5
10-14-06

City of Alexandria, Virginia

MEMORANDUM

DATE: September 28, 2005

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

FROM: Christopher P. Spera
Assistant City Attorney

SUBJECT: Responses to Issues Raised at September 19, 2005 Public Hearing Regarding Virginia Paving Asphalt Plant, 5601 Courtney Avenue

---

ISSUE:

City Council has requested a response to issues raised during the public comment portion of the September 19, 2005 public hearing by residents of Cameron Station regarding the Virginia Paving asphalt plant. Given that the issues raised involve a number of different departments within the City, the Office of the City Attorney prepared this memorandum with input from those departments.

BACKGROUND:

Virginia Paving Company, formerly Newton Asphalt, has been in operation in the City at its current location at 5601 Courtney Avenue for over 40 years. It currently provides asphalt paving service from its Alexandria plant for the City, the federal government, VDOT and other local governments. Some of these paving contracts contain requirements from local governments for paving at night in order to reduce the impact on traffic when a re-paving project is in process. Asphalt paving generally requires relatively warm weather, so the spring and summer tend to be the months when nighttime operations and vehicular traffic at the plant takes place.

Virginia Paving's operation is subject to the terms and conditions set forth in Special Use Permit No. 398, granted by the City on April 12, 1960. That SUP contains the following language, which was among the conditions imposed on the applicant by the City in 1960 upon the recommendation of the City's Director of Traffic:

> That no operation of this plant requiring exit or entrance of vehicles be permitted after hours of darkness or during inclement weather or on Sundays or holidays.

The restriction neither generally limits the operation of the plant nor sets hours of operation for the plant. However, it does limit plant operation with respect to vehicular traffic to and from the plant – primarily the trucks that transport the removed asphalt road surface to the plant to be recycled and take the newly manufactured asphalt from the plant for installation on the roadway being re-paved. Although this condition was imposed on the plant back in 1960, it appears as if the City had never taken an enforcement action regarding vehicular traffic after hours of darkness against this facility. Since the City's enforcement procedures have historically been complaint-driven, and there appear to have been no complaints regarding vehicular traffic at the plant after dark to which to respond, it appears as if both the City and the asphalt plant had over time simply not focused on this condition, which was imposed over four decades ago.

With the development of Cameron Station as a residential neighborhood, the City received an increasing number of complaints over the last twelve months from Cameron Station residents regarding air quality, smoke, soot and odor in the area. In response to these complaints, the City began testing and investigating potential sources of the conditions about which the Cameron Station residents complained. During the course of this investigation, City staff "rediscovered" the vehicular traffic restriction from the 1960 SUP and brought it to the attention of both the plant and the residents. This resulted in Virginia Paving filing its March 29, 2005 application to amend SUP No. 398 to allow nighttime vehicular traffic during the portion of the year when it conducts nighttime paving operations. In addition, in the context of assessing the resident's complaints, the City discovered and required Virginia Paving to remedy certain fire and building code violations, but those do not appear to bear any relationship to the conditions about which the Cameron Station residents complained. At the present time, Virginia Paving is in compliance with all applicable Virginia Department of Environmental Quality standards regarding air emissions. While there was a fine assessed on Virginia Paving by the federal EPA, this fine was related to the lack of a storm water management plan, and not to any emission from the plant.

Staff have engaged in an extended dialogue with the plant and the Cameron Station community, working with both sides to try and develop a comprehensive environmental plan directed at the issues that formed the overwhelming majority of the residents' complaints since the development of Cameron Station – air quality, smoke, odor and soot – as well as storm water management, open land issues and other issues of interest to the City.

Staff's initial approach regarding the nighttime vehicular traffic was to allow Virginia Paving to continue nighttime vehicular traffic, pending resolution of this issue through an amendment to their SUP. However, during the public commentary portion of the public hearing on June 21, 2005, residents of Cameron Station complained that the City was allowing Virginia Paving to violate the terms of its SUP regarding nighttime vehicular activity. Staff, at Council's direction, prepared a report setting forth the history of its involvement with the applicant and the basis for how it had treated the applicant during the pendency of the application to amend the SUP. This report was shared with Council at the June 28, 2005 public hearing, at which time Council limited Virginia Paving's nighttime vehicular activity to paving projects for the City of Alexandria or for the Woodrow Wilson Bridge project until the application to amend the SUP

had been ruled upon. That application is scheduled to be heard by both the Planning Commission and Council in November of 2005. Staff continues to work with the applicant and the community to ensure that all relevant factors are considered in the preparation of the staff report on the application. This includes consideration of substantial environmental testing and modeling results either already provided or to be provided by the applicant. In addition, the Cameron Station community has arranged for an environmental review consultant, who will be reviewing the same testing and modeling results and whose report will also have to be considered by staff prior to the issuance of its report.

ADDITIONAL CONCERNS BY THE COMMUNITY

During the public comment portion of the September 20, 2005 public hearing, residents of Cameron Station raised a number of additional issues regarding Virginia Paving. The issues seem to be related to general concerns regarding the information made available to the community and the general operation of the plant, and are not related to the prohibition on nighttime vehicular operations, as modified by Council on June 28, 2005. Those concerns can be summarized as follows:

1) In October of 2004[1], the Office of the City Attorney sent a letter to Virginia Paving setting forth a number of building and fire code violations that had been discovered during the course of staff's investigation in response to community complaints and demanding corrective action. A copy of the letter is attached hereto. Cameron Station residents asserted that this letter should have been "made public" during the June discussions regarding the SUP prohibition on vehicular traffic. The letter was described as a "bombshell" that was "hidden" from the community and Council.

   Response: This characterization of both the October 2004 letter and staff's treatment of it is inaccurate. Staff's June 28, 2005 memorandum to council, a copy of which is attached hereto, specifically states at pages 2 and 3 that staff had been involved in an ongoing investigation in response to community complaints and that a specific issue included in the investigation included "building and fire code violations." Moreover, the code violations that were identified have nothing to do with the prohibition on nighttime vehicular traffic that was the subject of the public comment on June 21, 2005 or the Council Action on June 28, 2005. Staff has worked with Virginia Paving, as it would with any other property owner or business found to have code violations, to clear those violations. It is standard practice for staff to try work with the property owner and remedy code violations before taking more drastic measures. Code Enforcement's recent inspection of the plant revealed that the code

[1] / Although the residents referred to an October 4, 2004 letter from the Office of the City Attorney, the actual date of the letter is October 26, 2004.

violations referenced in the October 2004 letter had either been cleared or were part of the overall remediation plan that Virginia Paving is working on with staff in the context of the application to amend the SUP. A copy of Code Enforcement's September 14, 2005 report is attached hereto.

2) Cameron Station residents asserted that an ambient air quality study conducted by the City in 2004 was only provided to the community after repeated requests and that this report showed that the air quality around Cameron Station was "among the worst in the nation." The residents claimed that this report should have been brought to Council's attention in June.

Response: These representations mischaracterize the content of the report and staff's communication of the report to the community. Senior members of T&ES met with Cameron Station community leaders in June of 2004 and discussed air quality and potential sources, specifically the Waste-to-Energy Facility and Virginia Paving. Staff shared with the community information regarding the upgrades and improvements that occurred at the WTE Facility in 2000. In response to the community's concerns about air quality, staff agreed to perform short term monitoring of particulates, which was completed in August of 2004. A draft report based on the monitoring results was received in October of 2004. A copy is attached hereto. Staff attended a Cameron Station Community meeting on November 17, 2004 and presented the results of the monitoring. The monitoring results indicated the air quality was meeting the National Ambient Air Quality Standard for PM 10 but staff agreed to pursue additional resources to do additional monitoring. Council approved funding for an additional PM 10 monitoring station in the FY2006 Budget and staff is presently working on the installation of that station. All these steps were taken even though staff priorities set in the 2005 operating budget had to be reordered to accomplish this. Community representatives requested the monitoring results after a meeting between staff and the community in July of 2005; they were given to the community in August of 2005.

Staff believes that the largest PM 10/2.5 contributor in the Cameron Station vicinity is emissions from vehicles on the Beltway and other nearby roadways. A more fulsome analysis of the source of particulates in this area is underway and is part of the ongoing investigation, testing and modeling that will be considered by staff, the Planning Commission and Council as a part of this application. The ambient air quality monitoring results had nothing to do with the issue of nighttime vehicular traffic, which was the issue before Council in June.

3) Cameron Station residents stated that there may be other information that has been withheld by staff from the public and Council.

Response: As previously stated, staff did not withhold either the October 4, 2004 letter or the ambient air quality monitoring results from the public or Council. Moreover, staff has responded to numerous requests for copies of documents and other information from the community in the context of this application; P&Z staff communicates with representatives of the community regarding Virginia Paving almost weekly and both T&ES staff and the City Attorney's office have responded to numerous community inquiries as well. Staff has met with the community representatives on numerous occasions to answer their questions and keep them apprised of the process. The members of City staff involved with this application all feel that they have interacted with the community in a responsive, timely and cooperative manner and will continue to do so. Staff also feels that it has consistently conveyed a fair and accurate picture of the status of this application when asked to do so by Council.

4) Cameron Station residents stated that Council had not been advised in June that Virginia Paving had been fined by the federal EPA.

Response: The issue before Council in June was related to the prohibition on nighttime vehicular traffic during the pendency of the application, not an ultimate decision on the application to amend the SUP. Moreover, as previously noted, the EPA fine was related to Virginia Paving's failure to have a storm water management plan in place, a shortcoming that has been addressed to the EPA's satisfaction. Staff is unaware of any violations from either the EPA or the VDEQ related to emissions from the plant.

CONCLUSION

The issue that is currently being considered by staff and that will be presented to the Planning Commission and Council will be whether or not SUP No. 398 should be amended as requested by Virginia Paving. This can only take place after staff and the community have had an opportunity to review the environmental testing and modeling results related to the plant. While the various letters and reports referenced by the Cameron Station residents on September 19 may be relevant in the context of the Planning Commission and Council hearings on this application, they do not appear to be items that require action at this time, either by staff or by Council.

ATTACHMENTS:

October 26, 2004 Letter to Virginia Paving from City Attorney's Office
September 14, 2005 Code Enforcement Report
June 28, 2005 Staff Memorandum to Council
Draft Report on Ambient Air Quality Monitoring at Cameron Station

Copies To:
James Hartman, City Manager
Rich Baier, T&ES
Bill Skrabak, T&ES
Eileen Fogarty, P&Z
Rich Josephson, P&Z
Art Dahlberg, Code Enforcement
Ignacio Pessoa, City Attorney

October 15, 2004

Mr. William J. Skrabak
Division Chief
City of Alexandria
Division of Environmental Quality
301 King Street, Room 3900
Alexandria, VA 22314

Re: ***Draft Report on Ambient Air Quality Monitoring***
Cameron Station
Alexandria, Virginia
MM&A Project No.: COA123

Dear Mr. Skrabak:

Marshall Miller & Associates, Inc. (MM&A) collected and tested ambient air at two locations near Cameron Station during August 2004. The samples were analyzed for Total Suspended Particulates (TSP), Particulate Matter Less than 10 μm (PM10), metals and by microscopy. The attached report presents our compilation and evaluation of these analyses.

If you have any questions concerning the findings or require additional guidance, please feel free to contact us at your convenience. MM&A appreciates this opportunity to provide the City of Alexandria with our professional environmental consulting services. We look forward to working with you on future projects.

Respectfully,

MARSHALL MILLER & ASSOCIATES

Eric P. Powers

Eric Powers, C.P.G
Senior Scientist

Attachment: Draft Report

Suite 203, 11277 Airpark Road / Ashland, VA 23005 / Tel 804.798.6525 / Fax 804.798.5907
Web Site -- http://www.mma1.com • E-mail -- ashland@mma1.com
Other Offices in Bluefield, VA / Kingsport, TN / Charleston, WV / Lexington, KY / Raleigh, NC / Madisonville, KY / Harrisburg, PA / Kansas City, KS

DRAFT REPORT ON
AMBIENT AIR QUALITY MONITORING
CAMERON STATION
Alexandria, Virginia

October 15, 2004

Prepared For:
Mr. William J. Skrabak
CITY OF ALEXANDRIA
Division of Environmental Quality
301 King Street, Room 3900
Alexandria, Virginia 22314

Prepared By:
MARSHALL MILLER & ASSOCIATES, INC.
11277 Airpark Road, Suite 203
Ashland, Virginia 23005
(804)798-6525

MM&A Project No. COA123

Prepared by:

Eric Powers, C.P.G.
Senior Scientist

Reviewed by:

Vince Alaimo
Senior Scientist

MARSHALL MILLER & ASSOCIATES

EXECUTIVE SUMMARY

Ambient air samples were collected from the vicinity of Cameron Station townhouses over a three-week period in August 2004 and analyzed for total suspended particulates (TSP) and particulates less than 10 microns in diameter (PM10). The nine 24-hour sample periods were selected to measure particulates mostly during worst-case air quality conditions when the townhouses were downwind of several nearby potential PM sources. The results indicated the samples contained particulate (PM) levels and constituents (metals) commonly found in urban air. While some of these constituents undoubtedly originate for human activity such as burning fossil fuels, the type and concentration of particles suggests a mixture of natural and manmade sources. This is not surprising since the concentration of PM in ambient air is often impacted by human activity, regardless of the origin of the particles.

While a small number of anomalous particle concentrations were detected, most of the results fell within a narrow range and all were well below the U.S. EPA's (EPA) National Ambient Air Quality Standards (NAAQSs) for PM10. The data also suggest that the largest variations in particulates are likely attributable to weather factors such as the amount of rainfall and to a lesser extent, the wind direction during the sampling period.

Lead concentrations, as determined from selected samples, were also well below the NAAQS of 1.5 $\mu g/M^3$ and below EPA's 2001 Region III average concentration. Since lead was phased out of gasoline over two decades ago, the largest contributors to airborne lead are industrial sources, which account for 78 percent of the emissions and all violations of the NAAQSs. Subordinate amounts of lead continue to come from transportation and stationary sources.

It is not possible to determine the exact source of any PM found in the Cameron Station samples using the techniques employed in this study. However, it is possible to develop a broad characterization of the particles as originating from human activity. The microscopic analysis was useful in characterizing some of the PM as fossil fuel combustion by-products. However the exact source of the PM remains in question and

likely originates from a number of different sources common to the area. These include, but are not limited to: transportation (automobile, truck, train, aircraft exhaust) and roadway dust; electrical power generation (coal-fired power plants); industry (asphalt and cement manufacture); and construction (diesel powered equipment, demolition, earthmoving, etc.). Additionally, natural sources such as forest fires and dust storms also contribute to PM found in ambient air. In most cases, ambient air contains a mixture of materials from natural and human sources that in urban areas are often suspended as a consequence of human activity.

Identifying the exact source of PMs in Cameron Station air would require additional study to characterize emissions from specific nearby sources either by conducting additional testing, dispersion modeling or a combination of the two. Since the current levels encountered in Cameron Station air do not exceed applicable government standards, it is unlikely that such additional study would support enforcible actions on the part of the regulating agencies and therefore any follow-up actions would necessarily have to be based on projected health impacts from identifiable PMs.

TABLE OF CONTENTS **PAGE**

TABLES

TABLE OF CONTENTS – continued

FIGURES

APPENDICES

PHOTOGRPAHS

)DUCTION

2004 the City of Alexandria tasked Marshall Miller and Associates (MM&A) g ambient air for suspended particulate matter (PM) in the vicinity of the tation residential townhouses located in the west side of Alexandria. Such may originate from any number of stationary or mobile sources including, ted to: natural windblown dust, diesel truck and/or train exhaust, aviation trical power generation exhaust and industrial sources. Particulates may be tly or formed in the atmosphere by transformations of gaseous emissions s of sulfur (SO_x), oxides of nitrogen (NO_x) and volatile organic compounds abundance and chemical/physical properties of particulates vary greatly ion, meteorology, and source category, thus complicating the assessment of fare effects.

PURPOSE

f this monitoring program was to measure and characterize the prevailing ıded particulates (TSP) and particulates less than 10 microns (μm) in)) in ambient air in the vicinity of the Cameron Station townhouses. In tudy attempted to measure PM mostly during worst-case conditions when were downwind of several suspected nearby sources.

ıe broad array of urban sources in the Washington D.C. metropolitan ific sources are located within one half mile of the site, including a te-fired electrical generation station and an asphalt recycling facility. ll of the potential sources mentioned above are also present at or near t, particulates from these are likely to be captured in the samples. In an e whether particulates could be related to one of the known specific ly goes beyond measuring particle concentrations alone by also icroscopically and chemically to more fully characterize the types of the air in the area of interest. It should be noted that although this ed to determine the exact source of airborne particles, it provides a ... ıor determining whether local particulate concentration exceeds

regulatory standards and may also provide a basis for follow-up determinations on whether they may be attributable to nearby sources.

1.2 SCOPE OF WORK

The scope of work for this investigation was as follows:

- Collect ambient air samples concurrently from two sites in the vicinity of Cameron Station under a variety of atmospheric conditions; and
- Analyze air samples for PM10 and TSP using gravimetric analysis on all samples and metals and microscopic analysis on four selected TSP samples.

2.0 METHODS

2.1 SAMPLE LOCATIONS

MM&A collected air samples from two fixed locations near the Cameron Station townhouses on nine days between August 6th and the 24th in 2004. Dedicated sampling equipment was set up at each of the two locations and operated on an intermittent basis to collect ambient air samples when conditions permitted. Samples were collected over a broad range of weather conditions except during prolonged periods of precipitation. The total elapsed time for all of the samples to be collected was extended beyond the original scheduled period because the exceptionally rainy period of August 2004 precluded obtaining samples during worst-case (stable) air quality conditions.

Map 1 illustrates the location of the two sampling points based on a 2002 aerial photograph of the Cameron Station area. The stations were selected not only because of their close proximity to Cameron Station but also because they are downwind of two nearby sources of particulate matter: the asphalt recycling plant and the electric power generation station. The prevailing wind in Alexandria in August/September is primarily from the south but with common shifts to the west and northwest following the passage of cold fronts.

Station 1 was established on the roof of the picnic shelter at Armistead Boothe Park, near the western edge of the Cameron Station community **(Photo 1)**. This station is within 1,000 feet of the asphalt recycling facility and just over 1,200 feet north of the power

station. Of the two sampling stations, Station 2 is on average, more frequently downwind of the closest sources during the summer months. Two samplers, one for PM10 and the other for TSP were installed on the rooftop side by side for the duration of the sample period **(Photo 2)**. The intakes for both samplers were approximately 15 feet off of the ground. Existing electrical outlets beneath the picnic shelter supplied power for the sampling equipment.

Station 2 was established on the roof of the City Parks and Recreation maintenance shed in Brenman Park east of the Cameron Station townhouses **(Photo 3)**. This station is positioned northeast of the two sources mentioned above and is therefore still frequently downwind of the sources of interest. The configuration of samplers for both PM10 and TSP were identical to those deployed at Station 1.

2.2 SAMPLE COLLECTION

The PM10 and TSP sampling methods both employ sampling devices that pull air through a filter media in order to collect entrained particles from the surrounding air **(Photo 4)**. The pre-calibrated samplers are electrically powered and were programmed to sample over a 24-hour period per sample. The filter media (glass micro-fiber) and the equipment that draws the air through it are both fully housed in a unit that contains the filter, vacuum pump, flow meter and controller. Separate units of slightly differing design are required to collect PM10 and TSP samples. The main difference between the two is that the PM10 sampler is equipped with a specially designed intake baffle that eliminates particulate greater than 10 microns prior to reaching the filter media. Conversely, this baffle is absent in the TSP sampler, which allows all of the particulates present in the air to be collected on the filter media.

Samples for each sampling period and type were collected on individual, pre-weighed, 8 x 10-inch Wattman glass micro-fiber filters. A serial number embossed on each filter insures that the tare weight of the media is known before it is deployed in the sampler. At the time of deployment, the pump controller is pre-set to sample for a 24-hour period. An attempt was made to deploy and retrieve sample media at 11:00 am each morning and

consequently each sample spans two calendar days. The number of operating hours and flow rate for each sampler were also recorded during each deployment/retrieval event. Weather data for each sample period were collected from the National Weather Service station at Ronald Reagan National Airport. Temperature, humidity, barometric pressure, wind speed/direction and precipitation were collected and matched to the sample period and summarized in **Table 1.** In several instances, weather conditions changed substantially throughout the sample period so that the sample represents air quality under a composite of atmospheric conditions.

2.3 SAMPLE ANALYSIS

2.3.1 Gravimetric Analysis

Before deployment in the field, filters are desiccated in the laboratory for a minimum of 24 hours and then weighed to the nearest 0.1 of a milligram on an analytical balance. National Institutes of Standards and Testing (NIST) traceable weights are used to check the balance accuracy prior to weighing the filters, which are annually certified by an independent company using NIST traceable weights. The pre-weighed filters were then sealed in Ziplok® bags and shipped to the test site. After sampling, the filters are resealed in clean Ziplok® bags and returned to the lab via express delivery. Once in the lab, the filters are once again desiccated before weighing them to the nearest 0.1 mg. The final weight of the sample is the difference between the initial and final weights reported in grams. The laboratory certificates for the gravimetric analyses are presented in **Appendix I.**

The particulate concentration was determined by calculating the volume of air that passed through each filter during the sampling period, which was generally 24 hours. The volume of air (reported in m^3/min) drawn through each filter was calculated using the following formula:

$$\mathbf{m^3/min = 1/m((Sqrt(in\ H_2O)(Pav/760)(298/Tav)) - b)}$$

Where:

m = sampler slope
b = sampler intercept
in H_2O = average TE-5008 manometer reading

T_{av} = daily average temperature (°K)
P_{av} = daily average pressure (mmHg)
Sqrt = square root

The sampler used with each filter is identified with its specific slope (m) and intercept (b). The unit volume result is then multiplied by the sampling duration (reported in hours) to obtain the total volume that passed through the filter. This result was in turn, divided into the mass of the particles trapped on the filters to obtain a mass per cubic meter of air ($\mu g/m^3$). The data and results of these calculations are presented in **Table 2** where they are grouped by sample type and location.

2.3.2 ICP/MS

Four TSP samples were selected for further testing to determine the content of metals in the particulate collected on the filters. The filters are cut with a template widthwise 3/4 inch (1/12 of the filter); placed in a beaker with 5 milliliters (ml) of aqua regia, loosely covered and digested at 80°C water bath for one hour. The samples were then cooled and brought to 50 ml final volume with reverse-osmosis de-ionized (RODI) water. Samples are then shaken and centrifuged for five-minutes at 3000 rpm. The prepared samples were then analyzed by inductively coupled plasma mass spectroscopy (ICP/MS), which uses radio frequency energy to induce a species-dependent response by each metal present in the sample. The results are reported as mass in micrograms (μg). The laboratory certificates for the ICP/MS analyses are presented in **Appendix II.**

2.3.3 Microscopy

Four TSP samples were selected for microscopic analysis to document the morphology of particles trapped on the filters. Samples were examined on the filter material through an American Optical Stereoscope with zoom magnification from 10.5X to 63X. Final examination was performed using Olympus BX51 research grade microscope with bright-field/dark-field reflective halogen illumination, tri-ocular, 10X eyepieces with a micrometer-calibrated grid. Objectives are Achromat 10X, 20X, 40X. Digital photographs were taken with a Nikon Coolpix 4500 through the phototube camera adapter. A visual description of each sample is provided along with the judgment of the

ry regarding the probable composition of the predominant particles. The ›ratory certificates for the microscopic analyses are presented in **Appendix III.**

RESULTS

3.1 GRAVIMETRIC RESULTS

›le 3 summarizes the results of gravimetric analysis for TSP and PM10 air samples ıped by location and sorted by the sample initiation date. As expected, the TSP .ples had the highest concentrations since they account for the entire range of iculates present at the time of sampling. TSP concentrations averaged between 52.7 64.2 $\mu g/m^3$ with the somewhat higher average occurring in Boothe Park. PM10 centrations averaged 40.1 $\mu g/m^3$ in Brenman Park and 48.9 $\mu g/m^3$ in Boothe Park.

ed on the minimum and maximum for each sample type and the prevailing weather ditions (precipitation and wind direction) at the time of collection, the lowest centrations were encountered on days when it rained and the highest concentrations .ed on dry days. This is not surprising due to the cleansing effect of precipitation ambient air. Concentration maximums occurred on dry days when the prevailing ıds were anywhere from south-southwest to east-northeast to east-southeast. Because se minimums occur during periods with higher wind speeds and the maximums during iods of low wind speed, the results appeared to be more influenced by wind direction ıer than speed.

3.2 METALS RESULTS

ble 4 summarizes the ICP analytical results for metals on four filters selected from the nple population. Three of the four samples are from Boothe Park while the fourth is m Brenman Park. Twenty-five of the 33 metals analyzed were detectable in the nples. Within the group of detectable metals, there was little variation from one nple to the next. Sodium, which is common in the earth's crust and in manufactured ›ducts such as road salt, occurred at the highest concentrations, ranging from 15.34 $/m^3$ to 18.99 $\mu g/m^3$, followed by sulfur, which occurred at concentrations of 4.53 $\mu g/m^3$ 4 $\mu g/m^3$. Sulfur is a constituent of diesel and other fossil fuels such as coal and is

emitted directly into the atmosphere from vehicular exhaust and from coal-fired power plants. As mentioned above, it is also formed in the atmosphere by transformations of gaseous emissions containing oxides of sulfur. Other metals that were common to all of the samples were calcium, iron, potassium, aluminum and magnesium, which are all abundant constituents of the earth's crust. The likely origin of these metals is from fine windblown silt composed of soil particles. Numerous other metals such as zinc, silicon and phosphorous identified in the samples are also commonly found in the earth's crust and are suspended in the air by wind and human activity such as construction and transportation. Beyond these generalizations, it is not possible to attribute any of the detected metals to a particular source using the methods employed.

3.3 VISIBLE MICROSCOPIC ANALYSIS RESULTS

The most identifiable particulate visible in the microscopic analyses are "black carbon particles in the range of 2.5 to 50 μm in size." These particles were common to all four samples examined and according to the laboratory are common by-products from the combustion of fossil fuels such as diesel and heating oil. Since the identification of particulate is based solely on the judgment of the analyst, it is not possible to resolve the actual composition of the particles based on this analytical approach. Although other particulates are also visible in the samples, they are less distinctive in morphology than the "black carbon particulates" and are likely particles of soil-derived materials.

4.0 CONCLUSIONS

4.1 COMPARISON TO EPA NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

The Clean Air Act (CAA), which was last amended in 1990, required the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The CAA established two types of national air quality standards. *Primary standards* set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly and *Secondary standards* set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

As required by the CAA, the EPA Office of Air Quality Planning and Standards (OAQPS) set NAAQSs for six principal pollutants, which are called "criteria" pollutants. There is no standard under NAAQS for TSP. The relevant criteria are listed below in **Table 5**.

TABLE 5.
PARTIAL LIST OF NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Primary Stds.	Averaging Times	Secondary Stds.
Lead	1.5 $\mu g/m^3$	Quarterly Average	Same as Primary
Particulate Matter (PM_{10})	50 $\mu g/m^3$	Annual [2] Arith. Mean	Same as Primary
	150 ug/m^3	24-hour [1]	

[1] Not to be exceeded more than once per year.
[2] To attain this standard, the expected annual arithmetic mean PM10 concentration at each monitor within an area must not exceed 50 ug/m^3.

Under the NAAQS, identical primary and secondary PM10 standards were set for two averaging times: 50 $\mu g/m^3$, expected annual arithmetic mean, averaged over 3 years, and 150 $\mu g/m^3$ for a 24-hour average, with no more than one expected exceedance per year. Using the data from this study as a surrogate measure for comparison to either limit, neither Boothe Park (PM10 = 48.9 $\mu g/m^3$) nor Brenman Park (PM10 = 40.1 $\mu g/m^3$) sample period averages exceed either air quality standard. Likewise, none of the samples tested approached the 150-$\mu g/m^3$ level but instead were generally less than half to one third this limit.

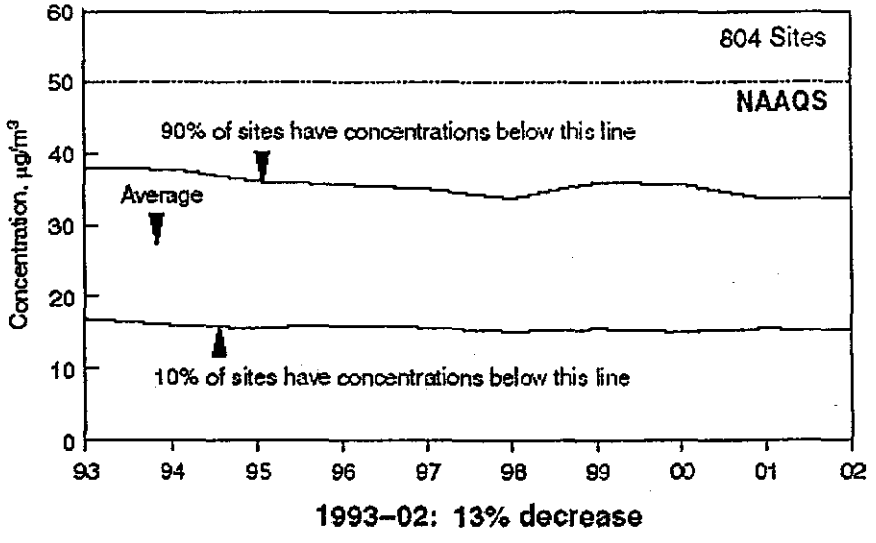
Lead is the only one of 33 metals tested at Cameron Station that has a NAAQS standard. None of the four samples tested had lead concentrations exceeding the 1.5 $\mu g/m^3$ NAAQS level. Since lead was phased out of gasoline over two decades ago, most lead emissions (78%) mainly come from industrial sources the remainder comes from transportation sources (12%) and fuel combustion (10%). In 2001, the average concentration of lead in EPA's Region III was 0.037 $\mu g/m^3$. The highest lead concentration detected in any of the four Cameron Station samples was 0.02 $\mu g/m^3$,

which occurred in one of the Brenman Park samples. The remaining three samples had concentrations of 0.1 $\mu g/m^3$.

4.2 COMPARISON TO NATIONAL 10-YEAR PM10 AIR QUALITY TRENDS

During the 10-year period between 1993 and 2002 the EPA found that the national average of annual mean PM10 concentrations at 804 domestic monitoring sites ranged from 24 to 28 $\mu g/m^3$ **(Figure 2)**. The monitoring stations for the study were located in a mixture of urban, suburban and rural sites. Efforts to improve air quality during this period have evidently resulted in a 13 percent decrease in PM10 concentrations. Compared to the PM10 averages presented in **Table 3** the averages of the two Cameron Station sample stations (40.1 and 48.9 $\mu g/m^3$) are above the 90th percentile of the national average, and above the average of 35 $\mu g/m^3$ for urban locations.

Figure 2. PM10 Air Quality from 1993 to 2002 Based on a Seasonally-weighted Annual Average.



From EPA Report on Air Quality Trends: http://www.epa.gov/airtrends/pm2

TABLES

MARSHALL MILLER & ASSOCIATES

Table 1
Cameron Station Ambient Air Monitoring
Sampling Data for August 2004

Sampler	Filter	Initial Weight grams	Final Weight grams	Total Weight grams	Start Date	Finish Date	Time Start	Time Finish	Elapsed Time hours	Mano-meter (inches)	Temp1 (F)	Temp2 (F)	T_{av} (F)	Pressure 1 (inches Hg)	Pressure 2 (inches Hg)	P_{av}	Precip. (inches)	Wind Direction 1	Wind Direction 2	Wind Speed 1	Wind Speed 2	Precip	Rainfall
PM1	6262637	4.3433	4.3536	0.0103	8/6/2004	8/6/2004	1030	2040	10.10	3.6	70	66	20.0	29.94	29.94	29.94	N/A	N	NNW	4-20	4-20	Rain	Trace
HV1	6262638	4.3568	4.3883	0.0315	8/6/2004	8/7/2004	1030	1030	24.79	3.6	70	70	21.1	29.94	29.94	29.94	N/A	N	NNW	4-20	4-20	Rain	Trace
PM2	6262641	4.3628	4.3904	0.0276	8/6/2004	8/7/2004	1030	1030	24.00	4.3	70	70	21.1	29.94	30.00	29.97	N/A	N	NNW	4-20	4-20	Rain	Trace
HV2	6262642	4.3628	4.4844	0.1216	8/6/2004	8/9/2004	1031	1131	72.93	4.3	70	81	24.2	29.94	30.08	30.01	N/A	N	NNW	4-20	4-20	Rain	Trace
PM1	6262619	4.4091	4.4630	0.0539	8/9/2004	8/10/2004	1114	1130	24.25	2.4	81	80	26.9	30.08	30.01	30.05	N/A	SW - ENE	S - SSW	0-4	4-17	None	0.00
HV1	6262620	4.4189	4.5191	0.1002	8/9/2004	8/10/2004	1119	1130	24.30	3.6	81	80	26.9	30.08	30.01	30.05	N/A	SW - ENE	S - SSW	0-4	4-17	None	0.00
PM2	6262621	4.4033	4.4490	0.0457	8/9/2004	8/10/2004	1142	1205	23.44	2.6	81	80	26.9	30.08	30.01	30.05	N/A	SW - ENE	S - SSW	0-4	4-17	None	0.00
HV2	6262622	4.4072	4.4915	0.0843	8/9/2004	8/10/2004	1140	1205	24.58	4.3	81	80	26.9	30.08	30.01	30.05	N/A	SW - ENE	S - SSW	0-4	4-17	None	0.00
HV1	6262631	4.3617	4.5168	0.1551	8/10/2004	8/11/2004	1145	1430	26.81	3.6	80	85	28.1	30.01	30.01	30.01	0 - 0.5	S - SSW	S - SSW	4-17	0- 7	Rain,Hail,T-storm	0.82
PM1	6262633	4.3647	4.4421	0.0774	8/10/2004	8/11/2004	1145	1435	26.88	2.4	80	85	28.1	30.01	29.89	29.95	0 - 0.5	S - SSW	S - SSW	4-17	0- 7	Rain,Hail,T-storm	0.82
HV2	6262634	4.3850	4.4849	0.0999	8/10/2004	8/11/2004	1220	1510	26.86	4.4	80	85	28.1	30.01	29.89	29.95	0 - 0.5	S - SSW	S - SSW	4-17	0- 7	Rain,Hail,T-storm	0.82
PM2	6262635	4.3824	4.4439	0.0615	8/10/2004	8/11/2004	1215	1515	25.00	2.2	80	85	28.1	30.01	29.89	29.95	0 - 0.5	S - SSW	S - SSW	4-17	0- 7	Rain,Hail,T-storm	0.82
PM2	6262632	4.3617	4.3744	0.0127	8/11/2004	8/12/2004	1520	1211	20.84	1.5	85	78	27.5	29.89	29.93	29.91	0 - 1.4	S - SSW	S - E	0-27	0-14	Fog,Rain,T-storm	2.43
HV2	6262636	4.3539	4.3853	0.0314	8/11/2004	8/12/2004	1515	1210	20.92	3.0	85	78	27.5	29.89	29.93	29.91	0 - 1.4	S - SSW	S - E	0-27	0-14	Fog,Rain,T-storm	2.43
HV1	6262639	4.3452	4.4008	0.0556	8/11/2004	8/12/2004	1435	1150	21.17	3.3	85	78	27.5	29.89	29.93	29.91	0 - 1.4	S - SSW	S - E	0-27	0-14	Fog,Rain,T-storm	2.43
PM1	6262640	4.3553	4.3845	0.0292	8/11/2004	8/12/2004	1440	1154	21.08	2.5	85	78	27.5	29.89	29.93	29.91	0 - 1.4	S - SSW	S - E	0-27	0-14	Fog,Rain,T-storm	2.43
HV1	6262615	4.4125	4.4906	0.0781	8/16/2004	8/17/2004	1155	1145	23.78	3.5	79	76	25.3	29.89	30.19	30.04	N/A	NNW - S	S - SSW	0-12	0-16	Rain	Trace
PM1	6262616	4.3857	4.4391	0.0534	8/16/2004	8/17/2004	1156	1146	23.79	2.2	79	76	25.3	29.89	30.19	30.04	N/A	NNW - S	S - SSW	0-12	0-16	Rain	Trace
PM2	6262624	4.3624	4.4212	0.0588	8/16/2004	8/17/2004	1212	1212	24.00	2.7	79	76	25.3	30.18	30.03	30.11	N/A	NNW - S	S - SSW	0-12	0-16	Rain	Trace
HV2	6262625	4.3886	4.4805	0.0919	8/16/2004	8/17/2004	1212	1212	24.00	4.3	79	76	25.3	30.15	30.15	30.15	N/A	NNW - S	S - SSW	0-12	0-16	Rain	Trace
HV1	6262618	4.4036	4.4849	0.0813	8/17/2004	8/18/2004	1152	1138	23.75	3.5	76	81	25.8	30.15	30.04	30.10	0 - 1.4	S - SSW	S - SSW	0-16	4-19	Rain	0.14
PM2	6262626	4.4084	4.4434	0.0350	8/17/2004	8/18/2004	1217	1159	23.67	2.7	76	81	25.8	30.04	30.18	30.11	0 - 1.4	S - SSW	S - SSW	0-16	4-19	Rain	0.14
HV2	6262628	4.3713	4.4278	0.0565	8/17/2004	8/18/2004	1217	1158	23.67	4.3	76	81	25.8	30.15	30.04	30.10	0 - 1.4	S - SSW	S - SSW	0-16	4-19	Rain	0.14
PM1	6262630	4.3763	4.4265	0.0502	8/17/2004	8/18/2004	1152	1137	23.76	2.2	76	81	25.8	30.15	30.04	30.10	0 - 1.4	S - SSW	S - SSW	0-16	4-19	Rain	0.14
HV2	6262611	4.3948	4.4453	0.0505	8/18/2004	8/19/2004	1210	1225	24.25	4.2	81	80	26.9	30.04	30.02	30.03	N/A	SSW-S	SSW-S	4-19	4-18	None	0.00
PM2	6262612	4.4089	4.4374	0.0285	8/18/2004	8/19/2004	1210	1226	24.26	2.7	80	81	26.9	30.02	29.96	29.99	N/A	SSW-S	SSW-S	4-19	4-18	None	0.00
HV1	6262613	4.4280	4.5316	0.1036	8/18/2004	8/19/2004	1144	1208	24.39	3.6	81	80	26.9	30.04	30.02	30.03	N/A	SSW-S	SSW-S	4-19	4-18	None	0.00
PM1	6262614	4.4255	4.4664	0.0409	8/18/2004	8/19/2004	1144	1209	24.38	2.2	81	80	26.9	30.04	30.02	30.03	N/A	SSW-S	SSW-S	4-19	4-18	None	0.00
HV1	6262617	4.3884	4.4987	0.1103	8/23/2004	8/24/2004	1145	1235	24.82	3.6	81	84	28.1	30.06	30.13	30.10	N/A	N-SSW	WSW-S	0-10	0-15	None	0.00
PM1	6262623	4.3858	4.4439	0.0581	8/23/2004	8/24/2004	1146	1235	24.83	2.2	81	84	28.1	30.06	30.13	30.10	N/A	N-SSW	WSW-S	0-10	0-15	None	0.00
PM2	6262627	4.3804	4.4322	0.0518	8/23/2004	8/24/2004	1203	1259	24.92	2.7	81	84	28.1	30.06	30.13	30.10	N/A	N-SSW	WSW-S	0-10	0-15	None	0.00
HV2	6262629	4.3744	4.4671	0.0927	8/23/2004	8/24/2004	1203	1259	24.91	4.5	81	84	28.1	30.06	30.13	30.10	N/A	N-SSW	WSW-S	0-15	0-15	None	0.00
HV2	6262601	4.3735	4.4956	0.1221	8/24/2004	8/25/2004	1305	1219	23.20	4.4	84	77	26.9	30.14	30.28	30.21	N/A	S-ESE	E-ENE	0-15	4-9	None	0.00
PM2	6262606	4.4104	4.4801	0.0697	8/24/2004	8/25/2004	1305	1224	23.28	2.7	84	77	26.9	30.14	30.28	30.21	N/A	S-ESE	E-ENE	0-15	4-9	None	0.00
HV1	6262607	4.4247	4.5201	0.0954	8/24/2004	8/25/2004	1244	1205	23.31	3.5	84	77	26.9	30.14	30.28	30.21	N/A	S-ESE	E-ENE	0-15	4-9	None	0.00
PM1	6262608	4.3740	4.4408	0.0668	8/24/2004	8/25/2004	1244	1200	23.22	2.1	84	77	26.9	30.14	30.28	30.21	N/A	S-ESE	E-ENE	0-15	4-9	None	0.00

Table 4
Cameron Station Ambient Air Monitoring Results
Metals for Selected TSP Samples

	Sample Mass						Concentrations				
Filter Number	#6262642	#6262620	#6262631	#6262613	MDL	units	#6262642	#6262631	#6262620	#6262613	units
Date Sampled	6-Aug-04	9-Aug-04	10-Aug-04	18-Aug-04			6-Aug-04	10-Aug-04	9-Aug-04	18-Aug-04	
Location	Brenman	Boothe	Boothe	Boothe			Brenman	Boothe	Boothe	Boothe	
Sample Volume (m^3)	1389.9	1410.1	1369.0	1367.2			1389.9	1369.0	1410.1	1367.2	
Beryllium	ND	ND	ND	ND	1	ug	ND	ND	ND	ND	ug/m^3
Bismuth	ND	ND	ND	ND	6	ug	ND	ND	ND	ND	ug/m^3
Cadmium	ND	ND	ND	ND	2	ug	ND	ND	ND	ND	ug/m^3
Selenium	ND	ND	ND	ND	10	ug	ND	ND	ND	ND	ug/m^3
Silver	ND	ND	ND	ND	1	ug	ND	ND	ND	ND	ug/m^3
Thallium	ND	ND	ND	ND	10	ug	ND	ND	ND	ND	ug/m^3
Tin	ND	ND	ND	ND	10	ug	ND	ND	ND	ND	ug/m^3
Uranium	ND	ND	ND	ND	30	ug	ND	ND	ND	ND	ug/m^3
Cobalt	ND	ND	2.4	2	2	ug	ND	0.00	ND	0.00	ug/m^3
Sodium	22000	26000	25000	21000	5	ug	16.07	18.26	18.99	15.34	ug/m^3
Sulphur	9500	9100	9300	6200	25	ug	6.94	6.79	6.65	4.53	ug/m^3
Calcium	4900	4000	4800	3600	10	ug	3.58	3.51	2.92	2.63	ug/m^3
Iron	3700	2700	4100	2900	5	ug	2.70	2.99	1.97	2.12	ug/m^3
Potassium	1300	1300	1300	1100	20	ug	0.95	0.95	0.95	0.80	ug/m^3
Aluminum	1200	1800	2700	2000	20	ug	0.86	1.97	1.28	1.46	ug/m^3
Magnesium	1000	1200	1600	1300	10	ug	0.73	1.17	0.88	0.95	ug/m^3
Zinc	310	150	230	200	5	ug	0.23	0.17	0.11	0.15	ug/m^3
Phosphorus	310	130	260	210	25	ug	0.23	0.19	0.09	0.15	ug/m^3
Silicon	260	280	300	230	10	ug	0.19	0.22	0.20	0.17	ug/m^3
Copper	240	99	120	83	2	ug	0.18	0.09	0.07	0.06	ug/m^3
Boron	170	170	160	130	6	ug	0.12	0.12	0.12	0.09	ug/m^3
Barium	140	48	140	31	1	ug	0.10	0.10	0.04	0.02	ug/m^3
Titanium	61	88	150	100	1	ug	0.04	0.11	0.06	0.07	ug/m^3
Manganese	50	40	61	39	1	ug	0.04	0.04	0.03	0.03	ug/m^3
Strontium	28	9	11	7.7	1	ug	0.02	0.01	0.01	0.01	ug/m^3
Lead	24	15	20	10	3	ug	0.02	0.01	0.01	0.01	ug/m^3
Antimony	14	ND	ND	ND	10	ug	0.01	ND	ND	ND	ug/m^3
Chromium	13	11	13	9.7	2	ug	0.01	0.01	0.01	0.01	ug/m^3
Molybdenum	12	3.7	6.6	5.8	3	ug	0.01	0.00	0.00	0.00	ug/m^3
Vanadium	11	12	18	12	2	ug	0.01	0.01	0.01	0.01	ug/m^3
Nickel	9.2	5.7	7.4	5.3	3	ug	0.01	0.01	0.00	0.00	ug/m^3
Zirconium	7.1	5.8	4.6	4	1	ug	0.01	0.00	0.00	0.00	ug/m^3
Arsenic	6.8	ND	ND	ND	6	ug	0.00	ND	ND	ND	ug/m^3

Table 3
Summary of Cameron Station Air Quality Gravimetric Results
August 2004

Parameter/Units	Total Suspended Particulates (TSP)				Particulates Under 10 Microns (PM10)			
	TSP conc. ug/m³	Date Collected	Wind Direction	Precipitation Inches	PM10 conc. ug/m³	Date Collected	Wind Direction	Precipitation Inches
Boothe Park								
Minimum	21.6	8/6-7/04	N-NNW	Rain	18.9	8/6-7/04	N-NNW	Rain
Maximum	100.3	8/10-11/04	S-SSW-S-E	None	70.8	8/24-25/04	S-ESE-E-ENE	None
Average	64.2				48.9			
STD	21.8				16.4			
Brenman Park								
Minimum	28.4	8/6-9/04	N-NNW	Rain	17.9	8/11-12/04	S-SSW-S-E	Rain
Maximum	89.1	8/24-25/04	S-ESE-E-ENE	None	65.2	8/24-25/04	S-ESE-E-ENE	None
Average	52.7				40.1			
STD	20.0				17.3			

Table 2
Cameron Station Ambient Air Monitoring Results
Calculation of Sample Volumes (February/March 2003)

Filter Number	Start Date	Sampler	Manometer Reading (H2O)	AVG Daily Temperature Tav (°K)	Average Daily Pressure Pav (mmHg)	Sampling Duration (hours)	Total Sample Volume (m^3)	Filter Weight (g)	Concentration (ug/m^3)	Sample Type
Booth Park Total Suspended Paticulates										
6262638	8/6/2004	HV1	3.6	294.1	29.94	24.8	1456.2	0.0315	**21.6**	**TSP**
6262620	8/9/2004	HV1	3.6	299.9	30.05	24.3	1415.5	0.1002	**70.8**	**TSP**
6262631	8/10/2004	HV1	3.6	301.1	30.01	26.8	1546.5	0.1551	**100.3**	**TSP**
6262639	8/11/2004	HV1	3.3	300.5	29.91	21.2	1174.8	0.0556	**47.3**	**TSP**
6262615	8/16/2004	HV1	3.5	298.3	30.04	23.8	1369.0	0.0781	**57.1**	**TSP**
6262618	8/17/2004	HV1	3.5	298.8	30.10	23.8	1367.2	0.0813	**59.5**	**TSP**
6262613	8/18/2004	HV1	3.6	299.9	30.03	24.4	1410.1	0.1036	**73.5**	**TSP**
6262617	8/23/2004	HV1	3.6	301.1	30.10	24.8	1444.3	0.1103	**76.4**	**TSP**
6262607	8/24/2004	HV1	3.5	299.9	30.21	23.3	1342.0	0.0954	**71.1**	**TSP**
Brenman Park Total Suspended Paticulates										
6262642	8/6/2004	HV2	4.3	297.2	30.01	72.9	4288.6	0.1216	**28.4**	**TSP**
6262622	8/9/2004	HV2	4.3	299.9	30.05	24.6	1438.2	0.0843	**58.6**	**TSP**
6262634	8/10/2004	HV2	4.4	301.1	29.95	26.9	1586.0	0.0999	**63.0**	**TSP**
6262636	8/11/2004	HV2	3.0	300.5	29.91	20.9	1015.3	0.0314	**30.9**	**TSP**
6262625	8/16/2004	HV2	4.3	298.3	30.15	24.0	1403.5	0.0919	**65.5**	**TSP**
6262628	8/17/2004	HV2	4.3	298.8	30.10	23.7	1389.9	0.0565	**40.6**	**TSP**
6262611	8/18/2004	HV2	4.2	299.9	30.03	24.3	1402.7	0.0505	**36.0**	**TSP**
6262629	8/23/2004	HV2	4.5	301.1	30.10	24.9	1491.5	0.0927	**62.2**	**TSP**
6262601	8/24/2004	HV2	4.4	299.9	30.21	23.2	1370.5	0.1221	**89.1**	**TSP**
Boothe Park Particulates Under 10 Microns										
6262637	8/6/2004	PM1	3.6	293.0	29.94	10.1	546.1	0.0103	**18.9**	**PM10**
6262619	8/9/2004	PM1	2.4	299.9	30.05	24.3	1053.4	0.0539	**51.2**	**PM10**
6262633	8/10/2004	PM1	2.4	301.1	29.95	26.9	1163.5	0.0774	**66.5**	**PM10**
6262640	8/11/2004	PM1	2.5	300.5	29.91	21.1	932.1	0.0292	**31.3**	**PM10**
6262616	8/16/2004	PM1	2.2	298.3	30.04	23.8	990.8	0.0534	**53.9**	**PM10**
6262630	8/17/2004	PM1	2.2	298.8	30.10	23.8	989.5	0.0502	**50.7**	**PM10**
6262614	8/18/2004	PM1	2.2	299.9	30.03	24.4	1012.3	0.0409	**40.4**	**PM10**
6262623	8/23/2004	PM1	2.2	301.1	30.10	24.8	1030.1	0.0581	**56.4**	**PM10**
6262608	8/24/2004	PM1	2.1	299.9	30.21	23.2	944.1	0.0668	**70.8**	**PM10**
Brenman Park Particulates Under 10 Microns										
6262641	8/6/2004	PM2	4.3	294.1	29.97	24.0	1422.6	0.0276	**19.4**	**PM10**
6262621	8/9/2004	PM2	2.6	299.9	30.05	23.4	1062.9	0.0457	**43.0**	**PM10**
6262635	8/10/2004	PM2	2.2	301.1	29.95	25.0	1036.0	0.0615	**59.4**	**PM10**
6262632	8/11/2004	PM2	1.5	300.5	29.91	20.8	707.7	0.0127	**17.9**	**PM10**
6262624	8/16/2004	PM2	2.7	298.3	30.11	24.0	1109.8	0.0588	**53.0**	**PM10**
6262626	8/17/2004	PM2	2.7	298.8	30.11	23.7	1097.8	0.0350	**31.9**	**PM10**
6262612	8/18/2004	PM2	2.7	299.9	29.99	24.3	1109.9	0.0285	**25.7**	**PM10**
6262627	8/23/2004	PM2	2.7	301.1	30.10	24.9	1140.0	0.0518	**45.4**	**PM10**
6262606	8/24/2004	PM2	2.7	299.9	30.21	23.3	1069.1	0.0697	**65.2**	**PM10**

FIGURES

Figure 1 – Location of Sampling Stations

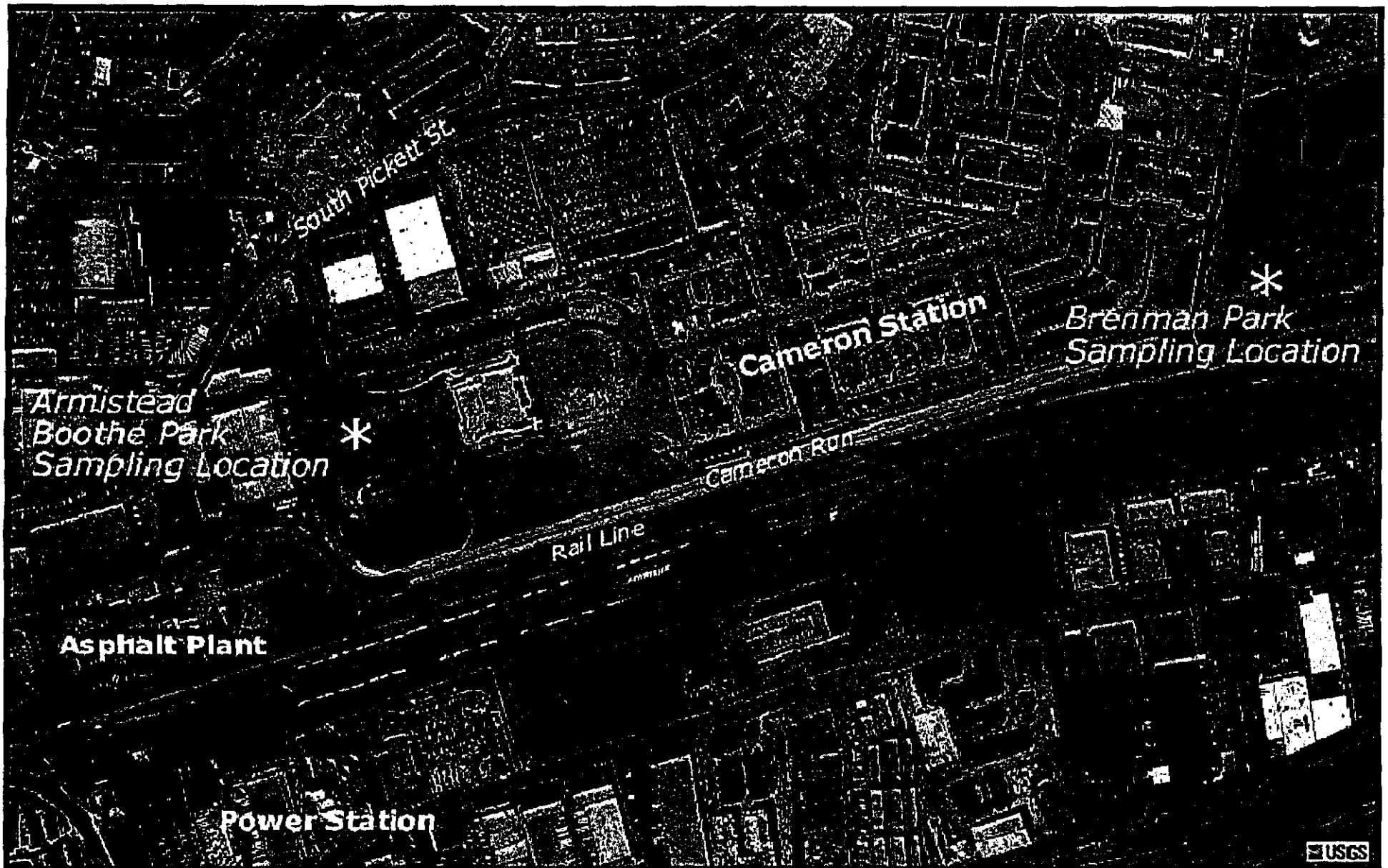


FIGURE 1
LOCATION OF
SAMPLING STATIONS

CITY OF ALEXANDRIA
CAMERON STATION AIR MONITORING
ALEXANDRIA, VA

DATE:	10/12/04
SCALE:	1"=30'
DESIGNED:	JPD
DRAWN:	BFW

Prepared by:
MARSHALL MILLER ASSOCIATES
COA123.dwg

450' 0 450'
1" = 450'

APPENDIX I

Laboratory Certificates for Gravimetric Analyses

Research Triangle Park Laboratories, Inc.
8109 Ebenezer Church Road
Raleigh, NC 27612

919 510-0228 Telephone
919 510-0141 Fax
Web Site: www.rtp-labs.com

NELAP Accredited NJ #NC003

Project: 04-150 Client: Marshall Miller Assoc. Contact: Eric Powers
Date Received: 8/30/2004 Client Proj.: Cameron Station
Filter Type: 8"x10" Whatman Glass Microfibre EPM2000

Gravimetric Analysis

Filter Number	Initial Weight	Final Weight	Total Weight, grams
6262630	4.3753	4.4255	0.0502
6262629	4.3744	4.4671	0.0927
6262628	4.3713	4.4278	0.0565
6262627	4.3804	4.4322	0.0518
6262626	4.4084	4.4434	0.0350
6262625	4.3886	4.4805	0.0919
6262624	4.3624	4.4212	0.0588
6262623	4.3858	4.4439	0.0581
6262622	4.4072	4.4915	0.0843
6262621	4.4033	4.4490	0.0457
6262620	4.4189	4.5191	0.1002
6262619	4.4091	4.4630	0.0539
6262642	4.3628	4.4844	0.1216
6262641	4.3628	4.3904	0.0276
6262640	4.3553	4.3845	0.0292
6262639	4.3452	4.4008	0.0556
6262638	4.3568	4.3883	0.0315
6262637	4.3433	4.3536	0.0103
6262636	4.3539	4.3853	0.0314
6262635	4.3824	4.4439	0.0615
6262634	4.3850	4.4849	0.0999
6262633	4.3647	4.4421	0.0774
6262632	4.3617	4.3744	0.0127
6262631	4.3617	4.5168	0.1551
6262618	4.4036	4.4849	0.0813
6262617	4.3884	4.4987	0.1103
6262616	4.3857	4.4391	0.0534
6262615	4.4125	4.4906	0.0781
6262611	4.3948	4.4453	0.0505
6262612	4.4089	4.4374	0.0285
6262613	4.4280	4.5316	0.1036
6262614	4.4255	4.4664	0.0409
6262608	4.3740	4.4408	0.0668
6262607	4.4247	4.5201	0.0954
6262606	4.4104	4.4801	0.0697
6262605	4.3869		
6262604	4.3801		
6262603	4.4034		
6262602	4.3912		
6262601	4.3735	4.4956	0.1221

Research Triangle Park Laboratories, Inc.
8109 Ebenezer Church Road
Raleigh, NC 27612

919 510-0228 Telephone
919 510-0141 Fax
Web Site: www.rtp-labs.com

NELAP Accredited NJ #NC003
PA Registration #68-1664
DEA Registered

September 30, 2004

Marshall Miller Associates
11277 Airpark Road
Ashland, VA 23005

Attn: Eric Powers

PROJECT: Cameron Station
RTP Labs ID: 04-150

Enclosed with this letter is the report on the analyses for the samples received on August 30, 2004 for a normal turnaround. Thirty-six 8" x 10" Whatman Glass Microfiber EPM2000 filters were received in good condition with their chain-of-custody forms completed. The analysis performed on all samples was gravimetric; and on four samples metals by ICP/MS and particle analysis by visible microscopy was performed.

If you have any questions, please give me a call at (919) 510-0228.

Sincerely,

Alston Sykes, Principal Chemist

Attachments: Gravimetric results; Metals results, Microscopy results, COC forms

File: MarshallMiller04150.doc/als

esearch Triangle Park Laboratories, Inc.
ıezer Church Road
ig., NC 27612

510-0228 Telephone
510-0141 Fax
Web Site: www.rtp-labs.com

RTPLabs
NELAP Accredited NJ #NC003
PA Registration #68-1664
DEA Registered

Project: 04-150 Client: Marshall Miller Assoc. Contact: Eric Powers
Date Received: 8/30/2004 Client Proj.: Cameron Station
Filter Type: 8"x10" Whatman Glass Microfibre EPM2000

Gravimetric Analysis

Filter Number	Initial Weight	Final Weight	Total Weight, grams
6262630	4.3753	4.4255	0.0502
6262629	4.3744	4.4671	0.0927
6262628	4.3713	4.4278	0.0565
6262627	4.3804	4.4322	0.0518
6262626	4.4084	4.4434	0.0350
6262625	4.3886	4.4805	0.0919
6262624	4.3624	4.4212	0.0588
6262623	4.3858	4.4439	0.0581
6262622	4.4072	4.4915	0.0843
6262621	4.4033	4.4490	0.0457
6262620	4.4189	4.5191	0.1002
6262619	4.4091	4.4630	0.0539
6262642	4.3628	4.4844	0.1216
6262641	4.3628	4.3904	0.0276
6262640	4.3553	4.3845	0.0292
6262639	4.3452	4.4008	0.0556
6262638	4.3568	4.3883	0.0315
6262637	4.3433	4.3536	0.0103
6262636	4.3539	4.3853	0.0314
6262635	4.3824	4.4439	0.0615
6262634	4.3850	4.4849	0.0999
6262633	4.3647	4.4421	0.0774
6262632	4.3617	4.3744	0.0127
6262631	4.3617	4.5168	0.1551
6262618	4.4036	4.4849	0.0813
6262617	4.3884	4.4987	0.1103
6262616	4.3857	4.4391	0.0534
6262615	4.4125	4.4906	0.0781
6262611	4.3948	4.4453	0.0505
6262612	4.4089	4.4374	0.0285
6262613	4.4280	4.5316	0.1036
6262614	4.4255	4.4664	0.0409
6262608	4.3740	4.4408	0.0668
6262607	4.4247	4.5201	0.0954
6262606	4.4104	4.4801	0.0697
6262605	4.3869		
6262604	4.3801		
6262603	4.4034		
6262602	4.3912		
6262601	4.3735	4.4956	0.1221

APPENDIX II

Laboratory Certificates for ICP/MS Analyses

Research Triangle Park Laboratories, Inc.
8109 Ebenezer Church Road
Raleigh, NC 27612

919 510-0228 Telephone
919 510-0141 Fax
Web Site: www.rtp-labs.com

NELAP Accredited NJ #NC003
PA Registration #68-1664
DEA Registered

Metals Analysis by ICP/MS

Analyte	Filter #6262642	Filter #6262631	Filter #6262620	Filter #6262613		
Date Sampled	Aug 6, 04	Aug 10, 04	Aug 9, 04	Aug 18, 04		
Location	Brenman	Armistead	Armistead	Armistead	MDL, units	
Aluminum	1200	2700	1800	2000	20	ug
Antimony	14	ND	ND	ND	10	ug
Arsenic	6.8	ND	ND	ND	6	ug
Barium	140	140	48	31	1	ug
Beryllium	ND	ND	ND	ND	1	ug
Bismuth	ND	ND	ND	ND	6	ug
Boron	170	160	170	130	6	ug
Cadmium	ND	ND	ND	ND	2	ug
Calcium	4900	4800	4000	3600	10	ug
Chromium	13	13	11	9.7	2	ug
Cobalt	ND	2.4	ND	2.0	2	ug
Magnesium	1000	1600	1200	1300	10	ug
Potassium	1300	1300	1300	1100	20	ug
Sodium	22000	25000	26000	21000	5	ug
Copper	240	120	99	83	2	ug
Iron	3700	4100	2700	2900	5	ug
Lead	24	20	15	10	3	ug
Manganese	50	61	40	39	1	ug
Molybdenum	12	6.6	3.7	5.8	3	ug
Nickel	9.2	7.4	5.7	5.3	3	ug
Phosphorus	310	260	130	210	25	ug
Selenium	ND	ND	ND	ND	10	ug
Silicon	260	300	280	230	10	ug
Silver	ND	ND	ND	ND	1	ug
Strontium	28	11	9.0	7.7	1	ug
Sulphur	9500	9300	9100	6200	25	ug
Thallium	ND	ND	ND	ND	10	ug
Tin	ND	ND	ND	ND	10	ug
Titanium	61	150	88	100	1	ug
Uranium	ND	ND	ND	ND	30	ug
Vanadium	11	18	12	12	2	ug
Zinc	310	230	150	200	5	ug
Zirconium	7.1	4.6	5.8	4.0	1	ug

File: MarshallMiller04150.doc/als

Research Triangle Park Laboratories, Inc.
8109 Ebenezer Church Road
Raleigh, NC 27612

919 510-0228 Telephone
919 510-0141 Fax

Web Site: www.rtp-labs.com

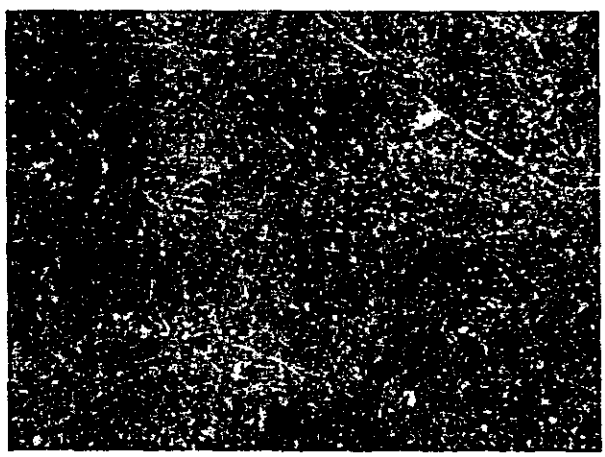
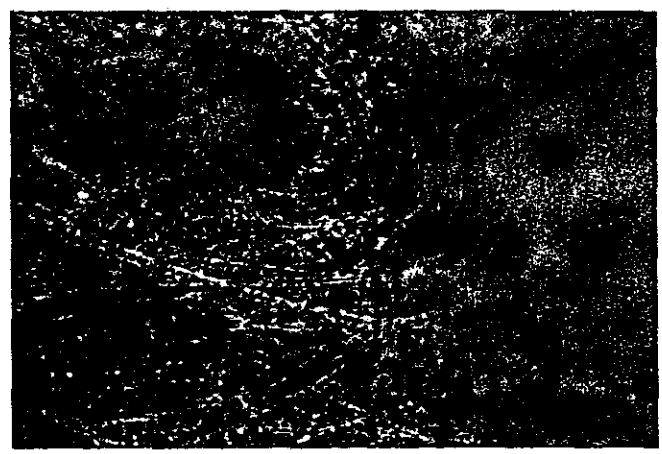
RTPLabs

NELAP Accredited NJ #NC003
PA Registration #68-1664
DEA Registered

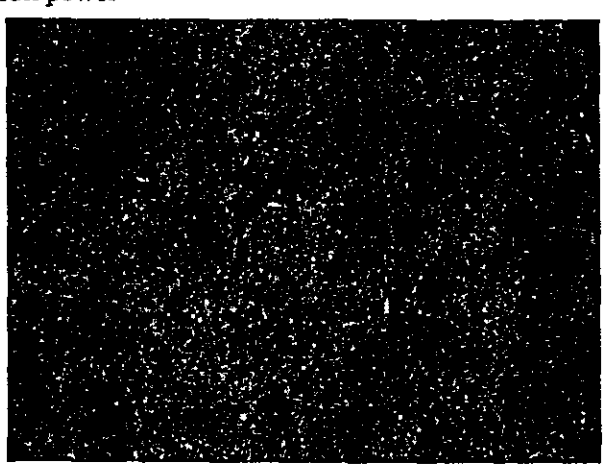
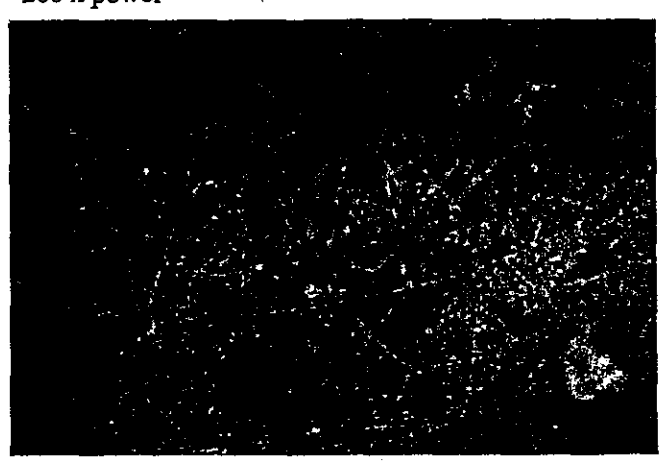
Visible Microscopy Analysis

Project: 04-150 Client: Marshall Miller Assoc. Contact: Eric Powers
Date Received: 8/30/2004 Client Proj.: Cameron Station
Filter Type: 8"x10" Whatman Glass Microfibre EPM2000

Filter # 6262642
Date: Sampled: Aug. 6, 2004
Location: Brenman; Wind Direction: N-NNW; Wind Speed: 5-20
Results: Black carbon particulate in the range of 2.5 to 50 um size.
100x power 200 x power

Filter # 6262631
Date: Sampled: Aug. 10, 2004
Location: Armistead; Wind Direction: S-SSW; Wind Speed: 5-17
Results: Black carbon particulate in the range of 2.5 to 50 um size.
63x power 200 x power

File: MarshallMiller04150.doc/als

Research Triangle Park Laboratories, Inc.
8109 Ebenezer Church Road
Raleigh, NC 27612

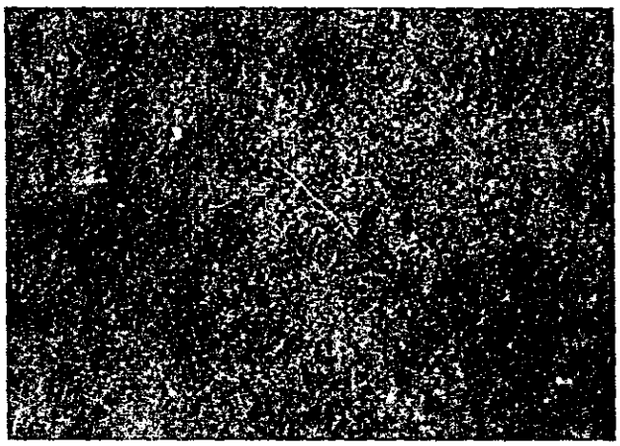
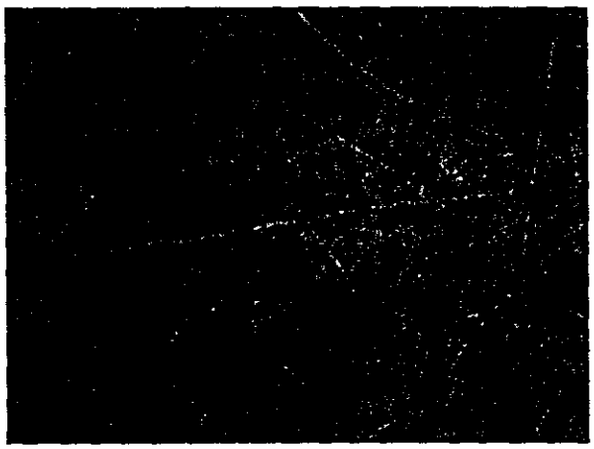
919 510-0228 Telephone
919 510-0141 Fax
Web Site: www.rtp-labs.com

RTPLabs
NELAP Accredited NJ #NC003
PA Registration #68-1664
DEA Registered

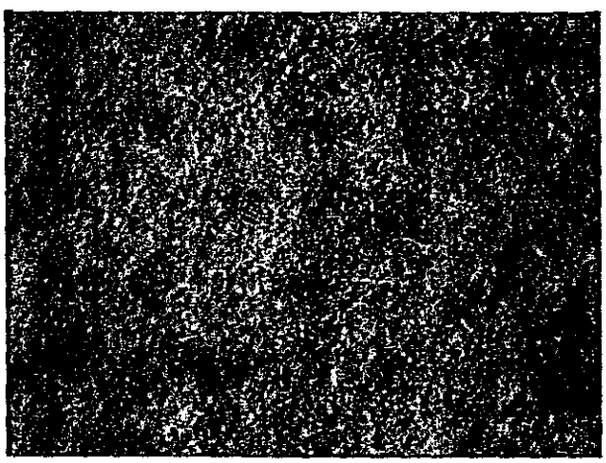
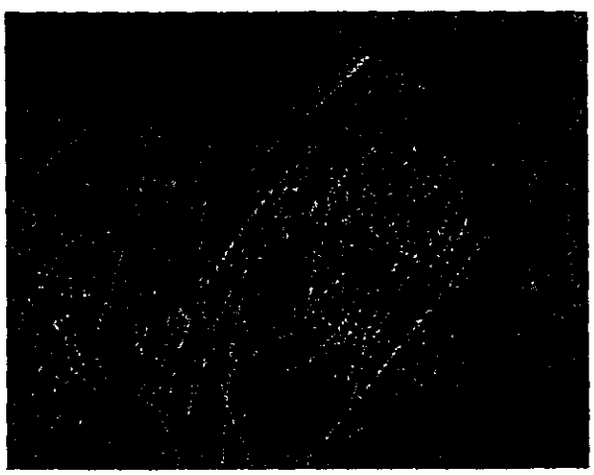
Visible Microscopy Analysis

Project: 04-150 Client: Marshall Miller Assoc. Contact: Eric Powers
Date Received: 8/30/2004 Client Proj.: Cameron Station
Filter Type: 8"x10" Whatman Glass Microfibre EPM2000

Filter # 6262620
Date: Sampled: Aug. 9, 2004
Location: Armistead; Wind Direction: SW-ENE-S-SW; Wind Speed: 0-17
Results: Black carbon particulate in the range of 2.5 to 50 um size.
63x power 200 x power

Filter # 6262613
Date: Sampled: Aug. 18, 2004
Location: Armistead; Wind Direction: SSW-S; Wind Speed: 4-20
Results: Black carbon particulate in the range of 2.5 to 50 um size.
63x power 200 x power

File:
MarshallMiller04150.doc/als

Research Triangle Park Laboratories, Inc
8109 Ebenezer Church Road
Raleigh, North Carolina 27612-7307
Phone: 919-510-0228 Fax: 919-510-0141
Web Site: www.rtp-labs.com

Chain of Custody Record

NELAP Accredited NJ #NC003
ISO 17025

RTPLabs

Client (Billing)	Marshall Miller + Associates
Send Report To Attention:	Eric Powers
Phone Number	804-798-6525
Fax Number	804-798-5907
Date:	8/26/04
Address	11277 Airpark Rd
Page	1 of 4
City	Ashland
State	VA
Zip Code	23005
RTP Labs Proj. Tracking No.:	
Client Tracking No.:	04-150
Contract/Purchase Order No.:	COA123
Project Name:	Cameron Station
Comments:	Filters

Requested Analyses: Gravimetric

No.	Sample ID No. & Description	Date Sampled	Time	Matrix: Air – Ambient	Matrix: Air – Source	Liquid/Solid	Compliance Test	Preservatives	# of Containers	Gravimetric		Canisters (vacuum or pressure): Field Initial	Field Final	Lab Receipt	Lab Final	Lab Sample ID Fraction
1	6262638	8/7/04		X					1	X	Hold sample do not analyse					
2	6262637	8/6/04								X	Hold sample do not analyse					
3	6262620	8/10/04								X						
4	6262619	8/10/04								X						
5	6262631	8/11/04								X						
6	6262633	8/11/04								X						
7	6262639	8/12/04								X						
8	6262640	8/12/04								X						
9	6262615	8/17/04								X						
10	6262616	8/17/04								X						

Turn Around Time Requested for Report: Business Days; *Rush Multipliers (Xx)
☐ 1 day*(4x) ☐ 2 days*(3x) ☐ 3 days*(2x) ☐ 5 days*(1.5x) ☐ 10 days*(1.1x) ☒ 15 days

Data Pack: Std ☐ Full ☐ 1.1x surcharge
Electronic Deliverable: ☐ 1.1x surcharge

QC Requirements: Screen ☐ Standard ☐
EPA Level IV for Compliance ☐
Requires approved QAPP sent to lab

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
			Alston Sykes	8/30/04	11:00

File: chain RTP doc/xls revision 12/18/2003

...arch Triangle Park Laboratories, Inc.
...er Church Road
27612
...0-0228 Telephone
...0-0141 Fax
Web Site: www.rtp-labs.com

RTPLabs
NELAP Accredited NJ #NC003
PA Registration #68-1664
DEA Registered

Research Triangle Park Laboratories, Inc
8109 Ebenezer Church Road
Raleigh, North Carolina 27612-7307
Phone: 919-510-0228 Fax: 919-510-0141
Web Site: www.rtp-labs.com

Chain of Custody Record

NELAP Accredited NJ #NC003
ISO 17025

Client (Billing): Marshall Miller & Associates	Send Report To Attention: Erin Powers	Phone Number: 434-798-6525	Fax Number: 804-798-5907	Date: 8/26/04	
Address: 11277 Airpark Rd			Requested Analyses	Page 2 of 4	
City: Ashland	State: VA	Zip Code: 23005		RTP Labs Proj. Tracking No.:	
Contract/Purchase Order No.: 60123	Project Name: Cameron Station			Client Tracking No.: 04-150	

	Sample ID No. & Description	Date Sampled	Time	Matrix: Air – Ambient	Matrix: Air – Source	Matrix: Liquid/Solid	Compliance Test	Preservatives	# of Containers	Grad. Metric	Canisters (vacuum or pressure): Field Initial	Field Final	Lab Receipt	Lab Final	Lab Sample ID Fraction
1	6262614	8/18/04		X					1	X					
2	62626 30	8/18/04								X					
3	6262613	8/19/04								X					
4	6262614	8/19/04								X					
5	6262617	8/24/04								X					
6	6262623	8/24/04								X					
7	6262607	8/25/04								X					
8	6262608	8/25/04								X					
9	6262642	8/9/04								X	Hold sample do not analyze				
10	6262641	8/7/04								X	Hold sample do not analyze				

Comments: filters

Turn Around Time Requested for Report: Business Days; *Rush Multipliers (Xx)
☐ 1 day*(4x) ☐ 2 days*(3x) ☐ 3 days*(2x) ☐ 5 days*(1.5x) ☐ 10 days*(1.1x) ☒ 15 days

Data Pack: Std ☐ Full ☐ 1.1x surcharge
Electronic Deliverable: ☐ 1.1x surcharge

QC Requirements: Screen ☐ Standard ☐
EPA Level IV for Compliance ☐
Requires approved QAPP sent to lab

Relinquished By:	Date:	Time:	Received By: Date: 8/24/04 Time: 11:30
Relinquished By:	Date:	Time:	Received By: Date: Time:

File: chain_RTP docpls revision 12/18/2003

Research Triangle Park Laboratories, Inc.
8109 Ebenezer Church Road
Raleigh, NC 27612
919 510-0228 Telephone
919 510-0141 Fax
Web Site: www.rtp-labs.com
NELAP Accredited NJ #NC003
PA Registration #68-1664
DEA Registered

Research Triangle Park Laboratories, Inc
8109 Ebenezer Church Road
Raleigh, North Carolina 27612-7307
Phone: 919-510-0228 Fax: 919-510-0141
Web Site: www.rtp-labs.com

Chain of Custody Record

NELAP Accredited NJ #NC003
ISO 17025

RTPLabs

Client (Billing): Marshall Miller & Assoc.	Send Report To Attention: Eric Powers
Phone Number: 304-798-6525	Fax Number: 304-798-5707
Date: 8/26/04	Page 3 of 4
Address: 11277 Airpark Rd	
City: Ashland	State: VA
Zip Code: 23005	RTP Labs Proj. Tracking No.:
Contract/Purchase Order No.: COA123	Project Name: Cameron Station
Client Tracking No.: 04-150	

Comments:

Requested Analyses: Gravimetric

	Sample ID No. & Description	Date Sampled	Time	Matrix: Air – Ambient	Matrix: Air – Source	Liquid/Solid	Compliance Test	Preservatives	# of Containers	Gravimetric						Canisters (vacuum or pressure): Field Initial	Field Final	Lab Receipt	Lab Final	Lab Sample ID Fraction
1	6262622	8/10/04		X					1	X										
2	6262621	8/10/04		↓					↓	X										
3	6262634	8/11/04								X										
4	6262635	8/11/04								X										
5	6262636	8/12/04								X										
6	6262632	8/12/04								X										
7	6262625	8/17/04								X										
8	6262624	8/17/04								X										
9	6262628	8/18/04								X										
10	6262626	8/18/04								X										

Turn Around Time Requested for Report: Business Days; *Rush Multipliers (Xx)
☐ 1 day*(4x) ☐ 2 days*(3x) ☐ 3 days*(2x) ☐ 5 days*(1.5x) ☐ 10 days*(1.1x) ☒ 15 days

Data Pack: Std ☐ Full ☐ 1.1x surcharge
Electronic Deliverable: ☐ 1.1x surcharge

QC Requirements: Screen ☐ Standard ☐
EPA Level IV for Compliance ☐
Requires approved QAPP sent to lab

Relinquished By:	Date:	Time:	Received By: Alton Sykes	Date: 8/30/04	Time: 11:00
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Research Triangle Park Laboratories, Inc.
8109 Ebenezer Church Road
Raleigh, NC 27612
919 510-0228 Telephone
919 510-0141 Fax
Web Site: www.rtp-labs.com

NELAP Accredited NJ #NC003
PA Registration #68-1664
DEA Registered

Research Triangle Park Laboratories, Inc
8109 Ebenezer Church Road
Raleigh, North Carolina 27612-7307
Phone: 919-510-0228 Fax: 919-510-0141
Web Site: www.rtp-labs.com

Chain of Custody Record

NELAP Accredited NJ #NC003
ISO 17025

RTPLabs

Client (Billing): Marshall Miller & Associates	Send Report To Attention: Eric Parsons
Phone Number: 804-798-6525	Fax Number: 804-798-5907
Date: 8/26/04	Page 4 of 4
Address: 11277 Airpark Rd	
City: Ashland	State: VA Zip Code: 23005
Contract/Purchase Order No.: COA127	Project Name: Cameron Station
RTP Labs Proj. Tracking No.:	Client Tracking No.: 04-150

Comments:

Requested Analyses

	Sample ID No. & Description	Date Sampled	Time	Matrix: Air: Ambient	Source	Liquid/Solid	Compliance Test	Preservatives	# of Containers	Gravimet/SIC	Canisters vacuum or pressure: Field Initial	Field Final	Lab Receipt	Lab Final	Lab Sample ID Fraction
1	6262611	8/19/04		X					1	X					
2	6262612	8/19/04		↓					↓	X					
3	6262629	8/24/04		↓					↓	X					
4	6262627	8/24/04		↓					↓	X					
5	6262601	8/25/04		↓					↓	X					
6	6262606	8/25/04		↓					↓	X					
7															
8															
9															
10															

Turn Around Time Requested for Report: Business Days; *Rush Multipliers (Xx)
☐ 1 day*(4x) ☐ 2 days*(3x) ☐ 3 days*(2x) ☐ 5 days*(1.5x) ☐ 10 days*(1.1x) ☒ 15 days

Data Pack: Std ☐ Full ☐ 1.1x surcharge
Electronic Deliverable: ☐ 1.1x surcharge

QC Requirements: Screen ☐ Standard ☐
EPA Level IV for Compliance ☐
Requires approved QAPP sent to lab

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
			Alton Sykes	8/30/04	11:06

Research Triangle Park Laboratories, Inc.
8109 Ebenezer Church Road
Raleigh, NC 27612
919 510-0228 Telephone
919 510-0141 Fax
Web Site: www.rtp-labs.com

NELAP Accredited NJ #NC003
PA Registration #68-1664
DEA Registered

PHOTOGRAPHS

MARSHALL MILLER & ASSOCIATES

Photo 1.
Sample Station 1 – Armistead Boothe Park Picnic Shelter

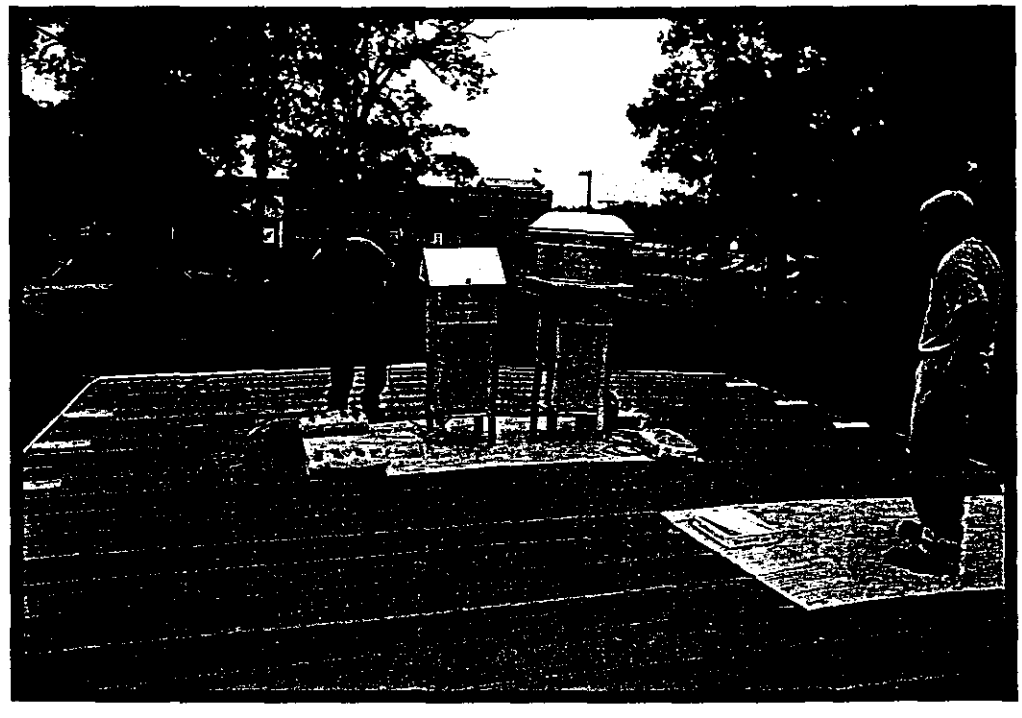


Photo 2
TSP Sampler (Left) - PM10 Sampler (Right)

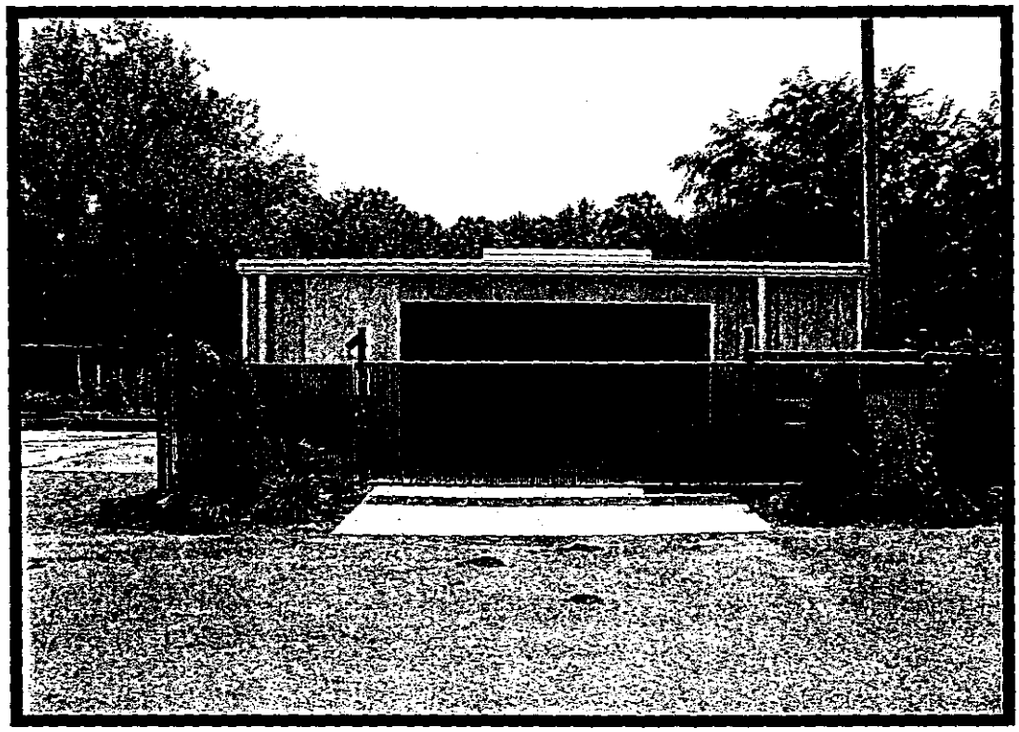


Photo 3
Sampling Station 2 on roof of Maintenance Shed at Brenman Park

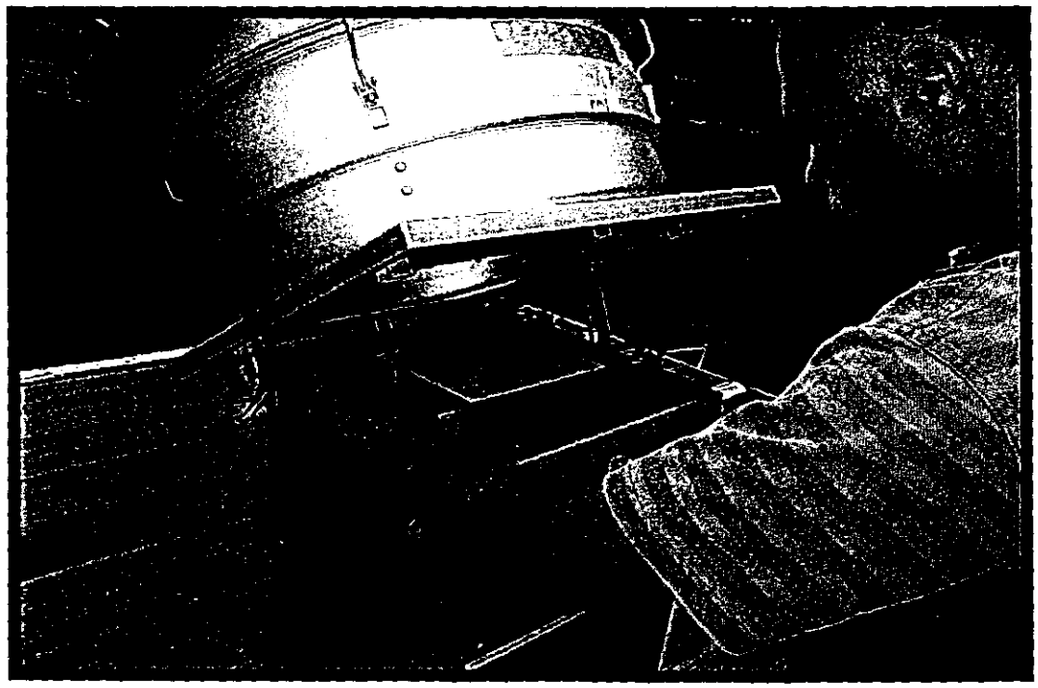


Photo 4
Changing Filter Media in PM10 Sampler

OFFICE OF THE CITY ATTORNEY

301 KING STREET, SUITE 1300
ALEXANDRIA, VIRGINIA 22314
http://ci.alexandria.va.us

(703) 838-4433

FACSIMILE
(703) 838-4810

IGNACIO BRITTO PESSOA
CITY ATTORNEY

JILL R. APPLEBAUM
SENIOR ASSISTANT CITY ATTORNEY

ASSISTANT CITY ATTORNEYS
CATHERINE RICHARDS CLEMENT
MARY ELLIOTT
JOANNA C. FRIZZELL
GEORGE McANDREWS
KAREN S. SNOW

October 26, 2004

Dennis A. Luzier, Plant Manager
Virginia Paving Company
5601 Courtney Ave
Alexandria, Virginia 22304

RE: Violations of State and City Codes at 5601 Courtney Avenue

Dear Mr. Luzier:

Recently, City of Alexandria Departments having responsibility to enforce state and city codes did an inspection of the Virginia Paving Company plant. Those inspections showed numerous violations of state and city codes as well as of the Special Use Permit governing this plant. The specific violations are detailed in the enclosed document.

In an effort to resolve the problems discovered at the plant, we would like to set up a meeting with you to discuss the situation and the action that needs to be taken to remedy the violations and any damage that has been caused by the violations. It is our hope that we can discuss a voluntary resolution to this matter including an acceptable remediation plan. However in the event Virginia Paving Company is unwilling to resolve the problem to the City's satisfaction, will take further legal action which may include revoking the Special Use Permit currently in place and obtaining court orders preventing Virginia Paving Company from continuing to violate the state and city codes.

Please contact me as soon as possible to set up a time in the next couple weeks for you to meet with the different City Departments involved in this enforcement action. Given the magnitude of these violations, we request that relevant decision makers for your company or your parent corporation attend this meeting. I can be reached at (703) 838-4433. We would like to hear from you within 10 days from the date of this letter as these violations present public health issues that need to be addressed without delay.

Violations at 5601 Courtney Avenue determined as of October 26, 2004

State Water Control Law, Virginia State Code Title 62.1, Chapter 3.1

1. 62.1-44.5 – Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances.

State Fire Code, Virginia State Code Title 27, Chapter 9

1. 2703.4.2 – Above ground stationary tanks used for the storage of hazardous materials shall be located and protected in accordance with the requirements for outdoor storage of the particular material involved and shall be marked as required by Section-2703.5.

2. 2703.2.5 – Empty containers and tanks previously used for storage of hazardous materials shall be free from residual material and vapor as defined by DOTn, the Resource Conservation and Recovery Act (RCRA) or other regulating authority or maintained as specified for the storage of hazardous material.

3. 2703.3 – Hazardous materials in any quantity shall not be released into a sewer, storm drain, ditch, drainage canal, creek, stream, river, lake or tidal waterway or on the ground, sidewalk, street, highway or into the atmosphere.

4. 2703.3.1 – When hazardous materials are released in quantities reportable under state, federal, or local regulations, the code official shall be notified.

5. 2703.5 – Visible hazard identification signs as specified by *NFPA 704* for the specific material contained shall be placed on stationary containers and above-ground tanks and at entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities requiring a permit and at specific entrances and locations designated by the code official.

6. 2703.5.1 – Individual containers, cartons or packages shall be conspicuously marked or labeled in an approved manner. Rooms or cabinets containing compressed gases shall be conspicuously labeled: COMPRESSED GAS.

7. 2703.9.1.1 – Responsible persons shall be designated and trained to be liaison personnel to the fire department. These persons shall aid the fire department in preplanning emergency Reponses and identifying the locations where hazardous materials are located, and shall have access to Material Safety Data Sheets and be knowledgeable in the site emergency response procedures.

8. 2703.9.2 – Storage, dispensing, use and handling areas shall be secured against unauthorized entry and safeguarded with such protective facilities as public safety requires.

9. 2703.9.3 – Guard posts or other approved means shall be provided to protect storage tanks and connected piping, valves and fittings; dispensing areas; and use areas subject to vehicular damage in accordance with Section 312.

EXHIBIT NO. 1

34 C
6-28-05

City of Alexandria, Virginia

MEMORANDUM

DATE: JUNE 27, 2005

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

FROM: JAMES K. HARTMANN, CITY MANAGER

SUBJECT: VIRGINIA PAVING ASPHALT PLANT, 5601 COURTNEY AVENUE

ISSUE: Citizen complaints regarding vehicular traffic at the Virginia Paving asphalt plant in violation of the terms of the plant's Special Use Permit.

RECOMMENDATION: That City Council ask staff to take one of the following actions:

A. Take immediate action on the SUP #398's prohibition on nighttime vehicle activity at the Virginia Paving facility; or
B. Take immediate action on the SUP #398's prohibition on nighttime vehicle activity, except as to that work which is most critical for the public health, safety and welfare, such as work on the Woodrow Wilson Bridge; or
C. Require Virginia Paving to complete the environmental review and testing it has agreed to perform, hold the SUP for hearing in September, and delay enforcement of the condition until that time.

DISCUSSION: During the public comment portion of Council's June 21, 2005, public hearing, representatives of Cameron Station asked Council to act immediately on the conditions of Virginia Paving Company's SUP. Council requested this memorandum and that staff address these complaints at Council's June 28 meeting.

Virginia Paving SUP Condition

Virginia Paving, formerly Newton Asphalt, has been in operation in the City at its current location for 45 years. It is located on Courtney Avenue, east of South Van Dorn Street just south of the intersection with South Pickett Street.

SUP Violation

When the asphalt plant was established in Alexandria, it required Council approval by SUP. SUP No. 398 (attached), approved in 1960, contains the following language, which is one of the few

limitations included in the permit, and which was recommended as a matter of traffic safety by the City's Director of Traffic:

> That no operation of this plant requiring exit or entrance of vehicles be permitted after hours of darkness or during inclement weather or on Sundays or holidays.

The restriction neither generally limits the operation of the plant nor sets hours of operation for the plant. However, it does limit plant operation with respect to vehicular traffic to and from the plant – primarily the trucks that transport the removed asphalt road surface to the plant to be recycled and those that take the newly manufactured asphalt from the plant for installation on the roadway being repaved. The limitation has to do with vehicular traffic related to asphalt-making operations, not the production of the asphalt itself, which can take place at any time.

Although this condition was imposed on the plant back in 1960, the City has no record of any complaints regarding violation of this condition since the plant has been in operation. Since the City's enforcement system historically has been complaint-driven, and there have been no complaints regarding vehicular traffic at the plant after dark, the City has never taken an enforcement action against the facility regarding after hours vehicular traffic.

Current Contracts

Virginia Paving currently provides asphalt paving service from its Alexandria plant for the City, the federal government, VDOT, other local governments, and the private sector. According to Virginia Paving, some of these paving contracts, including ones for the Woodrow Wilson Bridge Project, the Springfield Interchange, and Fairfax County contain requirements for paving at night in order to reduce the impact on traffic when a repaving project is in process. Virginia Paving also has contracts with the City of Alexandria. These contracts require that paving take place between 9:00 AM and 3:30 PM, but contract modifications are sometimes granted to allow paving at night. See the attached list of current contracts with the City. Asphalt paving generally requires relatively warm weather, so the spring and summer tend to be the plant's busiest months.

Citizen and City Concerns

Over the last year, with the near completion of Cameron Station as a residential neighborhood, there have been an increasing number of complaints from Cameron Station residents regarding:

- air quality
- odors
- noise
- smoke and soot

In response to these complaints, the City staff investigated potential sources of the problems, and researched the SUP, including the violation of the above condition. Staff has also focused on a series of other issues, primarily environmental, in order to require Virginia Paving to address potential environmental damage, both past and future, by the plant. Specific issues which have

been part of the investigation include:

- air emissions, including odors
- noise
- storm water management
- asphalt spillage
- maintenance
- building and fire code violations
- Resource Protection Area (RPA) buffer
- underground storage tanks
- storage and disposal of oil and hazardous materials

While the above issues pertain to industrial uses generally, and are regulated in large part by the Commonwealth, Virginia Paving's violation of its SUP gave the City the opportunity to comprehensively review and improve the facility, with the potential of bringing it to a higher level than required by its state permits. In fact, Virginia Paving is in compliance with all applicable Virginia Department of Environmental Quality standards regarding air emissions. While there was a fine assessed at one point by the EPA, this fine was related to the lack of a storm water management plan, and not to any emission from the plant. The City is investigating the compliance status of other site discharges.

Proposed Amendment to SUP

When staff reviewed Virginia Paving's violation of its condition regarding traffic limitations, it advised both the plant and residents about the violation. In response, on March 29, 2005, Virginia Paving, filed an application to amend its SUP, specifically the restriction on nighttime vehicle travel. The applicant originally sought to have its application heard in June of 2005, and to limit the scope of the hearing to the nighttime driving issue, but the hearing was deferred by staff until September in order to be able to address the broad scope of improvements that the neighbors are concerned about and that the plant seems willing to address.

Staff has viewed the SUP application as an opportunity to address plant issues that were not part of the original SUP, such as buffers to the adjacent stream, measures to control noise and odor, stormwater management, and other neighborhood impacts. Staff from Planning, T&ES, Code Enforcement and the City Attorney's Office therefore have engaged in an extended dialogue with the plant representatives, working with Virginia Paving on a broad based environmental plan directed at the environmental issues, as well as those that formed the overwhelming majority of the residents' complaints since the development of Cameron Station – air quality, smoke, odor and soot.

There is Virginia Paving environmental testing going on that will conclude in late July, and which should supply the City with sufficient data to respond accurately and fully to citizen concerns and to best fashion conditions for the continuing operation of the plant. The attached recent letter

from Mary Catherine Gibbs, counsel for Virginia Paving, outlines in detail the work that will be accomplished in response to the City's requirements.

In order to allow that work to continue, and in order to allow the plant to continue night operations to satisfy their existing contracts, including a contract for paving for the Woodrow Wilson Bridge construction project, staff has held final action on the SUP condition regarding late night or Sunday vehicular activity until Council's September public hearing meeting. Staff will be meeting with Virginia Paving representatives throughout the summer to review the specific actions to be taken regarding noise, odors, stormwater management and hours of operation.

Conclusion

The issue for Council is whether it wishes to direct staff to take action on the SUP condition immediately, which will curtail any nighttime traffic by the plant. Again, this will result in creating issues with regard to existing paving contracts. Additionally, it is anticipated that such action could further exacerbate traffic congestion when such paving is done during the day.

The Council may also determine that immediate elimination of all nighttime plant traffic is advisable, except for the most crucial public projects, such as the Woodrow Wilson Bridge and Springfield Interchange.

Alternatively, Council may wish to wait to learn the results of Virginia Paving's extensive testing and investigation over the summer, so that there is sufficient information to answer questions about environmental issues, including noise, odors, other air emissions and water management, and to act on this matter in the context of the SUP amendment application, which is now scheduled for hearing in September.

ATTACHMENTS:

Attachment 1. SUP No. 398
Attachment 2. Gibbs' June 21 letter
Attachment 3. City of Alexandria Existing Asphalt Contract Work

STAFF:

Eileen Fogarty, Director, Planning and Zoning
Richard J. Baier, P.E., Director, Transportation & Environmental Services
William Skrabak, Division Chief, Environmental Quality
Arthur Dahlberg, Code Enforcement
Ignacio Pessoa, City Attorney
Christopher Spera, Assistant City Attorney

ALEXANDRIA FIRE MARSHAL'S OFFICE

301 King Street Room-4200 Alexandria, Virginia 22314

ATTENTION: **ARTHUR DALHBERG, DIRECTOR**

SUBJECT(s): **VIRGINIA PAVING COMPANY**

REPORT TYPE: **RE – INSPECTION REPORT**

REPORT DATE: September 14, 2005 FPP #: 2004-01388 / alb

RE - INSPECTION REPORT

SUBJECT:

VIRGINIA PAVING COMPANY
5601 COURTNEY AVENUE

BACKGROUND SUMMARY

This report is predicated by a re - inspection of the property by the Alexandria Fire Marshal's Office. The initial inspection was conducted on September 30, 2004. Those inspections showed numerous violations of state and city codes as well as the Special Use Permit governing the plant. The violations identified in the September 30, 2004 report are include as **(attachment #1)**. Photographs taken depict the plant's condition on September 30, 2004 **(attachment #2)**. Photographs of the plant on the September 14, 2005 re – inspection depict changes made as of September 2004 **(attachment #3)**. The result of the September 14, 2005 re – inspection follow.

RE - INSPECTION SUMMARY

1) The re – inspection was initiated at the entrance of the plant starting at the rap pile, corrective measures include the regarding of the surface area to allow letch ate from rain water contained within the rap to flow unobstructed to a storm water catch basin, thus eliminating settling of letch ate facilitating the proper treatment of the letch ate.

2) A knox box containing MSDS sheets and emergency contact information was placed at the entrance to the administrative building.

3) Approved containers were placed in service to store testing equipment, which contain low – grade radioactive testing instruments.

4) The area boarding the railroad tracks was completely cleared of all discarded tires, pallets, drums and miscellaneous trash and debris.

5) Fire protection barrier protection was installed to protect fire hydrants from impact damage.

6) The vehicle wash area was re – graded to allow run – off of water to be collected in a settling area with an improved skimmer system which captures petroleum and suspended solids transferring them to approve containers for VADEQ, EPA approved disposal.

RE - INSPECTION SUMMARY(continued)

7) Plant repair facility was re – graded to prohibit the off – site migration of petroleum products in conjunction with a secondary containment area for all petroleum, hydrocarbon materials

8) Storage of all paints and aerosols have been placed into approved fire cabinets.

9) Above ground storage tanks for gasoline and diesel fuel have been outfitted with overflow containment valves with the secondary containment area cleared of smaller kerosene tanks and debris. (Containment barrels present in photograph were removed upon request).

10) Fueling island curb area raised with reinforced barrier protection installed.

11) Area boarding Backlick Channel removed of all nusciance vegetation, tires, abandoned tank cars and trailers. Area re – graded for the proper flow of storm water to be re – directed to a catch basin.

12) U.S. Filter tank area removed of all nusciance vegetation, tires, abandoned tank cars and trailers. Area re – graded for the proper flow of storm water to be re – directed to a catch basin.

13) Bed liner spray area completely removed of any petroleum based agent and replaced with non – hydrocarbon bio – degradable agent. All trash and debris were removed from the area with the existence of standing water and agent spillage absent.

14) Settling basin boarding Backlick Channel has been capped with all standing water removed.

15) U.S. Filter tank area adhering to spill prevention controls.

16) Berm area for Backlick Channel being fitted with temporary berms and silt screens while re – grading of adjacent rap area being conducted. Permanent beams will be placed upon completion of grading.

17) A storm water management system is currently being constructed with a completion date January 2006.

18) Asphalt mixing area has been cleaned and trash and debris removed with all flammable paints and aerosols being placed into fire cabinets. Secondary containment for all bulk petroleum and liquid containers have been installed.

CONCLUSIONS

Both Short Term Work Plans and Long Term Work Plans appear to be proceeding as scheduled. The Best Management Practices are apparent in the operation of the plant. Stack emissions were below VADEQ requirements with the construction of the storm water treatment system currently under construction. Eco-Sorb for odor abatement has been implemented with noticeable results on site. The re – inspection was conducted without prior notice. Operations at the plant have changed for the positive. Monitoring of the remaining Short Term Work Plan and Long Term Plan is recommended to insure continued compliance as stated by the City of Alexandria.

5
10-14-06

City of Alexandria, Virginia

MEMORANDUM

DATE: NOVEMBER 9, 2005

TO: COUNCILMAN ANDREW MACDONALD

THROUGH: ROSE WILLIAMS BOYD, DIRECTOR OF CITIZEN ASSISTANCE

FROM: RICHARD J. BAIER, P.E., DIRECTOR, T&ES

SUBJECT: VIRGINIA PAVING ENVIRONMENTAL ISSUES (COUNCIL REQUEST NO. 05-174M)

This is in response to your e-mail which raised a question about environmental issues associated with Virginia Paving and outlined your recommendations for action.

City staff considers Virginia Paving's SUP application as an opportunity to evaluate all aspects of its operations, especially environmental impacts. Staff is using this opportunity to identify the community's concerns and develop a comprehensive set of proposed conditions that address those concerns and improve the environment. Environmental issues that staff is currently working on include air quality, storm water management, water quality, stream buffer enhancement, and noise pollution.

With respect to your recommendations, City staff has already tasked Maureen Barrett, P.E., with Aero Engineering (the same engineer who conducted modeling for the City regarding Mirant Potomac Plant emissions), to conduct a comprehensive air emissions modeling analysis. The analysis will include evaluating impacts of emissions from this plant for all criteria pollutants and comparing them with the National Ambient Air Quality Standards (health based standards). The evaluation will also include a comparison of its emissions with Virginia Air Toxics Regulations. Additionally, staff has also been working closely with David Sullivan, an air pollution consultant representing the Cameron Station community.

Staff is also reviewing the emissions assessment report for hot mix asphalt plants produced by the U.S. Environmental Protection Agency, the report on health impacts of occupational exposures to asphalt (by National Institute of Occupational Health and Safety) that was included in your memo, and other similar information in the public domain to ensure that all emissions and impacts are thoroughly evaluated. In an effort to receive community input and share with the community staff's approach to addressing their concerns, a public information meeting is being planned prior to the Planning Commission's public hearing.

While this process is taking place, staff will continue to monitor this industrial facility's compliance with applicable permits. If there are any questions, please contact me at 703.838.4966 or William Skrabak at 703-838-4334. If there are questions about the SUP itself, please contact Richard Josephson of Planning and Zoning at 703.838.4666.

cc: The Honorable Mayor and Members of City Council
James K. Hartmann, City Manager
Christopher Spera, Assistant City Attorney, CAO
William Skrabak, Chief, Division of Environmental Quality, T&ES
Richard Josephson, Deputy Director, Planning and Zoning
Aimee Vosper, Landscape Architect Supervisor, RP&CA

MEMO

October 21, 2005

From: Councilman Andrew Macdonald

To: Jim Hartmann, City Manager
CC: Mayor and Council

Re: Virginia Paving –Environmental Issues

ISSUE: Is the Virginia Paving Plant an environmental/industrial hazard?

Plants that produce asphalt for paving emit a mixture of toxic hydrocarbons, some of which are known carcinogens, as well oxides of sulfur and nitrogen, at several stages of the production and distribution process (see attached report). It is not at all clear whether it is safe to locate and run such plants in densely-populated residential areas.

In a letter to the City dated, June 21, 2005, Virginia Paving indicates that the levels of "permitted" pollutants released from the plan's stacks do not violate applicable state emission standards. They have hired RAMCOM Environmental ---a member of the *National Asphalt Pavement Association* -- to conduct further tests. The letter also indicates that a leaking underground storage tank, discovered in 1983, has still not been fully cleaned up. The letter also says that the company has embarked on a plan to further reduce the emission of air pollutants using the "best available control technology."

The City hired a consultant to measure the levels and composition of particulate matter (PM 10 only) in the air in the vicinity of Cameron Station in August 2004. The study was not able to pinpoint the particular source (s) of the particulate matter. Concentrations were generally within federally permitted levels.

I am still concerned about the overall impact of this plant on air quality and human health. If we have not done so, I think we should investigate several of these issues further.

Recommended action:

That the City, with Council approval, consider hiring it's own "independent" environmental consultant (s) to: (1) measure the levels and types of pollutants being released from the plant; (2) model the health risks associated with the operation of this plant (as we have done at Mirant); and (3) assess the overall effectiveness of their pollution control and noise-reduction plan.