

Letter Health Consultation

H&H BURN PIT SITE

HANOVER COUNTY, VIRGINIA

**Prepared by
Virginia Department of Health**

MARCH 2, 2016

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Community Health Investigations
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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LETTER HEALTH CONSULTATION

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COMMONWEALTH of VIRGINIA

Department of Health

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Darius Ostrauskas
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1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Dear Mr. Ostrauskas,

The Virginia Department of Health (VDH) appreciates the opportunity to provide cancer statistics for the community living near the H&H Burn Pit site and Hanover County, Virginia, and to document the data gap related to past exposures to contaminants in air when the facility was operating. The United States Environmental Protection Agency (EPA) requested VDH and the Agency for Toxic Substances and Disease Registry (ATSDR) provide an updated evaluation of the cancer statistics for the area and determine if there was any link to past air exposures. This request was made on behalf of a former resident of the area who contacted EPA. Under a cooperative agreement with the ATSDR, VDH prepared this update on cancer statistics (2002–2012) near the H&H Burn Pit site as well as an evaluation of the past air exposure pathway at this site.

The intent of this cancer data review was to provide descriptive cancer statistics for past and present Hanover County residents who may have concerns about cancer rates and is not intended to link overall cancer rates to environmental exposures. In this evaluation, VDH concludes that cancer incidence rates in Hanover County for most cancers were not statistically higher than state rates. However, cancer rates for breast, colon, melanoma, prostate, kidney, and non-Hodgkin lymphoma were significantly higher than the state rates during the period selected. This review has important limitations regarding cancer registry rate comparisons, including that most cancers are caused by a combination of factors, such as genetics, personal behavior, and environmental factors, and cancer rate comparisons from cancer registries do not typically include information on these other important risk factors. Exposure to carcinogens in the environment might take decades to cause cancer; and this analysis is limited to individuals diagnosed with cancer living in Hanover County during 2002–2012.

Because of the past site use and burning activities, the air pathway was a past potential exposure pathway for nearby residents. However, because no past air data are available from when the facility was operating to quantitatively evaluate this exposure pathway, VDH cannot conclude whether exposure to contaminants in the air near the H&H Burn Pit in the past could have harmed people's health. VDH does not have any public health recommendations for this

site at this time, but remains available to review additional environmental information for its implications for public health as needed.

BACKGROUND AND STATEMENT OF ISSUES

H&H Burn Pit is a 1-acre disposal site located approximately 15 miles northwest of Richmond, Virginia in Hanover County. The site is located in a rural area (approximately 600 people live within 1 mile of the site). Between 1960 and 1976, chemicals such as dyes, resins, and solvents were incinerated onsite in a shallow, unlined burn pit measuring 30 feet in diameter. Nearby residents recalled noticing smoke from regular dump burnings and children playing onsite. In 1982, H&H Incorporated and the Haskell Chemical Company removed contaminated soil, installed monitoring wells, and implemented measures to control erosion and sedimentation.

In 1983, in response to community concerns, VDH conducted a health survey study and interviewed residents living near the H&H Burn Pit site regarding cases of cancer, reproductive history, and significant medical problems. Thirty-five households were surveyed, representing 143 individuals. At that time, VDH stated that, keeping in mind the limitations of these kinds of surveys, it did not uncover evidence suggesting that the site negatively affected the health of area residents.

ATSDR completed a public health assessment document for this site in 1988.¹ In 1989, the site was added to EPA's National Priorities List for long-term cleanup.² ATSDR concluded that, based on the environmental information available at that time, the site was considered to be of public health concern because of the risk to human health. ATSDR noted that contaminant concentrations in groundwater, leachate, and surface soils were of health concern, and recommended periodic residential well water sampling and additional environmental characterization and sampling on and nearby the site. The air pathway was not evaluated in 1988. Since that time, EPA has conducted extensive evaluation and cleanup activities at this site.

DISCUSSION

Air Exposure Pathway Evaluation

To determine if exposure to chemicals from a site poses a health risk, VDH evaluates exposure pathways (how people come into contact with contaminants on site), the concentrations of contaminants present on site, and whether the concentrations pose a health risk.

Air emissions from burning activities took place for approximately 16 years. A mixture of materials were incinerated, including solvents from printing press operations, printing ink residues, and other materials. Because of the past site use and burning activities, the air pathway was a past potential exposure pathway for nearby residents. However, no past air sampling information is available to evaluate the potential risk presented by exposure to airborne contaminants generated during previous burning activities. Therefore, VDH cannot further quantitatively evaluate past exposures for public health implications.

¹ ATSDR. Health Assessment for HH Incorporated Burn Site, Farrington, Virginia, May 5, 1988.

² EPA [website](http://www.epa.gov/reg3hwmd/npl/VAD980539878.htm#history). Accessed March 13, 2015. <http://www.epa.gov/reg3hwmd/npl/VAD980539878.htm#history>

Analysis of Cancer Registry Data for Hanover County

The Virginia Cancer Registry at VDH provided age-adjusted cancer incidence rates for Hanover County for 2002–2012 (Table 1).

Table 1. Age-Adjusted Hanover County and Virginia Cancer Rates, 2002–2012

Cancer Type	Hanover County Rate (per 100,000)	Virginia Rate (per 100,000)
Oral Cavity and Pharynx	11.6	10.4
Esophagus	4.7	4.7
Stomach	6.5	6.1
Colon and Rectum*	49.9	42.9
Liver and Intrahepatic Bile Duct	5.5	5.6
Pancreas	12.8	11.5
Lung and Bronchus	71.2	66.1
Melanoma of the Skin*	24.4	18.9
Breast (female)*	135.2	123.9
Cervix Uteri	4.8	6.6
Corpus and Uterus	21.6	22.5
Ovary	12.7	12.1
Prostate*	164.3	143.5
Testis	6.1	4.6
Urinary Bladder	20.7	18.8
Kidney and Renal Pelvis*	18.4	13.9
Brain and Other Nervous System	7.9	6.2
Thyroid	10.7	10.0
Hodgkin Lymphoma	3.7	2.7
Non-Hodgkin Lymphoma*	20.4	17.2
Myeloma	5.5	5.8
Leukemia	11.8	10.6
Other	38.2	36.3

(Source: Virginia Cancer Registry) *Hanover County rate significantly higher than respective state rate. Significance testing performed using 95% confidence intervals (Tiwari mod method). Rates are not presented for cancer types with fewer than 20 cases reported during this period.

The majority of the cancer rates presented in Table 1 were not elevated when compared with state-wide rates. However, colon, melanoma, female breast, prostate, kidney, and non-Hodgkin lymphoma cancer rates for Hanover County were statistically higher than state rates. This descriptive analysis included 11 years of diagnosis data for Hanover County from the VDH Cancer Registry. Statistical significance testing for other counties, including other counties in the Chickahominy Health District, was not performed as part of this review. In Virginia, cancer incidence rates and cancer mortality rates do vary by district.³

³ Virginia Department of Health, Cancer in Virginia: Overview and Selected Statistics, August 2014.

Cancer Registry Data Analysis Limitations

Important limitations to reviews of cancer data exist in state cancer registries. Most cancers are caused by some combination of genetic factors, personal behaviors, and environmental factors. In many cases, an environmental exposure that might be related to the development of a cancer type takes place years or decades before the individual developed cancer. Similar with other state cancer registries, the VDH Cancer Registry does not contain information about a person's environmental exposure history, such as potential exposure to the burning activities at this site, drinking water sources, or occupational history. Again, similar with other state cancer registries, patient records in VDH Cancer Registry contain the individual's home address at the time of diagnosis. Thus, the evaluation in this report is limited to patients residing in Hanover County during 2002–2012 and who were diagnosed during that same period; the analysis does not include persons who may have lived in Hanover County in the past, but who lived elsewhere at the time of their cancer diagnosis. Regarding residents who lived near H&H Burn Pit in the past, this potentially exposed population was likely to be much less than the population of this entire county. Thus, it may be difficult or impossible to see an elevation in cancer risk at the county level from any past exposures from the site.

CONCLUSIONS

Because of the past site use and burning activities, the air pathway was a past potential exposure pathway for nearby residents. However, VDH cannot currently conclude whether exposure to contaminants in the air near the H&H Burn Pit in the past could have harmed people's health. The reason for this is that there are no past air data available from when this facility was operating to quantitatively evaluate this exposure pathway.

VDH concludes that cancer incidence rates in Hanover County for most cancers were not statistically higher than state rates. However, cancer rates for breast, colon, melanoma, prostate, kidney, and non-Hodgkin lymphoma were significantly higher than the state rates during the period selected. The intent of this analysis was to provide descriptive cancer statistics for past and present Hanover County residents who may have concerns about cancer rates and is not intended to link cancer rates to environmental exposures.

We trust that the above information will help you and that you will share this information with the resident who inquired about the issue. Should you have any additional questions please contact Dwight Flammia, Ph.D. by phone at (804)-864-8127 or by email: dwight.flammia@vdh.virginia.gov.

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Greetings,

You are receiving a document from the Agency for Toxic Substances and Disease Registry (ATSDR). We are very interested in your opinions about the document you received. We ask that you please take a moment now to complete the following ten question survey. You can access the survey by clicking on the link below.

Completing the survey should take less than 5 minutes of your time. If possible, please provide your responses within the next two weeks. All information that you provide will remain confidential.

The responses to the survey will help ATSDR determine if we are providing useful and meaningful information to you. ATSDR greatly appreciates your assistance as it is vital to our ability to provide optimal public health information.

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