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**Sandia National Laboratories, California
Air Quality Program
Annual Report
May 2007**



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Sandia National Laboratories, California
Air Quality Program
Annual Report
May 2007

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ABSTRACT

The annual program report provides detailed information about all aspects of the SNL/CA Air Quality Program. It functions as supporting documentation to the SNL/CA Environmental Management System Program Manual. The program report describes the activities undertaken during the past year, and activities planned in future years to implement the Air Quality Program, one of six programs that supports environmental management at SNL/CA.

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Summary of Document Changes

Significant changes made to the May 2007 edition of the Air Quality Program Annual Report are marked with a left-hand sidebar within the document and are summarized below.

Section	Page	Change
2.4	9	Added section describing how the Air Quality Program monitors for new developments related to air quality laws and regulations that may impact SNL/CA.
4.0	11	Updated list of program documents and reports generated by the Air Quality Program
6.2.1	15	Updated presentation on mobile source emissions based on 2005 Emissions Inventory of Mobile Sources Report
6.2.2	16	Updated Paint Shop VOC Emission section to include results of reduced solvent usage for 2005 resulting from new cleaning equipment.
6.2.3	16	Summarized 2006 Spare The Air season including comparing with previous years.
7.1	18	Identified potential risk from potential reduced funding of the Air Quality Program.
8.1	19	Described BAAQMD inspections conducted between January and March of 2007.
8.2	19	Updated to reflect October 2006 corporate audit.
8.4	19	Discussed 2006 line implementation assessment for the Air Quality Program which evaluated whether owners/operators were complying with sitewide 2006/2007 Permit to Operate issued by BAAQMD.
9.0	20	Updated accomplishments to reflect previous year's activities.
10.0	21	Discussed future air quality trends and issues potentially affecting SNL/CA including proposed amendments state and local laws and regulations.
11	25	Replaced existing Table with Timeline Figure
12	26	Added Reference Section
App B	30	Updated Air Quality Program Personnel

1 Program Description

Sandia/CA's policy is to minimize the impact of its operations on the environment through responsible management of air emissions. To implement this policy, Sandia/CA complies with all applicable Federal, State and local environmental standards and regulations, submitting applications for permits when required, and operating in compliance with all applicable requirements.

The SNL/CA Air Quality Program's purpose is to obtain and maintain permits/registrations and assist and guide the line organizations in complying with all permit conditions and regulatory requirements. The Air Quality Program assesses the impact of new air quality laws and regulations on SNL/CA operations and develops future plans to maintain compliance. Potential impacts of new and modified air pollution sources are assessed through regulatory analysis, emissions calculations, and, when necessary, risk assessments.

The Air Quality Program is responsible for assessing and protecting air quality at SNL/CA and assisting SNL organizations in complying with applicable environmental laws and regulations, particularly those for air quality permitting and reporting.

Specific responsibilities of the Air Quality Program include:

- Keep SNL/CA organizations, the public, and the DOE apprised of air quality issues
- obtain and maintain air quality permits and registrations and assist SNL/CA organizations in achieving compliance with all permit requirements
- assess any applicable potential impacts of new and existing sources
- maintain air quality compliance documents and records and ensure that all necessary reports are submitted to the appropriate agencies in a timely manner.

1.1 Air Quality Program Scope and Ownership

The applicability and requirements of the SNL/CA Air Quality Program pertain to all site operations that emit, or have the potential to emit, air pollutants. As of May 1, 2007, SNL/CA has 15 permitted emission sources with the Bay Area Air Quality Management District (BAAQMD). There are 17 sources listed as "exempt from permitting" on the BAAQMD Permit to Operate. Appendix A lists the permitted and exempt sources in operation.

The SNL/CA Air Quality Program is developed and managed by the Environmental Management Department (8516). Air Quality Program staff interact regularly with (1) other Environmental Program staff (e.g., Hazardous Materials Management Program, NEPA, etc.), (2) internal customers (e.g., SNL line organizations, Facilities Planning Department, Maintenance Engineering Department, etc.), (3) DOE/SSO, (4) the BAAQMD (the Permitting Division and the Compliance and Enforcement Division), and (5) the California Air Resources Board.

2 Program Drivers

The Federal Clean Air Act was passed in 1967 to protect and enhance the nation's air quality. It provides the statutory basis for regulating air contaminants through a national program to control emissions from motor vehicles and stationary sources. Through the CAA, congress has given authority for air protection to the U.S. EPA, who in turn delegates authority to states which have demonstrated a program to comply with the CAA. In California, the Air Resources Board has further delegated authority to local air districts. The County and regional air pollution control districts were created to assist the CARB in carrying out its mission. The BAAQMD is the regional agency that regulates air quality from stationary industrial sources in the Bay Area.

In the Bay Area, the BAAQMD regulates air emissions from stationary (i.e., nonvehicular) industrial air pollutant sources, and develops air resource strategies (implemented through rules and regulations) to comply with the CAA and to protect public health and welfare. The CARB has retained authority for control of vehicular emissions, develops rules regarding stationary sources which must be adopted and implemented by local districts, and has also developed a number of air toxics programs which are administered by the districts. The EPA has retained some authority for the regulation of sitewide emissions of radionuclides in the Bay Area through the NESHAPS program.

2.1 Federal

2.1.1 *National Ambient Air Quality Standards*

The Clean Air Act required the EPA to develop a list of air pollutants from all sources that could harm the public health or the environment. The EPA identified six substances as "criteria pollutants," and subsequently developed National Ambient Air Quality Standards (NAAQSs) for these pollutants to protect public health and the environment. The six criteria pollutants are:

- sulfur dioxide (SO₂),
- nitrogen dioxide (NO₂),
- carbon monoxide (CO),
- ozone,
- particulate matter (smaller than 10 microns in diameter), and
- lead.

The EPA program for attainment and maintenance of NAAQSs requires local agencies to develop a comprehensive permitting program. BAAQMD has developed a set of rules governing stationary sources of air pollution that are among the strictest in the U.S.

2.1.2 *National Emission Standards for Hazardous Air Pollutants*

In addition to the regulations for criteria pollutants, there is the EPA's NESHAPs program which prescribes emission limitations for the following substances:

- radionuclides
- beryllium

- mercury
- asbestos
- vinyl chloride
- benzene
- inorganic arsenic
- coke oven emissions.

The NESHAPs standards most relevant to SNL/CA operations include those for asbestos demolition and renovation operations and to a limited extent, radionuclides. While some of the other listed pollutants are used onsite, the regulatory threshold is often quite high or the standard is applicable for only selected industries or uses.

Asbestos: Asbestos emissions are controlled under NESHAP 40 CFR Part 61 Subpart M. The SNL/NM Facility Asbestos Implementaiton Team (FAIT) (Facilities ES&H Department, 108411) provides the necessary NESHAP notification prior to the start of any job relating to asbestos. The FAIT also has the responsibility for complying with permit conditions and managing necessary records.

Radionuclides: The NESHAP regulations for radionuclide emissions contain a subsection which applies solely to Department of Energy/National Nuclear Security Administration (DOE/NNSA) facilities. This subsection (40 CFR Part 61 Subpart H) establishes radiation protection standards, monitoring requirements, and annual reporting of radionuclide air emissions. To comply with the national emission standards, SNL/CA evaluates individual projects with the potential to release radionuclide emissions to determine the worst-case dose to the public. Additionally, dose calculations are compared to the requirements to determine the need for annual monitoring.

2.1.3 Refrigerants

Based on the requirements of the CAA, EPA has established regulations that effect many aspects of the refrigeration industry. The aspects of 40 CFR Part 82 that are most pertinent to SNL/CA operations are summarized below:

- the prohibition of venting,
- requires service practices that maximize recycling of ozone-depleting compounds during the servicing and disposal of air-conditioning and refrigeration equipment,
- certification of recovery and recycling equipment,
- certification of technicians who perform maintenance, service, repair, or disposal,
- evacuation of air-conditioning and refrigeration equipment to a specific vacuum when opening equipment
- requires owners of equipment with charges >50 pounds to repair leaks in the equipment when those leaks would result in the loss of more than a certain percentage of the equipment's charge over a year.
- Safe disposal requirements ensuring the removal of refrigerants from small appliances that enter the waste stream with the charge intact
- Special hazardous waste rules for refrigerants and refrigerant oils.

2.1.4 DOE Order 450.1

DOE Order 450.1, Environmental Protection Program/2003 outlines the basic strategy for environmental compliance at DOE facilities, requires DOE facilities to implement an EMS that addresses protection of site resources and long-term stewardship of these resources.

2.2 State

Requirements for air protection in the state are detailed in the California Health and Safety (H&S) Code and the California Clean Air Act. By Federal law, the state must adopt air quality standards and rules and regulations which are at least as strict as the federal. California has chosen to adopt State Ambient Air Quality Standards (AAQSs) which are more stringent than the Federal standards in many areas. The State AAQSs also include hydrogen sulfide (H₂S), sulfur acid mists, and visibility-reducing particulates, in addition to the Federally-designated criteria pollutants.

2.2.1 CARB Registrations and Certifications

The CARB has retained authority for control of vehicular emissions, while the regional air pollution control districts (BAAQMD) assist CARB in carrying out its mission. The CARB does not have authority to issue permits directly to stationary sources of air pollution. However, the CARB does have a number of certification/exemption processes which may be viewed by some to be "permitting authority." Pertinent to SNL/CA are (1) the Statewide Portable Equipment Registration Program for portable generators, and (2) Asbestos NESHAP Demolition and Renovation Form.

2.2.2 Diesel Particulate Matter Emissions

In 1998, the CARB identified diesel particulate matter (DPM) as a toxic air contaminant. In response, CARB developed a comprehensive Diesel Risk Reduction Plan with a goal to reduce DPM by 75 percent in 2010 and 85 percent by 2020 from a 2000 baseline. Of significance to SNL/CA are:

- **Cleaner Diesel Fuel:** sulfur levels in diesel fuel sold and distributed in California were lowered to less than 15 parts per million starting in June, 2006.
- **Airborne Toxic Control Measure for Stationary Compression Ignition Engines:** rule approved in 2004 containing new emission and hourly usage limits and fuel and reporting requirements. Initial requirements applicable to SNL/CA went into effect on January 1, 2006.

CARB is currently developing additional regulations to support efforts to reduce DPM. One such proposed regulation would affect on-road in-use heavy-duty diesel vehicles including SNL/CA's solid waste vehicle. Information on the proposed regulation is discussed in more detail in Section 10.

2.2.3 Air Toxics “Hot Spots”

The California air toxics regulations do not require additional permits (other than those already required by the BAAQMD). They do, however, require SNL/CA to inventory all routine emissions of air toxics from the site so that the CARB can assess the regional and state-wide risks to public health. The required biennial updates to the inventory are handled through the annual BAAQMD permit renewal process.

2.2.4 Climate Change

On September 27, 2006, California passed a law requiring that CARB monitor and reduce greenhouse gases (GHG). As a result, CARB is in the process of developing regulations and guidelines to reduce GHG including establishing statewide emission caps, reduction strategies, and reporting requirements. More details are provided in Section 10.

2.3 Local

The BAAQMD is responsible for ensuring that the ambient air quality standards are attained and maintained in the San Francisco Bay Area. Their jurisdiction includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and the southern portions of Solano and Sonoma Counties. Among the many activities conducted to meet their clean air goal, the BAAQMD adopts and enforces rules for stationary sources of air pollution that are among the strictest in the U.S. Some elements of these rules applicable to SNL/CA include:

1. Limiting emissions of specific pollutants from sources
2. Curtailing open burning
3. Restricting impacts to visibility
4. Reducing emissions from handling of solvents
5. Limiting organic compound content of coatings and adhesives
6. Restricting types of fuels that can be used in sources
7. Prescribing equipment and operating conditions through a permitting system

Through BAAQMD’s permitting system, permits are issued for stationary sources that may have a significant impact on air quality. Owners or operators of these sources must apply for an Authority to Construct and a Permit to Operate before constructing and operating the source. Depending on the potential emissions from the source, certain emission control equipment or Best Available Control Technology (BACT) may be needed before the permit can be approved. If approved, permits are then issued and specify conditions that the sources must meet to construct and operate the source. These conditions may include limiting hours of operations, restricting total emissions, and maintaining usage records.

Some of these rules have been developed because the BAAQMD has been delegated implementation and enforcement authority for many federal and state requirements. For example, authority for many of the federal NESHAP standards has been transferred to BAAQMD including those related to Asbestos. To satisfy the NESHAP requirements, SNL/CA must notify the BAAQMD for certain demolition or asbestos removal activities.

Proposed changes that may impact SNL/CA diesel-fueled electric generators are discussed in Section 10.

2.4 Monitoring Development of Laws and Regulations

Federal, state, and local laws and regulations are constantly being revised. The Air Quality Program monitors these changes to ensure SNL/CA complies with any new or revised laws and regulations. As part of monitoring these changes, the Air Quality Program is on the EPA, CARB, and BAAQMD list servers, which provide information by email on proposed changes to laws and regulations. Separately, CARB and BAAQMD publishes advisories and news releases that inform the public of regulatory changes and scheduled workshops to discuss those changes. As needed, the Program attends these workshops to provide input to regulators and determine potential impacts to SNL/CA. In addition, the Air Quality Program receives newsletters and notices from private organizations including Pollution Online Newsletter twice a week and California Environmental Insider twice a month. In particular, the California Environmental Insider summarizes recent court decisions, enforcement actions, and new and revised laws and regulations affecting California businesses. Also, to support the Air Quality Program’s monitoring efforts, two air quality consultants serving as SNL/CA contractors provide regulatory expertise such as information on updates to regulations and review of how such changes may impact SNL/CA.

3 Operational Controls

Administrative controls are applied within the Air Quality Program to prevent exceedances and violations. These include Technical Work Documents (Table 1), the Interdisciplinary Team (IDT) review, Usage Log Sheets designed with checks and balances, and the Corporate ES&H Manual.

Table 1. Air Quality Program Technical Work Documents

Title	Current Version
OP471707, Operating Procedure for Air Quality Program	Issue C, 9/01/06
OP471799A, Refrigerant Storage and Handling Procedure	Issue C, 11/09/06
ES&H Manual, Chapter 17, Air Emissions	Issue H, 3/05/07
SP473544, Standard Operating Procedure for Roof Access	Issue A, 02/16/05
PHS SNL06A00051-003, Air Quality Program Operations at SNL/CA	March 2007
Administrative Procedure for Spare the Air Day	Draft

In addition, a communications array is used to administratively control refueling operations on Spare The Air Days (an EMS Air Quality target, see Section 6.2.3). This array consists of e-mail notifications, banners, signs, and “soft” barriers (see Figure 1) to encourage site personnel to not refuel their gasoline-powered vehicles on Spare The Air Days.



Figure 1. Signage Used to Encourage the Postponement of Refueling Operations

Engineered controls provide a fixed “barrier” to prevent exceedances or violations. For example, the paint shop has state-of-the-art cleaning equipment that not only reduce the VOC emissions to our atmosphere, but also reduce the risk of violating the strict regulations governing the use of solvents (see Section 6.2.2).

4 Documents Produced

Table 2 identifies the documents produced by the Air Quality Program. The BAAQMD Annual Data Update Form is submitted to the BAAQMD to satisfy permitting requirements and is used by BAAQMD to calculate permit renewal fees. The BAAQMD permit applications and CARB Statewide Portable Equipment Registration Program applications are prepared whenever certain new process or equipment is installed or modified. The BAAQMD and CARB regulations specify what type of process or equipment requires a permit application and identify testing and reporting requirements. For example, an annual vapor recovery test on the Gasoline Dispensing Facility (GDF) (Source #32) must be conducted and results submitted to BAAQMD annually. Table 2 also identifies usage logs maintained for various permitted sources on site. The logs are based on data provided by the user of the source and are maintained by the Air Quality Program. These records are kept to satisfy the BAAQMD permit conditions for each source and to ensure allowable permit conditions are not exceeded. The records are also used for the BAAQMD Annual Data Update Form.

Table 2. Program Documents, Reports, and Logs

Document	Due Date	Frequency of Distribution	Distribution	Purpose
BAAQMD Annual Data Update Form	Mid April	Annual	BAAQMD	BAAQMD Requirements
BAAQMD Permit Applications	Prior to installing or modifying	As needed: prior to installing or modifying equipment/processes	BAAQMD	BAAQMD Requirements
Vapor Recovery Test of Above Ground Gas Tank (Source #32)	January	Annually	BAAQMD	BAAQMD Requirements
Asbestos/Demolition Notification	10 working days prior to start of demolition	Prior to demolition	BAAQMD	BAAQMD Requirements
CARB Statewide Portable Equipment Registration Program Applications	Prior to use of Portable Engine	As needed: when planning to use a new portable engine	CARB	CARB Requirements
B910 Cold Cleaner Usage Log (Source #33)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
Maintenance and Facilities Adhesives and Sealant Usage Log (Source #93)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
Sitewide Wipe Cleaning Usage Log (Source #95)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
B963 Paint Spray Booth Usage Logs (Source #96)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
B9151 Emergency Diesel Generator with 390 HP Engine Usage Log (Source #101)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
Portable Emergency Diesel Generator with 699 HP Engine Usage Log (Source #102)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
Portable Diesel Generator with 96 HP Engine Usage Log (Source #103)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
B964 Emergency Diesel Generator with 196 HP Engine Usage Log (Source #104)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
B968 Emergency Diesel Generator with 575 HP Engine Usage Log (Source #105)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
B9151 Emergency Diesel Generator with 394 HP Engine Usage Log (Source #108)	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements
B906/114 Vapor Degreaser	First Half of Each Month	Monthly	Air Quality Program	BAAQMD Requirements

5 Approved Job Descriptions, Qualifications, and Job-Specific Training

5.1 Air Quality Program Job Assignments and Qualifications

The job assignments in the Air Quality Program include the Air Quality Program Lead, Air Quality Engineer/Specialist, and Air Quality Intern. Personnel in each assignment must have specific qualifications to carry out the applicable duties. In addition, Sandia views training, development, and education as a strategic investment in Sandia's future, and therefore has corporate and job specific training requirements for each assignment. The job assignments and required qualifications and training are described below. Appendix B provides a list of personnel currently supporting each job assignment.

5.1.1 Air Quality Program Lead

The Air Quality Program Lead is responsible for management and oversight of all program activities and serves as the air quality expert for SNL/CA. Management and oversight duties include, but are not limited to, budgeting, identifying investments needs, task assignment and oversight, contract management, conducting program self assessments, reporting, developing operational controls, and participating in department projects. The Air Quality Program Lead identifies applicable regulatory requirements and directly helps site personnel achieve and maintain compliance. As part of this effort, the Program Lead participates in the ES&H Interdisciplinary Team meetings where SNL/CA personnel present new and modified projects conducted on-site. The Program Lead assists site personnel in obtaining necessary operating permits for processes and equipment and then complying with the permit requirements. This assignment requires regular interaction with Federal and state agencies and monitoring of changes in regulations relevant to the site. Any applicable changes are then communicated to the site by the Program Lead. The Program Lead also prepares for and guides BAAQMD inspections.

At a minimum, the Air Quality Program Lead must hold a Bachelor of Arts or Science Degree in the environmental, science, or engineering fields and have more than 5 years of relevant work experience. The Program Lead must possess program management skills and strong communication skills (oral and written). Additionally, this assignment requires knowledge of California and Bay Area air quality regulations and permitting procedures. The formal training requirements are identified in Table 3.

5.1.2 Air Quality Engineer

The Air Quality Engineer assists with the day-to-day activities of the Air Quality Program and serves as the back-up for the Air Quality Program Lead. The day-to-day activities include maintaining usage records for on-site sources, preparing Annual Data Update Forms to the BAAQMD, and preparing and reviewing SOPs and reports. When the Program Lead is not

available, the Air Quality Engineer attends the ES&H Interdisciplinary Team meetings. The Air Quality Engineer also assists with preparing permit applications and helping SNL/CA personnel

understand the permit compliance requirements. In addition, the Air Quality Engineer provides assistance preparing for BAAQMD inspections.

The minimum qualifications for the Air Quality Engineer include possessing a Bachelors degree in an engineering field, although a Masters degree in the environmental and science fields is also acceptable. Three years of directly related work experience is also necessary. The Air Quality Engineer must have good oral and written communication skills, be competent with Microsoft Word and Excel, and be able to work independently. Desirable skills include familiarity with the California and Bay Area air quality regulations, particularly those relating to internal combustion engines. The formal training requirements are identified in Table 3.

5.1.3 Air Quality Student Intern

The Air Quality Student Intern is responsible for implementing SNL/CA's Spare the Air (STA) Program. Under guidance from the Program Lead, the duties of the Intern include developing STA educational and outreach initiatives for SNL/CA personnel; developing, conducting, and analyzing STA surveys; performing emission calculations; and announcing declared STA days.

At a minimum, the Student Intern must be a sophomore in an undergraduate program and maintain a 3.2 GPA. Although environmental, science, or engineering fields are desirable, other relevant fields of study, such as journalism or communication, may be acceptable. Also, the intern must be competent with word processing and spreadsheets (preferably Microsoft Word and Excel), have experience navigating and searching the Internet, and demonstrate the ability to work independently. The ability to perform light physical work outside in hot weather is also required. The formal training requirements are identified in Table 3.

5.2 Specialized Assignments and Certifications

The EPA requires that HVAC technicians be certified by an approved technician certification program (40 CFR Part 82.161). There are four types of certification:

- Type I maintain, service, or repair small appliances
- Type II maintain, service, repair or dispose of high or very-high pressure appliances
- Type III maintain, service, repair, or dispose of low-pressure appliances
- Universal maintain, service or repair equipment as described in Type I, II, III.

SNL/CA HVAC technicians will only service appliances for which they have the proper level of certification (e.g. Type I, Type II, Type III, or Universal). EPA does not currently require recertification or continuing education.

Table 3. Formal Training Matrix

Training Requirement	Training Method	Air Quality Program Lead	Air Quality Engineer	Air Quality Intern
WRT101 Effective Writing Skills	SNL classroom	X	X	
FPP105CA Fall Protection and Prevention	SNL classroom	X	X	
ESH100C California Site Specific ES&H Awareness	SNL classroom	X	X	X
ESH100 ES&H Awareness	Online	X	X	X
Visible Emission Evaluation Proficiency	CARB classroom and field	X		
ESH300 Self Assessment	Online	X		
FileMaker Pro Intermediate	Classroom		X	
GPA of 3.2	Educational Institution			X

6 Performance Measures

6.1 Primary Performance Measures

The key indicator for the performance and effectiveness of the SNL/CA Air Quality Program is the outcome of periodic regulatory inspections. Although inspections can occur at any time, the BAAQMD typically inspects permitted sources every two years. The inspections are a rigorous and detailed review of permitted equipment and processes vis a vis applicable BAAQMD regulations and permit conditions. Inspections result in a source being declared one of the following: in compliance; in violation; not operating; or dismantled. Table 4 shows the results of BAAQMD inspections occurring over the past 13 years.

Table 4. Results Of BAAQMD Inspections For Past Thirteen Years

	1994	1996	1998	2000	2003	2004	2007
Sources Inspected	24	46	54	18	7	26	30
In Compliance	23	39	45	14	6	25	29
Not Operating	1	6	8	4	0	1	1
Dismantled	0	1	1	0	1	0	0
In Violation	0	0	0	0	0	0	0
Violation Rate	0%	0%	0%	0%	0%	0%	0%

A general Environmental Management Target is to “Receive no Notices of Violation (NOV) as a result of any external regulatory Agency Audit”. This target is a measure of how well Air

Quality is achieving the general Environmental Objective of “Meeting or exceeding all applicable environmental requirements”. The data from Table 4 show that the Air Quality Program is meeting the EMS general objective set for the department.

6.2 Secondary Performance Measures

Secondary performance measures for the Air Quality Program are the EMS Air Quality Targets. These targets provide a means by which to measure progress towards meeting the Air Quality EMS Objective of “Minimize air emissions related to operations and transportation, with particular emphasis on Spare The Air Days”. The Air Quality EMS Targets (i.e., performance measures) are discussed below. Over the next several years, progress towards meeting these targets will be assessed which will provide an indication of how well the EMS Objectives are being met.

6.2.1 Mobile Source Emissions

The Air Quality Program has an EMS Target of reducing the sitewide mobile source emissions by 10% by the end of 2008. A baseline for mobile source emissions was established using 2004 data.¹ Onsite mobile sources include vehicles, carts, landscaping equipment, and construction and maintenance equipment that are not permanently attached to a stationary foundation.

In order to determine the progress of this emissions reduction effort, an annual follow-up analysis was completed using 2005 activity data (i.e., hours of operation or miles driven). The methodology, calculations, results and recommendations of this 2005 analysis are documented in *2005 Emission Inventory of Mobile Sources – Progress Report* (SNL, 2007). The estimated emissions of reactive organic gases (ROG), carbon monoxide (CO), nitrogen oxides (NO_x), and respirable particulate matter (PM₁₀) and relative change between the 2004 baseline and 2005 are presented in Table 5.

Table 5. Comparison of Baseline and 2005 Emissions (tons/yr)

	ROG			CO			NO _x			PM ₁₀		
	baseline	2005	Change	Baseline	2005	Change	baseline	2005	Change	baseline	2005	Change
GSA	0.05	0.03	-41%	0.71	0.46	-35%	0.32	0.18	-44%	0.015	0.011	-27%
Carts	5.3	5.5	+4%	64	66	+3%	1.2	1.2	0%	0.10	0.11	+10%
Landscaping	6.5	6.7	+3%	16	16	0%	0.33	0.33	0%	0.26	0.26	0%
Construction	1.2	1.2	0%	14	14	0%	1.7	1.2	-29%	0.12	0.097	-19%
Total	13.0	13.4	+3%	95	96	+1%	3.6	2.9	-19%	0.50	0.48	-4%

ROG = Reactive Organic Gases (similar to VOC - volatile organic compounds); CO = carbon monoxide; NO_x = nitrogen oxides; PM₁₀ = particulate matter with a diameter of <10 microns

The expectation was that very little would have changed considering plans to reduce sitewide mobile source emissions were just starting to be implemented. In addition, the activity data for the 2004 baseline and the 2005 analysis are similar because the baseline incorporates some 2005 data (see footnote 1). The one significant change that is seen is the 19% reduction in total NO_x

¹ The 2004 Baseline Emission Inventory of Mobile Sources was completed in December 2005 and was, in part, based on 2005 data because complete 2004 data were not available.

emissions. This can be largely attributed to the replacement of the 1990 street sweeper with a newer 2005 sweeper. Other reductions (PM₁₀ by 4%) and increases (ROG by 3% and CO by 1%) are not, at this time, considered to be significant due to (1) the uncertainty and assumptions inherent in the emissions calculations and (2) the fact that the 2004 baseline included some 2005 data.

Although the “Total” percentage decreases or increases in ROG, CO and PM₁₀ emissions may not be of significance, some observations and conclusions can be drawn from the relative numbers:

1. In order to significantly reduce ROG emissions, cart and landscaping usage (age of fleet, technology type, or hours used) must be affected.
2. Overall CO emissions can be most effectively reduced by influencing cart usage.
3. Overall PM₁₀ emissions can be most effectively reduced by affecting landscaping equipment usage.

6.2.2 Paint Shop VOC Emissions

Another Air Quality Program EMS Target is to reduce Paint Shop VOC emissions by 25% by the end of 2008, relative to a 2004 baseline. In 2005, the Air Quality Program was instrumental in acquiring two new pieces of cleaning equipment for Sandia’s painting operations:

- a paint-gun cleaner acquired in 2005 provides a closed-loop cleaning process for the spray guns. Although this equipment still uses a solvent for cleaning, the closed-loop design greatly decreases the volatile organic compound (VOC) emissions compared to the hand cleaning process previously employed. A total of 0.25 gallons of solvent evaporated from the use of the gun cleaner in 2006, compared to 10 gallons evaporating from the gun cleaning process in 2004.
- a parts wash-rack acquired in 2005 uses hot pressurized water to clean metal parts prior to painting. This piece of equipment replaces a hand cleaning method that used high VOC solvents. A total of 1.5 gallons of solvent was used for wipe cleaning/surface preparation tasks in 2006, compared to 6.75 gallons evaporated in 2004.

These new processes/equipment not only reduce the VOC emissions to the atmosphere, but also reduce the risk of violating the strict regulations governing the use of solvents.

6.2.3 Refueling on Spare The Air Days

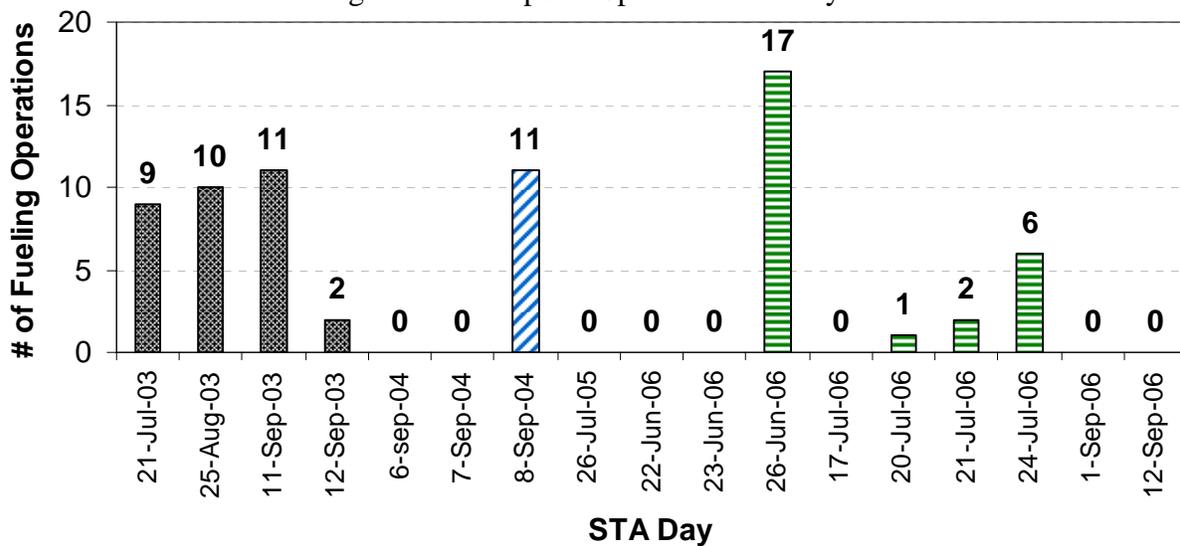
The third EMS initiative is aimed at reducing the number of fill-ups at our B963 gasoline tank on Spare the Air Days by 50% from a 2003/2004 baseline. A program was developed and implemented that encourages site personnel to plan their gasoline fueling activities for either before or after a Spare The Air Day (see Figure 1).

During the summer of 2006, the Bay Area experienced several periods of unhealthy air quality, with the Bay Area Air Quality Management District (BAAQMD) issuing 9 weekday Spare the

Air advisories, compared to the 2005 Spare The Air season when just 1 weekday advisory was issued. These advisories are used to notify the public when air pollution is expected to reach unhealthy concentrations and to encourage Bay Area residents to take individual action to reduce harmful pollutants. The site’s workforce appears to be committed to this initiative, as there were just 26 fill-ups over the 9 Spare The Air Days in 2006. This averages to less than 3 fill-ups per Spare The Air Day, compared to an average of 7 on a typical work day. Figure 2 shows the number of fill-ups on Spare the Air Days over the last four years.

One anomaly shown in Figure 2 is the 17 fill ups on June 26, 2006 which fell on a Monday. The prior Thursday and Friday were also Spare the Air Days during which time site personnel successfully deferred all fueling operations. However, personnel were not able to sustain the delay for three consecutive working days and thus had to fill up on that Monday.

Figure 2. Fill-ups on Spare The Air Days



7 Quality Assurance

7.1 Program Risk Assessment

The Air Quality Program Risk Assessment assesses the risks associated with not meeting programmatic requirements. The risk assessment was updated in January 2007 and identified five potential risks:

Table 6. Air Quality Program Risks

Risk #	Risk	Risk Category
1	Increased Regulation Leading To The Need For A Title V Permit	Low
2	Nuisance Complaint From Local Residents	Low
3	Release To The Atmosphere	Low
4	Operating A Source Without A Permit	Medium
5	Reduction In Program Funding By 10%	Medium

Risk 4 received a risk category ranking of “medium” primarily due to the “high” probability for a source to be unknowingly operated without a permit, but with a “low” consequence. The

“high” probability of occurrence is due to Sandia being a Research and Development laboratory that, by nature, has constantly changing processes, experiments, equipment, etc. This is compounded by the complexity and evolving nature of air regulations themselves. The Air Quality Program has several processes in-place to help reduce the probability of this type of event occurring:

1. All projects are required to make presentations to the IDT
2. The Air Quality Program receives monthly reports generated by the Chemical Information System (CIS) on the use of toxics
3. Air Quality Program personnel are subscribed to numerous List Serves with Regulatory agencies to stay informed of new and changing laws and regulations
4. Self-assessments performed by the Air Quality Program and the Line Organizations help to identify non-compliant operations.

Risk 5 received a risk category ranking of “medium” primarily due to the “very high” probability that funding for the Air Quality Program will be reduced by 10% from FY2007 levels. Reduced staffing levels would be the primary affect of a 10% reduction in funding. Realistically, the Air Quality Program cannot do much to reduce the very high probability of a reduction in funding occurring. However, the consequences of a funding reduction can be minimized by identifying, reducing, and eliminating if necessary, those activities that are performed as part of Sandia’s efforts to be a good corporate citizen or are good business practices. Every effort would be made to not negatively impact regulatory required activities.

The complete Air Quality Program Risk Assessment is included as Appendix C.

7.2 Maintaining Program Quality

The Air Quality Program strives to ensure that data and documents are managed in a manner that optimizes accuracy, consistency, validity, and retrievability. The following tools and processes are used to maintain a high degree of quality:

- All raw data is reviewed for accuracy and reasonableness when received from source owner
- All data input is reviewed for accuracy after input is complete
- Reports, documents, permit applications and usage logs undergo an internal review and technical edit (note: usage logs are never edited)
- Electronic data and documents are stored on a corporate server, to ensure daily back-ups
- Program staff maintain required and desirable certifications, licenses and training
- The original copies of Program data and documents are submitted to the ES&H Records Center upon completion of a particular project
- Annual Air Quality Program Self Assessment.

8 Program Assessments

Assessments are generally performed to (1) measure the ES&H health of an organization, (2) identify, communicate and correct negative performance or compliance trends, (3) assess and

improve work processes, and (4) identify findings, violations, observations and noteworthy practices.

8.1 BAAQMD Inspections

The BAAQMD routinely “assesses” SNL/CA’s compliance with air district regulations and permit conditions. These particular type of assessments are more commonly referred to as “Inspections”. Although Inspections can occur at any time, they typically occur every two years. Prior to 2006, SNL/CA was inspected by the BAAQMD on June 23, 2004. BAAQMD recently conducted a series of inspections between January and March of 2007. This last series of inspections is summarized in Section 9. The BAAQMD inspections are a rigorous and detailed review of permitted equipment and processes. Table 4 shows the results of inspections occurring over the past 13 years.

8.2 Corporate Assessments

The Air Quality Program is regularly included in many Sandia Corporate or Lockheed Martin assessments or audits. Most recently, the Air Quality Program was one element of a corporate audit focusing on environmental permitting conducted in October 2006. The results of this audit are pending.

Lockheed Martin last audited the Air Quality Program in December 1996 as part of an overall ES&H audit.

8.3 Program Self-Assessment

This assessment is conducted to determine the completeness, quality and efficiency of the Air Quality Program’s structure and management. The 2006 assessment included a review of technical work documents, program processes, web pages and links, publications and communications to assure that they are streamlined, accurate and current. The Program Self Assessment Document Review Form, included as Appendix D, provides the results of this assessment.

8.4 Line Implementation Assessment

This assessment is performed in order to determine how well the line or site is implementing the requirements of the Air Quality Program or supporting specific program-related objectives and targets. The 2006 Line Implementation Assessment evaluated whether the owners/operators of permitted sources were complying with conditions specified in the 2006/2007 Permit To Operate issued by BAAQMD. As part of this evaluation, personal interviews were conducted with owners/operators and records were carefully scrutinized. The line assessment demonstrated that permit conditions were being satisfied, and so No Findings were issued. However, several recommendations were made to further facilitate implementation of the requirements. These recommendations ranged from improving the format of the logs to submitting a request to remove a source from the Permit To Operate. Appendix E documents the scope, process and results of the 2006 Air Quality Line Implementation Assessment.

8.5 Environmental Program Representative Assessment

During 2006, Air Quality did not request assessment support from the Environmental Program Representative.

8.6 Division 8000 Line Self-Assessment

During 2006, the Division 8000 Line Self-Assessment process did not address any air quality issues.

9 Accomplishments

The Air Quality Program accomplished the following activities from April 2006 to March 2007

- The Air Quality Program completed the *2005 Emission Inventory of Mobile Source, Annual Progress Report, Sandia National Laboratories, California* (April, 2007) that estimated emissions from vehicles, carts, landscaping equipment, and construction and maintenance equipment for calendar year 2005. The report was prepared in order to compare 2005 emissions with the estimated baseline emissions reported in the *Baseline Emission Inventory (2004) of Mobile Sources, Sandia National Laboratories, California* (December, 2005) and evaluate the progress towards meeting the Mobile Source EMS target.
- Estimated 2005 emissions from Paint Shop operations. This information was used to compare 2005 emissions with the baseline emissions to evaluate the progress towards meeting the Paint Shop EMS target.
- Follow-up line assessments were conducted on several activities at SNL/CA to ensure emissions from these activities were below the thresholds identified in BAAQMD's Regulation 2, Rule 5 (New Source Review of Toxic Air Contaminants). Emissions of toxic air contaminants above these thresholds could result in the need for a permit. The activities selected to be closely examined were identified in the 2005 Line Implementation Assessment. Based on the 2005 initial assessment, the following activities were evaluated:
 - Building 942, Room 1313 operations for the Polymer Processing Research and Development Laboratory.
 - Maintenance Warehouse operations.
 - Building 968 operations under the control of organization 8321 (Biosystems Research) and 8324 (Microfluids).The assessments included interviews with users, onsite review of the activities, inventory and usage report review, and emission estimates. All of these operations were determined to have emissions that fall below the BAAQMD thresholds.
- BAAQMD had claimed that CARB's Stationary Compression Ignition Engine ATCM would apply to SNL/CA's portable generators S102 and S103. BAAQMD also believed that generator S108 should be limited to 50 hours of emergency operation instead of 100

hours. However, the Air Quality Program convinced BAAQMD that CARB's ATCM definition of portable differs from BAAQMD's definition and under the ATCM's definition of portability, S102 and S103 would be exempt from the ATCM. In addition, the Air Quality Program showed that because S108 was permitted as a new engine after May 17, 2000 and met certain emission limits, it would satisfy an ATCM exemption allowing for 100 hours of reliability-related operations.

- The Air Quality Program identified operations that use trichloroethylene (TCE) as a wipe cleaner to ensure that they were satisfying record keeping requirements specified in the SNL/CA permit. Only two operations were found to use TCE as a wipe cleaner. After the Air Quality Program discussed the requirements with the staff of one of the operations (bicycle tire repair), the TCE was replaced with a product called Simple Green that does not contain TCE. The Air Quality Program also worked with other user to find suitable alternatives to TCE but was unsuccessful. Therefore, the second user maintains a log to satisfy the permit requirements.
- Between January 31 and March 1 2007, an inspector with the BAAQMD conducted a series of onsite inspections. The inspector examined 30 sources listed on our permit including the associated records and found no violation of permit requirements.
- During the 2006 Spare The Air season, there were just 26 fill-ups over the 9 Spare The Air Days in 2006. This averages to less than 3 fill-ups per Spare The Air Day, compared to an average of 7 on a typical work day. Section 6.2.3 discusses this EMS Air Quality Target in more detail.
- The design of the Paint Shop (Source 96) records was reformatted to meet the expectations of the BAAQMD inspector as expressed during the February 2007 inspections. A member of the Air Quality Program attended an advanced database class in order to effectively make the necessary design modifications.
- An Employee Transportation Survey was conducted in October 2006. The survey asked employees and contractors specific questions regarding their commuting practices. There were nearly 600 surveys returned which is approximately a 50% response rate. The analysis and results of the survey will be presented in next year's Air Quality Program Report.

10 Trends / Issues

Federal, state, and local agencies continue to develop measures to reduce exposure to toxic air contaminants and criteria pollutants. In addition, particularly at the state level, efforts are underway to reduce emissions of greenhouse gases such as carbon dioxide (CO₂) and methane. The recent initiatives to reduce toxic air contaminants, criteria pollutants, and greenhouse gases are summarized below:

- The California Air Resources Board (CARB) is currently proposing amendments to the Airborne Toxic Control Measure (ATCM) for Chrome Plating and Chromic Acid Anodizing Operations to further control hexavalent chromium emissions, a toxic air contaminant. These amendments would affect the chromium plating operations in building 943 (Source #77) which is inactive at this time. As currently proposed (April, 2007), the amendments would require the use approved chemical fume suppressants during operation of the process. Other chemical fume suppressants not specifically identified in the ATCM can be used if performance testing demonstrates compliance with emissions limits. As an alternative to fume suppressants, add-on air pollution control devices (e.g. HEPA filter) can be installed, but suppressants would likely be the control option selected for this source. Even though the source is currently not in operation, new fume suppressant will need to be purchased and onsite within 6 months after an effective date that is to be determined. Also, the operation of the chrome plating must be done under the direction of a person that has completed the CARB Compliance Assistance Training Course no later than two years after the effective date and every two years thereafter. More information is available at <http://www.arb.ca.gov/toxics/chrome/chrome.htm>.
- To reduce PM₁₀ and NO_x emissions in the region, BAAQMD is proposing to amend their Regulation 9, Rule 8, “Nitrogen Oxides and Carbon Monoxide From Stationary Internal Combustion Engines.” BAAQMD defines a stationary engine as one that remains at a facility for more than one year. Two of the proposed changes that would most affect SNL/CA’s engines are:
 1. limiting hours of operation of reliability-related activities to not exceed 50 hours in a calendar year for engines used exclusively for emergency purposes and with an output rating of 50 horsepower or greater (rule currently limits it to 100 hours).
 2. imposing emission limits on non-emergency engines with an output rating of 50 horsepower or greater including those fueled by diesel (emission limits currently do not apply to engines of less than 250 horsepower and engines fueled by diesel).

Four out of the five generators used only for emergency purposes at SNL/CA and that would fall under the revised rule are already limited to 20 hours of operation for reliability-related activities due to the CARB ATCM for Stationary Diesel Engines. Therefore, these four engines already satisfy the BAAQMD proposed rule changes to the hours of operation. The fifth emergency generator is currently allowed 100 hours of reliability-related operations, and so the proposed amendments would reduce its allowed reliability-related activities to 50 hours. Also, SNL/CA operates one other diesel engine with an engine rated at 96 horsepower that can be used for both discretionary and emergency purposes. Since this engine is not used exclusively for emergency purposes, if the proposed amendments to the rule were to go into effect, this engine would need to meet new emission standards by January 1, 2012. More information is available at BAAQMD’s regulator workshop website (<http://www.baaqmd.gov/pln/ruledev/workshops.htm>).

- CARB is in the early stages of promulgating a new On-Road In-Use Heavy-Duty Diesel Vehicle regulation that would apply to existing private and federal fleets. More specifically, the proposed regulation would apply to diesel-fueled vehicles with gross vehicle weight ratings of greater than 14,000 pounds. The current plan is to develop the regulation so that

emissions from these vehicles are no higher than 2004 model year engines by 2014 and no higher than 2007 model year engines by 2020. Exemptions may apply for vehicles with low annual mileage or small fleets. Several vehicles used at SNL/CA may be subject to the proposed regulations. In particular, the proposed regulation may apply to SNL/CA's solid waste collection vehicle. CARB has a regulation for solid waste collection vehicles but since SNL/CA's vehicle does not collect a fee, this regulation does not apply. Based on initial conversations with CARB in 2006, it was believed that CARB's On-Road Heavy Duty Diesel-Fueled Vehicles Owned by Public Agencies and Utilities regulation would apply to this vehicle. However, further conversations with CARB revealed that this rule would not apply to federal fleets and that CARB may try instead to capture federal fleets in the On-Road In-Use Heavy Duty Diesel Vehicle regulation. More information is available at <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>.

- In California, Assembly Bill Number 32 was signed into law on September 27, 2006 and made the CARB responsible for monitoring and reducing GHG. The law requires that CARB do the following:
 - By January 1, 2008, establish statewide GHG emission cap for 2020 that is equivalent to 1990 emissions.
 - By January 1, 2008, adopt reporting rules for significant sources of GHG. CARB is to determine what constitutes a significant source.
 - By January 1, 2009, adopt a plan to achieve emission reductions from significant GHG sources.
 - By January 1, 2011, adopt regulations, to become effective on January 1, 2012, to achieve reductions from significant GHG sources.
 - By July 1, 2007, adopt early action measures that can be implemented before January 1, 2010 for significant GHG sources.

Given the relatively limited emission causing activities associated with SNL/CA compared to other facilities in the state, SNL/CA is not expected to be considered a significant source. Therefore, the reporting and emission reduction requirements to be promulgated are not anticipated to apply to SNL/CA. However, final determination of what is considered a significant source will not be made until January 1, 2008. In addition, CARB may institute programs that allow sources not considered significant to participate and obtain credit for any emission reduction efforts. Therefore, SNL/CA will continue to monitor developments in the policies and regulations pertaining to this new law. More information is available at <http://www.arb.ca.gov/cc/cc.htm>.

- A related law that has been in effect since 1992, the Energy Policy Act of 1992 required the Department of Energy (DOE) to establish a voluntary GHG reporting program. Under the program, an individual, organization, or business may report on activities that contribute, reduce, or remove GHG. This may include emissions for a baseline period (from 1987 to 1990) and subsequent annual emissions. However, the years and the level of detail are up to the discretion of the reporter. The GHG that may be reported include carbon dioxide, methane, nitrous oxide, and halogenated substances. This is a purely voluntary program that a person or entity may decide to participate for various reasons including:
 - Recognition of environmental efforts

- Establish a record of emissions for future considering (e.g. for future required programs)
- Provide information to the public to support efforts to reduce GHG emission

Therefore, SNL/CA may voluntarily report their GHG as part of this program but is not required to participate.

More recently, the Energy Policy Act of 2005 was passed which not change the DOE voluntary program but did add the following requirements pertaining to GHG:

- Requires preparation of national strategy to promote technologies and practices that reduce greenhouse gases.
- Requires creation of program to assist deployment of technologies that reduce greenhouse gas emissions in developing countries.

More information on about the voluntary reporting program is available at <http://www.eia.doe.gov/oiaf/1605/frntvrgg.html>.

11 Goals and Objectives

The Air Quality Program has developed goals and objectives as part of the SNL/CA EMS Program. There are two primary Air Quality EMS Objectives: (1) reducing air emissions related to operations and transportation in general, and (2) reducing air emissions relating to operations and transportation with particular emphasis on Spare The Air Days. Figure 3 lists the Targets and Actions that have been identified to support these Objectives. These Targets and Actions have both short term (within the next year) and near term (within 3 years) completion dates.

Although there is one Target addressing stationary sources (i.e., the Paint Shop), the primary focus is on reducing the emissions from mobile sources. Most of SNL/CA's stationary sources of emissions are permitted with the BAAQMD, and therefore already have strict control measures applied to them. SNL/CA's mobile sources (cars, trucks, lawn mowers, leaf blowers, garbage truck, bus/van, etc.) are relatively less regulated, and therefore offer the greatest opportunity for emissions reduction.

12 References

SNL, 2005. *2004 Baseline Emission Inventory of Mobile Sources*. Prepared by Richard Shih. December 2005.

SNL, 2007. *2005 Emission Inventory of Mobile Sources Progress Report*. Prepared by Richard Shih. April 2007.

Appendix A

Permitted and Exempt Sources

Permitted Sources

Permit#	Building	Description	Type of Emission	Permit Owner
32	963	Above Ground Gas Tank	Organics	Dwight Soria
33	910	Degreaser	Organics	Jim Mitchell
55	961	Decontamination Sink	Solvents	Gary Shamber
56	961	Waste Compactor	Particulates	Gary Shamber
60	961	Drum Crusher	Solvents & Particulates	Gary Shamber
77	943	Chromium Plating Ops	Not Operational	John Hachman
93	Sitewide	Maintenance & Facilities Adhesive & Sealant Use	Organics	Dwight Soria
95	Sitewide	Sitewide Wipe Cleaning	Organics	AQ Program
96	963	Paint Spray Booth	Organics	Scott Keith
101	9151	Emergency Diesel Generator	Particulates, Organics NOx, SO2, CO	Carl Smith
102	Portable	Emergency Diesel Generator	Particulates, Organics NOx, SO2, CO	Carl Smith
103	Portable	Diesel Generator-200 Hours of Use	Particulates, Organics NOx, SO2, CO	Carl Smith
104	964	Emergency Diesel Generator	Particulates, Organics NOx, SO2, CO	Carl Smith
105	968	Emergency Diesel Generator	Particulates, Organics NOx, SO2, CO	Carl Smith
108	9151	Emergency Diesel Generator	Particulates, Organics NOx, SO2, CO	Carl Smith

Exempt Sources

Source #	Building	Process or Equipment	Owner	Status
6	907	Boiler	Russ Kellman	Exempt from Permitting
7	907	Boiler	Russ Kellman	Exempt from Permitting
25	912	Boiler	Johnny Vargas	Exempt from Permitting
26	968	Boiler	Russ Kellman	Exempt from Permitting
27	968	Boiler	Russ Kellman	Exempt from Permitting
28	910	Boiler	Johnny Vargas	Exempt from Permitting
29	910	Boiler	Johnny Vargas	Exempt from Permitting
30	907	Diesel Tank	Bob Clevenger	Exempt from Permitting
40	961	Ultrasonic Cleaner	Gary Shamber	Exempt from Permitting
41	910	Soldering Unit	Jim Mitchell	Exempt from Permitting
61	906/153	Laser Chemistry Lab	Craig Taatjes	Exempt from Permitting
65	906/101	Materials Synthesis Lab	Mark Allendorf	Exempt from Permitting
74	941/1132	Macro Molecular Chemistry Lab	Jim McElhanon/ Tom Zifer	Exempt from Permitting
81	943	Boiler	Mike Replogle	Exempt from Permitting
82	943	Boiler	Mike Replogle	Exempt from Permitting
91	906/Machine Shop	Confined Abrasive Blaster	Ken St. Hilaire	Exempt from Permitting
32100	Sitewide	Fugitive Emissions from Research lab	Air Quality Program	Exempt from Permitting

Appendix B

Program Assignments

Job Assignment	Personnel	Back-Up
Air Quality Program Lead	Leslee Gardizi	Barbara Larsen; Rick Shih
Air Quality Specialist	Rick Shih	None
Air Quality Specialist	Eric Rivero	None
Air Quality Student Intern	Victoria Krammen	TBD

Appendix C

Air Quality Program Risk Assessment

Air Quality Program Risk Assessment (Feb 2007)

The risk assessment process for the Air Quality Program follows the general steps of

1. Identify the risk
2. Identify the probability of the event occurring
3. Identify the consequence if the event occurs.

The following tables will be used to assign a numeric value to the probabilities and consequence categories.

Likelihood/Probability Of Occurrence Level	Likelihood/Probability Criteria
Very High	• Everything points to this occurring
High	• <i>High chance</i> • <i>Lack of relevant processes or experience contribute to a high chance of occurrence</i>
Medium	• <i>Even chance</i>
Low	• <i>Not much of a chance</i>
Negligible	• <i>Negligible chance this will occur</i>

CONSEQUENCE/ SEVERITY LEVEL	CONSEQUENCE/SEVERITY CRITERIA
High	<i>damage (e.g., ozone depletion, rad soil contamination) • Serious environmental impact resulting in recovery actions lasting 5 years or more (e.g., TCE in aquifer) • Results in General Emergency (affects both onsite and offsite) • Unsatisfactory rating by external regulators or cease and desist order • Affects lab leadership, including prime contract • Actions, inactions or events that pose the most serious threats to national security interests and/or critical DOE assets, create serious security situations, or could result in deaths in the workforce or general public (i.e., IMI-1) † • Actions, inactions or events that pose threats to national security interests and/or critical DOE assets or that potentially create dangerous situations (i.e., IMI-2) † • Unallowable costs or fines >\$1M • Adverse public opinion – high interest/widespread open public attention or debate (lasting weeks to months) • Customer dissatisfaction results in permanent loss of lab customer • Catastrophic failure to meet internal requirements • Loss of major program within the division (>\$10M)</i>

Medium	<ul style="list-style-type: none"> • Has the potential for adverse impact on Sandia’s programmatic performance or the achievement of corporate strategic or operational objectives • Significant injury/illness -fully recoverable with a long recovery time • Significant environmental impact resulting in recovery actions lasting up to 5 years (e.g., major oil spill) • Results in Site/Area Emergency (affects multiple onsite facilities) • One of regulator “hot buttons” (e.g., NNSA, NMED) • Results in increased oversight of limited number of functions • Actions, inactions, or events that pose threats to DOE security interests or that potentially degrade the overall effectiveness of DOE’s safeguards and security protection program (i.e., IMI-3) † • Unallowable costs or fines >\$500K and <\$1M • Adverse public opinion – moderate interest, limited PR problems of short duration (days) • Customer dissatisfaction results in partial loss of program • Significant failure to meet internal requirements • Loss of program within division (>\$1M)
Low	<ul style="list-style-type: none"> • Minimal injury/illness – Fully recoverable with a short recovery time • Minimal environmental impact that can be improved within days • Results in increased short-term oversight • Results in an Operational Emergency (affects a single onsite facility) • Actions, inactions, or events that could pose threats to DOE by adversely impacting the ability of organizations to protect DOE safeguards and security interests (i.e., IMI-4) † • Unallowable costs or fines <\$500K • Adverse public opinion with short-term local negative publicity or embarrassment
Negligible	<ul style="list-style-type: none"> • Little or no attention, might be discussed as lesson learned

The risk level will be graded according to the following matrix. Adapted from DOE O 471.4.

RISK GRADING LEVELS					
		Consequence/Severity			
		<i>Negligible</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
Likelihood of Occurrence	<i>Very High</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>	<i>High</i>
	<i>High</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>	<i>High</i>
	<i>Medium</i>	<i>Low</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>
	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Medium</i>
	<i>Negligible</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>

Risks Associated with the Air Quality Program

- 1. Increased Regulation to require Title V permit**
- 2. Nuisance Complaint filed with BAAQMD**
- 3. Large Quantity Accidental Release to Atmosphere**
- 4. Operating a Source Without a Permit**
- 5. Reduction in Program Funding by 10%**

1. Increased Regulations that will require a Title V permit

a. Identification of Risk

California (and EPA) has been increasing the number of regulated substances (especially toxics). The emission limits for some toxics are quite low. There is the potential that the increased regulations would require the SNL/CA site to obtain a Title V permit (for toxics emission).

b. Probability of Occurrence

Given the nature of a Research and Development laboratory having many different chemicals but in very small quantities the probability is considered to be LOW.

c. Consequence of Occurrence

A Title V permit would require new reporting requirements. Instrumentation for control or monitoring of the emissions would also be required. Manpower would be expended during the initial permit process, and during renewal cycles. Ongoing increased regulatory oversight could be expected. The consequence is considered LOW.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of LOW with a consequence of LOW, the risk category is **LOW**.

2. Nuisance Complaint filed with BAAQD

a. Identification of Risk

Odors or visible emissions emanating from the SNL/CA site could cause local residents to file a nuisance complaint with the Bay Area Air Quality Management District.

b. Probability of Occurrence

SNL/CA has had a few instances in the recent past of visible emissions being released from site operations. SNL/CA has also experienced breaks in gas lines, which could

possibly cause off-site odor issues. Nuisance odors from chemical releases are considered unlikely due to controls on use and storage. The probability is considered LOW.

c. Consequence of Occurrence

Response to a nuisance complaint would be handled by cessation of the operation causing the release (for the short term). Long term fixes could involve modifications to operations. Nuisance complaints are taken very seriously by the local regulatory agency and would undoubtedly lead to increased regulatory oversight. The consequence is considered LOW.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of LOW and a consequence of LOW, the risk category is **LOW**.

3. Large Quantity Accidental Release to Atmosphere

a. Identification of Risk

The risk to be considered here is a release of a contaminant to the atmosphere.

b. Probability of Occurrence

Given the large quantity of chemicals used on-site, an accidental release at some point in the lifetime of the facility is considered MEDIUM.

c. Consequence of Occurrence

Modeling has shown that the worst-case scenario of the release of a toxic gas from a SNL/CA facility has no detrimental impact on off-site persons. Impact to site personnel is not considered here, since that possibility falls under the purview of the Industrial Hygiene and Emergency Management Programs.

Compared to the totality of emissions in the San Francisco Bay Area, or the Livermore Valley, any credible release from SNL/CA is NEGLIGIBLE.

d. Overall Risk Category

In accordance with the chart above for a risk with a probability of MEDIUM and a consequence of NEGLIGIBLE, the risk category is **LOW**.

4. Operating a Source Without a Permit

a. Identification of Risk

An operation or a piece of equipment that would require a permit from the Bay Area Air Quality Management District could be operating without the knowledge of Air Quality Program personnel, and without a permit.

b. Probability of Occurrence

There are several processes in use at the SNL/CA site to help prevent such an occurrence: (1) all projects are required to make a presentation to the IDT before operations begin; (2) the Air Quality Program receives reports generated by the Chemical Information System on the use of toxics, and (3) self-assessments performed by ES&H and line organizations can identify air quality issues.

However, given the complexity and number of projects at the SNL/CA site, the probability of a source operating without a permit is graded as HIGH.

c. Consequence of Occurrence

Consequences of operating without a permit would typically involve a temporary shutdown of the process while a permit is obtained, and potentially a fine (probably <\$5,000) from the regulatory agency. This consequence is graded as LOW.

d. Overall Risk Category

In accordance with the chart above for a risk with a probability of HIGH and a consequence of LOW, the risk category is **MEDIUM**.

5. Reduction in Program Funding by 10%

a. Identification of Risk

The Environmental Management Department, like other organizations with indirect-funded programs, is experiencing flat and possibly reduced budgets over the next several years. Nearly all of the Air Quality Program's expenditures are for labor costs; therefore any reduction in the programmatic budget would affect staffing.

b. Probability of Occurrence

Due to budget constraints that are expected to continue for the next couple of years, it is a VERY HIGH probability that funding for the Air Quality Program will be reduced by 10% from FY2007 levels.

c. Consequence of Occurrence

Reduced staffing levels would be the primary affect of a 10% reduction in funding. Every effort would be made to not negatively impact regulatory required activities, although delays might occur. However, Air Quality Program activities that are done in order to be a good-corporate citizen or are good business practices would be eliminated or greatly reduced. Such projects are: activities relating to Spare The Air Days; mobile source emissions inventory; programmatic self assessments; site communications (TNTs, Communicator articles, New Hire Orientation training, organizational outreach, Earth Day activities, etc.), and Employee Commuter issues and initiatives. Based on the criteria presented in the table, the consequences of a 10% reduction in funding for the Air Quality Program are considered to be LOW.

d. Overall Risk Category

According to the Consequence/Severity Table presented above, a risk with a VERY HIGH probability and a LOW consequence falls into the **MEDIUM** risk category.

Appendix D

Program Self Assessment

Program Documents Review

Organization: 8516 **Program:** Air Quality
Date: 12/20/06 **Signature:** Leslee Gardizi (Signature on File)
Program Lead

Document Type	Document Title	Review Complete / Date	Changes Made
Operating Procedures	OP471707 – Operating Procedure for Air Quality Program ----- Note: 8516 department name change to Environmental Management needs to be incorporated into OP.	<input checked="" type="checkbox"/> 12/2006	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	OP471999 – Refrigerant Storage and Handling Procedure -----	<input checked="" type="checkbox"/> 11/2006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	AP47 800011 - Spare The Air Coordinator ----- Note: This draft AP needs to be reviewed and formalized.	<input checked="" type="checkbox"/> 11/2006	<input type="checkbox"/> Yes <input type="checkbox"/> No
PHS	PHS SNL06A00051-001 Air Quality Program Operations at SNL/CA -----	<input checked="" type="checkbox"/> 2/2006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Other Program Documents	Air Quality Source Usage Logs ----- Note: Substantive changes and additions will need to be made to content and organization of Logs Binder as a result of the 2006 AQ Program Assessment by June 30, 2007.	<input checked="" type="checkbox"/> 12/2006	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Web Pages	Environmental Management Web Page ----- Note: Reviewed AQ Metrics link. Need to update Emissions Metric with 2005 data when it becomes available (2/2007) and need to update discussion on STA Day metric.	<input checked="" type="checkbox"/> 12/2006	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Air Quality Program Web Pages ----- Note: Substantive changes, as indicated on a mark-up filed in the 2006 AQ Program Assessment file, will be made by March 30, 2007.	<input checked="" type="checkbox"/> 12/2006	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Appendix E

Line Implementation Assessment

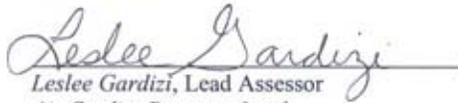


Environmental Programs Assessment Report

*Air Quality Program, SNL/CA
Compliance With Permit Conditions*

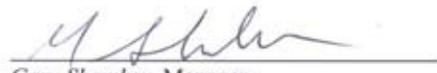
December 2006

Submitted by:


Leslee Gardizi, Lead Assessor
Air Quality Program Lead

12/20/2006
Date

Approved by:


Gary Shamber, Manager
Environmental Management Department

12/21/2006
Date

Distribution

- *Ed Cull, 8510*
- *Pat Smith, 8500*
- *Bob Carling, 8700*
- *Corey Knapp, 8200*
- *Gary Shamber, 8516*
- *Bob Clevenger, 8513*
- *Howard Royer, 8236*
- *Tim Shepodd, 8778*
- *Craig Taylor, 8514*
- *ES&H Records Center*

Summary of Results

This assessment evaluated whether the owners/operators of permitted sources were complying with operating conditions as specified in the Bay Area Air Quality Management District (BAAQMD) Permit. The assessment also scrutinized the electronic records kept for each of the permitted sources. Electronic records organize and present the raw data from a source's field logs and are designed and maintained by the AQ Program staff. The electronic records were evaluated with respect to whether they could readily and accurately show compliance with the requirements specified in the operating conditions.

No findings are being issued as a result of this assessment. All permit conditions for all sources are currently being met and the assessor found that for the most part, the source owners/operators were aware of and understood the permit conditions. There are numerous recommended actions resulting from this assessment, ranging from adjusting a line on a graph to submitting formal documentation to the BAAQMD. Most of the recommended actions identified fall into the AQ Program staff purview and should be completed by June 30, 2007.

Overall strengths were seen across the board in (1) the cleanliness and overall housekeeping of permitted equipment, (2) the organization of field log books and log sheets, and (3) the timely submission of monthly field data to the AQ Program.

Assessment Result Details

1. Scope

- a. The 2006/2007 Permit To Operate lists 13 permitted sources that have "conditions" associated with their operation. This annual Air Quality Program Assessment evaluated (1) whether the conditions are being met by the source owner/operator and (2) the completeness of required records. The BAAQMD 2006/2007 Permit To Operate was used as a basis for determining observations

or findings. Once identified, corrections can be made thereby reducing the risks of violations during Air District inspections.

- b. The organizations involved in this assessment were those that own or operate permitted sources that have operating conditions. Those organizations are: 8513, 8236-1, 8516, 8778 and 8514-1.
- c. No specific programs were assessed. Permitted sources are owned by various programs and organizations as noted in 1b.
- d. As part of this assessment the following facilities were visited: Bldg 961 (Sources 55, 56, 60); Bldg 9633 Tool crib (Source 93); Bldg 963 (Source 96); Bldg 910/310 (Source 33); Bldg 9151 (Sources 101, 108); Bldg 963 Equipment Yard (Sources 102, 103); Bldg 964 (Source 104); B968 (Source 105). Sources 77 and 95 have no actual equipment; conditions and records were evaluated as a desk assessment.

2. Methodology

Personal interviews were conducted with the source owners/operators (see Appendix 4). Detailed review of usage records (primarily maintained by AQ Program) were conducted by AQ Program staff. Equipment was inspected as described in 1d.

3. Items in Compliance

The operating conditions for each permitted source are shown in the table included as Appendix 3. All sources were found to be in compliance with all operating conditions; therefore, no findings were issued as part of this assessment.

4. Strengths

Noteworthy practices were seen for all assessed sources with respect to housekeeping. All equipment and surrounding areas were clean, clutter-free and tidy. All source owners showed a sense of ownership and organization with their field log books or laboratory log sheets. And finally, Janet Von Toussaint, Jim Mitchell, Scott Keith, Gabe Davalos and Carl Smith submit their monthly field/laboratory data to the Air Quality Program in a timely manner.

5. Observations/Recommendations

- a. Robert Oteri is the operator of the Decontamination Sink (Source 55), Waste Compactor (Source 56), and the Drum Crusher (Source 60). Robert indicated that the latter two sources have not been operated in at least 5 years and the only thing that goes down the Decontamination Sink is water and Dial™ soap. Under the current regulatory philosophy, these three sources probably would not require permits. It is recommended that SNL/CA AQ Program submit a Source Archival Request to the BAAQMD by April 30th. If approved, these pieces of equipment would be removed from the BAAQMD Permit To Operate.

- b. Dwight Soria is the owner of the Facilities and Maintenance Adhesives and Sealants (Ad/S) Usage Permit (Source 93); the Air Quality Program maintains the records for this source. The following observations were noted:
- i. The Exempt and Nonexempt Ad/S Logs do not specifically show information that corresponds to Condition 1. The required information can be surmised and calculated, but the log sheets do not specifically tabulate the total VOC emissions (exempt and nonexempt) and compare it to the limit specified in Condition 1. It is recommended that the AQ Program revise the table format so that direct comparison between table totals and the limits specified in the conditions can be made. This should be completed by March 30, 2007.
 - ii. The Permit To Operate was near the Ad/S cabinets, but it was an expired permit. This is not a finding because the BAAQMD requirement is that the Permits be “readily available”. Since the current permit is always in the AQ Program office, it is always readily available if an inspector were to request it. A copy of the current Permit To Operate was posted on the Adhesives cabinet.
 - iii. Dwight was unaware of the Exempt and Nonexempt Ad/S electronic log sheets that AQ maintains. AQ Program staff discussed the concept of “closing the data loop” and Dwight indicated that he would like to receive a copy of the electronic usage log. AQ Program staff will begin sending Dwight a monthly e-mail with the electronic logs as an attachment.
- c. Scott Keith and Gabe Davalos are the owners of the Paint Booth Permit (Source 96). The following observations and recommendations are noted:
- i. Scott suggested that the methylene chloride column be removed from the coatings log (because no coatings contain methylene chloride) and kept only on the Surface Preparation log. AQ Program will revise both painters log and electronic log.
 - ii. The print outs of the electronic usage logs do not provide the detail and organization necessary to determine compliance with the permit conditions. Examples are:
 1. Coating log – missing entries at end of each page
 2. Coating log – 3.75 gallons of methylene chloride on the electronic log while the painters log shows 0 gal?
 3. All logs – need to have units (gallons, quarts, ounces) labeled better
 4. Gun Cleaning log – 2005 data is included with the 2006 log
 5. Coatings log – Coatings w/ ICn/DICn are more than total coatings used

This is being considered an observation and not a finding because the original painters’ logs and the electronic logs are accurate. However the **print-outs** of the electronic logs should be refined to expedite and ease a BAAQMD inspection. It is recommended that the AQ Program personnel

maintaining this electronic database take a formal elementary class in File Maker Pro in order to acquire the skills necessary for optimal usage of this database.

- d. Carl Smith is the operator of the Bldg 9151 emergency generators (Sources 101 and 108), the Bldg 964 emergency generator (Source 104), the Bldg 968 emergency generator (Source 105) and the two portable generators (Sources 102 and 103). The following observations and recommendations are noted:
 - i. For Sources 101 and 102, the limit of 20 hours for Reliability Related Activities should be indicated on the usage tables. AQ Program staff will correct.
 - ii. For all five generators, the usage graphs have not been sent to the source owner (Carl) since mid-summer because the total hours for each generator have been so far below the limits it didn't seem necessary. AQ Program staff discussed the concept of "closing the loop" with data received from the source owners. It was decided that AQ Program staff would send Carl a monthly e-mail with graphs as attachments and a paper copy quarterly.
 - iii. For Source 103, the usage table and graph need some reformatting as indicated on a mark-up filed in the 2006 AQ Program Assessment file. AQ Program staff will revise tables and graphs.
 - iv. In August 2006, the AQ Program sent an e-mail to the BAAQMD requesting clarification on several of the permit conditions pertaining to the generators. The BAAQMD found that some changes to the condition were in fact needed and rather than revising the existing condition they issued a new condition for Sources 101, 104 and 105. As part of this assessment, AQ Program staff replaced copies of the old conditions with the new conditions at each of the affected generators and discussed the new conditions with Carl. One requirement of the new condition that had not been specified previously was the requirement for the generators to have a nonresettable hour meter up to 9,999 hours. As part of this assessment, AQ Program staff verified that the Sources 101, 104 and 105 did have acceptable hour meters.
- e. John Hackman is the owner/operator of the Chromium Plating Operations permit (Source 77). This source is not operable and, in fact, does not physically exist. We have kept the operating permit over the years so that in the event that we need this capability, we would have an existing permit in order to start up operations. There have not been any requirements to keep this permit except payment of the annual permit fee (\$150). However, impending regulatory changes will impose minor requirements on our chromium plating operations even if throughput is 0 amp/hrs. This assessment focused on briefing John Hackman on these future requirements, rather than evaluating a nonexistent operation. It is recommended that John confer with his manager Tim Shepodd regarding the cost/benefit of keeping this permitted source. AQ Program will

provide John and Tim a white paper on the upcoming regulatory changes by mid-February.

- f. Jim Mitchell is the owner/operator of the Perchloroethylene (AP-20) Cold Cleaner (Source 33). The following observations and recommendations are noted:
 - i. Janet Von Toussaint and Jim Mitchell promptly provide the AQ Program with the Source #33 usage log on a monthly basis. However, the electronic usage logs maintained by the AQ Program are not sent back to the source owner. AQ Program staff discussed with JMitchell the concept of “closing the data loop”. Jim indicated that he would like to receive a copy of the electronic usage log. AQ Program staff will begin sending Jim a monthly e-mail with the log as an attachment.
 - ii. Discussions pointed out that when operators remove spent solvent and tag it for disposal, they are not indicating this on the AP-20 log sheet. There is no requirement to log it, but if they do we can take credit for the solvent going to waste rather than evaporating to the atmosphere. Review of the laboratory log sheet shows that there is no actual column for indicating “waste generated”, although there is a “comments” column. Consider revising the laboratory Usage Log to provide a column for indicating the amount of solvent disposed of as waste.
- g. The AQ Program analyzes the data and maintains the records for the Sitewide Wipe Cleaning permit (Source #95). In September, AQ Program staff noted that daily records for the usage of TCE for wipe cleaning purposes were not being kept, as is required by the permit conditions. A survey of approximately 20 TCE users was conducted, with 2 indicating that they use TCE for wipe cleaning purposes. Usage Logs were designed for each of the users and distributed. AQ Program staff will collect usage logs quarterly and maintain records.

No other observations were noted for Source #95.

6. Findings

There were no findings resulting from this assessment.

7. Personnel Interviewed

The personnel interviewed as part of this assessment are identified in Section 5.

Appendices

Appendix 1. Assessment Team

Leslee Gardizi

Eric Rivero

Appendix 2. Schedule

The AQ Program Assessment occurred during November and December 2006.

Specific dates of interviews and facility/equipment inspections were:

Robert Oteri (Sources 55, 56, 60) December 7, 2006

Dwight Soria (Source 93) December 7, 2006

Scott Keith/Gabe Davalos (Source 96) December 11, 2006

Carl Smith (Sources 101, 102, 103, 104, 105, 108) December 14, 2006

John Hachman (Source 77) December 13, 2006

Jim Mitchell (Source 33) December 20, 2006

APPENDIX 3. PERMIT CONDITIONS CHECKLIST

Appendix 3 is a checklist detailing the conditions applicable to each permitted source.

Appendix 4. Memo To Source Owners

Appendix 4 is the initial memo to Source Owners describing the scope of the assessment and the need for personal interviews.



date: December 1, 2006
to: Distribution
from: Leslee Gardizi (8516), MS 9221
subject: EMS Annual Self Assessment - Air Quality Program/Permitted Air Pollution Sources

As part of our site's Environmental Management System (EMS) all environmental programs conduct an annual Line Implementation Assessment which evaluates how well the line organizations or site operations are implementing the requirements of the Air Quality Program. This year, the Air Quality Program has identified the BAAQMD Permit to Operate as the target area. This annual Self-Assessment will focus on the permitted sources that have "operating conditions" associated with their operations. I would like to meet with each of you individually to ensure that you, the operator/owner of the permitted source, fully understand the specific requirements of the operating conditions. We will also review the records that are being kept for the source and ensure that they are complete as required by the operating permit and applicable regulations.

I will be sending you an Outlook Meeting Notice proposing a date and time to meet. If it is not a convenient time for you, please propose another over the next two weeks. I anticipate that the meeting will take from 30 minutes to 2 hours, depending on the number of sources you are responsible for and the complexity of the operating conditions associated with your source. If you have any questions, please call me at 4-3680. Thank you.

Distribution:

Dwight Soria: Above Ground Gas Tank (Source 32)
Maintenance & Facilities Adhesives/Sealants Use (Source 93)
Jim Mitchell: Perchloroethylene Cold Cleaner (Source 33)
Robert Oteri: Decontamination Sink (Source 55)
Waste Compactor (Source 56)
Drum Crusher (Source 60)
John Hachman: Chromium Plating Operations (Source 77)
Scott Keith: Paint Spray Booth (Source 96)
Carl Smith: 9151 Emergency Diesel Generator (Source 101)
Portable Emergency Diesel Generator (Source 102)
Portable Diesel Generator (Source 103)
964 Emergency Diesel Generator (Source 104)
968 Emergency Diesel Generator (Source 105)
9151 Emergency Diesel Generator (Source 108)
AQ Program: Sitewide Wipe Cleaning (Source 95)