they were subject to *New Source Performance Standards*, (NSPS 40 CFR 60, Subpart Kb. Fourteen of the 15 tanks store mineral oil, scintillation oil, or dielectric oil, which all have vapor pressures of <0.01 mm Hg. Applicability of Subpart Kb was modified by EPA in 2003 and these tanks are no longer subject to this regulation, and were subsequently removed from the draft LANL Title V permit.

Emissions from these smaller oil storage tanks were included for the first time in the 2002 annual emissions inventory. With agreement from NMED, emissions from the 14 tanks were summed and listed as one stack entry in the emissions inventory report due to the small quantity of emissions (email correspondence with Jim Shively, NMED/AQB, dated February 3, 2003). This "composite" mineral oil tank was assigned Eqpt 108. Because an equipment number is now assigned, emissions from these tanks will continue to be included in the annual emissions inventory submittal. However, these tanks are not included in the Title V Operating Permit semi-annual emissions reports. Based on the most conservative tank parameters and actual throughput from chemical inventory records, a unit emission rate was calculated. The TANKS 4.0 software was used to estimate emissions for both vertical and fixed-roof tanks (EPA 2007b). Unit emission rates in lb/yr were multiplied by the number of active horizontal and vertical tanks to provide an estimate of total annual emissions from all of the active tanks.

2.8 Permitted Beryllium-Machining Operations

The Laboratory operates under four 20.2.72 NMAC construction permits for beryllium-machining operations that are subject to 40 CFR 61, Subpart C, "National Emission Standards for Beryllium Operations." Beryllium-machining operations are reported in the emissions inventory as ACT 2, 3, and 6 and Eqpt 5. Emissions reported for the Beryllium Test Facility (ACT 3) are from actual stack emissions measurements. Emissions for the Target Fabrication Facility (ACT 2) are from initial compliance stack testing and are reported at permitted emission levels. In addition, emissions from the plutonium facility (ACT 6 and Eqpt 5) are reported at permitted emission levels. Foundry operations within the plutonium facility did not occur during this reporting period. Total emissions from all permitted beryllium operations are included in the semi-annual emissions reports.

2.9 Generators

LANL installed a process-related generator at TA-33 to support research activities. NMED issued a construction permit (Permit No. 2195-F) in October 2002 for installing the generator, and this unit is included in LANL's Title V Operating Permit. The unit first operated in May 2006. It only operated for a total of 4 hours for 2006. The TA-33 generator is included as Eqpt 56 in the 2006 Emissions Inventory Report.

The Laboratory maintains approximately 45 stationary standby generators that are considered exempt sources under the Construction Permit regulations (20.2.72.202.b NMAC) and the annual emissions inventory requirements. However, these sources are included in LANL's Title V Operating Permit with operating limits and emission limits. Therefore these sources must be included in the semi-annual emissions reports. All stationary standby generators at LANL are exercised on a routine schedule to ensure they are operational and will function properly if needed. All units are equipped with hour meters to document how many hours they are used. The Laboratory maintains records on a semi-annual basis to document hour meter readings. The number of hours each generator is used in a reporting period is multiplied by AP-42 emission factors for diesel-fired internal combustion engines or natural gas-fired internal combustion engines (EPA 1996). Emissions are then summed for each pollutant and reported on the semi-annual emissions reports for this source category.

2.10 Emissions from Chemical Use Activities

The majority of the Laboratory's work is devoted to research and development (R&D) activities. Varying operating parameters, as well as amounts and types of chemicals, are used in these activities. R&D activities occur at virtually all technical areas within the Laboratory, typically in small quantities in laboratory settings. Figure 2.10-1 shows a typical laboratory at LANL where chemicals are used.

For the purposes of annual emissions inventory reporting, one equipment number has been assigned for all R&D chemical use (Act 7). Facility-wide chemical use emissions are reported on both the annual emissions inventory and the semi-annual emissions reports. The methods used to quantify emissions of VOC and HAPs from R&D activities are discussed below.

Figure 2.10-1 Example of chemical use in laboratory hood at LANL.

2.10.1 VOC Emissions

The Laboratory tracks chemical purchases through a facility-wide chemical tracking system called ChemLog. A download from the ChemLog inventory system was created that included all chemical containers added to LANL's inventory between January 1, 2006, and December 31, 2006. This dataset included 49,238 separate line items of chemicals purchased.

The dataset was reviewed electronically to identify all VOCs purchased and received at LANL in 2006. With the exception of specific listed chemicals, VOCs are any compounds of carbon that participate in atmospheric photochemical reactions. VOCs include commonly used chemicals such as ethanol, methanol, trichloroethylene, and isopropanol. The general assumption used in estimating VOC emissions from chemical use is

Purchasing = Use = Emissions

From the dataset of chemicals purchased in 2006, certain categories of chemicals were separated and eliminated from the analysis. The classifications assigned and corresponding reasons (noted in parentheses) for exclusion of chemicals from inventory records are noted below.

- Solid materials (not a significant source of air emissions based on their low vapor pressure);

- Non-VOC materials as defined by 40 CFR 51.100 (specific chemicals in 40 CFR 51.100 are listed as having negligible photochemical reactivity and are exempt from the definition of VOC);
- Paints (paints were evaluated separately—see Section 3.5);
- Inorganic chemicals (inorganics are not compounds of carbon);
- Oils (not a significant source of air emissions based on low vapor pressure and primarily used for maintenance);
- Fuels used for combustion purposes (emissions from fuel combustion are reported for each combustion unit).

Furthermore, the following categories of chemicals were eliminated based on guidance from NMED (letter from Mary Uhl, NMED/AQB, dated January 30, 2001):

- Container sizes of 1 lb or less;
- Chemicals with vapor pressures less than 10 mmHg;
- Chemicals used to calibrate equipment;
- Maintenance chemicals;
- Use of office equipment and products;
- Chemicals used for boiler water treatment operations;
- Chemicals used for oxygen scavenging (deaeration) of water; and
- Chemicals used in bench-scale chemical analysis.*

After elimination of chemicals and categories of chemicals listed above, the remaining chemical inventory records were matched with a list of known VOCs by CAS number. For mixtures (chemicals without CAS numbers), material safety data sheets (MSDSs) were reviewed to determine if any VOCs were present and, if so, to determine the associated percent volatile. As a conservative estimate, VOCs identified in ChemLog records were assumed to be 100 percent emitted to air. Estimated emissions of VOCs from chemical use in 2006 totaled 10.1 tons.

2.10.2 HAP Emissions

Section 112(b) of the 1990 Clean Air Act Amendments listed 189 unique HAPs identified for potential regulation by EPA. In 1995, caprolactam was delisted as a HAP and methyl ethyl ketone was delisted in 2005. Of the remaining 187 listed HAPs, 17 are classes of compounds (e.g., nickel compounds). Use of the 187 listed chemicals in activities at the Laboratory was evaluated and quantified for the annual emissions inventory and the semi-annual emissions reports.

The ChemLog inventory system 2006 data set was analyzed to identify HAPs. The identification process was similar to that used for VOCs. Pure chemicals (i.e., chemicals with CAS numbers), classes of compounds, and mixtures were evaluated to determine if the chemicals themselves were HAPs or if they contained HAP constituents. For mixtures, MSDSs were reviewed to determine if any HAPs were present and, if so, to determine the associated HAP percentages. Listed below are

* This exemption was applied only to biological research solutions. Otherwise, this exemption was not applied (see Table 3.3-1).

certain chemical types or categories that were identified and removed from this analysis (refer to Section 2.10.1 and Table 3.3-1 for explanations on removal of these chemicals):

- Paints;
- Oils;
- Maintenance chemicals;
- Chemicals used to calibrate equipment;
- Container sizes of 1 lb or less;
- Chemicals used in bench-scale chemical analysis;
- Use of office equipment and products;
- Chemicals used for boiler water treatment operations; and
- Chemicals used for oxygen scavenging (deaeration) of water.

Total HAP emissions were estimated by summing 1) pure HAP chemicals, 2) classes of compounds that are HAPs, and 3) the HAP constituents from mixtures. The resulting total amount of HAPs from chemical use reported for 2006 was 4.8 tons.

The HAP emissions reported generally reflect quantities procured in the calendar year. In a few cases procurement values and operational processes were further evaluated so that actual air emissions could be reported instead of procurement quantities. Additional analyses for certain metals and acids were performed and are described below.

HAP Metals

Purchases of beryllium, chromium, lead, manganese, mercury, and nickel compounds were evaluated to determine usage and potential air emissions. Several of the purchases were identified as laboratory calibration standards containing only parts per million quantities of the metals. These were exempt from emissions inventory requirements because of their use as standards for calibrating laboratory equipment. Other purchasers of relatively large quantities of metal compounds that were contacted confirmed that the material was still in use or in storage and had not resulted in air emissions.

Hydrochloric Acid

In 2006, the Facility and Waste Operations Division purchased multiple 14-gallon carboys of hydrochloric acid (HCl). This HCl was used for heat exchanger scale cleaning and for cleaning of electrodialysis reversal membranes. Emissions from these particular activities were estimated to be less than one pound based on specific process information and engineering calculations. This is considered a routine maintenance activity and exempt from emissions inventory reporting. The remaining procurements consisted of numerous small purchases from a variety of operating groups. Additional analysis of these numerous small purchases was not done. As a conservative assumption, all of this HCl was assumed to be emitted resulting in a reported total of 0.94 tons of HCl emissions.

2.11 Emissions Summary by Source

Table 2.11-1 provides a summary of LANL's 2006 actual emissions, as submitted for the annual emissions inventory. The table presents emissions by pollutant and by source, with a facility total at the bottom of the table. Attachment A provides detailed information on how emissions were calculated for each emission unit.

Table 2.11-1 Summary Graphs
Summary of LANL 2006 Reported Emissions for Annual Emissions Inventory

	NO_X (tons/yr)	SO_x (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)	CO (tons/yr)	VOC (tons/yr)	HAPs (tons/yr)
TA-3 Steam Plant Boilers	17.8	0.3	2.3	2.3	12.2	1.7	0.6
TA-21 Steam Plant Boilers	1.5	0.01	0.1	0.1	1.3	0.08	0.03
Non-Exempt Boilers	5.1	0.03	0.5	0.5	3.6	0.3	0.1
Asphalt Plant	0.03	0.005	0.01	0.006	0.4	0.008	0.008
Data Disintegrator	n/a*	n/a	0.4	0.4	n/a	n/a	n/a
Degreaser	n/a	n/a	n/a	n/a	n/a	0.01	0.01
Carpenter Shops	n/a	n/a	0.06	0.05	n/a	n/a	n/a
Oil Storage Tanks	n/a	n/a	n/a	n/a	n/a	0.05	n/a
R&D Chemical Use	n/a	n/a	n/a	n/a	n/a	10.1	4.8
TA-33 Generator	0.09	0.01	0.003	n/a	0.07	0.002	0.005
TOTAL	**24.5**	**0.36**	**3.4**	**3.4**	**17.6**	**12.3**	**5.6**

* n/a = Not Applicable.

Table 2.11-2 provides a summary of 2006 emissions as reported on the semi-annual emissions reports required by the Title V Operating Permit. Attachment A provides detailed information on how emissions were calculated for each emission source category.

Table 2.11-2
Summary of LANL 2006 Semi-Annual Emissions as Reported Under Title V Operating Permit Requirements

	NO_X (tons/yr)	SO_x (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)	CO (tons/yr)	VOC (tons/yr)	HAPs (tons/yr)
TA-3 Steam Plant Boilers	17.8	0.3	2.3	2.3	12.2	1.7	0.6
TA-21 Steam Plant Boilers	*Emissions included in Small Boilers Source Category*						
All Small Boilers & Heaters	25.8	0.2	2.0	2.0	21.0	1.4	0.5
Asphalt Plant	0.03	0.005	0.01	0.006	0.4	0.008	0.008
Data Disintegrator	n/a[a]	n/a	0.4	0.4	n/a	n/a	n/a
Degreaser	n/a	n/a	n/a	n/a	n/a	0.01	0.01
Carpenter Shops	n/a	n/a	0.06	0.05	n/a	n/a	n/a
Oil Storage Tanks[b]	n/a	n/a	n/a	n/a	n/a	0.05	n/a
R&D Chemical Use	n/a	n/a	n/a	n/a	n/a	10.1	4.8
Stationary Standby Generators	18.4	4.1	0.9	0.9	4.1	0.9	0.01
TA-33 Generator	0.09	0.01	0.003	n/a	0.07	0.002	0.005
TOTAL	**62.1**	**4.6**	**5.7**	**5.7**	**37.8**	**14.2**	**5.9**

[a] n/a = Not Applicable.[b] Source category not included in Title V Operating Permit.

3.0 REPORTING EXEMPTIONS

Specific activities that are determined to be insignificant under NMED's Operating Permit program (20.2.70 NMAC) are exempt from reporting under the emissions inventory requirements (20.2.73.300 NMAC). NMED has designated exempt sources, activities, or thresholds in the following lists:

- "List of Insignificant Activities," March 25, 2005 (NMED 2005) and
- "List of Trivial Activities," January 10, 1996 (NMED 1996).

Laboratory sources and activities that qualify as insignificant or trivial as specified in these lists are not included in the annual emissions inventory. The following subsections of this report provide information and examples of the Laboratory's exempt activities as well as analyses performed to determine exempt status.

3.1 Boilers

The Laboratory's boiler inventory was evaluated against the "List of Insignificant Activities." Specifically, boilers were exempted from emissions inventory reporting requirements if they met one of the following requirements:

- Fuel-burning equipment which uses gaseous fuel, has a design rate less than or equal to five (5) million BTU per hour, and is used solely for heating buildings for personal comfort or for producing hot water for personal use, or
- Any emissions unit…that has the potential to emit no more than **one (1) ton per year** of any regulated pollutant…

Any boiler that was not used exclusively for comfort heating or hot water was evaluated for the one (1) ton per year exemption. For purposes of determining exemptions, boiler design ratings were used to estimate potential to emit. Any boiler not qualifying for one of these two exemptions is included in the annual emissions inventory with its own unique equipment number.

For the semi-annual emissions reports, emissions from all boilers and heaters were summed and reported for the entire source category.

3.2 Generators

The Laboratory maintains an inventory of approximately 125 portable generators. Portable generators are used at the Laboratory for temporary operations requiring remote power or to provide emergency backup power during power outages at various sites. The portable generators are fueled by gasoline and/or diesel fuel.

In addition to portable generators, the Laboratory maintains and operates approximately 45 stationary standby generators. Stationary generators are used on standby (emergency) status to provide power to critical systems at the Laboratory during power outages. The stationary generators are fueled by natural gas, gasoline, or diesel.

The insignificant activity exemptions applicable to the Laboratory's generators are the following:

- Portable engines and portable turbines that have a design capacity…less than or equal to

  - 200-horsepower engine if fueled by diesel or natural gas and
  - 500-horsepower engine if fueled by gasoline.
- Emergency generators which on a temporary basis replaces equipment used in normal operation, and which either has an allowable emission rate or potential to emit for each pollutant that is equal to or less than the equipment replaced, or which does not operate for a period exceeding 500 hours per calendar year.

On the basis of size, portable generators used for temporary power at remote locations are exempt from emissions inventory reporting requirements. Further, LANL's small portable generators are considered trivial activities and are not included in the Title V Operating Permit or semi-annual emissions reports. All stationary generators are designated as standby equipment under the Operating Permit Program and are used solely to provide emergency backup power for less than 500 hours per year. Therefore they are considered insignificant sources and are also exempt from annual emissions inventory reporting requirements. However, the stationary standby generators were voluntarily included as a source category in the Title V Operating Permit and are included in the semi-annual emissions reports.

3.3 VOC Emissions

A number of insignificant and trivial activities were applicable for exempting materials from the VOC chemical use total in the emissions inventory. The basis of the exemptions and corresponding insignificant or trivial activities are explained in Table 3.3-1.

Fuels such as propane, kerosene, and acetylene were analyzed separately and are not listed in Table 3.3-1. When fuels are burned in an open flame, almost all of the fuels are consumed and emissions are minimal. Emissions from fuel combustion are accounted for using emission factors for each fuel-burning unit.

3.4 HAP Emissions

The HAP chemical use exemption analysis, similar to the VOC chemical use exemption analysis, resulted in application of several of the same exemptions from NMED/AQB "List of Insignificant Activities" (NMED 2005) and "List of Trivial Activities" (NMED 1996) (refer to Table 3.3-1).

Table 3.3-1
Exemptions Applied for Chemical Use Activities

Basis of Exemption	Activity Type	Activity
Container sizes of 1 pound or less	Trivial	Paint or nonpaint materials dispensed from prepackaged aerosol cans of 16-ounce capacity or less.
Chemicals with vapor pressures less than 10 mmHg	Insignificant	Any emissions unit, operation, or activity that handles or stores a liquid with vapor pressure less than 10 mmHg or in quantities less than 500 gal.
Calibration chemicals	Trivial	Routine calibration and maintenance of laboratory equipment or other analytical instruments, including gases used as part of those processes.
Maintenance chemicals and oils	Trivial	Activities that occur strictly for maintenance of grounds or buildings, including lawn care; pest control; grinding; cutting; welding; painting; woodworking; sweeping; general repairs; janitorial activities; plumbing; re-tarring roofs; installing insulation; steam-cleaning and water-washing activities; and paving of roads, parking lots, and other areas.
		Activities for maintenance and repair of equipment, pollution-control equipment, or motor vehicles either inside or outside of a building.
Use of office equipment and products	Trivial	Use of office equipment and products, not including printers or businesses primarily involved in photographic reproduction.
Chemicals used for boiler water treatment	Trivial	Boiler water treatment operations, not including cooling towers.
Chemicals used for oxygen scavenging	Trivial	Oxygen scavenging (deaeration of water).
Chemicals used in bench-scale chemical analysis	Trivial	Bench-scale laboratory equipment used for physical or chemical analysis but not lab fume hoods or vents. *Note: This exemption was applied only to biological research solutions. Otherwise, this exemption was not applied.*

3.5 Paints

An analysis of VOC and HAP emissions resulting from painting activities at the Laboratory was performed to determine if certain exemptions apply. Paint information for 2006 was gathered from work control databases and the ChemLog chemical inventory system. These records were evaluated for applicability of exemptions for trivial and insignificant activities.

The following exemptions from NMED/AQB Operating Permit Program "List of Trivial Activities" (NMED 1996) were used in the paint analysis:

- Activities that occur strictly for maintenance of grounds or buildings, including the following: lawn care; pest control; grinding; cutting; welding; painting; woodworking; sweeping; general repairs; janitorial activities; plumbing; re-tarring roofs; installing insulation; steam-cleaning and water-washing activities; and paving of roads, parking lots, and other areas.
- Activities for maintenance and repair of equipment, pollution control equipment, or motor vehicles either inside or outside of a building.
- Paint or nonpaint materials dispensed from prepackaged aerosol cans of 16 ounces or less capacity.

The corresponding amounts of paint were totaled for painting activities that did not qualify for one of the trivial activity exemptions listed above. The paint total for 2006 was determined to be 3,764 pounds (1.88 tons), which further qualified for the following insignificant activity:

- Surface coating of equipment, including spray painting and roll coating, for sources with facility-wide total cleanup solvent and coating actual emissions of less than two (2) tons per year.
- All emissions from paints and painting activities were exempt as insignificant or trivial activities and therefore were not included in the 2006 emissions inventory.

4.0 EMISSIONS SUMMARY

4.1 2006 Emissions Summary

Table 4.1-1 presents facility-wide actual emissions of criteria pollutants for 2006 as reported in the annual emissions inventory and the semi-annual emissions reports. In addition, the Title V Operating Permit emissions limits are included. Table 4.1-2 presents actual emissions for HAPs from chemical use. Emission unit information and detailed emissions calculations are included in Attachment A. The 2006 Emissions Inventory Report as submitted to NMED is presented in Attachment B. Attachment C includes semi-annual emissions reports for 2006.

Table 4.1-1
LANL Facility-Wide Criteria Pollutant Emissions for 2006

Pollutant	Actual Emissions for Annual Emissions Reporting (tons/yr)	Actual Emissions for Semi-Annual Title V Operating Permit Reporting (tons/yr)	Title V Operating Permit Facility-Wide Emission Limits (tons/yr)
NO_x	24.5	62.1	245
SO_x	0.36	4.6	150
CO	17.6	37.8	225
PM	3.4	5.9	120
PM_{10}	3.4	5.7	120
$PM_{2.5}$	3.4	5.7	—*
VOC	12.3	14.2	200

—* = No Title V Operating Permit Facility-Wide Emission Limits on $PM_{2.5}$.

Table 4.1-2 LANL HAP Emissions from Chemical Use for 2006

Pollutant	Chemical Use HAP Emissions* (tons/yr)
Top 5 HAPs	
Hydrochloric Acid	0.94
Methanol	0.73
Methylene Chloride	0.55
Acetonitrile	0.44
Ethylene Glycol	0.43
Total HAPs	**4.8**

* HAP emissions from combustion sources are included in the emissions reports, however, they are negligible and do not contribute significantly to facility-wide HAP emissions.

Figure 4.1-1 shows criteria air pollutant emissions by source for 2006, excluding the very small emissions sources such as the paper shredder, degreasers, and carpenter shop. As the figure shows, the TA-3 steam plant, the sum of emissions from all small boilers and heaters, and the stationary stand-by generators were the largest sources of CO and NO_x emissions in 2006. R&D chemical use was the largest source of VOC emissions.

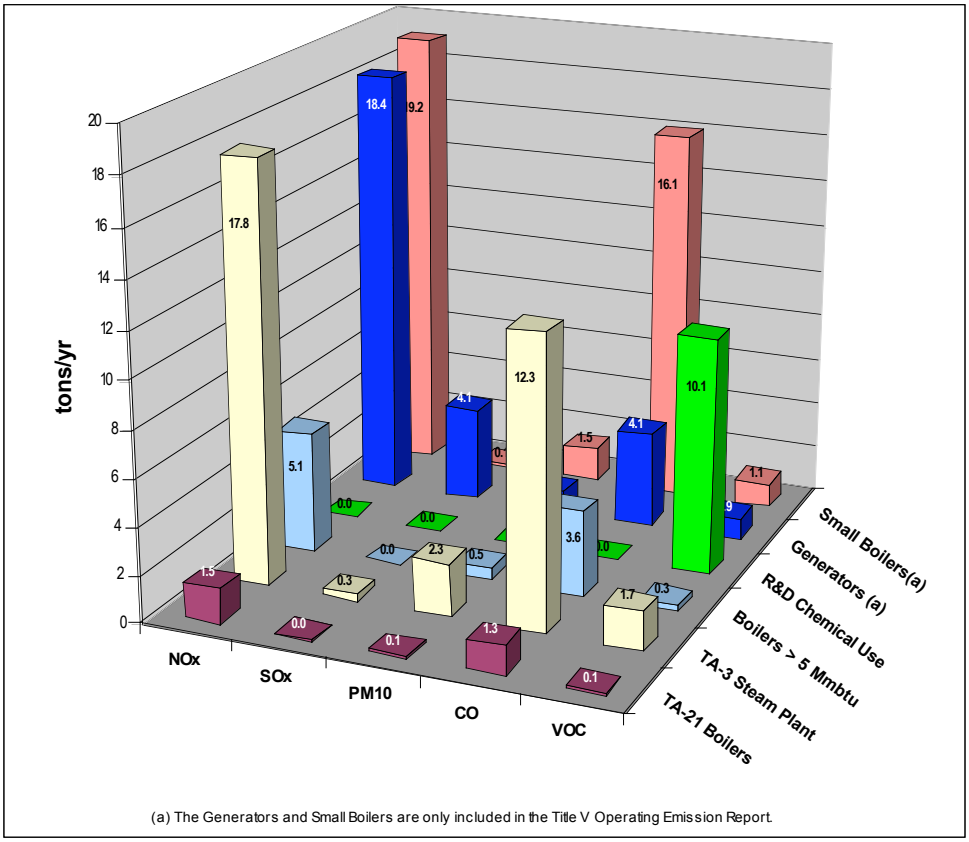

Figure 4.1-1 Emissions of criteria pollutants by source in 2006.

4.2 Emission Trends and Title V Permit Limits

A comparison of historical emissions to the facility-wide emission limits in the Title V Operating Permit is provided in the section below. It should be noted that the facility-wide emission limits in the Operating Permit include emissions from some sources that are not included in the annual emissions inventory, most notably small (insignificant) boilers and emergency standby generators. However, historical data are only available for emission sources that were included in the annual emissions inventory submittals.

Figure 4.1-2 provides a comparison of the past eight years' facility-wide emissions for criteria air pollutants as reported to NMED on the annual emissions inventory submittal. The facility-wide emission limits included in LANL's Title V Operating Permit are also shown on the graph.

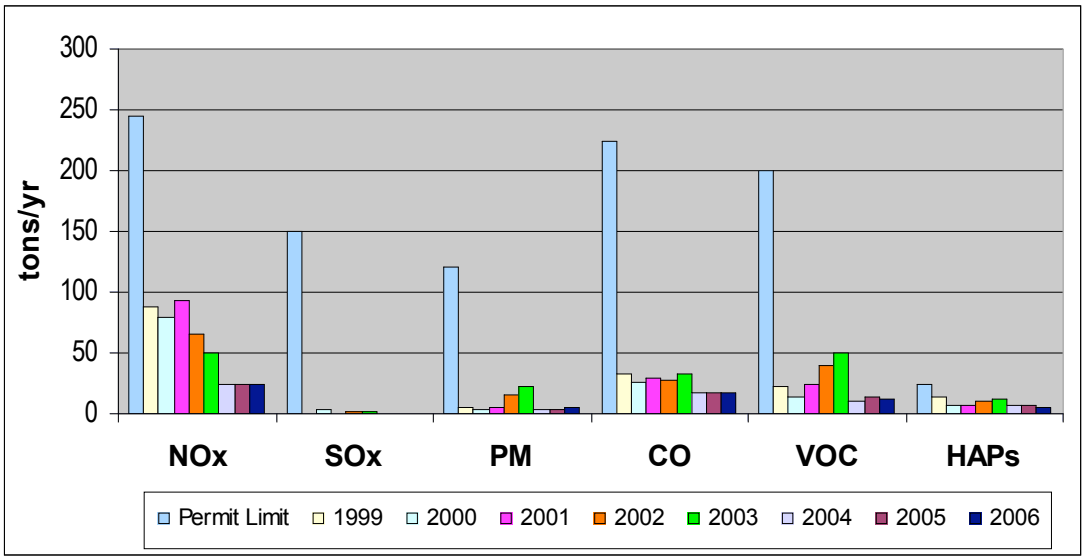

Figure 4.1-2 Comparison of facility-wide annual reported emissions from 1999–2006.

Figure 4.1-3 presents VOC and HAP emissions from chemical use activities for the last eight years. The continued fluctuation in both VOC and HAP emissions is due to both variations in actual chemical purchases and improvements the Laboratory has made to the chemical tracking system.

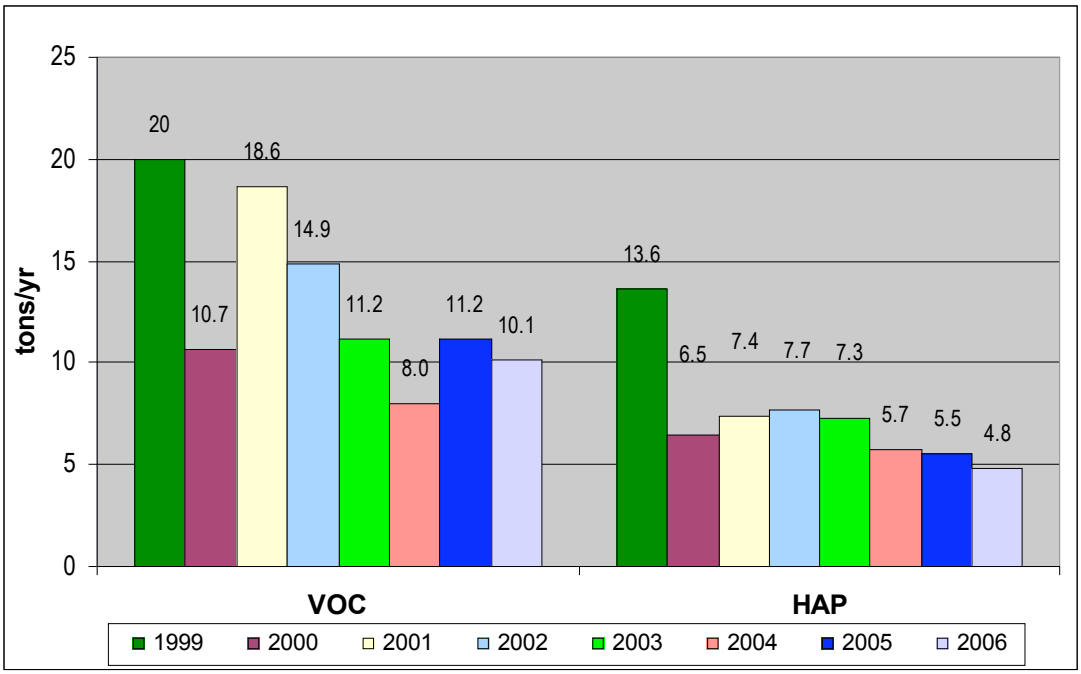

Figure 4.1-3 VOC and HAP emissions from chemical use, 1999–2006.

REFERENCES

LANL (Los Alamos National Laboratory), 2007a. "2006 Annual Emissions Inventory Report Submittal to the New Mexico Environment Department," Los Alamos National Laboratory document LA-UR-07-1634 (March 2007).

LANL (Los Alamos National Laboratory), 2007b. "Semi-Annual Emissions Report, Operating Permit Number P100M1, July–December 2006," submitted to the New Mexico Environment Department, Los Alamos National Laboratory document LA-UR-07-1496 (March 2007).

LANL (Los Alamos National Laboratory), 2006. "IDEA ID No. 856 – Los Alamos National Laboratory (LANL) Semi Annual Emissions Report, Operating Permit No.: P100M1," submitted to the New Mexico Environment Department, Los Alamos National Laboratory document LA-UR-06-6561 (September 2006).

New Mexico Environment Department, Air Quality Bureau, 2006. "Clean Air Act, Title V Operating Permit No. P-100M1." http://www.lanl.gov/environment/air/docs/progs/OpPermit_P100M1_FinalPermit.pdf (June 15, 2006).

New Mexico Environment Department, Air Quality Bureau, 2005. "List of Insignificant Activities under Title V Operating Permits," (March 24, 2005).

New Mexico Environment Department, Air Quality Bureau, 1996. "List of Trivial Activities under Title V Operating Permits," http://www.nmenv.state.nm.us/aqb/forms/TrivialListTitleV.pdf (January 10, 1996).

U.S. Environmental Protection Agency, 2007a. Aerometric Information Retrieval System (AIRS), http://www.epa.gov/enviro/html/airs/ (Accessed January 2007).

U.S. Environmental Protection Agency, 2007b. TANKS Emission Estimation Software, http://www.epa.gov/ttn/chief/software/tanks/ (Accessed January 2007).

U.S. Environmental Protection Agency, 1998. "Compilation of Air Pollutant Emission Factors," AP-42, Fifth Edition, Section 1.4–Natural Gas Combustion, July 1998, and Section 1.3–Fuel Oil Combustion, http://www.epa.gov/ttn/chief/ap42/ (September 1998).

U.S. Environmental Protection Agency, 1996. "Compilation of Air Pollutant Emission Factors," AP-42, Fifth Edition, Section 3.3–Gasoline and Diesel Industrial Engines, October 1996, and Section 3.4–Large Stationary Diesel and All Stationary Dual Fired Engines, http://www.epa.gov/ttn/chief/ap42/ (October 1996).

Attachment A

Emission Calculation Worksheets
for Individual Emission Units

2006 TA-60 BDM Asphalt Plant

Data Reviewed By / Date: _____

Month	Data Entry Asphalt Produced (Tons)	12-Month Rolling Total	Month	Data Entry Asphalt Produced (Tons)	12-Month Rolling Total
January	137	1758	**July**	238	2863
February	327	2085	**August**	102	2606
March	138	2223	**September**	143	2177
April	143	2366	**October**	164	2185
May	211	2577	**November**	103	2092
June	267	2844	**December**	35	2008
6 Month Total	1,223		**6 mo. Total:**	785	

Tons/Asphalt Produced (2006):	**2,008**

12-Month Rolling Permit Limit is 13,000 Tons

Emission Calculations

Pollutant	Emission Factor (lb/ton)	Annual Emissions (tons)	Emissions (tons) Jan-June	Emissions (tons) July-Dec	Reference
NOx	0.025	0.025	0.015	0.010	(a)
SOx	0.0046	0.005	0.003	0.002	(a)
PM	0.0096	0.010	0.006	0.004	(b)
PM-10	0.006	0.006	0.004	0.002	(c)
PM-2.5	0.006	0.006	0.004	0.002	(c)
CO	0.4	0.402	0.245	0.157	(a)
VOC	0.0082	0.008	0.005	0.003	(a)
HAPs					
Acetaldehyde	0.00032	0.000	0.000	0.000	(d)
Benzene	0.00028	0.000	0.000	0.000	(d)
EthylBenzene	0.0022	0.002	0.001	0.001	(d)
Formaldehyde	0.00074	0.001	0.000	0.000	(d)
Napthalene	0.000036	0.0000	0.000	0.000	(d)
POM	0.00011	0.0001	0.000	0.000	(d)
Quinone	0.00027	0.000	0.000	0.000	(d)
Toluene	0.001	0.001	0.001	0.000	(d)
Xylene	0.0027	0.003	0.002	0.001	(d)
TOTAL HAPS		0.008	0.005	0.003	
EPCRA 313			**lbs./year**		
Lead	8.90E-07	8.94E-07	0.0018		(e)
Sulfuric Acid	0.0046	4.62E-03	9.24		(f)
Mercury	4.10E-07	4.12E-07	0.0008		(e)
PACs	2.70E-08	2.71E-08	5.42E-05		(d)
Benzo(g,h,i) perylene	5.00E-10	5.02E-10	1.00E-06		(g)

Reference
(a) AP-42, Sec. 11.1, *Hot Mix Asphalt Plants* , Table 11.1-5 and 11.1-6, Updated 4/2004
(b) Calculated using AP-42 uncontrolled emission factor and applying manufacturer's suggested control efficiencies for cyclone & baghouse.
(c) PM-10 emission factor is calculated as 64% of the PM emission factor, using the same ratio of PM to PM-10 as provided in AP-42 Table 11.1-1. No data provided for PM-2.5, assume same as PM-10.
(d) AP-42, Table 11.1-9, *Hot Mix Asphalt Plants,* Updated 4/2004
(e) AP-42, Table 11.1-11, *Hot Mix Asphalt Plants,* Updated 4/2004
(f) Assume all SOx is converted to sulfuric acid
(g) EPCRA PAC Guidance Document, EPA-260-B-01-03, June 2001, Table 2-3

2006 TA-3 & TA-15 Carpenter Shops

Data Reviewed By/Date: _____

TA-3 Month	Data EntryHours of Operation [a] TA-3
January	15.5
February	19
March	22.5
April	26.5
May	14.25
June	11
6 Month Total	108.75

TA-3 Month	Data EntryHours of Operation [a] TA-3
July	12.25
August	13.5
September	22.75
October	14.1
November	8
December	7
6 Month Total	77.60

TA-15 Month	Data EntryHours of Operation [a] TA-15
January	10.2
February	19.8
March	29.2
April	13.3
May	13.3
June	16.0
6 Month Total	101.8

TA-15 Month	Data EntryHours of Operation [a] TA-15
July	29.8
August	21.2
September	7.1
October	15.0
November	14.0
December	10.5
6 Month Total	97.6

Reference
(a) Based on information provided monthly by the shop foreman from each shop.

Carpenter Shop Emissions Calculations for 2006

Data Reviewed By/Date: _____

ANNUAL EMISSIONS

Location	Operation Parameters: Exhaust Flow (ft^3/min)	Operation Parameters: Hours of Operation (hr/yr) [c]	TSP Prior to Cyclone tons/yr	TSP Post Cyclone tons/yr	PM Post Cyclone Emissions tons/yr: (PM) (PM > 40µm)	(PM 10) (PM 5-20 µm)	(PM 2.5) (PM <2.5 µm)
TA-3-38	2706	186	0.178	0.065	0.004	0.031	0.029
TA-15-563	2100	199	0.148	0.054	0.004	0.026	0.024

January through June Emissions

Location	Operation Parameters: Exhaust Flow (ft^3/min)	Operation Parameters: Hours of Operation (hr/period) [c]	TSP Prior to Cyclone tons/6 mo	TSP Post Cyclone tons/6 mo	PM Post Cyclone Emissions tons/6 mo: (PM) (PM > 40µm)	(PM 10) (PM 5-20 µm)	(PM 2.5) (PM <2.5 µm)
TA-3-38	2706	109	0.104	0.038	0.003	0.018	0.017
TA-15-563	2100	102	0.075	0.027	0.002	0.013	0.012

July through December Emissions

Location	Operation Parameters: Exhaust Flow (ft^3/min)	Operation Parameters: Hours of Operation (hr/period) [c]	TSP Prior to Cyclone tons/6 mo	TSP Post Cyclone tons/6 mo	PM Post Cyclone Emissions tons/6 mo: (PM) (PM > 40µm)	(PM 10) (PM 5-20 µm)	(PM 2.5) (PM <2.5 µm)
TA-3-38	2706	78	0.074	0.027	0.002	0.013	0.012
TA-15-563	2100	98	0.072	0.026	0.002	0.013	0.012

Conversions:			
lb/ton	lb/grain	min/hr	ton/lb
2000	0.00014	60	0.0005

Assumptions:		
PM	Cyclone [d] Efficiencies	% PM by size in Wood [e] Dust Prior to Cyclone
PM < 2.5	0.45	0.30
PM 5-20 microns	0.65	0.50
PM > 40 microns	0.95	0.50

Post Cyclone Emission Factor:
grain/ft^3 [b]
0.03

Maximum permitted exhaust flow rate is:	Shop Location	Flow Rate
	TA-3-38	5000 cfm
	TA-15-563	5471 cfm

References:

[a] Exhaust Rate calculated by Victor Martinez.

[b] Emission Factor obtained from AP-42, Section 10.4 Woodworking Waste Collection Operations, post cyclone emissions, Table 10.4.1, February 1980.

[c] Based on information provided monthly by the shop foreman.

[d] K. Wark & C.F. Warner, Air Pollution - Its Origin and Control, Table 5-9, pg 186 (1976).

[e] Emissions Inventory Improvement Program (EIIP) Uncontrolled Emission Factor Listing for Criteria Air Pollutants, Volume II: Chapter 14, July 2001 And AP-42 Appendix B, Section 10.5 Woodworking Waste Collection

Allowable Emission Limits are: **3.07 tpy of PM10 for the TA-3-38 shop**
2.81 tpy of PM10 for the TA-15-563 shop

2006 TA-52 Data Disintegrator

Data Reviewed By/Date: _____

	Data Entry			Data Entry	
Month	Boxes [c] Shredded	12-Month Rolling Total	Month	Boxes [c] Shredded	12-Month Rolling Total
January	1436	8410	**January**	890	9360
February	1040	8682	**February**	1468	10243
March	766	8383	**March**	599	10842
April	705	8244	**April**	328	11170
May	1023	8499	**May**	15	10865
June	1379	9228	**June**	560	10209
6 Month Total	**6,349**		**6 Month Total**	**3,860**	

Annual Boxes (2006): **10,209**

Emission Calculations

	Emission (b) Factor	% in (e) Exhaust	Control (d) Efficiency (Cyclone)	Control (d) Efficiency (Baghouse)
PM 2.5	15%	15%	0%	95.0%
PM 10	15%	90%	75%	95.0%
TSP	15%	100%	75%	95.0%

Average Box Weight[a]
45 Pounds

	Amount Processed (pounds)	PM-2.5 Emissions (pounds)	PM-2.5 Emissions (tons)	PM-10 Emissions (pounds)	PM-10 Emissions (tons)	TSP Emissions (pounds)	TSP Emissions (tons)
Annual	459,405	516.8	0.26	775.2	0.39	861.4	0.43
January–June	285,705	321.4	0.16	482.1	0.24	535.7	0.27
July–December	173,700	195.4	0.10	293.1	0.15	325.7	0.16

Reference				
[a] Estimated maximum box weight is 45 pounds.Information provided by shredding operations.Full box weight of tightly packed paper.	[b] Emission Factor (percentage of material shredded that will enter into the exhaust) obtained from the manufacturer of the air handling system, AGET Manufacturing Co. 15% is also listed in the construction permit application.	[c] Information provided by the shredding operations personnel.	[d] Information on control equipment efficiencies was provided by the manufacturer (SEM) of the Data Disintegrator. Those values not given were extrapolated using manufacturer data. Efficiencies of 75% for the Cyclone and 95% for the bag house are listed in the construction permit application. (see cyclone efficiency tab for more info.)	[e] Manufacturer provided info that the dust into the exhaust would be in the size range of 5-20 um. Conservative assumption that 15% is PM2.5, and 90% is PM10.

Maximum Annual emission rate is: **9.9 tpy or 2.3 lb/hr of Total Suspended Particulate (TSP) per year.**
9.9 tpy or 2.3 lb/hr of Particulate Matter <10µm (PM-10) per year.

2006 Small Boilers Data Entry/Gas Use

Data Entry

Month	Metered Boilers: TA-55 Boiler Gas Use (MSCF)[c] BHW-1B (B-602)	Metered Boilers: TA-55 Boiler Gas Use (MSCF)[c] BHW-2B (B-603)	Metered Boilers: TA-50-2[d] (MSCF) BS-1	Total Gas Use[g] (MSCF)	Total Gas Use[g] (MMSCF)	Non-Metered Gas Use (MMSCF)	12-Month Rolling Total for all Small Boilers (MMSCF)[e]
January	2751	135		69,973	69.97	66.84	513.43
February	591	0		59,582	59.58	58.74	504.46
March	1630	0		58,189	58.19	56.31	496.97
April	1301	57		35,789	35.79	34.18	484.29
May	578	1010		21,932	21.93	20.10	475.96
June	242	910	1492	16,395	16.40	14.99	476.66
July	504	511		12,634	12.63	11.37	474.00
August	2196	6		13,180	13.18	10.73	473.05
September	297	89		23,222	23.22	22.59	480.04
October	1762	749		41,690	41.69	38.93	481.16
November	3	2004		58,111	58.11	55.85	484.30
December	1	2223	1503	79,916	79.92	77.44	490.61
TOTAL	**11856**	**7694**	**2995**	**490,613**	**490.61**	**468.07**	**Permit Limit =** **870**

2006 Non Metered Boiler Pool Capacity:	**308.7**	**MMBTU/hr[f]**
Estimated Gas-Use per MMBtu rating Jan-June:	0.81	MMscf/MMBtu/hr
Estimated Gas-Use per MMBtu rating July-Dec:	0.70	MMscf/MMBtu/hr
Estimated Gas-Use per MMBtu - Annual	1.52	MMscf/MMBtu/hr

Definitions:
MMSCF= Million Standard Cubic Feet
MSCF = Thousand Standard Cubic Feet
Metered/Non-metered: Metered boilers are those units that have unit specific volumetric flow meters for the boiler(s) only.

		Gas Use Non-Metered[g] (MMSCF)								
AIRS Stack #		015	016	017	018	019	020	021	024	Insignificant Units[h]
Location:		TA-48-1	TA-48-1	TA-48-1	TA-53-365	TA-53-365	TA-59-1	TA-59-1	TA-16-1484	Lab Wide
ID:		BS-1	BS-2	BS-6	BHW-1	BHW-2	BHW-1	BHW-2	Plant 5	Various
Design Rate[i] (MMBTU/hr)		**5.336**	**5.335**	**7.140**	**7.115**	**7.115**	**5.335**	**5.335**	**12.700**	**253**
Calculated Gas Use-Jan-June		4.342	4.341	5.809	5.788	5.788	4.341	4.341	10.333	206.079
Calculated Gas Use-July-Dec		3.749	3.749	5.017	4.999	4.999	3.749	3.749	8.924	177.971
Calculated Gas Use-Annual		8.091	8.090	10.826	10.787	10.787	8.090	8.090	19.256	384.050

REFERENCES

(a) Information on non-metered boilers is provided as a data deliverable from KSL and contains all gas use at LANL minus those non-LANL sources which feed from the LANL main line and LANL sources that are individually metered. Total Gas use does not include TA-3 Power Plant and TA-21 Steam Plant. All other sources are included in this total.

(b)TA-16 Boilers include 2 boilers in plant 5. Gas use was difficult to obtain, so, the boilers were included in the "boiler pool" to determine gas use. Plant 6 has been taken off line and is not expected to be reused or boilers relocated. The removal of these boilers will be requested in the next operating permit revision.

(c) TA-55 has two boilers with separate AIRs numbers. Each boiler has a gas meter. The gas use information is provided monthly by the TA-55 facility personnel and is included in the KSL data deliverable.

(d) The TA-50-RLWTF boiler was added to EI as a new source in 2003. This boiler is owned and operated by a contractor and has been operated at LANL since mid-2000. Originally planned as a temporary source, but current plans are to keep operating for several more years. Therefore, decision was made to include in LANL's annual EI. Fuel use has not been tracked monthly. For 2005 and beyond, the total gas use for each 6 month reporting period is taken and used to calculate emissions.

(e) The 12-month rolling average includes all gas use from all boilers listed in this spreadsheet. Boilers not included in this report due to their large size or design are TA-21 boilers & powerplant boilers at TA-3. A gas use limit of 870 MMscf/yr, 12-month rolling average is a permit limit in Section 2.4 of the LANL operating permit.

(f) The non-metered boiler pool capacity is the sum of all active non-metered boilers design ratings in MMBTU. In 2004, the TA-16 boilers were added to the boiler pool. This increased the boiler pool from 249.4 to 262.1 MMBtu/Hr. This number is used to estimate the gas use rate (total non-metered gas use divided by the non-metered boiler pool capacity number).

(g) The non-metered boilers gas use section provides estimates of gas use for each boiler. This is calculated using the non-metered gas rate, as discussed in reference (f). The individual boiler design rating is multiplied by the gas use rate to provide the estimated gas used per reporting period (in MMSCF).

(h) NMED List of Insignificant Activities (9/95), Item (3.) exempts fuel burning equipment which uses gaseous fuel, has a design rate less than or equal to 5 MMBTU/hr, and is used for heating buildings for personal comfort or for producing hot water for personal use.

(i) The design rate for boilers includes a correction for elevation. LANL is at approximately 7,500 feet above sea level. Corrections are made for atmospheric boilers using 4% reduction (derated) for each 1,000 feet above sea level (4% x 7.5 = 30%). For forced draft and power burner boilers, the reduction is half that of atmospheric at 15%. The correction is made using the boiler plate input rating minus the appropriate percentage.

Emission Factors (lb/MMscf)

Criteria Pollutant	Small Uncontrolled Boilers[a]	TA-16 Low NOx Boilers[d]	TA-55-6 Boilers[c]
NOx	100	37.08	138
SOx	0.6	0.6	0.6
PM[2]	7.6	7.6	14.2
PM-10[2]	7.6	7.6	14.2
PM-2.5[2]	7.6	7.6	14.2
CO	84	37.08	38.2
VOC	5.5	5.5	5.98
HAPs[e]			
Arsenic	0.0002		
Benzene	0.0021		
BE	0.000012		
Cadmium	0.0011		
Chromium	0.0014		
Cobalt	0.000084		
Dichlorobenzene	0.0012		
Formaldehyde	0.075		
Hexane	1.8		
Lead	0.0005		
Mangenese	0.00038		
Mercury	0.00026		
Napthalene	0.00061		
Nickel	0.0021		
POM	0.000088		
Selenium	0.000024		
Toluene	0.0034		

References for Emission Factors
(a) AP-42, 7/98, Section 1.4, Natural Gas Combustion, Small Boilers.
(b) Emission factors for natural gas of PM-10 and PM-2.5 are roughly equal to those of
(c) AP-42, 7/98, Section 1.4, Natural Gas Combustion, Small Boilers for SOx. Stack test on 3/00 for NOx. Otherwise, Emission factors from Sellers Engineering Co.
(d) AP-42, 7/98, Section 1.4, Natural Gas Combustion, Small Boilers; Emission factors for NOx and CO from Sellers Engineering Co (low-NOx boilers).
(e) All HAP emission factors from AP-42 7/98, Section 1.4, Natural Gas Combustion,

2006 Small Boilers Emission Summary

Title V Semi-Annual Reporting

Total Emissions (tons)

Pollutant Criteria	Annual Emissions (Includes Insignificant Sources)	Jan-June (Includes Insignificant Sources)	July-Dec (Includes Insignificant Sources)
NOx	24.296	12.943	11.353
SOx	0.147	0.079	0.069
PM	1.929	1.025	0.903
PM-10	1.929	1.025	0.903
PM-2.5	1.929	1.025	0.903
CO	19.706	10.545	9.161
VOC	1.354	0.722	0.632
HAPs			
Arsenic	4.91E-05	2.62E-05	2.29E-05
Benzene	5.14E-04	2.75E-04	2.39E-04
BE	2.94E-06	1.57E-06	1.37E-06
Cadmium	2.69E-04	1.44E-04	1.25E-04
Chromium	3.43E-04	1.83E-04	1.60E-04
Cobalt	2.06E-05	1.10E-05	9.58E-06
Dichlorobenzene	2.94E-04	1.57E-04	1.37E-04
Formaldehyde	1.84E-02	9.82E-03	8.55E-03
Hexane	4.41E-01	2.36E-01	2.05E-01
Lead	1.22E-04	6.55E-05	5.70E-05
Mangenese	9.31E-05	4.98E-05	4.33E-05
Mercury	6.37E-05	3.40E-05	2.96E-05
Napthalene	1.49E-04	7.99E-05	6.95E-05
Nickel	5.14E-04	2.75E-04	2.39E-04
POM	2.16E-05	1.15E-05	1.00E-05
Selenium	5.88E-06	3.14E-06	2.74E-06
Toluene	8.33E-04	4.45E-04	3.88E-04
TOTAL HAPS	0.463	0.247	0.215

2006 Small Boilers Emissions by Boiler for Annual EI Reporting (Tons/Year)

Pollutant	AIRS 015	AIRS 016	AIRS 017	AIRS 018	AIRS 019	AIRS 020	AIRS 021	AIRS 024	AIRS 037	AIRS 038	AIRS New	Total for
	TA-48-1	TA-48-1	TA-48-1	TA-53-365	TA-53-365	TA-59-1	TA-59-1	TA-16	TA-55-6	TA-55-6	TA-50-2	
Criteria	BS-1	BS-2	BS-6	BHW-1	BHW-2	BHW-1	BHW-2	Plant 5	BHW-1B	BHW-2B	BS-1	Small Boilers
NOx	0.405	0.404	0.541	0.539	0.539	0.404	0.404	0.357	0.818	0.531	0.150	5.094
SOx	0.002	0.002	0.003	0.003	0.003	0.002	0.002	0.006	0.004	0.002	0.001	0.032
PM	0.031	0.031	0.041	0.041	0.041	0.031	0.031	0.073	0.084	0.055	0.011	0.469
PM-10	0.031	0.031	0.041	0.041	0.041	0.031	0.031	0.073	0.084	0.055	0.011	0.469
PM-2.5	0.031	0.031	0.041	0.041	0.041	0.031	0.031	0.073	0.084	0.055	0.011	0.469
CO	0.340	0.340	0.455	0.453	0.453	0.340	0.340	0.357	0.226	0.147	0.126	3.576
VOC	0.022	0.022	0.030	0.030	0.030	0.022	0.022	0.053	0.035	0.023	0.008	0.298
HAPs												
Arsenic	8.09E-07	8.09E-07	1.08E-06	1.08E-06	1.08E-06	8.09E-07	8.09E-07	1.93E-06	1.19E-06	7.69E-07	3.00E-07	1.07E-05
Benzene	8.50E-06	8.49E-06	1.14E-05	1.13E-05	1.13E-05	8.49E-06	8.49E-06	2.02E-05	1.24E-05	8.08E-06	3.14E-06	1.12E-04
BE	4.85E-08	4.85E-08	6.50E-08	6.47E-08	6.47E-08	4.85E-08	4.85E-08	1.16E-07	7.11E-08	4.62E-08	1.80E-08	6.39E-07
Cadmium	4.45E-06	4.45E-06	5.95E-06	5.93E-06	5.93E-06	4.45E-06	4.45E-06	1.06E-05	6.52E-06	4.23E-06	1.65E-06	5.86E-05
Chromium	5.66E-06	5.66E-06	7.58E-06	7.55E-06	7.55E-06	5.66E-06	5.66E-06	1.35E-05	8.30E-06	5.39E-06	2.10E-06	7.46E-05
Cobalt	3.40E-07	3.40E-07	4.55E-07	4.53E-07	4.53E-07	3.40E-07	3.40E-07	8.09E-07	4.98E-07	3.23E-07	1.26E-07	4.48E-06
Dichlorobenzene	4.85E-06	4.85E-06	6.50E-06	6.47E-06	6.47E-06	4.85E-06	4.85E-06	1.16E-05	7.11E-06	4.62E-06	1.80E-06	6.39E-05
Formaldehyde	3.03E-04	3.03E-04	4.06E-04	4.05E-04	4.05E-04	3.03E-04	3.03E-04	7.22E-04	4.45E-04	2.89E-04	1.12E-04	4.00E-03
Hexane	7.28E-03	7.28E-03	9.74E-03	9.71E-03	9.71E-03	7.28E-03	7.28E-03	1.73E-02	1.07E-02	6.92E-03	2.70E-03	9.59E-02
Lead	2.02E-06	2.02E-06	2.71E-06	2.70E-06	2.70E-06	2.02E-06	2.02E-06	4.81E-06	2.96E-06	1.92E-06	7.49E-07	2.66E-05
Mangenese	1.54E-06	1.54E-06	2.06E-06	2.05E-06	2.05E-06	1.54E-06	1.54E-06	3.66E-06	2.25E-06	1.46E-06	5.69E-07	2.02E-05
Mercury	1.05E-06	1.05E-06	1.41E-06	1.40E-06	1.40E-06	1.05E-06	1.05E-06	2.50E-06	1.54E-06	1.00E-06	3.89E-07	1.39E-05
Napthalene	2.47E-06	2.47E-06	3.30E-06	3.29E-06	3.29E-06	2.47E-06	2.47E-06	5.87E-06	3.62E-06	2.35E-06	9.14E-07	3.25E-05
Nickel	8.50E-06	8.49E-06	1.14E-05	1.13E-05	1.13E-05	8.49E-06	8.49E-06	2.02E-05	1.24E-05	8.08E-06	3.14E-06	1.12E-04
POM	3.56E-07	3.56E-07	4.76E-07	4.75E-07	4.75E-07	3.56E-07	3.56E-07	8.47E-07	5.22E-07	3.39E-07	1.32E-07	4.69E-06
Selenium	9.71E-08	9.71E-08	1.30E-07	1.29E-07	1.29E-07	9.71E-08	9.71E-08	2.31E-07	1.42E-07	9.23E-08	3.59E-08	1.28E-06
Toluene	1.38E-05	1.38E-05	1.84E-05	1.83E-05	1.83E-05	1.38E-05	1.38E-05	3.27E-05	2.02E-05	1.31E-05	5.09E-06	1.81E-04
TOTAL HAPS/Unit	7.64E-03	7.64E-03	1.02E-02	1.02E-02	1.02E-02	7.64E-03	7.64E-03	1.82E-02	1.12E-02	7.26E-03	2.83E-03	0.10

EPCRA 313

Chemical	Amount in Fuel[a]		Emissions from all Small Boilers[b]	
	Conc.	Pounds	Emission Factor (lbs/MMscf)	Emissions (lbs)
Lead[c]			5.0E-04	0.10
Sulfuric Acid[d]			0.6	125.06
Mercury[c]			2.6E-04	0.05
PACs[e]			8.69E-07	1.81E-04
Benzo(g,h,i) perylene[c]			1.20E-06	2.50E-04

References
(a) Amount of EPCRA chemical in fuel is considered "otherwise used" for EPCRA 313 threshold determination
(b) Combustion compounds emitted are considered "manufactured" for EPCRA 313 threshold determinations. Lead and mercury are lead compounds and mercury compounds.
(c) Emission Factors from AP-42, Section 1.4, Natural Gas Combustion, Tables 1.4-2, 1.4-3 and 1.4-4, July 1998
(d) Assume all SOx emissions are converted to sulfuric acid in the stack.
(e) EPCRA PAC Guidance Document, Table 2-3

TA-3 Power Plant Fuel Use Totals 2006 (Data Entry)

Data Reviewed By/Date: _____

Month	DATA ENTRY						Monthly Totals	
	TA-3-22 Steam Plant[b] Boiler # 1 (Edgemoor Iron Works, 210 MMBTU/hr)		TA-3-22 Steam Plant[b] Boiler # 2 (Edgemoor Iron Works, 210 MMBTU/hr)		TA-3-22 Steam Plant[b] Boiler # 3 (Union Iron Works, 210 MMBTU/hr)			
	Natural Gas (MCF)[a]	Fuel Oil (gallons)[a]	Natural Gas (MCF)[a]	Fuel Oil (gallons)[a]	Natural Gas (MCF)[a]	Fuel Oil (gallons)[a]	Natural Gas (MMCF)[a]	Fuel Oil (gallons)[a]
January	5,171	0	7,866	0	55,572	0	68.609	0
February	4,840	713	5,675	0	47,920	0	58.435	713
March	1,934	603	10,104	319	45,818	0	57.856	922
April	0	0	8,249	378	41,663	0	49.912	378
May	0	0	24,512	651	9,412	0	33.924	651
June	0	0	28,120	658	1,346	0	29.466	658
July	0	0	26,542	1,163	342	0	26.884	1163
August	17,919	0	6,403	0	2,705	0	27.027	0
September	24,522	0	4,077	0	4,891	0	33.490	0
October	32,044	438	2,139	0	47,848	0	82.031	438
November	25,681	0	29,612	13,368	9,492	2,634	64.785	16002
December	35,930	0	12,293	0	28,005	219	76.228	219
Annual Totals:	**148,041**	**1,754**	**165,592**	**16,537**	**295,014**	**2,853**	**608.647**	**21144**
Jan. - June	11,945	1,316	84,526	2,006	201,731	0	298.202	3322
July - Dec.	136,096	438	81,066	14,531	93,283	2,853	310.445	17822

Month	12-Mo. Rolling Total Natural Gas (MMscf)	12-Mo. Rolling Total Fuel Oil (gallons)
January	561.9	4403
February	563.4	4994
March	561.7	5881
April	563.9	5215
May	556.1	4970
June	554.9	4972
July	552.1	6135
August	551.3	5558
September	556.9	5558
October	596.7	5010
November	608.0	21012
December	608.6	21144

	Totals by Fuel Type	
	Natural Gas (MMscf)	Fuel Oil (Gallons)
Annual Totals:	608.65	21144.00
Jan. - June	298.20	3322.00
July - Dec.	310.45	17822.00

Permit Limits:	2000 MMscf	500,000 gallons

References

(a) AP-42, 7/98, Section. 1.4, *Natural Gas Combustion*, Tables 1.4-1, 1.4-2

(b) Fuel usage obtained from Jerry Gonzales (FWO-UI). Values are provided in a monthly data deliverable from KSL.

Emissions by Boiler 2006

Data Reviewed By/Date: _____

Pollutant Criteria	Emission Factor		Unit Emissions				Unit Emissions				Unit Emissions			
			Boiler #1, Stack 032				Boiler #2, Stack 033				Boiler #3, Stack 034			
	Natural Gas (lb/MMscf)(a)	Fuel Oil(f) Pounds/ 1000 gal	Annual Natl Gas (tons)	Annual Fuel Oil (tons)	Jan-June (gas&oil) (tons)	July-Dec (gas&oil) (tons)	Annual Natl Gas (tons)	Annual Fuel Oil (tons)	Jan-June (gas&oil) (tons)	July-Dec (gas&oil) (tons)	Annual Natl Gas (tons)	Annual Fuel Oil (tons)	Jan-June (gas&oil) (tons)	July-Dec (gas&oil) (tons)
NOx[c]	58	8.64	4.293	0.008	0.352	3.949	4.802	0.071	2.460	2.414	8.555	0.012	5.850	2.718
SOx[g]	0.6	7.4	0.044	0.006	0.008	0.042	0.050	0.061	0.033	0.078	0.089	0.011	0.061	0.039
PM[d]	7.6	3.3	0.563	0.003	0.048	0.518	0.629	0.027	0.325	0.332	1.121	0.005	0.767	0.359
PM-10[d]	7.6	2.3	0.563	0.002	0.047	0.518	0.629	0.019	0.324	0.325	1.121	0.003	0.767	0.358
PM-2.5[d]	7.6	1.55	0.563	0.001	0.046	0.518	0.629	0.013	0.323	0.319	1.121	0.002	0.767	0.357
CO[e]	40	5.0	2.961	0.004	0.242	2.723	3.312	0.041	1.696	1.658	5.900	0.007	4.035	1.873
VOC	5.5	0.2	0.407	0.0002	0.033	0.374	0.455	0.0017	0.233	0.224	0.811	0.0003	0.555	0.257
HAPs[h]														
Arsenic	0.0002	0.00055	1.48E-05	4.81E-07	1.56E-06	1.37E-05	1.66E-05	4.53E-06	9.00E-06	1.21E-05	2.95E-05	7.82E-07	2.02E-05	1.01E-05
Benzene	0.0021	—	1.55E-04	0.0	1.25E-05	1.43E-04	1.74E-04	0.0	8.88E-05	8.51E-05	3.10E-04	0.0	2.12E-04	9.79E-05
Beryllium	0.000012	0.00041	8.88E-07	3.60E-07	3.42E-07	9.07E-07	9.94E-07	3.40E-06	9.19E-07	3.47E-06	1.77E-06	5.86E-07	1.21E-06	1.15E-06
Cadmium	0.0011	0.00041	8.14E-05	3.60E-07	6.84E-06	7.49E-05	9.11E-05	3.40E-06	4.69E-05	4.76E-05	1.62E-04	5.86E-07	1.11E-04	5.19E-05
Chromium	0.0014	0.00041	1.04E-04	3.60E-07	8.63E-06	9.54E-05	1.16E-04	3.40E-06	5.96E-05	5.97E-05	2.07E-04	5.86E-07	1.41E-04	6.59E-05
Cobalt	0.000084	—	6.22E-06	0.0	5.02E-07	5.72E-06	6.95E-06	0.0	3.55E-06	3.40E-06	1.24E-05	0.0	8.47E-06	3.92E-06
Dichlorobenzene	0.0012	—	8.88E-05	0.0	7.17E-06	8.17E-05	9.94E-05	0.0	5.07E-05	4.86E-05	1.77E-04	0.0	1.21E-04	5.60E-05
Formaldehyde	0.075	0.048	5.55E-03	4.21E-05	4.80E-04	5.11E-03	6.21E-03	3.97E-04	3.22E-03	3.39E-03	1.11E-02	6.85E-05	7.56E-03	3.57E-03
Hexane	1.8	—	1.33E-01	0.0	1.08E-02	1.22E-01	1.49E-01	0.0	7.61E-02	7.30E-02	2.66E-01	0.0	1.82E-01	8.40E-02
Lead	0.0005	0.00123	3.70E-05	1.08E-06	3.80E-06	3.43E-05	4.14E-05	1.02E-05	2.24E-05	2.92E-05	7.38E-05	1.76E-06	5.04E-05	2.51E-05
Mangenese	0.00038	0.00082	2.81E-05	7.21E-07	2.81E-06	2.60E-05	3.15E-05	6.80E-06	1.69E-05	2.14E-05	5.61E-05	1.17E-06	3.83E-05	1.89E-05
Mercury[i]	0.00026	0.00041	1.92E-05	3.60E-07	1.82E-06	1.78E-05	2.15E-05	3.40E-06	1.14E-05	1.35E-05	3.84E-05	5.86E-07	2.62E-05	1.27E-05
Napthalene	0.00061	—	4.52E-05	0.0	3.64E-06	4.15E-05	5.05E-05	0.0	2.58E-05	2.47E-05	9.00E-05	0.0	6.15E-05	2.85E-05
Nickel	0.0021	0.00041	1.55E-04	3.60E-07	1.28E-05	1.43E-04	1.74E-04	3.40E-06	8.92E-05	8.81E-05	3.10E-04	5.86E-07	2.12E-04	9.85E-05
POM	0.000088	0.0033	6.51E-06	2.89E-06	2.70E-06	6.71E-06	7.29E-06	2.73E-05	7.03E-06	2.75E-05	1.30E-05	4.71E-06	8.88E-06	8.81E-06
Selenium	0.000024	0.00206	1.78E-06	1.80E-06	1.50E-06	2.08E-06	1.99E-06	1.70E-05	3.08E-06	1.59E-05	3.54E-06	2.93E-06	2.42E-06	4.05E-06
Toluene	0.0034	—	2.52E-04	0.0	2.03E-05	2.31E-04	2.82E-04	0.0	1.44E-04	1.38E-04	5.02E-04	0.0	3.43E-04	1.59E-04
TOTAL HAPS			1.40E-01	5.09E-05	1.13E-02	1.29E-01	1.56E-01	4.80E-04	7.99E-02	7.70E-02	2.79E-01	8.28E-05	1.90E-01	8.82E-02

References

(a) AP-42, 7/98, Section. 1.4, *Natural Gas Combustion*, Tables 1.4-1, 1.4-2

(b) Fuel usage obtained from Jerry Gonzales (FWO-UI). Values are provided in a monthly data deliverable from KSL.

(c) Average of source tests conducted on all 3 boilers September 2002 burning natural gas after FGR installed. Assumed FGR resulted in similar Nox reduction for oil.

(d) All PM from natural gas is assumed <1μ, so PM-10, PM-2.5 and total PM have equal EFs, AP-42, Natural Gas Combustion, Table 1.4-2. The PM emission factor for fuel oil is the sum of filterable and condensable PM.

(e) AP-42, 1/95, Section. 1.4, Natural Gas Combustion, Table 1.4-2. Consistent with previous stack tests.

(f) AP-42, 9/98, Section. 1.3, *Fuel Oil Combustion*, Table 1.3-1 with Errata, Table 1.3-3, and Table

(g) Boilers>100 MMBtu/hr: SOx Emission Factor (SO_2 {142S} + SO_3 {5.7S}) = 147.7 * S (from AP-42, Table 1.3-1 w/Errata) (S = weight % sulfur in oil)(Sulfur content per analysis on oil in tanks in August 01', no new oil delivered in 02'/03')

S(%)= 0.05

(h) HAP emission factors for natural gas from AP-42, Tables 1.4-3 an 1.4-4, for fuel oil from AP-42 Tables 1.3-8 and 1.3-10.

(i) AP-42, Table 1.4-2, 1.4-3, and 1.4-4, July 1998

(j) Assume all SO_3 is converted to sulfuric acid.

(k) AP-42, tables 1.3-9 and 1.3-10, September 1998.

(l) EPCRA PAC Guidance Document, Table 2-3.

S(%)= 0.05

(h) HAP emission factors for natural gas from AP-42, Tables 1.4-3 an 1.4-4, for fuel oil from AP-42 Tables 1.3-8 and 1.3-10.

(i) AP-42, Table 1.4-2, 1.4-3, and 1.4-4, July 1998

12 Month Rolling Emissions 2006 (Tons)

Pollutant	TSP	PM10	NOx	CO	VOC	SO2
Permit Limit (tons/yr) 12-Month Rolling Average	15.7	15.7	99.6	81.3	11.1	36.9
January	2.158	2.145	16.251	11.195	1.533	0.265
February	2.133	2.120	16.058	11.062	1.515	0.263
March	2.141	2.129	16.143	11.122	1.523	0.254
April	2.154	2.143	16.263	11.206	1.536	0.244
May	2.139	2.129	16.150	11.128	1.525	0.245
June	2.140	2.129	16.151	11.128	1.525	0.248
July	2.120	2.114	16.075	11.080	1.520	0.213
August	2.104	2.100	15.994	11.026	1.514	0.195
September	2.126	2.122	16.157	11.139	1.530	0.196
October	2.269	2.265	17.250	11.893	1.633	0.206
November	2.321	2.311	17.540	12.086	1.657	0.258
December	2.348	2.337	17.742	12.226	1.676	0.261

Monthly Emission Totals (Tons)

Pollutant	TSP	PM10	NOx	CO	VOC	SO2
January	0.261	0.261	1.990	1.372	0.189	0.021
February	0.223	0.223	1.698	1.170	0.161	0.020
March	0.221	0.221	1.682	1.159	0.159	0.021
April	0.190	0.190	1.449	0.999	0.137	0.016
May	0.130	0.130	0.987	0.680	0.093	0.013
June	0.113	0.113	0.857	0.591	0.081	0.011
July	0.104	0.103	0.785	0.541	0.074	0.012
August	0.103	0.103	0.784	0.541	0.074	0.008
September	0.127	0.127	0.971	0.670	0.092	0.010
October	0.312	0.312	2.381	1.642	0.226	0.026
November	0.273	0.265	1.948	1.336	0.180	0.079
December	0.290	0.290	2.212	1.525	0.210	0.024
Annual Totals	2.348	2.337	17.742	12.226	1.676	0.261

Data Reviewed By/Date: _____

Emission Summary TA-3 Power Plant 2006

Pollutant Criteria	Emission Factor Natural Gas (lb/MMscf)a	Emission Factor Fuel Oilf (lb/1000 gal.)	Annual Emissions (Natural Gas + Fuel Oil) (tons)	Jan-June Emissions (Natural Gas + Fuel Oil) (tons)	July-Dec Emissions (Natural Gas + Fuel Oil) (tons)	Reference Gas	Reference Oil
NOx	58	8.64	17.742	8.662	9.080	(c)	(c)
SOx	0.6	7.4	0.261	0.102	0.159	(a)(j)	(g)(j)
PM	7.6	3.3	2.348	1.139	1.209	(d)	(d)
PM-10	7.6	2.3	2.337	1.137	1.200	(d)	(d)
PM-2.5	7.6	1.55	2.329	1.136	1.194	(d)	(d)
CO	40	5.0	12.226	5.972	6.253	(b)	(g)
VOC	5.5	0.2	1.676	0.820	0.856	(b)	(i)
HAPs[h]							
Arsenic	0.0002	0.00055	6.67E-05	3.07E-05	3.59E-05	(a)	(k)
Benzene	0.0021	—	6.39E-04	3.13E-04	3.26E-04	(c)	
Beryllium	0.000012	0.00041	8.00E-06	2.47E-06	5.53E-06	(c)	(k)
Cadmium	0.0011	0.00041	3.39E-04	1.65E-04	1.74E-04	(c)	(k)
Chromium	0.0014	0.00041	4.30E-04	2.09E-04	2.21E-04	(c)	(k)
Cobalt	0.000084	—	2.56E-05	1.25E-05	1.30E-05	(c)	
Dichlorobenzene	0.0012	—	3.65E-04	1.79E-04	1.86E-04	(c)	
Formaldehyde	0.075	0.048	2.33E-02	1.13E-02	1.21E-02	(c)	(k)
Hexane	1.8	—	5.48E-01	2.68E-01	2.79E-01	(c)	
Lead	0.0005	0.001233	1.65E-04	7.66E-05	8.86E-05	(c)	(k)
Mangenese	0.00038	0.000822	1.24E-04	5.80E-05	6.63E-05	(c)	(k)
Mercury	0.00026	0.000411	8.35E-05	3.94E-05	4.40E-05	(i)(c)	(i)(k)
Napthalene	0.00061	—	1.86E-04	9.10E-05	9.47E-05	(c)	
Nickel	0.0021	0.000411	6.43E-04	3.14E-04	3.30E-04	(c)	(k)
POM	0.000088	0.0033	6.17E-05	1.86E-05	4.31E-05	(c)	(k)
Selenium	0.000024	0.002055	2.90E-05	6.99E-06	2.20E-05	(c)	(k)
Toluene	0.0034	—	1.03E-03	5.07E-04	5.28E-04	(c)	
TOTAL HAPS			5.75E-01	2.82E-01	2.94E-01		
EPCRA 313				**lbs./year**			
Lead	0.0005	0.00123	1.65E-04	0.330		(c)	(i)(k)
Sulfuric Acid	0.60	0.285	1.86E-01	371.21		(e)(j)	(e)(h)
Mercury	0.00026	0.00041	8.35E-05	0.167		(c)	(i)(k)
PACs	8.69E-07	1.65E-05	4.39E-07	8.78E-04		(f)(l)	(f)(l)
Benzo(g,h,i) perylene	1.20E-06	2.26E-06	3.89E-07	7.78E-04		(i)(k)(c)	(f)
Zinc	-	0.00055	5.79E-06	1.16E-02			(k)

Reference

(a) AP-42, 7/98, Section. 1.4, *Natural Gas Combustion*, Tables 1.4-1, 1.4-2

(b) Fuel usage obtained from Jerry Gonzales (FWO-UI). Values are provided in a monthly data deliverable from KSL.

(c) Average of source tests conducted on all 3 boilers September 2002 burning natural gas after FGR installed. Assumed FGR resulted in similar Nox reduction for oil.

(d) All PM from natural gas is assumed <1µ, so PM-10, PM-2.5 and total PM have equal EFs, AP-42, Natural Gas Combustion, Table 1.4-2. The PM emission factor for fuel oil is the sum of filterable and condensable PM.

(e) AP-42, 1/95, Section. 1.4, Natural Gas Combustion, Table 1.4-2. Consistent with previous stack tests.

(f) AP-42, 9/98, Section. 1.3, *Fuel Oil Combustion*, Table 1.3-1 with Errata, Table 1.3-3, and Table 1.3-6.

(g) Boilers>100 MMBtu/hr: SOx Emission Factor (SO_2 {142S} + SO_3 {5.7S}) = 147.7 * S (from AP-42, Table 1.3-1 w/Errata) (S = weight % sulfur in oil)(Sulfur content per analysis on oil in tanks in August 01', no new oil delivered in 02'/03')

S(%)= 0.05

(h) HAP emission factors for natural gas from AP-42, Tables 1.4-3 an 1.4-4, for fuel oil from AP-42 Tables 1.3-8 and 1.3-10.

(i) AP-42, Table 1.4-2, 1.4-3, and 1.4-4, July 1998

(j) Assume all SO_3 is converted to sulfuric acid.

(k) AP-42, tables 1.3-9 and 1.3-10, September 1998.

(l) EPCRA PAC Guidance Document, Table 2-3.

Reviewed By/Date:

2006 TA-21 Steam Plant Data Entry/Fuel Use

Data Reviewed By/Date: _____

	DATA ENTRY					
	Monthly Fuel Use TA-21-357		Converted			
Month	Natural Gas (MCF)	Fuel Oil (gallons)	Natural Gas (MMscf)	Month	Natural Gas Use 12-Month Rolling Total (MMscf)	Fuel Oil Use 12-Month Rolling Total (Gallons)
January	4001	0	4.001	January	31.75	242
February	3476	0	3.476	February	31.62	232
March	3557	0	3.557	March	31.45	232
April	2517	0	2.517	April	31.34	136
May	2002	0	2.002	May	31.21	48
June	1720	0	1.720	June	31.38	8
July	1695	334	1.695	July	31.92	342
August	1588	19	1.588	August	31.82	361
September	1712	0	1.712	September	32.10	354
October	2209	23	2.209	October	31.73	377
November	2503	20	2.503	November	30.87	396
December	2994	6	2.994	December	29.97	402
Annual Totals:	**29974**	**402**	**29.974**			
Jan. - June	17273	0	17.273			
July - Dec.	12701	402	12.701			

Permit Limit=60 MMScf/yr natural gas (12 month rolling total) and 10,000 gal/yr fuel oil (12 month rolling total)

2006 TA-21 Steam Plant Emissions Calculations

Pollutant Criteria	Natural Gas					Fuel Oil					Reference
	Emission Factor (lb/MMscf)	Annual Emissions (tons)	Emissions (tons) Jan-June	Emissions (tons) July-Dec	Ref.	Emission Factor (lb/1000 gal)	Annual Emissions (tons)	Emissions (tons) Jan-June	Emissions (tons) July-Dec	Ref.	(a) Fuel usage obtained from Jerry Gonzales, FWO-UI
Nox	100	1.499	0.864	0.635	(b)	20	4.02E-03	0.00E+00	4.02E-03	(g)	(b) AP-42, 7/98, Section. 1.4, Natural Gas Combustion, Tables 1.4-1, 1.4-2.
SOx	0.6	0.009	0.005	0.004	(b)	49.0	9.84E-03	0.00E+00	9.84E-03	(h)	
PM	7.6	0.114	0.066	0.048	(b)	3.3	6.63E-04	0.00E+00	6.63E-04	(g)	
PM-10	7.6	0.114	0.066	0.048	(d)	2.3	4.62E-04	0.00E+00	4.62E-04	(j)	(c) AP-42 7/98, Section 1.4, Natural Gas Combustion, Tables 1.4-3, 1.4-4.
PM-2.5	7.6	0.114	0.066	0.048	(d)	1.55	3.12E-04	0.00E+00	3.12E-04	(j)	
CO	84	1.259	0.725	0.533	(b)	5.0	1.01E-03	0.00E+00	1.01E-03	(g)	
VOC	5.5	0.082	0.048	0.035	(b)	0.2	4.02E-05	0.00E+00	4.02E-05	(i)	(d) PM-10 and PM-2.5 for natural gas combustion roughly equal to PM, per AP-42, Natural Gas Combustion, Table 1.4-2.
HAPs											
Arsenic	0.0002	3.00E-06	1.73E-06	1.27E-06	(c)	0.00055	1.10E-07	0.00E+00	1.10E-07	(k)	
Benzene	0.0021	3.15E-05	1.81E-05	1.33E-05	(c)						
Beryllium	0.000012	1.80E-07	1.04E-07	7.62E-08	(c)	0.00041	8.26E-08	0.00E+00	8.26E-08	(k)	(e) Assume all SOx is converted to sulfuric acid.
Cadmium	0.0011	1.65E-05	9.50E-06	6.99E-06	(c)	0.00041	8.26E-08	0.00E+00	8.26E-08	(k)	
Chromium	0.0014	2.10E-05	1.21E-05	8.89E-06	(c)	0.00041	8.26E-08	0.00E+00	8.26E-08	(k)	(f) EPCRA PAC Guidance Document, Table 2-3.
Cobalt	0.000084	1.26E-06	7.25E-07	5.33E-07	(c)						
Dichlorobenzene	0.0012	1.80E-05	1.04E-05	7.62E-06	(c)						(g) AP-42, 9/98, Section. 1.3, Fuel Oil Combustion, Table 1.3-1 with Errata. The PM emission factor is the sum of filterable and condensable PM.
Formaldehyde	0.075	1.12E-03	6.48E-04	4.76E-04	(c)	0.048	9.65E-06	0.00E+00	9.65E-06	(k)	
Hexane	1.8	2.70E-02	1.55E-02	1.14E-02	(c)						
Lead	0.0005	7.49E-06	4.32E-06	3.18E-06	(c)	0.00123	2.48E-07	0.00E+00	2.48E-07	(k)	
Mangenese	0.00038	5.70E-06	3.28E-06	2.41E-06	(c)	0.00082	1.65E-07	0.00E+00	1.65E-07	(k)	(h) S = weight % sulfur in oil (Title V Application, December 1995) Boilers <100 MMBtu/hr: SOx Emission Factor = 144 * S
Mercury	0.00026	3.90E-06	2.25E-06	1.65E-06	(c)	0.00041	8.26E-08	0.00E+00	8.26E-08	(k)	
Napthalene	0.00061	9.14E-06	5.27E-06	3.87E-06	(c)						
Nickel	0.0021	3.15E-05	1.81E-05	1.33E-05	(c)	0.00041	8.26E-08	0.00E+00	8.26E-08	(k)	
POM	0.000088	1.32E-06	7.60E-07	5.59E-07	(c)	0.0033	6.63E-07	0.00E+00	6.63E-07	(k)	S(%)= 0.34
Selenium	0.000024	3.60E-07	2.07E-07	1.52E-07	(c)	0.00206	4.13E-07	0.00E+00	4.13E-07	(k)	(i) AP-42, 9/98, Section 1.3, *Fuel Oil Combustion* , Table 1.3-3 NMTOC.
Toluene	0.0034	5.10E-05	2.94E-05	2.16E-05	(c)						
TOTAL HAPS		2.83E-02	1.63E-02	1.20E-02			1.17E-05	0.00E+00	1.17E-05		
EPCRA 313			**lbs./year**					**lbs./year**			(j) AP-42 9/98, Section 1.3, Fuel Oil Combustion, Table 1.3-6. The PM emission factor is the sum of filterable and condensable PM.
Lead	0.0005	7.49E-06	0.015		(c)	0.00123	2.48E-07	4.96E-04		(k)	
Sulfuric Acid	0.60	8.99E-03	17.984		(e)	0.0	0.00E+00	0.000		(e)(h)	
Mercury	0.00026	3.90E-06	7.79E-03		(c)	0.00041	8.26E-08	1.65E-04		(k)	
PACs	8.69E-07	1.30E-08	2.60E-05		(f)	1.65E-05	3.32E-09	6.63E-06		(f)	(k) AP-42, 9/98, Section 1.3, Fuel Oil Combustion, Tables 1.3-8 - 1.3-10.
Benzo(g,h,i) perylene	1.20E-06	1.80E-08	3.60E-05		(c)	2.26E-06	4.54E-10	9.09E-07		(f)	

2006 Generator Hours

								First 6 Month Readings 2006			Second 6 Month Readings 2006		
TA	Bldg	Manufacturer	MODEL	KW	Fuel Type	Reading Date 2nd half 06	Reading 2nd half 06	6 Month Reading Date	Reading	Hours Run	12 Month Reading Date	Reading	Hours Run
3	40	Onan Sons	1500DVE15R31374B	150	Diesel	Nov-05	0.0	Apr-06	1.6	1.6	Dec-06	3.2	1.6
3	223	Onan Sons		45	Nat. Gas	Nov-05	469.1	Apr-06	473.2	4.1	Dec-06	478	4.8
3	440	Cummins	500FDR5051	150	Diesel	Dec-05	98.0	Apr-06	114.5	16.5	Dec-06	121.8	7.3
3	440	Cummins	DFGA-5005210	500	Diesel	Dec-05	42.9	Apr-06	60.7	17.8	Dec-06	69.5	8.8
3	1076	Cummins	DGBB-5601289	35	Diesel	Dec-05	44.5	May-06	80.6	36.1	Dec-06	101.2	20.6
3	1404	Cummins	DFLC-5554001	1250	Diesel	Dec-05	79.0	May-06	112.9	33.9	Dec-06	287.9	175
3	1498	Caterpillar		600	Diesel	Nov-05	281.0	Apr-06	286.0	5.0	Dec-06	303	17
3	2322	Onan Sons		80	Diesel	Nov-05	202.8	Apr-06	284.4	81.6	Dec-06	329.1	44.7
16	980	Cummins	KTA50-G2	1100	Diesel	Dec-05	10.4	May-06	63.6	53.2	Dec-06	226.3	162.7
16	1374	Onan Sons	60ENA	60	Nat. Gas	Nov-05	978.0	Apr-06	1018.6	40.6	Dec-06	1039.4	20.8
18	31	Onan Sons	275DFML29807N	275	Diesel	Dec-05	160.0	May-06	172.2	12.2	Dec-06	173.4	1.2
21	155	Onan Sons	750.ODFV-4XR	750	Diesel	Nov-05	837.8	Apr-06	849.1	11.3	Dec-06	851.6	2.5
21	357	Caterpillar		125	Diesel	Nov-05	456.5	Apr-06	467.9	11.4	Dec-06	497.5	29.6
60	Yard	Onan Sons	H1750DSG15	175	Diesel	Nov-05	2934.0	Apr-06	2962.7	28.7	Dec-06	3054.4	91.7
60	Yard	Onan Sons		350	Diesel	Nov-05	1878.1	Apr-06	2506.4	628.3	Dec-06	2619.4	113
60	Yard	Cummins	150DGFA	150	Diesel	Nov-05	1083.5	Apr-06	1145.0	61.5	Dec-06	1147	2
33	20	Kohler	30ROZ	30	Diesel	Nov-05	915.2	May-06	916.7	1.5	Dec-06	919	2.3
33	151	Caterpillar	XQ225	225	Diesel	Nov-05	2944.0	May-06	2944.0	0.0	Dec-06	2944	0
33	208	Kohler	1600ROZD	1600	Diesel	Nov-05	4.9	May-06	4.9	0.0	Dec-06	9.3	4.4
33	Point	Onan Sons	80DG10A	80	Diesel	Nov-05	7643.1	May-06	7643.1	0.0	Dec-06	7643.1	0
35	2	Onan Sons	100DGDB	100	Diesel	Dec-05	115.3	May-06	115.3	0.0	Dec-06	115.5	0.2
43	1	Cummins	4BT3.9-GC	50	Diesel	Nov-05	356.7	Apr-06	362.1	5.4	Dec-06	369.4	7.3
43	1	Onan Sons		150	Diesel	Nov-05	506.6	Apr-06	530.2	23.6	Dec-06	562.6	32.4
46	335	Onan Sons	300DEFCB	300	Diesel	Nov-05	784.6	May-06	824.6	40.0	Dec-06	873.8	49.2
48	45	Onan Sons	DFCB-5740130	300	Diesel	Nov-05	343.7	May-06	2.9	2.9	Dec-06	16	13.1
50	37	Cummins	680FDR5059FF	500	Diesel	Nov-05	475.4	Apr-06	480.4	5.0	Dec-06	485.1	4.7
50	184	Onan Sons	DGFA-568741	150	Nat. Gas	Nov-05	92.1	Apr-06	112.1	20.0	Dec-06	153.6	41.5
50	188	Onan Sons	L940563879	1250	Diesel	Nov-05	142.7	Apr-06	148.1	5.4	Dec-06	149	0.9
53	1	Onan Sons		60	Nat. Gas	Nov-05	1067.1	Apr-06	1110.9	43.8	Dec-06	1165.4	54.5
53	2	Kato Eng.	Kaman	50	Diesel	Nov-05	194.3	May-06	194.3	0.0	Dec-06	194.3	0
53	M	Cummins		60	Diesel	Nov-05	4440.0	May-06	4440.1	0.1	Dec-06	4440.1	0
53	M	Onan Sons		12.5	Nat. Gas	Nov-05	581.5	May-06	581.5	0.0	Dec-06	581.5	0
54	412	Olympian	95M-07874-F	500	Diesel	Nov-05	269.2	Apr-06	282.5	13.3	Dec-06	292	9.5
55	5			100	Nat. Gas	Dec-05	62.4	Apr-06	65.7	3.3	Dec-06	71.3	5.6
55	8	Detroit		600	Diesel	Dec-05	782.9	May-06	792.2	9.3	Dec-06	805.3	13.1
55	364	Onan Sons	1250DFLC-4987	1250	Diesel	Dec-05	11.9	May-06	23.2	11.3	Dec-06	52.6	29.4
55	28	Onan Sons		40	Diesel	Dec-05	45.1	Apr-06	47.2	2.1	Dec-06	47.3	0.1
55	47	Onan Sons	1465	200	Diesel	Nov-05	492.3	Apr-06	500.1	7.8	Dec-06	515.6	15.5
55	142	Cummins	DFEB-4963414	400	Diesel	Dec-05	75.0	Apr-06	79.4	4.4	Dec-06	88.8	9.4
59	1	Allis Chalmers	2884-0703	90	Diesel	Nov-05	736.8	Apr-06	742.0	5.2	Dec-06	749.3	7.3
63	Yard	Murphy		20	Diesel	Nov-05	569.9	May-06	715.9	146.0	Dec-06	715.9	0
64	1	Onan Sons		250	Diesel	Nov-05	134.5	May-06	140.4	5.9	Dec-06	148	7.6
64	39	Onan Sons		20	Diesel	Dec-05	189.9	May-06	189.9	0.0	Dec-06	189.9	0
69	33	Cummins	DFLC-5568730	1250	Diesel	Nov-05	35.0	Apr-06	40.6	5.6	Dec-06	53.2	12.6
	44	Generators in use							TOTAL	1405.7		TOTAL	1023.9

Annual average of hours per unit	27.6	First 6 month average hours per unit	31.9	Second half average hours per unit	23.3

2006 TA-33 Generator Emission Factors

EMISSION FACTORS	Nox [(a)]	CO [(a)]	Sox [(b)]	PM [(b)]	PM10 [(b)]	VOC [(a)]
	lb/kw-hr	lb/kw-hr	lb/kw-hr	lb/kw-hr	lb/kw-hr	lb/kw-hr
Large Diesel fired	0.027	0.022	0.004	0.0009	0.0009	0.0005

(a) Manufacturer supplied emission factor

(b) Emission factors from AP-42, Table 3.3-1 & Table 3.4-1

References:
447 kw is the size limit for determining large vs. small diesel fired generator. This information was taken from the operating permit application.
(a) The AP-42 (fifth edition) emissions factor uses units of lb/hp-hr. There are 1.341 hp-hrs in a kwh. Therefore, take pounds/hp-hr x 1.341 hp-hr/kwh to obtain the emission factor in lb/kwh.
(b) Emission factors for large diesel fired boilers were taken from AP-42 (fifth edition) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4.

2006 GENERATOR HOURS

Location	First 6 Month Emissions of 2006						Second 6 Month Emissions of 2006					
	NOx (lb/yr)	CO (lb/yr)	SOx (lb/yr)	PM (lb/yr)	VOC (lb/yr)	HAPs (lb/yr)	NOx (lb/yr)	CO (lb/yr)	SOx (lb/yr)	PM (lb/yr)	VOC (lb/yr)	HAPs (lb/yr)
3-40	10.1	2.2	0.7	0.7	0.7	3.2E-03	10.1	2.2	0.7	0.7	0.7	3.2E-03
3-223	1.5	2.4	0.0	0.0	0.0	2.1E-02	1.7	2.8	0.0	0.0	0.0	2.4E-02
3-440	104.0	22.3	7.4	7.4	7.4	3.3E-02	46.0	9.9	3.3	3.3	3.3	1.5E-02
3-440	284.8	62.3	97.9	8.9	8.9	5.2E-02	140.8	30.8	48.4	4.4	4.4	2.6E-02
3-1076	53.1	11.4	3.8	3.8	3.8	1.7E-02	30.3	6.5	2.2	2.2	2.2	9.7E-03
3-1404	1356.0	296.6	466.1	42.4	42.4	2.5E-01	7000.0	1531.3	2406.3	218.8	218.8	1.3E+00
3-1498	96.0	21.0	33.0	3.0	3.0	1.7E-02	326.4	71.4	112.2	10.2	10.2	5.9E-02
3-2322	274.2	58.8	19.6	19.6	19.6	8.8E-02	150.2	32.2	10.7	10.7	10.7	4.8E-02
16-980	1872.6	409.6	643.7	58.5	58.5	3.4E-01	5727.0	1252.8	1968.7	179.0	179.0	1.0E+00
16-1374	19.5	31.7	0.0	0.1	0.2	2.7E-01	10.0	16.2	0.0	0.0	0.1	1.4E-01
18-31	140.9	30.2	10.1	10.1	10.1	4.5E-02	13.9	3.0	1.0	1.0	1.0	4.5E-03
21-155	271.2	59.3	93.2	8.5	8.5	4.9E-02	60.0	13.1	20.6	1.9	1.9	1.1E-02
21-357	59.8	12.8	4.3	4.3	4.3	1.9E-02	155.4	33.3	11.1	11.1	11.1	5.0E-02
60-Yard	210.9	45.2	15.1	15.1	15.1	6.8E-02	674.0	144.4	48.1	48.1	48.1	2.2E-01
60-Yard	9236.0	1979.1	659.7	659.7	659.7	3.0E+00	1661.1	356.0	118.7	118.7	118.7	5.3E-01
60-Yard	387.5	83.0	27.7	27.7	27.7	1.2E-01	12.6	2.7	0.9	0.9	0.9	4.1E-03
33-20	1.9	0.4	0.1	0.1	0.1	6.1E-04	2.9	0.6	0.2	0.2	0.2	9.3E-04
33-151	0.0	0.0	0.0	0.0	0.0	0.0E+00	0.0	0.0	0.0	0.0	0.0	0.0E+00
33-208	0.0	0.0	0.0	0.0	0.0	0.0E+00	225.3	49.3	77.4	7.0	7.0	4.1E-02
33-Point	0.0	0.0	0.0	0.0	0.0	0.0E+00	0.0	0.0	0.0	0.0	0.0	0.0E+00
35-2	0.0	0.0	0.0	0.0	0.0	0.0E+00	0.8	0.2	0.1	0.1	0.1	2.7E-04
43-1	11.3	2.4	0.8	0.8	0.8	3.7E-03	15.3	3.3	1.1	1.1	1.1	4.9E-03
43-1	148.7	31.9	10.6	10.6	10.6	4.8E-02	204.1	43.7	14.6	14.6	14.6	6.6E-02
46-335	504.0	108.0	36.0	36.0	36.0	1.6E-01	619.9	132.8	44.3	44.3	44.3	2.0E-01
48-45	36.5	7.8	2.6	2.6	2.6	1.2E-02	165.1	35.4	11.8	11.8	11.8	5.3E-02
50-37	80.0	17.5	27.5	2.5	2.5	1.5E-02	75.2	16.5	25.9	2.4	2.4	1.4E-02
50-184	24.0	39.0	0.0	0.1	0.3	3.4E-01	49.8	80.9	0.0	0.2	0.6	7.0E-01
50-188	216.0	47.3	74.3	6.8	6.8	3.9E-02	36.0	7.9	12.4	1.1	1.1	6.5E-03
53-1	21.0	34.2	0.0	0.1	0.3	3.0E-01	26.2	42.5	0.0	0.1	0.3	3.7E-01
53-2	0.0	0.0	0.0	0.0	0.0	0.0E+00	0.0	0.0	0.0	0.0	0.0	0.0E+00
53-M	0.3	0.1	0.0	0.0	0.0	8.1E-05	0.0	0.0	0.0	0.0	0.0	0.0E+00
53-M	0.0	0.0	0.0	0.0	0.0	0.0E+00	0.0	0.0	0.0	0.0	0.0	0.0E+00
54-412	212.8	46.6	73.2	6.7	6.7	3.9E-02	152.0	33.3	52.3	4.8	4.8	2.8E-02
55-5	2.6	4.3	0.0	0.0	0.0	3.7E-02	4.5	7.3	0.0	0.0	0.1	6.3E-02
55-8	178.6	39.1	61.4	5.6	5.6	3.2E-02	251.5	55.0	86.5	7.9	7.9	4.6E-02
55-364	452.0	98.9	155.4	14.1	14.1	8.2E-02	1176.0	257.3	404.3	36.8	36.8	2.1E-01
55-28	3.5	0.8	0.3	0.3	0.3	1.1E-03	0.2	0.0	0.0	0.0	0.0	5.4E-05
55-47	65.5	14.0	4.7	4.7	4.7	2.1E-02	130.2	27.9	9.3	9.3	9.3	4.2E-02
55-142	73.9	15.8	5.3	5.3	5.3	2.4E-02	157.9	33.8	11.3	11.3	11.3	5.1E-02
59-1	19.7	4.2	1.4	1.4	1.4	6.3E-03	27.6	5.9	2.0	2.0	2.0	8.9E-03
63-Yard	122.6	26.3	8.8	8.8	8.8	3.9E-02	0.0	0.0	0.0	0.0	0.0	0.0E+00
64-1	62.0	13.3	4.4	4.4	4.4	2.0E-02	79.8	17.1	5.7	5.7	5.7	2.6E-02
64-39	0.0	0.0	0.0	0.0	0.0	0.0E+00	0.0	0.0	0.0	0.0	0.0	0.0E+00
69-33	224.0	49.0	77.0	7.0	7.0	4.1E-02	504.0	110.3	173.3	15.8	15.8	9.2E-02
Total Emissions lbs/6 months	**16839.0**	**3728.6**	**2626.0**	**987.5**	**988.0**	**5.6**	**19923.7**	**4469.3**	**5685.0**	**787.2**	**787.9**	**5.5**
Tons/6 months	**8.4**	**1.9**	**1.3**	**0.5**	**0.5**	**2.8E-03**	**10.0**	**2.2**	**2.8**	**0.4**	**0.4**	**2.7E-03**

YEARLY TOTAL	NOx	CO	SOx	PM	VOC	HAPs
Tons/Year	**18.38**	**4.10**	**4.16**	**0.89**	**0.89**	**0.006**

2006 EMISSIONS FACTORS

		HAPS (lbs)											
		Acrolein		Naphthalene		1,1,2,2-Tetrachloroethane		1,1,2-Trichloroethane		1,3-Dichloropropene		Carbon Tetrachloride	
Emission Factors (lb/kwh)	Natural Gas	8.98E-06		3.32E-07		8.64E-08		5.23E-08		4.34E-08		6.05E-08	
	Diesel (small)	3.16E-07		2.90E-07									
	Diesel (large)	2.69E-08		4.44E-07									
Location		1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
3-40		7.58E-05	7.58E-05	6.95E-05	6.95E-05								
3-223		1.66E-03	1.94E-03	6.12E-05	7.16E-05	1.59E-05	1.87E-05	9.64E-06	1.13E-05	8.00E-06	9.37E-06	1.12E-05	1.31E-05
3-440		7.82E-04	3.46E-04	7.17E-04	3.17E-04								
3-440		2.40E-04	1.18E-04	3.95E-03	1.95E-03								
3-1076		3.99E-04	2.28E-04	3.66E-04	2.09E-04								
3-1404		1.14E-03	5.89E-03	1.88E-02	9.71E-02								
3-1498		8.07E-05	2.75E-04	1.33E-03	4.53E-03								
3-2322		2.06E-03	1.13E-03	1.89E-03	1.04E-03								
16-980		1.57E-03	4.82E-03	2.60E-02	7.95E-02								
16-1374		2.19E-02	1.12E-02	8.08E-04	4.14E-04	2.10E-04	1.08E-04	1.27E-04	6.52E-05	1.06E-04	5.41E-05	1.47E-04	7.54E-05
18-31		1.06E-03	1.04E-04	9.72E-04	9.56E-05								
21-155		2.28E-04	5.05E-05	3.76E-03	8.32E-04								
21-357		4.50E-04	1.17E-03	4.13E-04	1.07E-03								
60-Yard		1.59E-03	5.07E-03	1.45E-03	4.65E-03								
60-Yard		6.95E-02	1.25E-02	6.37E-02	1.15E-02								
60-Yard		2.91E-03	9.48E-05	2.67E-03	8.69E-05								
33-20		1.42E-05	2.18E-05	1.30E-05	2.00E-05								
33-151		0.00E+00	0.00E+00	0.00E+00	0.00E+00								
33-208		0.00E+00	1.89E-04	0.00E+00	3.13E-03								
33-Point		0.00E+00	0.00E+00	0.00E+00	0.00E+00								
35-2		0.00E+00	6.32E-06	0.00E+00	5.79E-06								
43-1		8.53E-05	1.15E-04	7.82E-05	1.06E-04								
43-1		1.12E-03	1.54E-03	1.03E-03	1.41E-03								
46-335		3.79E-03	4.66E-03	3.48E-03	4.27E-03								
48-45		2.75E-04	1.24E-03	2.52E-04	1.14E-03								
50-37		6.73E-05	6.32E-05	1.11E-03	1.04E-03								
50-184		2.69E-02	5.59E-02	9.95E-04	2.06E-03	2.59E-04	5.38E-04	1.57E-04	3.25E-04	1.30E-04	2.70E-04	1.81E-04	3.76E-04
50-188		1.82E-04	3.03E-05	3.00E-03	4.99E-04								
53-1		2.36E-02	2.94E-02	8.72E-04	1.08E-03	2.27E-04	2.83E-04	1.37E-04	1.71E-04	1.14E-04	1.42E-04	1.59E-04	1.98E-04
53-2		0.00E+00	0.00E+00	0.00E+00	0.00E+00								
53-M		1.90E-06	0.00E+00	1.74E-06	0.00E+00								
53-M		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
54-412		1.79E-04	1.28E-04	2.95E-03	2.11E-03								
55-5		2.96E-03	5.03E-03	1.09E-04	1.86E-04	2.85E-05	4.84E-05	1.72E-05	2.93E-05	1.43E-05	2.43E-05	1.99E-05	3.39E-05
55-8		1.50E-04	2.12E-04	2.48E-03	3.49E-03								
55-364		3.80E-04	9.89E-04	6.27E-03	1.63E-02								
55-28		2.65E-05	1.26E-06	2.43E-05	1.16E-06								
55-47		4.93E-04	9.79E-04	4.52E-04	8.98E-04								
55-142		5.56E-04	1.19E-03	5.10E-04	1.09E-03								
59-1		1.48E-04	2.08E-04	1.36E-04	1.90E-04								
63-Yard		9.22E-04	0.00E+00	8.46E-04	0.00E+00								
64-1		4.66E-04	6.00E-04	4.27E-04	5.50E-04								
64-39		0.00E+00	0.00E+00	0.00E+00	0.00E+00								
69-33		1.88E-04	4.24E-04	3.11E-03	6.99E-03								
Total Emissions lbs		**1.68E-01**	**1.48E-01**	**1.55E-01**	**2.50E-01**	**7.41E-04**	**9.95E-04**	**4.48E-04**	**6.02E-04**	**3.72E-04**	**5.00E-04**	**5.19E-04**	**6.96E-04**
Tons/Half/HAP		**8.41E-05**	**7.40E-05**	**7.75E-05**	**1.25E-04**	**3.71E-07**	**4.98E-07**	**2.24E-07**	**3.01E-07**	**1.86E-07**	**2.50E-07**	**2.59E-07**	**3.48E-07**
Tons/Year/HAP		**1.58E-04**		**2.03E-04**		**8.68E-07**		**5.25E-07**		**4.36E-07**		**6.07E-07**	
Tons/Year Total													

Emission Factors from AP-42, Volume 1, Fifth Edition (Small Diesel Engines Table 3.3-2, Large Diesel Engines Table 3.4-4, Natural Gas 4-Stroke Engines Table 3.2-3)

2006 EMISSIONS FACTORS

		HAPS (lbs)											
		Acrolein		Naphthalene		1,1,2,2-Tetrachloroethane		1,1,2-Trichloroethane		1,3-Dichloropropene		Carbon Tetrachloride	
Emission Factors (lb/kwh)	Natural Gas	8.98E-06		3.32E-07		8.64E-08		5.23E-08		4.34E-08		6.05E-08	
	Diesel (small)	3.16E-07		2.90E-07									
	Diesel (large)	2.69E-08		4.44E-07									
Location		1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
3-40		7.58E-05	7.58E-05	6.95E-05	6.95E-05								
3-223		1.66E-03	1.94E-03	6.12E-05	7.16E-05	1.59E-05	1.87E-05	9.64E-06	1.13E-05	8.00E-06	9.37E-06	1.12E-05	1.31E-05
3-440		7.82E-04	3.46E-04	7.17E-04	3.17E-04								
3-440		2.40E-04	1.18E-04	3.95E-03	1.95E-03								
3-1076		3.99E-04	2.28E-04	3.66E-04	2.09E-04								
3-1404		1.14E-03	5.89E-03	1.88E-02	9.71E-02								
3-1498		8.07E-05	2.75E-04	1.33E-03	4.53E-03								
3-2322		2.06E-03	1.13E-03	1.89E-03	1.04E-03								
16-980		1.57E-03	4.82E-03	2.60E-02	7.95E-02								
16-1374		2.19E-02	1.12E-02	8.08E-04	4.14E-04	2.10E-04	1.08E-04	1.27E-04	6.52E-05	1.06E-04	5.41E-05	1.47E-04	7.54E-05
18-31		1.06E-03	1.04E-04	9.72E-04	9.56E-05								
21-155		2.28E-04	5.05E-05	3.76E-03	8.32E-04								
21-357		4.50E-04	1.17E-03	4.13E-04	1.07E-03								
60-Yard		1.59E-03	5.07E-03	1.45E-03	4.65E-03								
60-Yard		6.95E-02	1.25E-02	6.37E-02	1.15E-02								
60-Yard		2.91E-03	9.48E-05	2.67E-03	8.69E-05								
33-20		1.42E-05	2.18E-05	1.30E-05	2.00E-05								
33-151		0.00E+00	0.00E+00	0.00E+00	0.00E+00								
33-208		0.00E+00	1.89E-04	0.00E+00	3.13E-03								
33-Point		0.00E+00	0.00E+00	0.00E+00	0.00E+00								
35-2		0.00E+00	6.32E-06	0.00E+00	5.79E-06								
43-1		8.53E-05	1.15E-04	7.82E-05	1.06E-04								
43-1		1.12E-03	1.54E-03	1.03E-03	1.41E-03								
46-335		3.79E-03	4.66E-03	3.48E-03	4.27E-03								
48-45		2.75E-04	1.24E-03	2.52E-04	1.14E-03								
50-37		6.73E-05	6.32E-05	1.11E-03	1.04E-03								
50-184		2.69E-02	5.59E-02	9.95E-04	2.06E-03	2.59E-04	5.38E-04	1.57E-04	3.25E-04	1.30E-04	2.70E-04	1.81E-04	3.76E-04
50-188		1.82E-04	3.03E-05	3.00E-03	4.99E-04								
53-1		2.36E-02	2.94E-02	8.72E-04	1.08E-03	2.27E-04	2.83E-04	1.37E-04	1.71E-04	1.14E-04	1.42E-04	1.59E-04	1.98E-04
53-2		0.00E+00	0.00E+00	0.00E+00	0.00E+00								
53-M		1.90E-06	0.00E+00	1.74E-06	0.00E+00								
53-M		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
54-412		1.79E-04	1.28E-04	2.95E-03	2.11E-03								
55-5		2.96E-03	5.03E-03	1.09E-04	1.86E-04	2.85E-05	4.84E-05	1.72E-05	2.93E-05	1.43E-05	2.43E-05	1.99E-05	3.39E-05
55-8		1.50E-04	2.12E-04	2.48E-03	3.49E-03								
55-364		3.80E-04	9.89E-04	6.27E-03	1.63E-02								
55-28		2.65E-05	1.26E-06	2.43E-05	1.16E-06								
55-47		4.93E-04	9.79E-04	4.52E-04	8.98E-04								
55-142		5.56E-04	1.19E-03	5.10E-04	1.09E-03								
59-1		1.48E-04	2.08E-04	1.36E-04	1.90E-04								
63-Yard		9.22E-04	0.00E+00	8.46E-04	0.00E+00								
64-1		4.66E-04	6.00E-04	4.27E-04	5.50E-04								
64-39		0.00E+00	0.00E+00	0.00E+00	0.00E+00								
69-33		1.88E-04	4.24E-04	3.11E-03	6.99E-03								
Total Emissions lbs		**1.68E-01**	**1.48E-01**	**1.55E-01**	**2.50E-01**	**7.41E-04**	**9.95E-04**	**4.48E-04**	**6.02E-04**	**3.72E-04**	**5.00E-04**	**5.19E-04**	**6.96E-04**
Tons/Half/HAP		**8.41E-05**	**7.40E-05**	**7.75E-05**	**1.25E-04**	**3.71E-07**	**4.98E-07**	**2.24E-07**	**3.01E-07**	**1.86E-07**	**2.50E-07**	**2.59E-07**	**3.48E-07**
Tons/Year/HAP		**1.58E-04**		**2.03E-04**		**8.68E-07**		**5.25E-07**		**4.36E-07**		**6.07E-07**	
Tons/Year Total													

Emission Factors from AP-42, Volume 1, Fifth Edition (Small Diesel Engines Table 3.3-2, Large Diesel Engines Table 3.4-4, Natural Gas 4-Stroke Engines Table 3.2-3)

2006 EMISSIONS FACTORS

		HAPS (lbs)											
		Chlorobenzene		Chloroform		Ethylbenzene		Ethylene Dibromide		Methanol		Methylene Chloride	
Emission Factors (lb/kwh)	Natural Gas	4.41E-08		4.68E-08		8.47E-08		7.27E-08		1.05E-05		1.41E-07	
	Diesel (small)												
	Diesel (large)												
Location		1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
3-40													
3-223		8.13E-06	9.52E-06	8.63E-06	1.01E-05	1.56E-05	1.83E-05	1.34E-05	1.57E-05	1.93E-03	2.26E-03	2.60E-05	3.04E-05
3-440													
3-440													
3-1076													
3-1404													
3-1498													
3-2322													
16-980													
16-1374		1.07E-04	5.50E-05	1.14E-04	5.84E-05	2.06E-04	1.06E-04	1.77E-04	9.08E-05	2.55E-02	1.30E-02	3.43E-04	1.76E-04
18-31													
21-155													
21-357													
60-Yard													
60-Yard													
60-Yard													
33-20													
33-151													
33-208													
33-Point													
35-2													
43-1													
43-1													
46-335													
48-45													
50-37													
50-184		1.32E-04	2.74E-04	1.40E-04	2.91E-04	2.54E-04	5.27E-04	2.18E-04	4.53E-04	3.14E-02	6.51E-02	4.22E-04	8.76E-04
50-188													
53-1		1.16E-04	1.44E-04	1.23E-04	1.53E-04	2.23E-04	2.77E-04	1.91E-04	2.38E-04	2.75E-02	3.42E-02	3.70E-04	4.60E-04
53-2													
53-M													
53-M		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
54-412													
55-5		1.45E-05	2.47E-05	1.54E-05	2.62E-05	2.80E-05	4.74E-05	2.40E-05	4.07E-05	3.45E-03	5.85E-03	4.64E-05	7.88E-05
55-8													
55-364													
55-28													
55-47													
55-142													
59-1													
63-Yard													
64-1													
64-39													
69-33													
Total Emissions lbs		**3.78E-04**	**5.07E-04**	**4.01E-04**	**5.39E-04**	**7.27E-04**	**9.76E-04**	**6.24E-04**	**8.38E-04**	**8.97E-02**	**1.20E-01**	**1.21E-03**	**1.62E-03**
Tons/Half/HAP		**1.89E-07**	**2.54E-07**	**2.01E-07**	**2.69E-07**	**3.63E-07**	**4.88E-07**	**3.12E-07**	**4.19E-07**	**4.48E-05**	**6.02E-05**	**6.04E-07**	**8.10E-07**
Tons/Year/HAP		**4.43E-07**		**4.70E-07**		**8.51E-07**		**7.31E-07**		**1.05E-04**		**1.41E-06**	
Tons/Year Total													

Emission Factors from AP-42, Volume 1, Fifth Edition (Small Diesel Engines Table 3.3-2, Large Diesel Engines Table 3.4-4, Natural Gas 4-Stroke Engines Table 3.2-3)

2006 EMISSIONS FACTORS

		HAPS (lbs)									
		PAH		Styrene		Toluene		Vinyl Chloride		Individual Generator HAP Emissions (lbs)	
Emission Factors (lb/kwh)	Natural Gas	4.82E-07		4.06E-08		1.91E-06		2.45E-08			
	Diesel (small)	5.74E-07									
	Diesel (large)	7.24E-07									
Location		1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
3-40		1.38E-04	1.38E-04							3.24E-03	3.24E-03
3-223		8.88E-05	1.04E-04	7.50E-06	8.78E-06	3.52E-04	4.12E-04	4.52E-06	5.30E-06	2.08E-02	2.43E-02
3-440		1.42E-03	6.28E-04							3.35E-02	1.48E-02
3-440		6.44E-03	3.19E-03							5.18E-02	2.56E-02
3-1076		7.25E-04	4.14E-04							1.71E-02	9.75E-03
3-1404		3.07E-02	1.58E-01							2.47E-01	1.27E+00
3-1498		2.17E-03	7.39E-03							1.75E-02	5.94E-02
3-2322		3.75E-03	2.05E-03							8.83E-02	4.83E-02
16-980		4.24E-02	1.30E-01							3.41E-01	1.04E+00
16-1374		1.17E-03	6.01E-04	9.90E-05	5.07E-05	4.64E-03	2.38E-03	5.97E-05	3.06E-05	2.74E-01	1.41E-01
18-31		1.93E-03	1.89E-04							4.54E-02	4.46E-03
21-155		6.14E-03	1.36E-03							4.93E-02	1.09E-02
21-357		8.18E-04	2.12E-03							1.93E-02	5.00E-02
60-Yard		2.88E-03	9.21E-03							6.79E-02	2.17E-01
60-Yard		1.26E-01	2.27E-02							2.97E+00	5.35E-01
60-Yard		5.29E-03	1.72E-04							1.25E-01	4.06E-03
33-20		2.58E-05	3.96E-05							6.08E-04	9.33E-04
33-151		0.00E+00	0.00E+00							0.00E+00	0.00E+00
33-208		0.00E+00	5.10E-03							0.00E+00	4.10E-02
33-Point		0.00E+00	0.00E+00							0.00E+00	0.00E+00
35-2		0.00E+00	1.15E-05							0.00E+00	2.70E-04
43-1		1.55E-04	2.09E-04							3.65E-03	4.93E-03
43-1		2.03E-03	2.79E-03							4.79E-02	6.57E-02
46-335		6.89E-03	8.47E-03							1.62E-01	2.00E-01
48-45		4.99E-04	2.25E-03							1.18E-02	5.31E-02
50-37		1.81E-03	1.70E-03							1.45E-02	1.37E-02
50-184		1.44E-03	3.00E-03	1.22E-04	2.53E-04	5.72E-03	1.19E-02	7.36E-05	1.53E-04	3.38E-01	7.01E-01
50-188		4.89E-03	8.15E-04							3.93E-02	6.55E-03
53-1		1.27E-03	1.57E-03	1.07E-04	1.33E-04	5.01E-03	6.23E-03	6.44E-05	8.02E-05	2.96E-01	3.68E-01
53-2		0.00E+00	0.00E+00							0.00E+00	0.00E+00
53-M		3.44E-06	0.00E+00							8.11E-05	0.00E+00
53-M		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
54-412		4.81E-03	3.44E-03							3.87E-02	2.76E-02
55-5		1.59E-04	2.70E-04	1.34E-05	2.28E-05	6.29E-04	1.07E-03	8.09E-06	1.37E-05	3.72E-02	6.31E-02
55-8		4.04E-03	5.69E-03							3.25E-02	4.57E-02
55-364		1.02E-02	2.66E-02							8.22E-02	2.14E-01
55-28		4.82E-05	2.30E-06							1.14E-03	5.41E-05
55-47		8.95E-04	1.78E-03							2.11E-02	4.19E-02
55-142		1.01E-03	2.16E-03							2.38E-02	5.08E-02
59-1		2.69E-04	3.77E-04							6.33E-03	8.88E-03
63-Yard		1.68E-03	0.00E+00							3.95E-02	0.00E+00
64-1		8.46E-04	1.09E-03							1.99E-02	2.57E-02
64-39		0.00E+00	0.00E+00							0.00E+00	0.00E+00
69-33		5.07E-03	1.14E-02							4.07E-02	9.17E-02
Total Emissions lbs		**2.80E-01**	**4.17E-01**	**3.49E-04**	**4.68E-04**	**1.63E-02**	**2.20E-02**	**2.10E-04**	**2.82E-04**	**5.63E+00**	**5.49E+00**
Tons/Half/HAP		**1.40E-04**	**2.08E-04**	**1.74E-07**	**2.34E-07**	**8.17E-06**	**1.10E-05**	**1.05E-07**	**1.41E-07**		
Tons/Year/HAP		**3.49E-04**		**4.08E-07**		**1.92E-05**		**2.46E-07**			
Tons/Year Total											

Emission Factors from AP-42, Volume 1, Fifth Edition (Small Diesel Engines Table 3.3-2, Large Diesel Engines Table 3.4-4, Natural Gas 4-Stroke Engines Table 3.2-3)

2006 Usage Data for TA-55 Trichloroethylene Degreaser Operations

Date Measured	Initial Solvent Level (inches)	Volume Added (liters)	Level Added (inches)	Volume Removed (liters)	Level Removed (inches)
Jan-03-2006	6.5	0	0	0	0
Feb-01-2006	6.3	0	0	0	0
Mar-01-2006	5.9	0	0	0	0
Apr-03-2006	5.5	0	0	0	0
Apr-10-2006	5.5	3.34	1.7	0	0
Apr-27-2006	7.2	0	0	14.15	7.2
May-01-2006	0	0	0	0	0
May-15-2006	0	14.74	7.5	0	0
Jun-07-2006	7.5	0	0	0	0
Jul-21-2006	7.5	0	0	0	0
Aug-22-2006	6.5	2.94	1.5	0	0
Sep-18-2006	8	0	0	0	0
Oct-25-2006	7.5	0	0	0	0
Nov-02-2006	7.5	14.35	7.3	14.74	7.5
Nov-06-2006	7.3	0.98	0.5	0	0
Dec-22-2006	7	1.96	1	0	0

Attachment B

2006 Annual Emissions Inventory Submittal to NMED

Los Alamos
NATIONAL LABORATORY
EST. 1943

Environmental Protection Division
P.O. Box 1663, MS J978
Los Alamos, New Mexico 87545
(505) 667-2211/FAX: (505) 665-8858

Date: March 20, 2007
Refer to: ENV-DO:07-008

Mr. Ron Duffy
New Mexico Environment Department
Air Quality Bureau
2048 Galisteo Street
Santa Fe, NM 87505

IDEA ID NO. 856 – LOS ALAMOS NATIONAL LABORATORY
2006 EMISSIONS INVENTORY REPORT REQUIRED UNDER 20.2.73 NMAC

Dear Mr. Duffy:

Enclosed is the 2006 Emissions Inventory Update for Los Alamos National Laboratory (LANL or Laboratory), required by Title 20, Chapter 2, Part 73 of the New Mexico Administrative Code (20.2.73 NMAC), Notice of Intent and Emissions Inventory Requirements.

We have updated the Excel worksheets that you provided, using the guidance in your instructions for the *2006 New Mexico Emissions Inventory Update.* All changes made to the worksheets are highlighted in yellow (additions).

In general, criteria pollutant emissions from LANL sources in 2006 are similar to emissions reported last year. Additionally, please note the following for our inventory for 2006:

- Per NMED request, emissions from natural gas and from No. 2 fuel oil have been reported separately for the boilers located at the TA-3 power plant and at the TA-21 steam plant.

- NMED has again required the reporting of HAP emissions, particulate matter emissions in the size of 2.5 microns in diameter or less ($PM_{2.5}$), and ammonia (NH_3) emissions in the 2006 Emissions Inventory. Therefore, this information is included in the 2006 Emissions Inventory.

- From the NMED 2006 Emission Inventory instructions, we are directed to "Report actual emissions of individual (speciated) hazardous air pollutants (HAPs) that are equal to or greater than 0.5 tons per year per emission unit." Therefore, for each source, LANL has only reported HAPs that are equal to or greater than 0.5 tons per year.

- Emissions of radionuclides other than radon from Laboratory operations, as reported to EPA under 40 CFR 61 Subpart H, resulted in a maximum offsite dose of 6.46 mrem during 2005. For 2006, this offsite dose is estimated to be 0.5 mrem. A final dose for 2006 will be reported to EPA in June 2007.

This submittal includes a diskette (Attachment 1) containing electronic copies of the updated spreadsheets and a signed certification statement (Attachment 2). We have also included a summary report that was prepared at the completion of the Emissions Inventory submittal for 2005 (Attachment 3). We followed the same methodology in preparing the 2006 emissions inventory updates as described in this report.

If you have any questions regarding this report, please contact Steve Story (665-2169) or Walt Whetham (665-8885), in the Laboratory's Ecology and Air Quality Group.

Sincerely,

Victoria A. George
Division Leader
Environmental Protection Division

VAG:alb

Enc: a/s

Cy:
V. Bynum, PADOPS, w/o enc., A102
R.Watkins, ADESH&Q, w/o enc., K491
S. Fong, DOE-LA-SO, w/o enc., A316
P. Wardwell, LC-ESH, w/o enc., A187
D. Wilburn, ENV-EAQ, w/o enc., J978
D. Janecky, ENV-EAQ, w/o enc., J978
J. Hurtle, ENV-EAQ, w/o enc., J978
S. Story, ENV-EAQ, w/o enc., J978
M. Stockton, ENV-EAQ, w/o enc., J978
D. Paulson, ENV-EAQ, w/o enc., J978
W. Whetham, ENV-EAQ, w/o enc., J978
IRM-RM550, w/o enc., A150
ENV-EAQ Emissions Inventory File
ENV-EAQ File
ENV-DO File

LA-UR-07-1634

Approved for public release; distribution is unlimited.

Title:	2006 Emissions Inventory Report
Author(s):	Walter Whetham
Intended for:	Ron Duffy, New Mexico Environmental Department

Attachment 2
2006 Emissions Inventory Certification Statement

2006 Emissions Inventory Certification

I, Victoria A. George, hereby certify on behalf of Los Alamos National Security, LLC (LANS), that the information and data submitted in the 2006 Emissions Inventory for Los Alamos National Laboratory with Permit Number P100M1 (IDEA/Tempo ID No. 856) are as complete, true and accurate as possible, to the best of my personal knowledge and professional expertise and experience.

Signed this twentieth day of March, 20 07, upon my oath of affirmation, before a notary of the State of New Mexico.

SIGNATURE (Responsible Company Official)	DATE	PHONE
	3/22/07	505 - 667-2211

PRINTED NAME	TITLE	COMPANY
Victoria A. George	Division Leader	LANS

Subscribed and sworn to before me on this 22nd day of March, 20 07.

My authorization as a Notary of the State of New Mexico expires on the day of 10th, 20 10.

NOTARY'S SIGNATURE	DATE
	3-22-07

NOTARY'S PRINTED NAME	NOTARY SEAL
Taylor A. Valdez	

856	Los Alamos National Laboratory	350280001	Agency Interest	Los Alamos National Laboratory	Standard Industrial Classification (SIC) Code	9711	National security
856	Los Alamos National Laboratory	350280001	Agency Interest	Los Alamos National Laboratory	North American Industry Classification (NAIC) Code	92811	National Security

856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	AQB-State/Local ID	006	Not Applicable
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Percent of Operation During Winter	25	percent of time
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Percent of Operation During Spring	25	percent of time
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Percent of Operation During Summer	25	percent of time
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Percent of Operation During Fall	25	percent of time
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Operating Time in Hours Per Day	5	h/d
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Operating Time in Days Per Week	5	d/week
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Operating Time in Weeks Per Year	52	weeks/y
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Operating Time in Hours Per Year	1920	h/y
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Input Materials Processed	516	Metal
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Standard Classification (SCC) Code	30903004	Industrial Processes, Fabricated Metal Products, Machining Operations, Specify Material**
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Beryllium in tons per year	2.00E-08	tons/y
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Beryllium calculation method	es	Estimate
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	BerylliumActual total efficiency controlled by Fabric Filter-Medium Temp ie 180F<T<250F	99.95	percent
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Particulate Matter (total suspended) in tons per year	2.00E-08	tons/y
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Actual Particulate Matter (total suspended) calculation method	es	Estimate
856	Los Alamos National Laboratory	350280001	006	Be Machining Ta35 Bldg213	Particulate Matter (total suspended)Actual total efficiency controlled by Fabric Filter-Medium Temp ie 180F<T<250F	99.95	percent

856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	AQB-State/Local ID	007		Not Applicable
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Percent of Operation During Winter	25		percent of time
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Percent of Operation During Spring	25		percent of time
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Percent of Operation During Summer	25		percent of time
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Percent of Operation During Fall	25		percent of time
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Operating Time in Hours Per Day	24		h/d
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Operating Time in Days Per Week	7		d/week
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Operating Time in Weeks Per Year	52		weeks/y
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Operating Time in Hours Per Year	8760		h/y
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Input Materials Processed	516		Metal Industrial Processes, Fabricated Metal Products, Machining Operations,
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Standard Classification (SCC) Code		30903004	Specify Material**
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Beryllium in tons per year		7.70E-09	tons/y
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Beryllium calculation method		es	Estimate
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	BerylliumActual total efficiency controlled by Fabric Filter-Medium Temp ie 180F<T<250F		99.95	percent
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Particulate Matter (total suspended) in tons per year		7.70E-09	tons/y
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Actual Particulate Matter (total suspended) calculation method		es	Estimate
856	Los Alamos National Laboratory	350280001	007	Be Machining Ta3 Bldg 141	Particulate Matter (total suspended)Actual total efficiency controlled by Fabric Filter-Medium Temp ie 180F<T<250F		99.95	percent

856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	AQB-State/Local ID	010	Not Applicable	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Percent of Operation During Winter	25	percent of time	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Percent of Operation During Spring	25	percent of time	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Percent of Operation During Summer	25	percent of time	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Percent of Operation During Fall	25	percent of time	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Operating Time in Hours Per Day	8	h/d	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Operating Time in Days Per Week	7	d/week	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Operating Time in Weeks Per Year	52	weeks/y	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Operating Time in Hours Per Year	2912	h/y	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Input Materials Processed	516	Metal	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Output Materials Processed		Industrial Processes, Fabricated Metal Products, Machining Operations, Specify	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Standard Classification (SCC) Code	30903004	Material**	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Aluminum in tons per year	1.60E-06	tons/y	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Aluminum calculation method AluminumActual total efficiency controlled by	ES	EPA emission factors (e.g., AP-42)	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Fabric Filter-Medium Temp ie 180F<T<250F	99.95	percent	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Beryllium in tons per year	1.60E-06	tons/y	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Actual Beryllium calculation method BerylliumActual total efficiency controlled by	ES	EPA emission factors (e.g., AP-42)	
856 Los Alamos National Laboratory	350280001	010	Be Cutting & Bead Dressing Ta-55-4	Fabric Filter-Medium Temp ie 180F<T<250F	99.95	percent	

856	350280001	031	R & D Activities - Labwide	AQB-State/Local ID	031		Not Applicable
856	350280001	031	R & D Activities - Labwide	Actual Percent of Operation During Winter	25		percent of time
856	350280001	031	R & D Activities - Labwide	Actual Percent of Operation During Spring	25		percent of time
856	350280001	031	R & D Activities - Labwide	Actual Percent of Operation During Summer	25		percent of time
856	350280001	031	R & D Activities - Labwide	Actual Percent of Operation During Fall	25		percent of time
856	350280001	031	R & D Activities - Labwide	Actual Operating Time in Hours Per Day	24		h/d
856	350280001	031	R & D Activities - Labwide	Actual Operating Time in Days Per Week	7		d/week
856	350280001	031	R & D Activities - Labwide	Actual Operating Time in Weeks Per Year	52		weeks/y
856	350280001	031	R & D Activities - Labwide	Actual Operating Time in Hours Per Year	8760		h/y
~~856~~	~~350280001~~	~~031~~	~~R & D Activities - Labwide~~	~~Actual Fuel Consumption~~			~~MM SCF/y~~
~~856~~	~~350280001~~	~~031~~	~~R & D Activities - Labwide~~	~~Actual Fuel Heating Value~~			~~MM BTU/MM SCF~~
~~856~~	~~350280001~~	~~031~~	~~R & D Activities - Labwide~~	~~Actual Fuel Type~~			~~Natural Gas~~
~~856~~	~~350280001~~	~~031~~	~~R & D Activities - Labwide~~	~~Actual Percent Sulfur of Fuel~~			~~percent~~
~~856~~	~~350280001~~	~~031~~	~~R & D Activities - Labwide~~	~~Actual Percent Ash of Fuel~~			~~percent~~
~~856~~	~~350280001~~	~~031~~	~~R & D Activities - Labwide~~	~~Actual Input Materials Processed~~			~~Industrial Processes, Photographic Equipment/Health Care/Laboratories, Laboratories,~~
856	350280001	031	R & D Activities - Labwide	Standard Classification (SCC) Code	31503001		Bench Scale Reagents: Research
856	350280001	031	R & D Activities - Labwide	Actual Acetaldehyde; (Ethyl aldehyde) in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Acetaldehyde; (Ethyl aldehyde) calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Acetonitrile; (Methyl cyanide) in tons per year		0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual Acetonitrile; (Methyl cyanide) calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Acetophenone in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Acetophenone calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Acrylamide in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Acrylamide calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Acrylic acid in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Acrylic acid calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Acrylonitrile in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Acrylonitrile calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Ammonia in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Ammonia calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Aniline in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Aniline calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Antimony in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Antimony calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Antimony compounds in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Antimony compounds calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Arsenic Compounds in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Arsenic Compounds calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Benzene in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Benzene calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Benzyl Chloride in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Benzyl Chloride calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Biphenyl in tons per year	0		tons/y
856	350280001	031	R & D Activities - Labwide	Actual Biphenyl calculation method	mb		Material balance
856	350280001	031	R & D Activities - Labwide	Actual Bromoform; (Tribromomethane) in tons per year	0		tons/y

856	350280001	031	R & D Activities - Labwide	Actual	Bromoform; (Tribromomethane) calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Butadiene(1,3-) in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Butadiene(1,3-) calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Cadmium in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Cadmium calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Cadmium compounds in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Cadmium compounds calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Carbon Disulfide in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Carbon Disulfide calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Carbon tetrachloride; (Tetrachoromethane) in tons per y	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Carbon tetrachloride; (Tetrachoromethane) calculation n	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Carbonyl sulfide in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Carbonyl sulfide calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Catechol (Pyrocatechol) in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Catechol (Pyrocatechol) calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Chlorine in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Chlorine calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Chloroacetic Acid in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Chloroacetic Acid calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Chlorobenzene(Phenyl Chloride) in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Chlorobenzene(Phenyl Chloride) calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Chloroform; (Trichloromethane) in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Chloroform; (Trichloromethane) calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Chromium in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Chromium calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Chromium compounds, other in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Chromium compounds, other calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Cobalt in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Cobalt calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Cobalt Compounds in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Cobalt Compounds calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Cresol(m-); (Methylphenol, 3-) in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Cresol(m-); (Methylphenol, 3-) calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Cumene in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Cumene calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Cyanide in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Cyanide calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Cyanide compounds in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Cyanide compounds calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Dibutylphthalate; (Di-n-butyl phthalate) in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Dibutylphthalate; (Di-n-butyl phthalate) calculation meth	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Dichloroethane (1,2-); (EDC); (Ethylene dichloride) in to	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Dichloroethane (1,2-); (EDC); (Ethylene dichloride) calcu	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Diethanolamine in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Diethanolamine calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Dimethyl Sulfate in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Dimethyl Sulfate calculation method	mb	Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Dimethyl formamide in tons per year	0	tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Dimethyl formamide calculation method	mb	Material balance

856	350280001	031	R & D Activities - Labwide	Actual Dimethylhydrazine(1,1-) in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Dimethylhydrazine(1,1-) calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Dioxane(1,4-) (1,4-Diethyleneoxide) in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Dioxane(1,4-) (1,4-Diethyleneoxide) calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Epichlorohydrin; (1-Chloro-2,3-epoxypropane) in tons pe	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Epichlorohydrin; (1-Chloro-2,3-epoxypropane) calculatio	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Epoxybutane(1,2-) (1,2-Butylene oxide) in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Epoxybutane(1,2-) (1,2-Butylene oxide) calculation meth	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Ethyl Acrylate in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Ethyl Acrylate calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Ethyl chloride; (Chloroethane) in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Ethyl chloride; (Chloroethane) calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Ethylene Glycol in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Ethylene Glycol calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Ethylene dibromide; (EDB); (1,2-Dibromoethane) in tons	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Ethylene dibromide; (EDB); (1,2-Dibromoethane) calcula	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Fine mineral fibers in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Fine mineral fibers calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Formaldehyde in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Formaldehyde calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Glycol Ethers in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Glycol Ethers calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Hexachlorocyclopentadiene in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Hexachlorocyclopentadiene calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Hexamethylphosphoramide in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Hexamethylphosphoramide calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Hexane in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Hexane calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Hydrazine in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Hydrazine calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Hydrochloric acid (HCl) in tons per year		0.94		tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Hydrochloric acid (HCl) calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Hydrofluoric Acid; (Hydrogen fluoride) in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Hydrofluoric Acid; (Hydrogen fluoride) calculation metho	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Hydroquinone in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Hydroquinone calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Iodomethane (Methyl iodide) in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Iodomethane (Methyl iodide) calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Lead Compounds in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Lead Compounds calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Manganese in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Manganese calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Manganese compounds in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Manganese compounds calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Mercury compounds in tons per year	0			tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Mercury compounds calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Methanol; (Methyl alcohol) in tons per year		0.73		tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Methanol; (Methyl alcohol) calculation method	mb			Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Methyl Ethyl Ketone; (MEK); (2-Butanone) in tons per ye	0			tons/y		

856	350280001	031	R & D Activities - Labwide	Actual	Methyl Ethyl Ketone; (MEK); (2-Butanone) calculation m	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Methyl Methacrylate in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Methyl Methacrylate calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Methyl bromide; (Bromomethane) in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Methyl bromide; (Bromomethane) calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Methyl chloride; (Chloromethane) in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Methyl chloride; (Chloromethane) calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Methyl isobutyl ketone; (Hexone); (4-Methyl-2-pentanon	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Methyl isobutyl ketone; (Hexone); (4-Methyl-2-pentanon	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Methyl tert butyl ether in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Methyl tert butyl ether calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Methylene chloride; (Dichloromethane) in tons per year		0.55		tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Methylene chloride; (Dichloromethane) calculation meth	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Methylenebiphenyl isocyanate; (MDI); (Diphenylmethan	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Methylenebiphenyl isocyanate; (MDI); (Diphenylmethan	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Naphthalene in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Naphthalene calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Nickel in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Nickel calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Nickel compounds in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Nickel compounds calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Nitrobenzene; (nitro-Benzene) in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Nitrobenzene; (nitro-Benzene) calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Nitrophenol(4-); (p-Nitrophenol) in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Nitrophenol(4-); (p-Nitrophenol) calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	PAHs: Total Naphthalene plus monomethylnaphthalene:	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	PAHs: Total Naphthalene plus monomethylnaphthalene:	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	PCE; (Perchloroethylene); (Tetrachloroethylene); (Tetra	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	PCE; (Perchloroethylene); (Tetrachloroethylene); (Tetra	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Phenol in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Phenol calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Phenylenediamine(p-); (Phenylenediamine) in tons per y	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Phenylenediamine(p-); (Phenylenediamine) calculation r	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Phosphine in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Phosphine calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Phosphorus in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Phosphorus calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Phthalic anhydride in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Phthalic anhydride calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Polycylic Organic Matter in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Polycylic Organic Matter calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Propylene oxide in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Propylene oxide calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Selenium in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Selenium calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Selenium compounds in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Selenium compounds calculation method	mb			Material balance
856	350280001	031	R & D Activities - Labwide	Actual	Styrene in tons per year	0			tons/y
856	350280001	031	R & D Activities - Labwide	Actual	Styrene calculation method	mb			Material balance

856	350280001	031	R & D Activities - Labwide	Actual TCE; (Trichloroethylene); (Trichloroethene) in tons per y	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual TCE; (Trichloroethylene); (Trichloroethene) calculation n	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Tetrachloroethane(1,1,2,2-) in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Tetrachloroethane(1,1,2,2-) calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Titanium tetrachloride in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Titanium tetrachloride calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Toluene diisocyanate(2,4-) in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Toluene diisocyanate(2,4-) calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Toluene; (Methyl benzene) in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Toluene; (Methyl benzene) calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Total HAP in tons per year	4.8	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Total HAP calculation method	es	Estimate		
856	350280001	031	R & D Activities - Labwide	Total HAPActual total efficiency controlled by Uncontrolled		percent		
856	350280001	031	R & D Activities - Labwide	Actual Trichloroethane(1,1,1-) (Methyl Chloroform) in tons per y	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Trichloroethane(1,1,1-) (Methyl Chloroform) calculation n	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Trichloroethane(1,1,2-) in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Trichloroethane(1,1,2-) calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Triethylamine in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Triethylamine calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Trimethylpentane(2,2,4-) in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Trimethylpentane(2,2,4-) calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Urethane; (Ethyl carbamate) in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Urethane; (Ethyl carbamate) calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Vinyl acetate; (Vinyl acetate monomer) in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Vinyl acetate; (Vinyl acetate monomer) calculation meth	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Volatile Organic Compounds (VOC) in tons per year	10.1	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Volatile Organic Compounds (VOC) calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Xylene(m-); (1,3-Dimethylbenzene); (meta-Xylene) in toi	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Xylene(m-); (1,3-Dimethylbenzene); (meta-Xylene) calcu	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Xylene(o-); (1,2-Dimethylbenzene); (ortho-Xylene) in tor	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Xylene(o-); (1,2-Dimethylbenzene); (ortho-Xylene) calcu	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Xylene(p-); (1,4-Dimethylbenzene); (para-Xylene) in ton	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Xylene(p-); (1,4-Dimethylbenzene); (para-Xylene) calcul	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Xylenes (total); (Xylol) in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Xylenes (total); (Xylol) calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual Zirconium in tons per year	0	tons/y		
856	350280001	031	R & D Activities - Labwide	Actual Zirconium calculation method	mb	Material balance		
856	350280001	031	R & D Activities - Labwide	Actual bis(2-ethylhexyl) phthalate; (Di-2-ethylhexyl phthalate); (0		tons/y		
856	350280001	031	R & D Activities - Labwide	Actual bis(2-ethylhexyl) phthalate; (Di-2-ethylhexyl phthalate); (	mb	Material balance		

856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Percent of Operation During Winter	20	percent of time
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Percent of Operation During Spring	30	percent of time
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Percent of Operation During Summer	30	percent of time
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Percent of Operation During Fall	20	percent of time
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Operating Time in Hours Per Day	12	h/d
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Operating Time in Days Per Week	7	d/week
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Operating Time in Weeks Per Year	52	weeks/y
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Operating Time in Hours Per Year	4368	h/y
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Fuel Consumption		
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Fuel Heating Value		
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Fuel Type		
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Percent Sulfur of Fuel		
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Percent Ash of Fuel		
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Input Materials Processed	15	Wood
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Input Materials Processed	15	Wood
856	350280001	TA-3-38	Carpenter Shop - General Construction	Standard Classification (SCC) Code	30703096	Industrial Processes, Pulp and Paper and Wood Products, Miscellaneous Wood Working Operations, Sanding/Planning Operations: Specify
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Particulate Matter (10 microns or less) in tons per year	0.06	tons/y
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-38	Carpenter Shop - General Construction	Particulate Matter (10 microns or less)Actual total efficiency controlled by Single Cyclone	65	percent
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Particulate Matter (2.5 microns or less) in tons per year	0.029	tons/y
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-38	Carpenter Shop - General Construction	Particulate Matter (2.5 microns or less)Actual total efficiency controlled by Single Cyclone	45	percent
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Particulate Matter (total suspended) in tons per year	0.064	tons/y
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-38	Carpenter Shop - General Construction	Particulate Matter (total suspended)Actual total efficiency controlled by Single Cyclone	95	percent
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Volatile Organic Compounds (VOC) in tons per year	0	tons/y
856	350280001	TA-3-38	Carpenter Shop - General Construction	Actual Volatile Organic Compounds (VOC) calculation method	04	Engineer Calculation

856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Percent of Operation During Winter		20	percent of time
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Percent of Operation During Spring		30	percent of time
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Percent of Operation During Summer		30	percent of time
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Percent of Operation During Fall		20	percent of time
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Operating Time in Hours Per Day		12	h/d
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Operating Time in Days Per Week		7	d/week
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Operating Time in Weeks Per Year		52	weeks/y
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Operating Time in Hours Per Year		4368	h/y
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Input Materials Processed	15		Wood
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Standard Classification (SCC) Code	30703096		Paper and Wood Products, Miscellaneous Wood Working Operations, Sanding/Planning Operations: Specify
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Particulate Matter (10 microns or less) in tons per year		0.05	tons/y
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Particulate Matter (10 microns or less) calculation method	ap		Design calculation
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Particulate Matter (2.5 microns or less) in tons per year		0.024	tons/y
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Particulate Matter (2.5 microns or less) calculation method	ap		Design calculation
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Particulate Matter (total suspended) in tons per year		0.054	tons/y
856	350280001	TA-15-563	Carpenter Shop - Test Stands	Actual Particulate Matter (total suspended) calculation method	ap		Design calculation

856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	AQB-State/Local ID	004	Not Applicable
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Percent of Operation During Winter	25	percent of time
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Percent of Operation During Spring	25	percent of time
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Percent of Operation During Summer	25	percent of time
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Percent of Operation During Fall	25	percent of time
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Operating Time in Hours Per Day	24	h/d
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Operating Time in Days Per Week	7	d/week
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Operating Time in Weeks Per Year	52	weeks/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Operating Time in Hours Per Year	8760	h/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Fuel Consumption	30	MM SCF/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Fuel Type	209	Natural Gas
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Percent Ash of Fuel	0	percent
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Input Materials Processed	209	Natural Gas
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Carbon Monoxide in tons per year	1.26	tons/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Formaldehyde in tons per year	0	tons/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Formaldehyde calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Hexane in tons per year	0	tons/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Nitrogen Dioxide in tons per year	1.5	tons/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Particulate Matter (10 microns or less) in tons per year	0.11	tons/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Particulate Matter (2.5 microns or less) in tons per year	0.11	tons/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Particulate Matter (total suspended) in tons per year	0.11	tons/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Sulfur Dioxide in tons per year	0.019	tons/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Sulfur Dioxide calculation method	es	Estimate
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Sulfur DioxideActual total efficiency controlled by Uncontrolled		percent
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Volatile Organic Compounds (VOC) in tons per year	0.082	tons/y
856 350280001	TA-21-357-1	Steam Plant Boiler (x3) Ta21 Bldg357 Nat Gas	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	005	Td Site Boiler Not Built	AQB-State/Local ID	005	Not Applicable
856	350280001	005	Td Site Boiler Not Built	Actual Percent of Operation During Winter	0	percent of time
856	350280001	005	Td Site Boiler Not Built	Actual Percent of Operation During Spring	0	percent of time
856	350280001	005	Td Site Boiler Not Built	Actual Percent of Operation During Summer	0	percent of time
856	350280001	005	Td Site Boiler Not Built	Actual Percent of Operation During Fall	0	percent of time
856	350280001	005	Td Site Boiler Not Built	Actual Operating Time in Hours Per Day	0	h/d
856	350280001	005	Td Site Boiler Not Built	Actual Operating Time in Days Per Week	0	d/week
856	350280001	005	Td Site Boiler Not Built	Actual Operating Time in Weeks Per Year	0	weeks/y
856	350280001	005	Td Site Boiler Not Built	Actual Operating Time in Hours Per Year	0	h/y
856	350280001	005	Td Site Boiler Not Built	Actual Fuel Consumption		MM SCF/y
856	350280001	005	Td Site Boiler Not Built	Actual Fuel Heating Value		MM BTU/MM SCF
856	350280001	005	Td Site Boiler Not Built	Actual Fuel Type	209	Natural Gas
856	350280001	005	Td Site Boiler Not Built	Actual Percent Sulfur of Fuel		percent
856	350280001	005	Td Site Boiler Not Built	Actual Percent Ash of Fuel		percent
856	350280001	005	Td Site Boiler Not Built	Actual Input Materials Processed		
856	350280001	005	Td Site Boiler Not Built	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	005	Td Site Boiler Not Built	Actual Carbon Monoxide in tons per year	0	tons/y
856	350280001	005	Td Site Boiler Not Built	Actual Carbon Monoxide calculation method	es	Estimate
856	350280001	005	Td Site Boiler Not Built	Carbon MonoxideActual total efficiency controlled by	Uncontrolle	percent
856	350280001	005	Td Site Boiler Not Built	Actual Nitrogen Dioxide in tons per year	0	tons/y
856	350280001	005	Td Site Boiler Not Built	Actual Nitrogen Dioxide calculation method	es	Estimate
856	350280001	005	Td Site Boiler Not Built	Nitrogen DioxideActual total efficiency controlled by	Uncontrolled	percent
856	350280001	005	Td Site Boiler Not Built	Actual Particulate Matter (total suspended) in tons p	0	tons/y
856	350280001	005	Td Site Boiler Not Built	Actual Particulate Matter (total suspended) calculatic	es	Estimate
856	350280001	005	Td Site Boiler Not Built	Particulate Matter (total suspended)Actual total efficiency controll		percent
856	350280001	005	Td Site Boiler Not Built	Actual Volatile Organic Compounds (VOC) in tons p	0	tons/y
856	350280001	005	Td Site Boiler Not Built	Actual Volatile Organic Compounds (VOC) calculatic	es	Estimate
856	350280001	005	Td Site Boiler Not Built	Volatile Organic Compounds (VOC)Actual total efficiency controll		percent

856	350280001	011	Metallography Ta55-4 North Stack	AQB-State/Local ID	011	Not Applicable
856	350280001	011	Metallography Ta55-4 North Stack	Actual Percent of Operation During Winter	25	percent of time
856	350280001	011	Metallography Ta55-4 North Stack	Actual Percent of Operation During Spring	25	percent of time
856	350280001	011	Metallography Ta55-4 North Stack	Actual Percent of Operation During Summer	25	percent of time
856	350280001	011	Metallography Ta55-4 North Stack	Actual Percent of Operation During Fall	25	percent of time
856	350280001	011	Metallography Ta55-4 North Stack	Actual Operating Time in Hours Per Day	8	h/d
856	350280001	011	Metallography Ta55-4 North Stack	Actual Operating Time in Days Per Week	7	d/week
856	350280001	011	Metallography Ta55-4 North Stack	Actual Operating Time in Weeks Per Year	52	weeks/y
856	350280001	011	Metallography Ta55-4 North Stack	Actual Operating Time in Hours Per Year	2912	h/y
~~856~~	~~350280001~~	~~011~~	~~Metallography Ta55-4 North Stack~~	~~Actual Fuel Consumption~~	~~0~~	~~MM SCF/y~~
~~856~~	~~350280001~~	~~011~~	~~Metallography Ta55-4 North Stack~~	~~Actual Fuel Heating Value~~	~~0~~	~~MM BTU/MM SCF~~
~~856~~	~~350280001~~	~~011~~	~~Metallography Ta55-4 North Stack~~	~~Actual Fuel Type~~		
~~856~~	~~350280001~~	~~011~~	~~Metallography Ta55-4 North Stack~~	~~Actual Percent Ash of Fuel~~	~~0~~	~~percent~~
856	350280001	011	Metallography Ta55-4 North Stack	Actual Input Materials Processed	516	Metal
856	350280001	011	Metallography Ta55-4 North Stack	Standard Classification (SCC) Code	30900303	Industrial Processes, Fabricated Metal Products, Abrasive Cleaning of Metal Parts, Polishing
856	350280001	011	Metallography Ta55-4 North Stack	Actual Aluminum in tons per year	1.60E-06	tons/y
856	350280001	011	Metallography Ta55-4 North Stack	Actual Aluminum calculation method	es	Estimate
856	350280001	011	Metallography Ta55-4 North Stack	AluminumActual total efficiency controlled by Fabric Filter-Medium Temp ie 180F<T<250F	99.95	percent
856	350280001	011	Metallography Ta55-4 North Stack	Actual Beryllium in tons per year	1.60E-06	tons/y
856	350280001	011	Metallography Ta55-4 North Stack	Actual Beryllium calculation method	es	Estimate
856	350280001	011	Metallography Ta55-4 North Stack	BerylliumActual total efficiency controlled by Fabric Filter-Medium Temp ie 180F<T<250F	99.95	percent

856	350280001	015	Boiler (Ta-48-1) Bs-1	AQB-State/Local ID	015	Not Applicable
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Percent of Operation During Winter	40	percent of time
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Percent of Operation During Spring	20	percent of time
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Percent of Operation During Summer	0	percent of time
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Percent of Operation During Fall	40	percent of time
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Operating Time in Days Per Week	7	d/week
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Operating Time in Weeks Per Year	33	weeks/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Operating Time in Hours Per Year	5500	h/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Fuel Consumption	8.09	MM SCF/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Fuel Type	209	Natural Gas
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Percent Ash of Fuel	0	percent
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Input Materials Processed	209	Natural Gas
856	350280001	015	Boiler (Ta-48-1) Bs-1	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Carbon Monoxide in tons per year	0.34	tons/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Hexane in tons per year	0	tons/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Nitrogen Dioxide in tons per year	0.4	tons/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Particulate Matter (10 microns or less) in tons per year	0.031	tons/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Particulate Matter (2.5 microns or less) in tons per year	0.031	tons/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Particulate Matter (total suspended) in tons per year	0.031	tons/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Particulate Matter (total suspended)	ap	EPA emission factors (e.g., AP-42)
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Sulfur Dioxide in tons per year	0.002	tons/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Volatile Organic Compounds (VOC) in tons	0.022	tons/y
856	350280001	015	Boiler (Ta-48-1) Bs-1	Actual Volatile Organic Compounds (VOC)	ap	EPA emission factors (e.g., AP-42)

856	350280001	016	Boiler (Ta-48-1) Bs-2	AQB-State/Local ID	016	Not Applicable
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Percent of Operation During Winter	40	percent of time
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Percent of Operation During Spring	20	percent of time
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Percent of Operation During Summer	0	percent of time
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Percent of Operation During Fall	40	percent of time
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Operating Time in Days Per Week	7	d/week
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Operating Time in Weeks Per Year	33	weeks/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Operating Time in Hours Per Year	5500	h/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Fuel Consumption	8.09	MM SCF/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Fuel Type	209	Natural Gas
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Percent Ash of Fuel	0	percent
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Input Materials Processed	209	Natural Gas
856	350280001	016	Boiler (Ta-48-1) Bs-2	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Carbon Monoxide in tons per year	0.34	tons/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Hexane in tons per year	0	tons/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Nitrogen Dioxide in tons per year	0.4	tons/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Particulate Matter (10 microns or less) in tons per year	0.031	tons/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Particulate Matter (2.5 microns or less) in tons per year	0.031	tons/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Particulate Matter (total suspended) in tons per year	0.031	tons/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Sulfur Dioxide in tons per year	0.002	tons/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Volatile Organic Compounds (VOC) in tons per year	0.022	tons/y
856	350280001	016	Boiler (Ta-48-1) Bs-2	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	017	Boiler (Ta-48-1) Bs-6	AQB-State/Local ID	017	Not Applicable
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Percent of Operation During Winter	40	percent of time
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Percent of Operation During Spring	20	percent of time
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Percent of Operation During Fall	40	percent of time
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Operating Time in Days Per Week	7	d/week
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Operating Time in Weeks Per Year	33	weeks/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Operating Time in Hours Per Year	5500	h/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Fuel Consumption	10.8	MM SCF/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Fuel Type	209	Natural Gas
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Percent Ash of Fuel	0	percent
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Input Materials Processed	209	Natural Gas
856	350280001	017	Boiler (Ta-48-1) Bs-6	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Carbon Monoxide in tons per year	0.46	tons/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Formaldehyde in tons per year	0	tons/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Formaldehyde calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Hexane in tons per year	0	tons/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Nitrogen Dioxide in tons per year	0.54	tons/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Particulate Matter (10 microns or less) in tons per year	0.041	tons/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Particulate Matter (2.5 microns or less) in tons per year	0.041	tons/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Particulate Matter (total suspended) in tons per year	0.041	tons/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Sulfur Dioxide in tons per year	0.003	tons/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Volatile Organic Compounds (VOC) in tons per year	0.03	tons/y
856	350280001	017	Boiler (Ta-48-1) Bs-6	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	018	Boiler (Ta-53-365) Bhw-1	AQB-State/Local ID	018	Not Applicable
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Percent of Operation During Winter	40	percent of time
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Percent of Operation During Spring	20	percent of time
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Percent of Operation During Summer	0	percent of time
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Percent of Operation During Fall	40	percent of time
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Operating Time in Days Per Week	7	d/week
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Operating Time in Weeks Per Year	33	weeks/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Operating Time in Hours Per Year	5500	h/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Fuel Consumption	10.8	MM SCF/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Fuel Type	209	Natural Gas
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Percent Ash of Fuel	0	percent
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Input Materials Processed	209	Natural Gas
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Carbon Monoxide in tons per year	0.45	tons/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Formaldehyde in tons per year	0	tons/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Formaldehyde calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Hexane in tons per year	0	tons/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Nitrogen Dioxide in tons per year	0.54	tons/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Particulate Matter (10 microns or less) in tons per year	0.041	tons/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Particulate Matter (2.5 microns or less) in tons per year	0.041	tons/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Particulate Matter (total suspended) in tons per year	0.041	tons/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Sulfur Dioxide in tons per year	0.003	tons/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Volatile Organic Compounds (VOC) in tons per year	0.03	tons/y
856	350280001	018	Boiler (Ta-53-365) Bhw-1	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	019	Boiler (Ta-53-365) Bhw-2	AQB-State/Local ID	019	Not Applicable
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Percent of Operation During Winter	40	percent of time
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Percent of Operation During Spring	20	percent of time
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Percent of Operation During Summer	0	percent of time
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Percent of Operation During Fall	40	percent of time
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Operating Time in Days Per Week	7	d/week
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Operating Time in Weeks Per Year	33	weeks/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Operating Time in Hours Per Year	5500	h/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Fuel Consumption	10.8	MM SCF/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Fuel Type	209	Natural Gas
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Percent Ash of Fuel	0	percent
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Input Materials Processed	209	Natural Gas
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Carbon Monoxide in tons per year	0.45	tons/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Formaldehyde in tons per year	0	tons/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Formaldehyde calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Hexane in tons per year	0	tons/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Nitrogen Dioxide in tons per year	0.54	tons/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Particulate Matter (10 microns or less) in tons per year	0.041	tons/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Particulate Matter (2.5 microns or less) in tons per year	0.041	tons/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Particulate Matter (total suspended) in tons per year	0.041	tons/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Sulfur Dioxide in tons per year	0.003	tons/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Volatile Organic Compounds (VOC) in tons per year	0.03	tons/y
856	350280001	019	Boiler (Ta-53-365) Bhw-2	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	020	Boiler (Ta-59-1) Bhw-1	AQB-State/Local ID	020	Not Applicable
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Percent of Operation During Winter	40	percent of time
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Percent of Operation During Spring	20	percent of time
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Percent of Operation During Summer	0	percent of time
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Percent of Operation During Fall	40	percent of time
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Operating Time in Days Per Week	7	d/week
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Operating Time in Weeks Per Year	33	weeks/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Operating Time in Hours Per Year	5500	h/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Fuel Consumption	8.1	MM SCF/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Fuel Type	209	Natural Gas
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Percent Ash of Fuel	0	percent
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Input Materials Processed	209	Natural Gas
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Carbon Monoxide in tons per year	0.34	tons/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Hexane in tons per year	0	tons/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Nitrogen Dioxide in tons per year	0.4	tons/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Particulate Matter (10 microns or less) in tons per year	0.031	tons/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Particulate Matter (2.5 microns or less) in tons per year	0.031	tons/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Particulate Matter (total suspended) in tons per year	0.031	tons/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Sulfur Dioxide in tons per year	0.002	tons/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Volatile Organic Compounds (VOC) in tons per year	0.022	tons/y
856	350280001	020	Boiler (Ta-59-1) Bhw-1	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	021	Boiler (Ta-59-1) Bhw-2	AQB-State/Local ID	021	Not Applicable
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Percent of Operation During Winter	40	percent of time
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Percent of Operation During Spring	20	percent of time
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Percent of Operation During Summer	0	percent of time
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Percent of Operation During Fall	40	percent of time
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Operating Time in Days Per Week	7	d/week
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Operating Time in Weeks Per Year	33	weeks/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Operating Time in Hours Per Year	5500	h/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Fuel Consumption	8.1	MM SCF/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Fuel Type	209	Natural Gas
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Percent Ash of Fuel	0	percent
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Input Materials Processed	209	Natural Gas
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Carbon Monoxide in tons per year	0.34	tons/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Hexane in tons per year	0	tons/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Nitrogen Dioxide in tons per year	0.4	tons/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Particulate Matter (10 microns or less) in tons per year	0.031	tons/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Particulate Matter (2.5 microns or less) in tons per year	0.031	tons/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Particulate Matter (total suspended) in tons per year	0.031	tons/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Sulfur Dioxide in tons per year	0.002	tons/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Volatile Organic Compounds (VOC) in tons per year	0.022	tons/y
856	350280001	021	Boiler (Ta-59-1) Bhw-2	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	AQB-State/Local ID	024		Not Applicable
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Percent of Operation During Winter	25		percent of time
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Percent of Operation During Spring	25		percent of time
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Percent of Operation During Summer	25		percent of time
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Percent of Operation During Fall	25		percent of time
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Operating Time in Hours Per Day	24		h/d
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Operating Time in Days Per Week	7		d/week
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Operating Time in Weeks Per Year	52		weeks/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Operating Time in Hours Per Year	8760		h/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Fuel Consumption		19.26	MM SCF/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Fuel Heating Value	1030		MM BTU/MM SCF
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Fuel Type	209		Natural Gas
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Percent Ash of Fuel	0		percent
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Input Materials Processed	209		Natural Gas
						External Combustion Boilers, Electric Generation, Natural Gas, Boilers <
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Standard Classification (SCC) Code	10100602		100 Million Btu/hr except Tangential
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Carbon Monoxide in tons per year		0.36	tons/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Carbon Monoxide calculation method	11		Manufacturer Specification
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Formaldehyde in tons per year		0	tons/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Formaldehyde calculation method	ap		EPA emission factors (e.g., AP-42)
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Hexane in tons per year		0	tons/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Hexane calculation method	ap		EPA emission factors (e.g., AP-42)
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Nitrogen Dioxide in tons per year		0.36	tons/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Nitrogen Dioxide calculation method	11		Manufacturer Specification
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Nitrogen DioxideActual total efficiency controlled by Low NOX Burners	63		percent
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Particulate Matter (10 microns or less) in tons per year		0.073	tons/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Particulate Matter (10 microns or less) calculation method	ap		EPA emission factors (e.g., AP-42)
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Particulate Matter (2.5 microns or less) in tons per year		0.073	tons/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Particulate Matter (2.5 microns or less) calculation method	ap		EPA emission factors (e.g., AP-42)
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Particulate Matter (total suspended) in tons per year		0.073	tons/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Particulate Matter (total suspended) calculation method	ap		EPA emission factors (e.g., AP-42)
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Sulfur Dioxide in tons per year		0.006	tons/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Sulfur Dioxide calculation method	ap		EPA emission factors (e.g., AP-42)
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Volatile Organic Compounds (VOC) in tons per year		0.053	tons/y
856 350280001	TA-16-1484	TA-16 Boiler with Backup, Plant-5	Actual Volatile Organic Compounds (VOC) calculation method	ap		EPA emission factors (e.g., AP-42)

856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	AQB-State/Local ID	028	Not Applicable
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual Percent of Operation During Winter	25	percent of time
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual Percent of Operation During Spring	25	percent of time
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual Percent of Operation During Summer	25	percent of time
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual Percent of Operation During Fall	25	percent of time
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual Operating Time in Hours Per Day	4	h/d
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual Operating Time in Days Per Week	1	d/week
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual Operating Time in Weeks Per Year	52	weeks/y
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual Operating Time in Hours Per Year	208	h/y
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual Input Materials Processed	952	Solvents: All
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Standard Classification (SCC) Code	40100255	Petroleum and Solvent Evaporation, Organic Solvent Evaporation, Degreasing, Trichloroethylene: General
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual TCE; (Trichloroethylene); (Trichloroethene) in tons per year	0.011	tons/y
856	350280001	028	Degreaser - Cold Ultrasonic Bath Ta-55-4	Actual TCE; (Trichloroethylene); (Trichloroethene) calculation method	mb	Material balance

856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	AQB-State/Local ID	002	Not Applicable
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Winter	30	percent of time
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Spring	20	percent of time
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Summer	20	percent of time
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Fall	30	percent of time
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Hours Per Day	24	h/d
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Days Per Week	7	d/week
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Weeks Per Year	52	weeks/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Hours Per Year	8760	h/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Fuel Consumption	148	MM SCF/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Fuel Type	209	Natural Gas
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Percent Ash of Fuel	0	percent
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Input Materials Processed	209	Natural Gas
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Standard Classification (SCC) Code	10100601	External Combustion Boilers, Electric Generation, Natural Gas, Boilers > 100 Million Btu/hr except Tangential
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Carbon Monoxide in tons per year	2.96	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Formaldehyde in tons per year	0	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Formaldehyde calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Hexane in tons per year	0	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Nitrogen Dioxide in tons per year	4.29	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Nitrogen Dioxide calculation method	st	Actual stack test
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Nitrogen DioxideActual total efficiency controlled by Flue Gas Recirculation	64	percent
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (10 microns or less) in tons per year	0.56	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (2.5 microns or less) in tons per year	0.56	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (total suspended) in tons per year	0.56	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Sulfur Dioxide in tons per year	0.044	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Toluene; (Methyl benzene) in tons per year	0	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Toluene; (Methyl benzene) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Volatile Organic Compounds (VOC) in tons per year	0.41	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, Natural Gas)	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	AQB-State/Local ID	002	Not Applicable
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Winter	30	percent of time
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Spring	20	percent of time
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Summer	20	percent of time
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Fall	30	percent of time
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Hours Per Day	24	h/d
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Days Per Week	7	d/week
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Weeks Per Year	52	weeks/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Hours Per Year	8760	h/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Fuel Consumption	165.6	MM SCF/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Fuel Type	209	Natural Gas
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Percent Ash of Fuel	0	percent
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Input Materials Processed	209	Natural Gas
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Standard Classification (SCC) Code	10100601	External Combustion Boilers, Electric Generation, Natural Gas, Boilers > 100 Million Btu/hr except Tangential
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Carbon Monoxide in tons per year	3.31	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Formaldehyde in tons per year	0	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Formaldehyde calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Hexane in tons per year	0	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Nitrogen Dioxide in tons per year	4.8	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Nitrogen Dioxide calculation method	st	Actual stack test
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Nitrogen DioxideActual total efficiency controlled by Flue Gas Recirculation	64	percent
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (10 microns or less) in tons per year	0.63	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (2.5 microns or less) in tons per year	0.63	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (total suspended) in tons per year	0.63	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Sulfur Dioxide in tons per year	0.05	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Volatile Organic Compounds (VOC) in tons per year	0.46	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, Natural Gas)	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	AQB-State/Local ID	002	Not Applicable
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Winter	30	percent of time
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Spring	20	percent of time
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Summer	20	percent of time
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Percent of Operation During Fall	30	percent of time
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Days Per Week	7	d/week
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Weeks Per Year	52	weeks/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Operating Time in Hours Per Year	8760	h/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Fuel Consumption	295	MM SCF/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Fuel Type	209	Natural Gas
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Percent Ash of Fuel	0	percent
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Input Materials Processed	209	Natural Gas
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Standard Classification (SCC) Code	10100601	External Combustion Boilers, Electric Generation, Natural Gas, Boilers > 100 Million Btu/hr except Tangential
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Carbon Monoxide in tons per year	5.9	tons/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Formaldehyde in tons per year	0	tons/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Formaldehyde calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Hexane in tons per year	0	tons/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Nitrogen Dioxide in tons per year	8.56	tons/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Nitrogen Dioxide calculation method	st	Actual stack test
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Nitrogen DioxideActual total efficiency controlled by Flue Gas Recirculation	64	percent
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (10 microns or less) in tons per year	1.12	tons/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (2.5 microns or less) in tons per year	1.12	tons/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (total suspended) in tons per year	1.12	tons/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Sulfur Dioxide in tons per year	0.09	tons/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Volatile Organic Compounds (VOC) in tons per year	0.81	tons/y
856	350280001	TA-3-22-3	Power Plant Boiler (pph, Natural Gas)	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	AQB-State/Local ID	035		Not Applicable
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Percent of Operation During Winter	25		percent of time
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Percent of Operation During Spring	25		percent of time
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Percent of Operation During Summer	25		percent of time
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Percent of Operation During Fall	25		percent of time
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Operating Time in Hours Per Day	24		h/d
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Operating Time in Days Per Week	7		d/week
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Operating Time in Weeks Per Year	52		weeks/y
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Operating Time in Hours Per Year	8760		h/y
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Fuel Consumption		21.14	M Gal/y
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Input Materials Processed	58		Distillate Oil (No. 2)
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Standard Classification (SCC) Code	39090004		Industrial Processes, In-process Fuel Use, Fuel Storage - Fixed Roof Tanks, Distillate Oil (No. 2): Working Loss
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Volatile Organic Compounds (VOC) in tons per year		0.007	tons/y
856	350280001	035	Tank 03-026 (No. 2 Fuel Oil)	Actual Volatile Organic Compounds (VOC) calculation method	ap		EPA emission factors (e.g., AP-42)

856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	AQB-State/Local ID	036	Not Applicable
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Percent of Operation During Winter	25	percent of time
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Percent of Operation During Spring	25	percent of time
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Percent of Operation During Summer	25	percent of time
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Percent of Operation During Fall	25	percent of time
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Operating Time in Days Per Week	7	d/week
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Operating Time in Weeks Per Year	52	weeks/y
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Operating Time in Hours Per Year	8760	h/y
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Fuel Consumption	21.14	M Gal/y
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Input Materials Processed	58	Distillate Oil (No. 2)
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Standard Classification (SCC) Code	39090004	Industrial Processes, In-process Fuel Use, Fuel Storage - Fixed Roof Tanks, Distillate Oil (No. 2): Working Loss
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Volatile Organic Compounds (VOC) in tons per year	0.033	tons/y
856	350280001	036	Tank 03-779 (No. 2 Fuel Oil)	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	AQB-State/Local ID	037	Not Applicable
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Percent of Operation During Winter	40	percent of time
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Percent of Operation During Spring	20	percent of time
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Percent of Operation During Summer	0	percent of time
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Percent of Operation During Fall	40	percent of time
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Operating Time in Days Per Week	7	d/week
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Operating Time in Weeks Per Year	33	weeks/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Operating Time in Hours Per Year	5500	h/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Fuel Consumption	11.86	MM SCF/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Fuel Heating Value		
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Fuel Type	209	Natural Gas
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Fuel Type		
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Percent Ash of Fuel	0	percent
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Percent Ash of Fuel		
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Input Materials Processed	209	Natural Gas
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Input Materials Processed		
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Output Materials Processed		
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Carbon Monoxide in tons per year	0.23	tons/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Carbon Monoxide calculation method	11	Manufacturer Specification
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Hexane in tons per year	0	tons/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Nitrogen Dioxide in tons per year	0.82	tons/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Nitrogen Dioxide calculation method	st	Actual stack test
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (10 microns or less) in tons per year	0.084	tons/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (10 microns or less) calculation method	11	Manufacturer Specification
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (2.5 microns or less) in tons per year	0.084	tons/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (2.5 microns or less) calculation method	11	Manufacturer Specification
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (total suspended) in tons per year	0.084	tons/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (total suspended) calculation method	11	Manufacturer Specification
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Sulfur Dioxide in tons per year	0.004	tons/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Volatile Organic Compounds (VOC) in tons per year	0.035	tons/y
856	350280001	037	Sellers Boiler Bhw-1b(Ta 55, Bldg. Pf6)	Actual Volatile Organic Compounds (VOC) calculation method	11	Manufacturer Specification

856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	AQB-State/Local ID	038	Not Applicable
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Percent of Operation During Winter	40	percent of time
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Percent of Operation During Spring	20	percent of time
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Percent of Operation During Summer	0	percent of time
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Percent of Operation During Fall	40	percent of time
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Operating Time in Days Per Week	7	d/week
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Operating Time in Weeks Per Year	33	weeks/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Operating Time in Hours Per Year	5500	h/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Fuel Consumption	7.7	MM SCF/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Fuel Heating Value	1030	MM BTU/MM SCF
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Fuel Heating Value		
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Fuel Type	209	Natural Gas
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Fuel Type		
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Percent Ash of Fuel	0	percent
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Percent Ash of Fuel		
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Input Materials Processed	209	Natural Gas
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Input Materials Processed		
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Output Materials Processed		
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Standard Classification (SCC) Code	10100602	External Combustion Boilers, Electric Generation, Natural Gas, Boilers < 100 Million Btu/hr except Tangential
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Carbon Monoxide in tons per year	0.15	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Carbon Monoxide calculation method	11	Manufacturer Specification
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Formaldehyde in tons per year	0	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Formaldehyde calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Hexane in tons per year	0	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Lead in tons per year	0	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Lead calculation method	11	Manufacturer Specification
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Nitrogen Dioxide in tons per year	0.53	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Nitrogen Dioxide calculation method	st	Actual stack test
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (10 microns or less) in tons per year	0.055	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (10 microns or less) calculation method	11	Manufacturer Specification
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (2.5 microns or less) in tons per year	0.055	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (2.5 microns or less) calculation method	11	Manufacturer Specification
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (total suspended) in tons per year	0.055	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Particulate Matter (total suspended) calculation method	11	Manufacturer Specification
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Sulfur Dioxide in tons per year	0.002	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Volatile Organic Compounds (VOC) in tons per year	0.023	tons/y
856	350280001	038	Sellers Boiler Bhw-2b(Ta 55, Bldg. Pf6)	Actual Volatile Organic Compounds (VOC) calculation method	11	Manufacturer Specification

856	350280001	044	BoilerTA-50	RLWTF	Actual Percent of Operation During Winter	25	percent of time
856	350280001	044	BoilerTA-50	RLWTF	Actual Percent of Operation During Spring	25	percent of time
856	350280001	044	BoilerTA-50	RLWTF	Actual Percent of Operation During Summer	25	percent of time
856	350280001	044	BoilerTA-50	RLWTF	Actual Percent of Operation During Fall	25	percent of time
856	350280001	044	BoilerTA-50	RLWTF	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	044	BoilerTA-50	RLWTF	Actual Operating Time in Days Per Week	2	d/week
856	350280001	044	BoilerTA-50	RLWTF	Actual Operating Time in Weeks Per Year	12	weeks/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Operating Time in Hours Per Year	192	h/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Fuel Consumption	3	MM SCF/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Fuel Heating Value	1030	
856	350280001	044	BoilerTA-50	RLWTF	Actual Fuel Type	209	Natural Gas
856	350280001	044	BoilerTA-50	RLWTF	Actual Percent Sulfur of Fuel	0	
856	350280001	044	BoilerTA-50	RLWTF	Actual Percent Ash of Fuel	0	
856	350280001	044	BoilerTA-50	RLWTF	Actual Input Materials Processed	209	Natural Gas
856	350280001	044	BoilerTA-50	RLWTF	Standard Classification (SCC) Code	10100604	External Combustion Boilers, Electric Generation, Natural Gas, Tangentially Fired Units
856	350280001	044	BoilerTA-50	RLWTF	Actual Carbon Monoxide in tons per year	0.13	tons/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	044	BoilerTA-50	RLWTF	Actual Hexane in tons per year	0	tons/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	044	BoilerTA-50	RLWTF	Actual Lead in tons per year	0	tons/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Lead calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	044	BoilerTA-50	RLWTF	Actual Nitrogen Dioxide in tons per year	0.15	tons/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	044	BoilerTA-50	RLWTF	Actual Particulate Matter (10 microns or less) in tons per year	0.011	tons/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	044	BoilerTA-50	RLWTF	Actual Particulate Matter (2.5 microns or less) in tons per year	0.011	tons/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	044	BoilerTA-50	RLWTF	Actual Particulate Matter (total suspended) in tons per year	0.011	tons/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	044	BoilerTA-50	RLWTF	Actual Sulfur Dioxide in tons per year	0.001	tons/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	044	BoilerTA-50	RLWTF	Actual Volatile Organic Compounds (VOC) in tons per year	0.008	tons/y
856	350280001	044	BoilerTA-50	RLWTF	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Percent of Operation During Winter	0	percent of time
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Percent of Operation During Spring	100	percent of time
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Percent of Operation During Summer	0	percent of time
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Percent of Operation During Fall	0	percent of time
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Operating Time in Hours Per Day	4	h/d
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Operating Time in Days Per Week	1	d/week
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Operating Time in Weeks Per Year	1	weeks/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Operating Time in Hours Per Year	4	h/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Fuel Consumption	0.32	M gal/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Fuel Heating Value	138	MM BTU/M gal
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Fuel Type	44	Diesel
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Percent Sulfur of Fuel	0.34	percent
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Percent Ash of Fuel	0.01	percent
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Input Materials Processed	44	Diesel
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Output Materials Processed		
856 350280001	TA-33-G-1	Diesel Fired Generator	Standard Classification (SCC) Code	20100102	Internal Combustion Engines, Electric Generation, Distillate Oil (Diesel), Reciprocating
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Carbon Monoxide in tons per year	0.07	tons/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Carbon Monoxide calculation method	dc	Design calculation
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Lead in tons per year	0	tons/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Lead calculation method	dc	Design calculation
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Nitrogen Dioxide in tons per year	0.09	tons/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Nitrogen Dioxide calculation method	dc	Design calculation
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Particulate Matter (10 microns or less) in tons per year	0.003	tons/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Particulate Matter (10 microns or less) calculation method	dc	Design calculation
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Particulate Matter (2.5 microns or less) in tons per year	0.003	tons/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Particulate Matter (2.5 microns or less) calculation method	dc	Design calculation
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Particulate Matter (total suspended) in tons per year	0.003	tons/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Particulate Matter (total suspended) calculation method	dc	Design calculation
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Sulfur Dioxide in tons per year	0.013	tons/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Sulfur Dioxide calculation method	dc	Design calculation
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Volatile Organic Compounds (VOC) in tons per year	0.002	tons/y
856 350280001	TA-33-G-1	Diesel Fired Generator	Actual Volatile Organic Compounds (VOC) calculation method	dc	Design calculation

856	350280001	TA-60	Tank (Asphalt Emulsion)	AQB-State/Local ID	035	Not Applicable
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Percent of Operation During Winter	25	percent of time
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Percent of Operation During Spring	25	percent of time
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Percent of Operation During Summer	25	percent of time
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Percent of Operation During Fall	25	percent of time
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Operating Time in Days Per Week	7	d/week
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Operating Time in Weeks Per Year	52	weeks/y
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Operating Time in Hours Per Year	8760	h/y
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Fuel Consumption	23736	gal/y
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Input Materials Processed	647	Asphalt Storage and Transport, Petroleum and Petroleum Product Storage, All Storage Types: Working Loss, Total: All
856	350280001	TA-60	Tank (Asphalt Emulsion)	Standard Classification (SCC) Code	A2501995000	Products
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Volatile Organic Compounds (VOC) in tons per year	0.003	tons/y
856	350280001	TA-60	Tank (Asphalt Emulsion)	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Percent of Operation During Winter	25		percent of time
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Percent of Operation During Spring	25		percent of time
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Percent of Operation During Summer	25		percent of time
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Percent of Operation During Fall	25		percent of time
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Operating Time in Hours Per Day	7		h/d
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Operating Time in Days Per Week	5		d/week
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Operating Time in Weeks Per Year	52		weeks/y
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Operating Time in Hours Per Year	2000		h/y
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Input Materials Processed		226	Paper
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Output Materials Processed			Waste Disposal, Treatment, and Recovery, Scrap and Waste Materials,
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Standard Classification (SCC) Code	A2650000002		Scrap and Waste Materials, Shredding
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Particulate Matter (10 microns or less) in tons per year		0.39	tons/y
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Particulate Matter (10 microns or less) calculation method	11		Manufacturer Specification
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Particulate Matter (10 microns or less)Actual total efficiency controlled by Single Cyclone, Fabric Filter		95	percent
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Particulate Matter (2.5 microns or less) in tons per year		0.26	tons/y
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Particulate Matter (2.5 microns or less) calculation method	11		Manufacturer Specification
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Particulate Matter (2.5 microns or less)Actual total efficiency controlled by Single Cyclone, Fabric Filter		95	percent
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Particulate Matter (total suspended) in tons per year		0.43	tons/y
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Actual Particulate Matter (total suspended) calculation method	11		Manufacturer Specification
856	350280001	Ta-52-11	Data Disintegrator/industrial Shredder	Particulate Matter (total suspended)Actual total efficiency controlled by Single Cyclone, Fabric Filter		95	percent

856	350280001	043	Composite Mineral Oil Tank	Actual Percent of Operation During Winter	25		percent of time	
856	350280001	043	Composite Mineral Oil Tank	Actual Percent of Operation During Spring	25		percent of time	
856	350280001	043	Composite Mineral Oil Tank	Actual Percent of Operation During Summer	25		percent of time	
856	350280001	043	Composite Mineral Oil Tank	Actual Percent of Operation During Fall	25		percent of time	
856	350280001	043	Composite Mineral Oil Tank	Actual Operating Time in Hours Per Day	24		h/d	
856	350280001	043	Composite Mineral Oil Tank	Actual Operating Time in Days Per Week		5	d/week	
856	350280001	043	Composite Mineral Oil Tank	Actual Operating Time in Weeks Per Year	52		weeks/y	
856	350280001	043	Composite Mineral Oil Tank	Actual Operating Time in Hours Per Year	8760		h/y	
856	350280001	043	Composite Mineral Oil Tank	Actual Fuel Consumption		0.715	M Gal/yr	
856	350280001	043	Composite Mineral Oil Tank	Actual Input Materials Processed	216		Oil	
856	350280001	043	Composite Mineral Oil Tank	Actual Input Materials Processed			Industrial Processes, In-process Fuel Use, Fuel Storage - Fixed Roof Tanks, Distillate Oil (No. 2): Working	
856	350280001	043	Composite Mineral Oil Tank	Standard Classification (SCC) Code	39090004		Loss	
856	350280001	043	Composite Mineral Oil Tank	Actual Volatile Organic Compounds (VOC) in tons per year		0.007	tons/y	
856	350280001	043	Composite Mineral Oil Tank	Actual Volatile Organic Compounds (VOC) calculation method	ap		EPA emission factors (e.g., AP-42)	

856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	AQB-State/Local ID	002	Not Applicable
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Winter	0	percent of time
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Spring	75	percent of time
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Summer	0	percent of time
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Fall	25	percent of time
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Hours Per Day	24	h/d
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Days Per Week	2	d/week
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Weeks Per Year	12	weeks/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Hours Per Year	576	h/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Fuel Consumption	1.75	M gal/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Fuel Heating Value	137	MM BTU/M gal
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Fuel Type	44	Diesel
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent Ash of Fuel	<0.01	percent
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Input Materials Processed	44	Diesel
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Standard Classification (SCC) Code	10100501	External Combustion Boilers, Electric Generation, Distillate Oil, Grades 1 and 2 Oil
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Carbon Monoxide in tons per year	0.004	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Lead in tons per year	0	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Lead calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Nitrogen Dioxide in tons per year	0.008	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Nitrogen Dioxide calculation method	st	Actual stack test
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (10 microns or less) in tons per year	0.002	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (2.5 microns or less) in tons per year	0.001	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (total suspended) in tons per year	0.003	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Sulfur Dioxide in tons per year	0.006	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Volatile Organic Compounds (VOC) in tons per year	0.0002	tons/y
856 350280001	TA-3-22-1	Power Plant Boiler (pph, No.2 fuel oil)	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	AQB-State/Local ID	002	Not Applicable
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Winter	0	percent of time
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Spring	10	percent of time
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Summer	10	percent of time
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Fall	80	percent of time
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Hours Per Day	24	h/d
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Days Per Week	2	d/week
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Weeks Per Year	12	weeks/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Hours Per Year	576	h/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Fuel Consumption	16.54	M gal/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Fuel Heating Value	137	MM BTU/M gal
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Fuel Type	44	Diesel
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent Ash of Fuel	<0.01	percent
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Input Materials Processed	44	Diesel
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Output Materials Processed		
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Standard Classification (SCC) Code	10100501	External Combustion Boilers, Electric Generation, Distillate Oil, Grades 1 and 2 Oil
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Carbon Monoxide in tons per year	0.041	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Lead in tons per year	0	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Lead calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Nitrogen Dioxide in tons per year	0.071	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Nitrogen Dioxide calculation method	st	Actual stack test
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (10 microns or less) in tons per year	0.019	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (2.5 microns or less) in tons per year	0.013	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (total suspended) in tons per year	0.027	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Sulfur Dioxide in tons per year	0.061	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Volatile Organic Compounds (VOC) in tons per year	0.002	tons/y
856 350280001	TA-3-22-2	Power Plant Boiler (pph, No.2 fuel oil)	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	AQB-State/Local ID	002	Not Applicable
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Winter	0	percent of time
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Spring	0	percent of time
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Summer	0	percent of time
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent of Operation During Fall	100	percent of time
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Hours Per Day	24	h/d
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Days Per Week	2	d/week
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Weeks Per Year	12	weeks/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Operating Time in Hours Per Year	576	h/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Fuel Consumption	2.85	M gal/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Fuel Heating Value	137	MM BTU/M gal
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Fuel Type	44	Diesel
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Percent Ash of Fuel	<0.01	percent
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Input Materials Processed	44	Diesel
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Output Materials Processed		
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Standard Classification (SCC) Code	10100501	External Combustion Boilers, Electric Generation, Distillate Oil, Grades 1 and 2 Oil
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Carbon Monoxide in tons per year	0.007	tons/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Lead in tons per year	0	tons/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Lead calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Nitrogen Dioxide in tons per year	0.012	tons/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Nitrogen Dioxide calculation method	st	Actual stack test
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (10 microns or less) in tons per year	0.003	tons/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (2.5 microns or less) in tons per year	0.002	tons/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (total suspended) in tons per year	0.005	tons/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Sulfur Dioxide in tons per year	0.011	tons/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Volatile Organic Compounds (VOC) in tons per year	0.0003	tons/y
856 350280001	TA-3-22-3	Power Plant Boiler (pph, No.2 fuel oil)	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Percent of Operation During Winter	0		percent of time
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Percent of Operation During Spring	0		percent of time
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Percent of Operation During Summer	0		percent of time
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Percent of Operation During Fall	0		percent of time
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Operating Time in Hours Per Day	0		h/d
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Operating Time in Days Per Week	0		d/week
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Operating Time in Weeks Per Year	0		weeks/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Operating Time in Hours Per Year	0		h/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Fuel Consumption	0		MM SCF/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Fuel Heating Value	0		MM BTU/MM SCF
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Fuel Type	209		Natural Gas
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Percent Sulfur of Fuel	0		percent
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Percent Ash of Fuel	0		percent
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Input Materials Processed	209		Natural Gas
							Internal Combustion Engines, Electric
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Standard Classification (SCC) Code		20100201	Generation, Natural Gas, Turbine
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Carbon Monoxide in tons per year	0		tons/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Carbon Monoxide calculation method	dc		Design calculation
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Lead in tons per year	0		tons/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Lead calculation method	dc		Design calculation
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Nitrogen Dioxide in tons per year	0		tons/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Nitrogen Dioxide calculation method	dc		Design calculation
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Particulate Matter (10 microns or less) in tons per year	0		tons/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Particulate Matter (10 microns or less) calculation method	dc		Design calculation
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Particulate Matter (2.5 microns or less) in tons per year	0		tons/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Particulate Matter (2.5 microns or less) calculation method	dc		Design calculation
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Particulate Matter (total suspended) in tons per year	0		tons/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Particulate Matter (total suspended) calculation method	dc		Design calculation
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Sulfur Dioxide in tons per year	0		tons/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Sulfur Dioxide calculation method	dc		Design calculation
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Volatile Organic Compounds (VOC) in tons per year	0		tons/y
856	350280001	CT-1	Turbine Generation Set (TA-3, Power plant)	Actual Volatile Organic Compounds (VOC) calculation method	dc		Design calculation

856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Percent of Operation During Winter	0	percent of time
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Percent of Operation During Spring	0	percent of time
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Percent of Operation During Summer	88	percent of time
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Percent of Operation During Fall	12	percent of time
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Operating Time in Hours Per Day	24	h/d
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Operating Time in Days Per Week	2	d/week
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Operating Time in Weeks Per Year	12	weeks/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Operating Time in Hours Per Year	576	h/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Fuel Consumption	0.4	M gal/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Fuel Heating Value		
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Fuel Heating Value	137	MM BTU/M gal
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Fuel Type	44	Diesel
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Fuel Type		
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Percent Sulfur of Fuel	0.3	percent
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Percent Ash of Fuel	0	percent
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Percent Ash of Fuel		
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Input Materials Processed	44	Diesel
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Input Materials Processed		
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Output Materials Processed		
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Standard Classification (SCC) Code	10100501	External Combustion Boilers, Electric Generation, Distillate Oil, Grades 1 and 2 Oil
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Carbon Monoxide in tons per year	0.001	tons/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Formaldehyde in tons per year	0	tons/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Formaldehyde calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Hexane in tons per year	0	tons/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Hexane calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Nitrogen Dioxide in tons per year	0.004	tons/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Particulate Matter (10 microns or less) in tons per year	0.0005	tons/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Particulate Matter (10 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Particulate Matter (2.5 microns or less) in tons per year	0.0003	tons/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Particulate Matter (2.5 microns or less) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Particulate Matter (total suspended) in tons per year	0.0007	tons/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Particulate Matter (total suspended) calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Sulfur Dioxide in tons per year	0.01	tons/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Sulfur DioxideActual total efficiency controlled by Uncontrolled		percent
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Volatile Organic Compounds (VOC) in tons per year	0.00004	tons/y
856	350280001	TA-21-357-1b	Steam Plant Boiler (x3) Ta21 Bldg357 No. 2 Fuel	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Percent of Operation During Winter	0	percent of time
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Percent of Operation During Spring	0	percent of time
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Percent of Operation During Summer	0	percent of time
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Percent of Operation During Fall	0	percent of time
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Operating Time in Hours Per Day	0	h/d
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Operating Time in Days Per Week	0	d/week
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Operating Time in Weeks Per Year	0	weeks/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Operating Time in Hours Per Year	0	h/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Fuel Consumption	0	MM SCF/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Fuel Heating Value	0	MM BTU/MM SCF
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Fuel Type	209	Natural Gas
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Percent Sulfur of Fuel	0	percent
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Percent Ash of Fuel	0	percent
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Input Materials Processed	647	Asphalt
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Standard Classification (SCC) Code	30500255	Asphalt Concrete, Drum Mix Plant: Rotary Drum Dryer / Mixer, Natural Gas - Fired
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Carbon Monoxide in tons per year	0	tons/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Carbon Monoxide calculation method	dc	Design calculation
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Lead in tons per year	0	tons/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Lead calculation method	dc	Design calculation
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Nitrogen Dioxide in tons per year	0	tons/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Nitrogen Dioxide calculation method	dc	Design calculation
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Particulate Matter (10 microns or less) in tons per year	0	tons/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Particulate Matter (10 microns or less) calculation method	dc	Design calculation
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Particulate Matter (2.5 microns or less) in tons per year	0	tons/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Particulate Matter (2.5 microns or less) calculation method	dc	Design calculation
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Particulate Matter (total suspended) in tons per year	0	tons/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Particulate Matter (total suspended) calculation method	dc	Design calculation
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Sulfur Dioxide in tons per year	0	tons/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Sulfur Dioxide calculation method	dc	Design calculation
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Volatile Organic Compounds (VOC) in tons per year	0	tons/y
856	350280001	TA-60-BDM	Asphalt Plant Dryer Nat Gas	Actual Volatile Organic Compounds (VOC) calculation method	dc	Design calculation

856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Percent of Operation During Winter	10	percent of time
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Percent of Operation During Spring	35	percent of time
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Percent of Operation During Summer	35	percent of time
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Percent of Operation During Fall	20	percent of time
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Operating Time in Hours Per Day	8	h/d
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Operating Time in Days Per Week	5	d/week
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Operating Time in Weeks Per Year	26	weeks/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Operating Time in Hours Per Year	1040	h/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Fuel Consumption	59	tons/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Fuel Heating Value	91.2	MM BTU/MM SCF
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Fuel Type	255	Propane
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Percent Sulfur of Fuel	0	percent
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Percent Ash of Fuel	0	percent
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Output Materials Processed	647	Asphalt
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Standard Classification (SCC) Code	30500255	Industrial Processes, Mineral Products, Asphalt Concrete, Drum Mix Plant: Rotary Drum Dryer / Mixer, Natural Gas - Fired
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Carbon Monoxide in tons per year	0.4	tons/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Carbon Monoxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Lead in tons per year	0	tons/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Lead calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Nitrogen Dioxide in tons per year	0.025	tons/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Nitrogen Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Particulate Matter (10 microns or less) in tons per year	0.006	tons/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Particulate Matter (10 microns or less) calculation method	11	Manufacturer Specification
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Particulate Matter (2.5 microns or less) in tons per year	0.006	tons/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Particulate Matter (2.5 microns or less) calculation method	11	Manufacturer Specification
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Particulate Matter (total suspended) in tons per year	0.01	tons/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Particulate Matter (total suspended) calculation method	11	Manufacturer Specification
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Sulfur Dioxide in tons per year	0.005	tons/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Sulfur Dioxide calculation method	ap	EPA emission factors (e.g., AP-42)
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Volatile Organic Compounds (VOC) in tons per year	0.008	tons/y
856	350280001	TA-60-BDMb	Asphalt Plant Dryer (Alt Op Scen) Propane	Actual Volatile Organic Compounds (VOC) calculation method	ap	EPA emission factors (e.g., AP-42)

856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Percent of Operation During Winter	0		percent of time
856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Percent of Operation During Spring	0		percent of time
856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Percent of Operation During Summer	0		percent of time
856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Percent of Operation During Fall	0		percent of time
856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Operating Time in Hours Per Day	0		h/d
856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Operating Time in Days Per Week	0		d/week
856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Operating Time in Weeks Per Year	0		weeks/y
856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Operating Time in Hours Per Year	0		h/y
						Industrial Processes, Petroleum Industry, , Underground Storage and Other
856 350280001	TA-54-SVE	Soil Vapor Extraction	Standard Classification (SCC) Code		30622201	Remediation: Vapor Extract
856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Volatile Organic Compounds (VOC) in tons per year		0	tons/y
856 350280001	TA-54-SVE	Soil Vapor Extraction	Actual Volatile Organic Compounds (VOC) calculation method		dc	Design calculation

Attachment C

2006 Semi-Annual Emissions Reports Submitted
Under Title V Operating Permit Requirements

Los Alamos
NATIONAL LABORATORY
EST.1943

Environmental Protection
Division Office
P.O. Box 1663, Mail Stop J978
Los Alamos, New Mexico 87545
505-667-2211/Fax 505-665-8858

Date: September 15, 2006
Refer To: ENV-DO:06-010

Mr. Edward L. Horst
Environmental Compliance Specialist
Compliance & Enforcement Section
New Mexico Environment Department
Air Quality Bureau
2048 Galisteo Street
Santa Fe, NM 87505

IDEA ID NO. 856 – LOS ALAMOS NATIONAL LABORATORY (LANL)
SEMI-ANNUAL EMISSIONS REPORT – OPERATING PERMIT NO: P100M1

Dear Mr. Horst:

Attached is the semi-annual emissions report for January through June of 2006. This report includes actual emissions from permitted sources included in section 2.0 of the Los Alamos National Laboratory (LANL) Operating Permit. This submission satisfies permit condition 4.1., which requires submission of a semi-annual emissions report on a 6-month basis. Furthermore, this report is submitted within 90 days from the end of the reporting period as stipulated in permit condition 4.3.

In this report, actual emissions are listed along with the emission limits for ease in comparing and verifying compliance. No annual emission limits were exceeded during this reporting period. Emissions are also reported from insignificant boiler and generator sources. These sources are included to demonstrate that LANL has not exceeded Prevention of Significant Deterioration (PSD) applicability thresholds.

Operating Permit NO: P100M1 was issued to LANL on June 15, 2006. This permit reduced allowable emissions for the TA-3 power plant boilers. The permit also added the data disintegrator as a source and removed the paper shedder and the rock crusher. This semi-annual emissions report reflects these changes.

Should you have any questions or comments regarding the information provided in this report, please contact Steve Story at (505) 665-2169.

Sincerely,

Victoria A. George
Division Leader
Environmental Protection Division

VAG:dj

Cy:

J. Van Prooyen, ADPADOPS, A102
R.Watkins, ADESH&Q, K491
S. Fong, DOE-LA-AO, A316
P. Wardwell, LC-ESH, A187
S. Archuleta, ADESH&Q, G756
W. Atencio, ADESH&Q, C925
G. Beers, ADESH&Q, G749
S. Costigan, RP-1, E503
J. Coy, ADESH&Q, E522
B. Garrett, ADESH&Q, M985
J. Graham, ADESH&Q, H814
S. Henry, ADESH&Q, J910
D. Macdonell, ADESH&Q, C928
M. Maestas, ADESH&Q, E500
R. Sandoval, ADESH&Q, P908
J. Gonzales, FM-UI, K718
D. Wilburn, ENV-EAQ, J978
D. Janecky, ENV-EAQ, J978
J. Hurtle, ENV-EAQ, J978
S. Story, ENV-EAQ, J978
M. Stockton, ENV-EAQ, J978
D. Paulson, ENV-EAQ, J978
S. Cossey, ENV-EAQ, J978
W. Whetham, ENV-EAQ, J978
J. Stanton, SSS-AF-V02, A199
R. Costa, SSS-AE-V02, A199
IRM-RM550, A150
ENV-EAQ Title V Emissions Report File
ENV-EAQ Reading File

LA-UR-06-6561

Approved for public release; distribution is unlimited.

Title:	IDEA ID NO. 856 - LOS ALAMOS NATIONAL LABORTORY (LANL) SEMI-ANNUAL EMISSIONS REPORT - OPERATING PERMIT NO: P-100M1
Author(s):	WALTER WHETHAM
Intended for:	NEW MEXICO ENVIRONMENT DEPARTMENT AIR QUALITY BUREAU

Los Alamos
NATIONAL LABORATORY
EST. 1943

Form 836 (7/06)

Identifying Information

Source Name: Los Alamos National Laboratory County: Los Alamos .

Source Address:
City: Los Alamos State: NM Zip Code: 87545

Responsible Official: Victoria A. George Ph No. (505) 667-2211 Fax No. (505) 665-8858
Technical Contact: Steven L. Story Ph No. (505) 665-2169 Fax No. (505) 665-8858
Principal Company Product or Business: National Security and Nuclear Weapons Research Primary SIC Code: 9711

Permit No. P100M1 {IDEA/Tempo ID No. 856} Permit Issued Date: June 15, 2006

Certification of Truth, Accuracy, and Completeness

I, Victoria A. George certify that, based on information and belief formed after reasonable inquiry, the statements and information in the attached semi-annual emission report are true, accurate, and complete.

Signature Date: 9/20/06

Title: Division Leader, Environmental Protection Division

Los Alamos National Laboratory
2006 Semi-Annual Emissions Report
(January through June)

This report is being provided to meet the requirement set forth in permit condition 4.1 of the Los Alamos National Laboratory (LANL) Operating Permit NO: P100M1. The emissions included in this report were calculated using operating data recorded during the first six months of 2006.

Facility Emissions

The following table displays the actual facility-wide emissions compared with the Facility Wide Emission Limits specified in permit condition 2.10.1 of the Operating Permit. These emissions include insignificant sources, which are included to demonstrate that facility-wide emissions are below all PSD applicability threshold limits. Also, due to the method used for calculating Hazardous Air Pollutant (HAP) and Volatile Organic Compound (VOC) emissions from chemical use, fugitive emissions are included (see permit condition 4.1).

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	2006 Annual Emissions (tons)	Facility Wide Emission Limits (Permit Condition 2.10.1) (tons per year)
Nitrogen Oxides (NOx)	31.0			245
Carbon Monoxide (CO)	19.4			225
Volatile Organic Compounds (VOCs)	6.4			200
Sulfur Dioxide (SO_2)	1.5			150
Particulate Matter (PM)	3.1			120
Hazardous Air Pollutants (HAPs)	2.2			24 combined
Jan-June Highest Individual HAP (Methanol)	0.4			8 individual

Los Alamos National Laboratory
2006 Semi-Annual Emissions Report
(January through June)

Source Emissions

The following are the actual emissions from permitted sources listed in permit condition 2.0 of the operating permit for the six month reporting period. Included with these emissions are the source specific emission limits if applicable.

Permit Condition/Source

2.1 Asphalt Production - Asphalt Plant located at TA-60

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.1.2) (tons per year)
NOx	0.015			1.0
SO_2	0.003			1.0
PM	0.006			*35.4 lbs/hr
CO	0.245			2.6
VOC	0.005			1.0
HAPs	0.005			No Source Permit Limit

Note: * The Asphalt Plant does not have a ton per year limit for PM. The lb/hr emissions were demonstrated during the initial source compliance test conducted on August 25th & 26th, 2005 and submitted to NMED.

Los Alamos National Laboratory
2006 Semi-Annual Emissions Report
(January through June)

2.2 Beryllium Activities

Source	Pollutant	January - June Emissions (grams)	July - December Emissions (grams)	Annual Emissions (grams)	Permit Limits (Permit Condition 2.2.2)
Beryllium Test Facility TA-3-141[(1)]	Beryllium	< 0.0033			3.5 gm/yr
Target Fabrication Facility TA-35-213[(2)]	Beryllium	< 0.00944			0.36 gm/yr
Plutonium Facility TA-55-PF4[(3)]					
Machining Operation	Beryllium	< 1.495			2.99 gm/yr
	Aluminum	< 1.495			2.99 gm/yr
Foundry Operation[(4)]	Beryllium	0			8.73×10^{-4} gm/yr
	Aluminum	0			8.73×10^{-4} gm/yr
Jan-June Beryllium Total (tons) =		**< 1.66E-06**	**Jan-June Aluminum Total (tons) =**		**< 1.65E-06**

Notes: [(1)] Emission values shown for the Beryllium Test Facility are from actual stack emission measurements which are submitted to NMED quarterly. [(2)] Emissions for the Target Facility are from initial compliance testing of that source and calculated based on a conservative assumption of 8 hour work days. Log books were checked to verify that work days were much less than 8 hours. [(3)] Emissions for the Plutonium Facility are calculated based on permitted throughputs. Log books were checked to verify that throughputs were much less than permitted values. [(4)] The Plutonium Facility foundry operations did not operate during the first six months of 2006. Other sources listed in section 2.2 of the permit do not require reporting in the Semi-Annual Emissions Report.

2.3 Boilers and Heaters

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.3.2) (tons per year)
NOx	13.8			80
SO_2	0.1			50
PM	1.1			50
PM-10	1.1			50
CO	11.3			80
VOC	0.8			50
HAPs	0.26			No Source Limit

Note: The emissions shown in this table include significant and insignificant sources. This section does not include the TA-3-22 Power Plant boilers. These can be found under Section 2.9 of this report. The TA-21 steam plant boilers are included in this table.

Los Alamos National Laboratory
2006 Semi-Annual Emissions Report
(January through June)

2.4 Carpenter Shops

Shop	Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limit (Permit Condition 2.4.2) (tons per year)
TA-3-38	PM_{10}	0.035			3.07
TA-15-563	PM_{10}	0.026			2.81

2.5 Chemical Usage

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.5.3.1)
VOCs	4.3			Source limits refer to facility wide limits. (See Facility Emissions Table on Page 1)
HAPs	1.6			
Highest Individual HAP (Methanol)	0.4			

2.6 Degreasers

Degreaser TA-55-DG-1	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.6.2.1) (tons per year)
VOCs	0.006			Source limits refer to facility wide limits. (See Facility Emissions Table on Page 1)
HAPs	0.006			

Note: Degreasers TA-55-DG-2 and TA-55-DG-3 were not used in the first six months of 2006. These degreasers are not expected to be used in the near future and are in storage.

Los Alamos National Laboratory
2006 Semi-Annual Emissions Report
(January through June)

2.7 Internal Combustion Sources

Generator TA-33-G-1	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.7.2) (tons per year)
TSP	0.003			0.6
PM_{10}	0.003			0.6
NOx	0.086			18.1
CO	0.070			15.2
VOC	0.002			0.3
SO_X	0.013			2.5
HAPs	1.86E-05			No Source Limit

Note: The TA-33-G-1 generator had initial start-up on May 18, 2006.

Standby Generators	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits
TSP	0.5			No Source Specific Emission Limits for Standby Generators
PM_{10}	0.5			
NOx	8.4			
CO	1.9			
VOC	0.5			
SOx	1.3			
HAPs	2.7E-03			

Note: Standby Generators are insignificant sources.

2.8 Data Disintegrator

Emission Unit TA-52-11	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.8.2) (tons per year)
TSP	0.27			9.9
PM10	0.24			9.9

Note: The data disintegrator was started on August 18, 2004, and replaced the existing paper shedder. Operating Permit No: P100M1 removed the paper shedder and added the data disintegrator.

Los Alamos National Laboratory
2006 Semi-Annual Emissions Report
(January through June)

2.9 Power Plant Boilers at Technical Area 3 (TA-3-22)

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limit (Permit Condition 2.9.2) (tons per year)
NOx	8.7			60.2
SO_2	0.1			7.9
TSP	1.1			8.4
PM_{10}	1.1			8.2
CO	6.0			41.3
VOC	0.8			5.6
HAPs	0.3			No Source Limit

Note: On June 15, 2006, LANL received a revised Title V permit, Operating Permit NO: P100M1. This permit lowered the power plant boilers emission limits to be consistant with Construction Permit 2195B-M1 (issued July 30, 2004). The limits shown here reflect the permit limits in the current Title V permit.

Los Alamos
NATIONAL LABORATORY
EST.1943

Environmental Protection Division
P.O. Box 1663, MS J978
Los Alamos, New Mexico 87545
(505) 667-2211/FAX: (505) 665-8858

Date: March 9, 2007
Refer to: ENV-DO:07-005

Mr. Edward L. Horst
Manager, Enforcement
Compliance & Enforcement Section
New Mexico Environment Department
Air Quality Bureau
2048 Galisteo Street
Santa Fe, NM 87505

IDEA ID NO. 856 – LOS ALAMOS NATIONAL LABORATORY (LANL)
OPERATING PERMIT NO: P100M1
SEMI-ANNUAL EMISSIONS REPORT – JULY 1, 2006 TO DECEMBER 31, 2006

Dear Mr. Horst:

Enclosed is Los Alamos National Laboratory's (LANL) semi-annual emissions report for the period July 1, 2006 through December 31, 2006. This report is required by permit condition 4.1 and is submitted within 90 days from the end of the reporting period as required by permit condition 4.3.

The semi-annual emissions report includes actual emissions from permitted sources included in section 2.0 of LANL's Operating Permit. Emissions are also reported from insignificant boiler and generator sources. These sources are included to demonstrate that LANL has not exceeded Prevention of Significant Deterioration (PSD) applicability thresholds. In this report, actual emissions are listed along with the emission limits for ease in comparing and verifying compliance. No annual emission limits were exceeded during this reporting period.

Operating Permit No: P100M1 was issued to LANL on June 15, 2006. This permit modification reduced allowable emissions for the TA-3 power plant boilers, added the data disintegrator, and removed the paper shedder, rock crusher, and two boilers. The paper shedder, rock crusher, and two boilers did not operate in 2006 and are not included in this report. All other changes are included in this semi-annual emissions report.

Should you have any questions or comments regarding the information provided in this report, please contact Steve Story at (505) 665-2169.

Sincerely,

Victoria A. George
Division Leader
Environmental Protection Division

VAG:alb

Cy:

V. Bynum, PADOPS, A102
R.Watkins, ADESH&Q, K491
S. Fong, DOE-LA-AO, A316
P. Wardwell, LC-ESH, A187
D. Wilburn, ENV-EAQ, J978
D. Janecky, ENV-EAQ, J978
J. Hurtle, ENV-EAQ, J978
S. Story, ENV-EAQ, J978
M. Stockton, ENV-EAQ, J978
K. Gorman-Bates, ENV-EAQ, J978
J. Little, ENV-EAQ, J978
D. Paulson, ENV-EAQ, J978
W. Whetham, ENV-EAQ, J978
J. Stanton, SSS-AF-V02, A199
R. Costa, SSS-AE-V02, A199
IRM-RM550, A150
ENV-EAQ Title V Emissions Report File
ENV-EAQ Reading File
ENV-DO Reading File

LA-UR-07-1496

Approved for public release; distribution is unlimited.

Title:	Semi-Annual Emissions Report - Operating Permit Number P100M1 July - December 2006
Author(s):	Walt Whetham
Intended for:	New Mexico Environmental Department

Form 836 (7/06)

Title V Operating Permit
Semi-Annual Emission Report

July 1, 2006 – December 31, 2006

Identifying Information

Source Name: Los Alamos National Laboratory County: Los Alamos

Source Address:
City: Los Alamos State: NM Zip Code: 87545

Responsible Official: Victoria A. George Ph No. (505) 667-2211 Fax No. (505) 665-8858
Technical Contact: Steven L. Story Ph No. (505) 665-2169 Fax No. (505) 665-8858
Principal Company Product or Business: National Security and Nuclear Weapons Research Primary SIC Code: 9711

Permit No. P100M1 {IDEA/Tempo ID No. 856} Permit Issued Date: June 15, 2006

Certification of Truth, Accuracy, and Completeness

I, Victoria A. George certify that, based on information and belief formed after reasonable inquiry, the statements and information in the attached semi-annual emission report are true, accurate, and complete.

Signature Date: 3/7/07

Title: Division Leader, Environmental Protection Division

Los Alamos National Laboratory
Semi-Annual Emissions Report
July through December of 2006

This report is being provided to meet the requirement set forth in permit condition 4.1 of the Los Alamos National Laboratory (LANL) Operating Permit Number P100M1. The emissions were calculated using operating data recorded during the second six months of 2006. The emissions from the first six months of 2006 were submitted in the previous Semi-Annual Emissions Report, but are included here to calculate annual emissions.

Facility Emissions

The following table displays the actual facility-wide emissions compared with the Facility Wide Emission Limits specified in permit condition 2.10.1 of the Operating Permit. These emissions include insignificant sources, which are included to demonstrate that facility-wide emissions are below all PSD applicability threshold limits. Hazardous Air Pollutant (HAP) and Volatile Organic Compound (VOC) emissions from chemical use include point source and fugitive emissions (see permit condition 4.1).

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	2006 Annual Emissions (tons)	Facility Wide Emission Limits (Permit Condition 2.10.1) (tons per year)
Nitrogen Oxides (NOx)	31.0	31.1	62.1	245
Sulfur Dioxide (SO_2)	1.5	3.1	4.6	150
Particulate Matter (PM)	3.1	2.8	5.9	120
Carbon Monoxide (CO)	19.4	18.4	37.8	225
Volatile Organic Compounds (VOCs)	6.4	7.8	14.2	200
Hazardous Air Pollutants (HAPs)	2.2	3.8	6.0	24 combined
Jan-June Highest Individual HAP (Methanol)	0.4	0.4	0.8	8 individual
July-Dec Highest Individual HAP (Hydrochloric Acid)	0.2	0.7	0.9	8 individual

Los Alamos National Laboratory
Semi-Annual Emissions Report
July through December of 2006

Source Emissions

The following are the actual emissions from permitted sources listed in permit condition 2.0 of the operating permit for the six month reporting period. Included with these emissions are the source specific emission limits if applicable.

Permit Condition/Source

2.1 Asphalt Production - Asphalt Plant located at TA-60

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.1.2) (tons per year)
NOx	0.015	0.010	0.025	1.0
SO_2	0.003	0.002	0.005	1.0
PM	0.006	0.004	0.010	*35.4 lb/hr
CO	0.245	0.157	0.402	2.6
VOC	0.005	0.003	0.008	1.0
HAPs	0.005	0.003	0.008	No Source Permit Limit

Note: * The Asphalt Plant does not have an annual limit for PM. The hourly emissions were demonstrated during the initial source compliance test conducted on August 25th & 26th, 2005 and submitted to NMED.

Los Alamos National Laboratory
Semi-Annual Emissions Report
July through December of 2006

2.2 Beryllium Activities

Source	Pollutant	January - June Emissions (grams)	July - December Emissions (grams)	Annual Emissions (grams)	Permit Limits (Permit Condition 2.2.2)
Beryllium Test Facility TA-3-141[1]	Beryllium	< 0.0033	< 0.0033	< 0.007	3.5 gm/yr
Target Fabrication Facility TA-35-213[2]	Beryllium	< 0.00944	< 0.009	< 0.018	0.36 gm/yr
Plutonium Facility TA-55-PF4[3]					
Machining Operation	Beryllium	< 1.495	< 1.41	< 2.91	2.99 gm/yr
	Aluminum	< 1.495	< 1.41	< 2.91	2.99 gm/yr
Foundry Operation[4]	Beryllium	0	0	0.00	8.73×10^{-4} gm/yr
	Aluminum	0	0	0.00	8.73×10^{-4} gm/yr
Beryllium Total[5] (tons) =		**< 1.66E-06**	**< 1.57E-06**	**< 3.23E-06**	
Aluminum Total (tons) =		**< 1.65E-06**	**< 1.55E-06**	**< 3.30E-06**	

Notes: [1] Emission values shown for the Beryllium Test Facility are from actual stack emission measurements which are submitted to NMED quarterly.[2] Emissions for the Target Fabrication Facility are from initial compliance testing of that source and calculated based on a conservative assumption of 8 hour work days. Log books were checked to verify that work days were much less than 8 hours.[3] Emissions for the Plutonium Facility are calculated based on permitted throughputs. Log books were checked to verify that throughputs were much less than permitted values.[4] The Plutonium Facility foundry operations did not operate during 2006. [5] Other Beryllium activities listed in section 2.2 of the permit do not require reporting in the Semi-Annual Emissions Report.

2.3 Boilers and Heaters

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.3.2) (tons per year)
NOx	13.8	12.0	25.8	80
SO_2	0.1	0.1	0.2	50
PM	1.1	1.0	2.0	50
PM-10	1.1	1.0	2.0	50
CO	11.3	9.7	21.0	80
VOCs	0.8	0.7	1.4	50
HAPs	0.26	0.23	0.5	No Source Limit

Note: The emissions shown in this table include significant and insignificant sources. This section does not include the TA-3-22 Power Plant boilers. These can be found under Section 2.9 of this report. The TA-21 steam plant boilers are included in this table.

Los Alamos National Laboratory
Semi-Annual Emissions Report
July through December of 2006

2.4 Carpenter Shops

Shop	Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limit (Permit Condition 2.4.2) (tons per year)
TA-3-38	PM_{10}	0.035	0.025	0.06	3.07
TA-15-563	PM_{10}	0.026	0.025	0.05	2.81

2.5 Chemical Usage

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.5.3.1)
VOCs	4.3	5.8	10.1	Source limits refer to facility-wide limits. (See Facility Emissions Table on Page 1)
HAPs	1.6	3.2	4.8	
Highest Individual HAP for the first six months (Methanol)	0.4	0.4	0.8	
Highest Individual HAP for the second six months (Hydrochloric Acid)	0.2	0.7	0.9	

2.6 Degreasers

Degreaser TA-55-DG-1	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.6.2.1) (tons per year)
VOCs	0.006	0.005	0.011	Source limits refer to facility-wide limits. (See Facility Emissions Table on Page 1)
HAPs	0.006	0.005	0.011	

Note: Degreasers TA-55-DG-2 and TA-55-DG-3 were not used in 2006. These degreasers are not expected to be used in the near future and are in storage.

Los Alamos National Laboratory
Semi-Annual Emissions Report
July through December of 2006

2.7 Internal Combustion Sources

Generator TA-33-G-1	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.7.2) (tons per year)
NOx	0.086	0	0.086	18.1
SO_X	0.013	0	0.013	2.5
TSP	0.003	0	0.003	0.6
PM_{10}	0.003	0	0.003	0.6
CO	0.070	0	0.070	15.2
VOC	0.002	0	0.002	0.3
HAPs	1.86E-05	0	1.86E-05	No Source Limit

Note: The TA-33-G-1 generator had initial start-up on May 18, 2006. All of the emissions are from the source test. The generator did not run during the second six months of 2006.

Standby Generators	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits
NOx	8.4	10.0	18.4	No Source Specific Emission Limits for Standby Generators
SOx	1.3	2.8	4.1	
TSP	0.5	0.4	0.9	
PM_{10}	0.5	0.4	0.9	
CO	1.9	2.2	4.1	
VOC	0.5	0.4	0.9	
HAPs	2.7E-03	2.7E-03	0.005	

Note: Standby Generators are insignificant sources.

2.8 Data Disintegrator

Emission Unit TA-52-11	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limits (Permit Condition 2.8.2) (tons per year)
TSP	0.27	0.16	0.43	9.9
PM10	0.24	0.15	0.39	9.9

Note: The data disintegrator was started on August 18, 2004, and replaced the existing paper shedder. Operating Permit No: P100M1 issued June 15, 2006 removed the paper shedder and added the data disintegrator.

Los Alamos National Laboratory
Semi-Annual Emissions Report
July through December of 2006

2.9 Power Plant Boilers at Technical Area 3 (TA-3-22)

Pollutant	January - June Emissions (tons)	July - December Emissions (tons)	Annual Emissions (tons)	Permit Limit (Permit Condition 2.9.2) (tons per year)
NOx	8.7	9.1	17.8	60.2
SO_2	0.1	0.2	0.3	7.9
TSP	1.1	1.2	2.3	8.4
PM_{10}	1.1	1.2	2.3	8.2
CO	6.0	6.3	12.3	41.3
VOC	0.8	0.9	1.7	5.6
HAPs	0.3	0.3	0.6	No Source Limit

Note: On June 15, 2006, LANL received a revised Title V permit, Operating Permit NO: P100M1. This permit lowered the power plant boilers emission limits to be consistant with Construction Permit 2195B-M1 (issued July 30, 2004). The limits shown here reflect the permit limits in the current Title V permit.


Los Alamos
NATIONAL LABORATORY
EST. 1943