Letter Health Consultation

LOVETT COAL ASH LANDFILL
STONY POINT, ROCKLAND COUNTY, NEW YORK

EPA FACILITY ID: NYD0000557355

Prepared by
State of New York Department of Health

OCTOBER 14, 2009

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

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LETTER HEALTH CONSULTATION

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State of New York
Department of Health
Under a cooperative agreement with the
Agency for Toxic Substances and Disease Registry

STATE OF NEW YORK
DEPARTMENT OF HEALTH
Flanigan Square 547 River Street Troy, New York 12180-2216

Richard F. Daines, M.D.
Commissioner

James W. Clyne, Jr.
Executive Deputy Commissioner

October 14, 2009

Mr. Greg Ulirsch, Ph.D.
Senior Technical Project Officer
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
1600 Clifton Road, NE, M/S F58
Atlanta, Georgia 30333

re: Lovett Coal Ash Landfill
Stony Point, Rockland County
Letter Health Consultation

Dear Mr. Ulirsch:

In July 2000, Congressman Gilman sent a letter to the New York State Commissioner of Health requesting assistance in responding to his constituent's concerns about the possible toxicity of ash from the Lovett electric generating plant and coal ash landfill. The New York State Department of Health (NYS DOH) responded to Congressman Gilman's letter in October 2000. The correspondence between the Congressman and the Department are attached to this letter. The Agency for Toxic Substances and Disease Registry (ATSDR) received the same letter from Congressman Gilman and asked NYS DOH to review the available information and conduct a health evaluation under our cooperative agreement. This letter provides the results of the NYS DOH evaluation.

During the 1990s, the New York State Department of Environmental Conservation (NYS DEC) received numerous complaints from citizens about ash falling onto properties near the generating plant and the coal ash landfill. The NYS DEC investigated these complaints and found that the Lovett facility's stacks were the primary source of the ash falling on most people's properties and that the stockpiled ash at the landfill was the primary source of ash at a nearby residential location. Over time, NYS DEC took actions against the facility to reduce emissions and ash depositing on nearby properties. In 2001, the ash landfill was permanently covered. The facility owner shut down the last remaining electric generating unit in 2008 and the facility was demolished earlier this year. Therefore, the operating facility and landfill are no longer a source of ash releases to air.

To assess possible chemical exposures in the past, we evaluated ash samples collected from the landfill and air samples collected from residential locations in the 1990's. The air data indicate that concentrations of particulate matter and metals were either below ambient air quality standards/guidelines or consistent with typical levels measured in air. With one exception, concentrations of metals in the bulk ash stored at the landfill were either consistent with typical levels measured in soils or below health-based concentrations. Chromium concentrations in bulk ash samples were only slightly higher than typical soil levels and a health-based soil comparison value. Thus, based on the available data, exposures to the ash would have been unlikely to cause health effects. However, data for other chemicals that could have been present in the ash (*e.g.*, polynuclear aromatic hydrocarbons) were not available because the air and ash samples were collected to determine the source of the nuisance particles depositing at residential locations and not for the purpose of fully characterizing chemical constituents in the ash or for evaluating human health risk.

Site Background

The Lovett coal ash landfill was part of Mirant New York's Lovett Generating Facility in the Tomkins Cove section of the Town of Stony Point (Rockland County, New York). The Hudson River bounds the former generating facility property to the east. Immediately west of the facility, the land slopes steeply upward toward a residential area. The Lovett coal ash landfill is at the southern end of the Lovett Generating Facility property. The Tomkins Cove dolostone quarry (owned and operated by Tilcon New York) is south of the landfill (Figure 1).

The Lovett generating facility was operated by Orange and Rockland Utilities (ORU) until Southern Energy New York, now known as Mirant New York, purchased the facility in July 1999. The power plant included two coal-fired and one natural gas electric generating units. The first coal-fired boiler was installed at the plant in 1955. A second coal-fired boiler was installed in 1966 and the natural gas boiler was installed in 1969. The plant burned mainly coal until the early 1970s when the coal boilers were retrofitted to burn oil. The facility re-converted the two oil boilers to burn coal again in 1987.

Ash from the power generating process was collected in both the bottom of the generating units (*i.e.*, bottom ash) and by the emissions control device, an electrostatic precipitator, located inside the stack (*i.e.*, flyash). The bottom ash and flyash were combined and placed in the on-site landfill, which was subject to a solid waste disposal permit issued by the NYS DEC. Uncollected flyash may have also been emitted directly from the facility's smokestack, which was subject to an air permit issued by the NYS DEC.

In response to citizen complaints of ash depositing on residential locations in the early 1990s, the NYS DEC conducted investigations. NYS DEC found the emissions control equipment to be periodically malfunctioning and conditions at the landfill to be in violation of the facility's solid waste disposal permit several times between 1998 and

2000. The solid waste permit violations included ash migration onto the covered portion of the landfill, improper disposal of ash outside the footprint of the landfill, and using leachate from the landfill to dampen and control dust on the exposed portion of the landfill. By 1998, NYS DEC regional staff no longer received complaints of ash depositing on nearby residences. Mirant New York constructed a permanent cover on the landfill in 2001. NYS DEC also took steps reduce smoke emissions from the generating plant which would also result in reducing any fallout of ash. Because facility upgrades failed to reduce emissions sufficiently, NYS DEC required Mirant to close the generating plant per a legal agreement signed by the Mirant New York. Mirant completed closure of the facility in April 2008. Demolition of the generating plant was completed in the spring of 2009.

Site Visits

When NYS DOH staff visited the site in October 2000, fences and gates surrounding the site controlled access to the landfill, as well as to the rest of the Lovett Generating Facility. Grass was growing on the soil of the partially constructed cover on the landfill. No dust migration was observed from the exposed ash on the upper half of the landfill; however, the wind was not strong during the visit.

NYS DOH staff inspected the closed and capped landfill and site of the former Lovett Generating Facility on August 21, 2009. NYS DOH staff observed that public access to the landfill was limited by several factors including a steep, heavily wooded escarpment; some chain link fencing; a chained and padlocked gate on the landfill maintenance road; and security provisions at the adjacent quarry. The landfill was completely covered with grass and was recently mowed. No exposed landfill material was observed. Staff also observed a retention basin at the north end of the landfill that appears to be designed to collect surface water runoff from the landfill surface. A concrete bunker next to the surface water retention lagoon is designed to collect and pump out any generated leachate. The retention basin has seven foot high chainlink fencing around the entire perimeter topped by three strands of barbed wire and has a padlocked gate to reduce the potential for accidental drowning. There is a vacant, level plot of land covered by crushed stone and surrounded by fencing in the location of the former Lovett Generating Facility.

Environmental Sampling

NYS DEC conducted two investigations in 1990 and 1991 to characterize particles settling out of the air onto residential properties near the Lovett facility (NYS DEC, 1990; NYS DEC, 1993). The studies involved placing filters in five-gallon plastic buckets on the properties to collect settled particles at three residential properties to the west of the Lovett site. A control site (away from the Lovett site) to the south of the facility was also monitored in the 1990 study (see Figure 1 for sample locations and site layout). Microscopic analysis was used to determine the presence of ash on the collection filters. Meteorological data (*i.e.*, wind speed and direction) were collected during the 1990 study to assess the frequency of winds from the facility toward

the sample locations. NYSDEC collected an additional settled dust sample in January 1992 from a property located within 300 feet of the landfill in response to a complaint from a Church Street resident.

NYSDEC collected over 100 settled particulate samples from four residential properties and a control location. Microscopic analysis indicated that all samples contained coal ash except for the control location. The samples from the residential properties west of the Lovett site consistently showed evidence of flyash (ash from the stack) whereas, the sample collected from the property nearest the Lovett site on Church Street contained evidence of both bottom ash (from the stockpile) and flyash. The results were qualitative and samples were categorized by how noticeable the ash was on the filters. A comparison of the particle sizes for samples collected at the residential locations to particle sizes for stack-related and stockpiled ash showed similarities.

Analysis of the 1990 meteorological data by NYS DEC staff indicated that the residential locations west of the site were usually downwind of the Lovett facility. Based on the morphology of the particles collected in the deposition studies, NYS DEC concluded that coal ash (flyash and bottom ash) from the Lovett facility was regularly (at least once a week) depositing on the residential properties. NYS DEC identified the Lovett facility as the only coal ash source in the area.

ORU conducted an air monitoring study during a portion of the 1991 NYS DEC air investigation (ORU, 1991). In addition to collecting settled particulate samples, the ORU study used air samplers to quantitatively collect total suspended particulate matter (TSP) and particulate matter less than 10 microns in diameter (*i.e.*, PM_{10}). Three sample locations overlapped those used by NYS DEC to the west of the facility. ORU also collected samples at the Lovett site's meteorological tower location to represent the area south of the facility. Microscopic analysis was performed on the heaviest TSP and settled dust samples collected to determine the presence of coal ash. ORU reported that the most abundant material on the filters was naturally occurring (pollen, spores, plant/insect fragments, *etc.*) and the second most abundant particles were minerals, especially limestone, quartz and feldspars. The sample results for the elemental analysis (*i.e.*, metals) of the settled particulate indicate that the particles regularly contained iron and barium, and on three separate occasions low levels of chromium, mercury and nickel (at or just above the limits of detection). These data were not quantified in a manner that allows us to estimate human exposure and potential health risks. Also, ORU reported that there were inconsistencies associated with weighing the settled particulate filters, making the quantification data unreliable. The two TSP samples with the most mass collected from each site were submitted for elemental analysis (see Table 1). These data were not associated with the reported weighing inconsistencies, however an analysis of a "blank" filter was not conducted so there is no information on the concentrations of metals in the filters.

The TSP concentrations at the Lovett site were consistently higher than the TSP concentrations at the residential sites. The highest TSP concentrations collected at the

Lovett site ranged from 109 to 164 micrograms per cubic meter (mcg/m^3), whereas the highest concentrations measured at the residential locations ranged from 62 to 100 mcg/m^3. The highest PM_{10} concentrations were measured at a residential location to the west of the facility. This location was the closest residential location to the facility that was included in ORU's 1991 study. PM_{10} concentrations at this residential location ranged from 26 to 55 mcg/m^3. Flyash was positively identified on all nine TSP samples from the residential and Lovett sampling sites submitted for microscopic analysis, although ORU's study suggested that ash was present in small amounts relative to other filter constituents, such as limestone and pollens. Nonetheless, the positive identification of flyash in the TSP samples supported the NYS DEC findings that flyash originating at the Lovett facility deposited on nearby residential properties. ORU's study also indicates that measured TSP and PM_{10} levels (24-hour samples) were below the National Ambient Air Quality Standards (NAAQS) of 260 and 150 mcg/m^3, respectively, that were in effect at the time the samples were collected.

Bulk ash samples from the landfill were also analyzed. The bulk samples were subjected to microscopic and elemental analyses.

Exposure Pathways and Public Health Implications for Adults and Children

Adults and children living near the Lovett plant may have been exposed to ash emitted from the Lovett generating plant stacks and from stockpiled ash during the period of time that the facility burned coal and when emissions control devices were periodically malfunctioning. Exposures may have occurred by direct contact with and by inhalation of suspended particulates. We evaluated the potential health implications of such exposures using the available data.

Inhalation Pathway

NYS DECs investigation indicates that residents living in the vicinity of the Lovett facility may have been exposed to coal ash that was released from the smokestack and/or blown by the wind from the landfill. In the ORU investigation, two TSP samples collected from each site were analyzed for metals. ORU used the results of the analyses to calculate the concentrations of metals in the ambient air during the time over which the samples were collected. The range of reported concentrations and the percent of samples that were below instrument detection limits are reported in Table 1. We compared these data to typical levels that have been measured in ambient air. If the concentrations exceeded typical levels measured in ambient air, then we would further evaluate the air levels and potential health risks.

With the exception of titanium, for which ambient air concentration data were not available, Table 1 indicates that the measured 24-hour concentrations of particulate-bound metals are similar or below typical ambient air levels (see Table 1). The measured titanium concentrations (ranging from non-detect to 0.019 mcg/m^3) were below NYS DECs health-based annual guideline concentration of 24 mcg/m^3 for titanium dioxide. Copper, iron and lead were detected in every sample. Arsenic,

chromium and titanium were measured in five to six out of nine samples. Mercury and nickel were detected often but not in all samples (one to two non-detects).

Because the 24-hour metal concentrations were consistent with or below typical levels in ambient air and to the extent that 24-hour sampling is representative of long-term concentrations, the data suggests that the risk for adverse health effects from exposure to particle-bound metals measured near the Lovett facility would be similar to the risk associated with exposure to typical ambient levels.

We also compared measured particulate matter levels and lead to their respective NAAQS. Measured lead concentrations in TSP were below levels measured in other NYS locations and the measured levels (24-hour samples) of TSP lead were below the level of the current lead NAAQS of 0.15 mcg/m^3 measured as a three-month rolling average. To the extent that the sampling can be viewed as representative of longer-term air quality, the results of these comparisons suggest that ambient air levels are below ambient air lead levels measured in other NY locations suggesting that health effects are not likely. The highest measured levels (24-hour average samples) of PM_{10} measured at a residential location (ranging from 26 to 55 mcg/m^3) are all below the 24-hour NAAQS for PM_{10} of 150 mcg/m^3. There is currently no NAAQS for TSP that allows for a direct comparison of air levels, since TSP NAAQS was replaced by the PM_{10} NAAQS. If it is conservatively assumed that all of the measured TSP is PM_{10}, the levels at the residential locations (ranging from 62 to 100 mcg/m^3) were all lower than the 24-hour NAAQS for PM_{10} of 150 mcg/m^3. At the Lovett site sampling location, two of the five highest measurements (158 and 164 mcg/m^3) slightly exceeded the standard. Since only a fraction of TSP is PM_{10}, the level of PM_{10} in these samples likely meets the numerical standard. Additionally, these samples were collected on site and not at residential locations.

Our comparison of available data to typical levels in air and to the NAAQS has some limitations. For example, the ORU ambient air sampling data that we reviewed were 24-hour samples taken over a period of 45 days. The typical levels in air that we used for comparison purposes likely represent annual averages of 24-hour samples. Also, we compared 24-hour lead sample data to the lead NAAQS that is based on 3-month average lead concentrations. Furthermore, we did not have any data for other constituents possibly emitted from the facility, including those that were not bound to particles. Nonetheless, the data do not provide any indication that past exposure would have resulted in health effects.

Ingestion Pathway

Coal ash was transported off-site and subsequently settled on residential properties. There it became available for direct human contact, or was incorporated into soil and household dust where it could be incidentally ingested. Quantitative data suitable for estimating human exposure are not available for concentrations of ash-related chemicals on residential surfaces (e.g., porches) or for chemical levels in residential soils. As a surrogate for exposure via ingestion pathways, we evaluated the

potential for adverse health effects resulting from contact with metals found in the ash collected from the stockpile (representing fly ash collected by the emission control device and bottom ash). We conducted this evaluation by comparing the concentrations of metals of concern (excluding sodium, potassium and calcium) detected in the bulk ash samples collected from the landfill to NYS Soil Cleanup Objectives (SCOs) which are protective of human health and the environment and to the typical range of concentrations found in rural NY soils (see Table 2). Metals that were not detected in the bulk ash samples include antimony, cadmium, molybdenum, silver, thallium, and tin. Comparison data from these sources were not available for some metals (*e.g.*, strontium and titanium). For metals without a respective SCO or NYS rural soil data, we compared concentrations to US EPA Soil Screening Levels, other data on typical soil concentrations, and developed our own health-based comparison values.

Using this approach we identified three metals (*i.e*., chromium, cobalt, and vanadium) to be elevated compared to their respective SCOs or the typical concentrations found in rural soils. Chromium was slightly elevated as compared to its respective health-based SCO and the levels measured in rural soils. Concentrations of cobalt in the bulk ash (24.4 to 28.1 milligrams per kilogram (mg/kg)) were about twice the level typically found in rural soils and we do not have an SCO for cobalt. However, the concentrations of cobalt were similar to a health-based Regional Screening Level (23 mg/kg) developed by US EPA Region 3 (US EPA, 2009). Like cobalt, the vanadium concentrations found in bulk ash (107 to 120 mg/kg) were significantly higher than those found in rural soils and we do not have an SCO for vanadium. However, the vanadium concentrations were below US EPA's health-based Soil Screening Level (SSL) for vanadium of 550 mg/kg (US EPA, 1996).

Strontium was found in bulk ash at concentrations ranging from 396 mg/kg to 553 mg/kg. This range is below the US EPA Region 3's Regional Screening Level (health-based) of 47,000 mg/kg (US EPA, 2009). Titanium was found in bulk ash at concentrations ranging from 819 mg/kg to 974 mg/kg. We could not identify a health-based comparison value developed by the US EPA or ATSDR for titanium, however we developed an ingestion-based comparison value of 22,000 mg/kg using a reference dose for non-carcinogenic endpoints (NSF International, 2005). Additionally, a US Geological Survey study found that titanium levels in eastern US soils range from 7 mg/kg to 1,500 mg/kg (Shacklette and Boerngen, 1984).

Our evaluation indicates that the levels of certain metals in bulk ash were slightly elevated with respect to health comparison values (*i.e.*, chromium) and higher than rural soils (*i.e.*, cobalt and vanadium). Cobalt and vanadium concentrations in bulk ash were lower than US EPA health-based comparison values. Thus, our evaluation indicates that past contact with metals found in the ash depositing on residential locations is not likely to have harmed people's health. However, data for other chemicals that could have been present in the ash (*e.g.*, polynuclear aromatic hydrocarbons) were not available.

CONCLUSIONS

Introduction

The NYS DOH reviewed environmental data collected at residences near the Lovett electric generating plant and at the ash landfill by the NYS DEC and the former facility operator, Orange and Rockland Utilities.

NYS DEC used their data to identify the Lovett power plant facility and the coal ash landfill as the sources of coal ash that settled on nearby residential properties while the facility was in operation. These data were also used by NYS DOH to evaluate whether residents near the Lovett facility could have been harmed by breathing and or having direct contact with (touching or eating) coal ash materials from the Lovett facility.

Conclusion 1

Based on the available data, NYS DOH concludes that breathing suspended particulate matter from the Lovett power plant and the coal ash landfill in the past was unlikely to have harmed people's health.

Basis for conclusion

To reach this conclusion, NYS DOH compared the concentration of metals measured in air at the homes near the Lovett facility to concentrations measured at US locations and determined that concentrations were similar. Additionally, NYSDOH compared the Lovett results to relevant air quality standards for particulate matter and lead and determined that the concentrations at homes near the Lovett facility were lower and therefore not a concern for health.

Conclusion 2

NYS DOH concludes that eating or having skin contact with ash that contained metals from the Lovett generating plant and landfill in the past were unlikely to have harmed people's health.

Basis for conclusion

Data are not available to determine whether soils and dust at homes near the facility were contaminated with metals from the Lovett coal ash facility. Samples that were needed to assess this information were not collected during past investigations conducted as a result of the original complaints from residents.

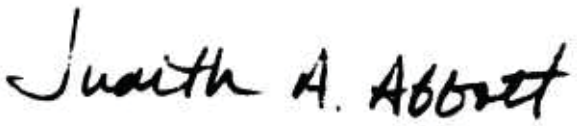
To reach this health conclusion, NYS DOH instead used data from coal ash samples collected directly from the Lovett coal ash landfill and determined that the concentration of metals in these samples were similar to levels found in typical soils or considered by USEPA and NYS DOH to be protective of public health. Thus, past contact with the metals in the ash was unlikely to harm people's health.

Conclusion 3

The operating facility and landfill are no longer a source of ash releases to air and, therefore, the facility currently will not harm people's health.

Basis for conclusion	In 2001, the ash landfill was permanently covered. The facility owner shut down the last remaining electric generating unit in 2008 and the facility was demolished in early 2009.
Next Steps	In 2001, the ash landfill was permanently covered. The facility owner shut down the last remaining electric generating unit in 2008 and the facility was demolished in early 2009. Therefore, the operating facility and landfill are no longer a source of ash releases to air and to nearby residences so no further health actions are needed, and we do not have any recommendations for actions to be taken at the plant. However, NYS DOH and ATSDR recommend that the NYS DEC continue to oversee the monitoring and maintenance of the closed landfill and that access continues to be restricted.
FOR MORE INFORMATION	If you have questions about this Letter Health Consultation, please contact the NYS DOH at 1-800-458-1158, extension 2-7800.

Sincerely,



Judith A. Abbott, Chief
Exposure Assessment Section
Bureau of Toxic Substance Assessment

Attachments

cc: E. Horn, Ph.D./A. Grey, Ph.D.
D. Luttinger, Ph.D./K. Gleason
T. Wainman, Ph.D./D. Briggs
G. Litwin/S. Bates/D. Miles
B. Devine
G. Sweikert
T. Micelli

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Table 1. Comparison of Measured Metal Concentrations associated with 24-Hour Total Suspended Particulate Samples Reported by ORU (1991).
(all values in units of micrograms per cubic meter of air or mcg/m^3)

Metal	Range of Ambient Air Concentrations measured in TSP near the Lovett facility (percent non-detects) [(1)]	Typical Ambient Air Concentrations	Reference
Arsenic	<0.001 - 0.0022 (56%)	Urban US sites: - Average concentrations range from 0.02 to 0.03 Remote US sites: - Average concentrations range from <0.001 to 0.003	ATSDR, 2007a
Barium [(2)]	0.1 – 6.83 (0%)	Average US concentrations range from 1.5 to 950	ATSDR, 2007b
Chromium	<0.005 - 0.0077 (67%)	Average US concentrations ranged from 0.005 to 0.525	ATSDR, 2008
Iron	0.27 – 1.26 (0%)	NYS annual average concentrations range from 0.29 to 1.18 (1987 data is the most recent year iron was evaluated)	NYS DEC, 1992
Lead	0.01 (same value for all samples) (0%)	NYS annual average concentrations range from 0.03 to 0.06 [(3)]	NYS DEC, 1992
Mercury	<0.0001 - 0.0004 (11%)	Particle phase [(4)] concentrations in urban/industrial sites: - Average concentrations range from 0.000015 to 0.0012 Particle-phase concentrations in remote US sites: - Average concentrations range from 0.000001 to 0.000086	ATSDR, 1999
Nickel	<0.005 - 0.01 (22%)	Average concentrations range from 0.006 to 0.02	ATSDR, 2005
Titanium	<0.005 - 0.019 (67%)	Ambient air concentration data not available	

(1) The ORU report presents metals concentrations in air for 24-hour TSP samples (n=9) collected at residential locations (n=4)and on the Lovett site (n=5). The symbol "<" means "less than" the value presented. This notation means the chemical was not detected at the reported analytical limit.

(2) In their 1991 report, ORU concluded that the barium data was an analytical error since it was not corroborated by the microscopic analyses. Nonetheless, we included it in this Table.

(3) These data do not include lead levels measured near an industrial source of lead located in Wallkill where 1991 levels ranged from 0.06 to 0.66 mcg/m3.

(4) Most metals in ambient air are associated with particulates. However, mercury is found in the gas and particle phases of ambient air. Since the ORU mercury data is associated with captured particles rather than gas phase samples, we determined that a comparison to reported particle phase monitoring data was most relevant.

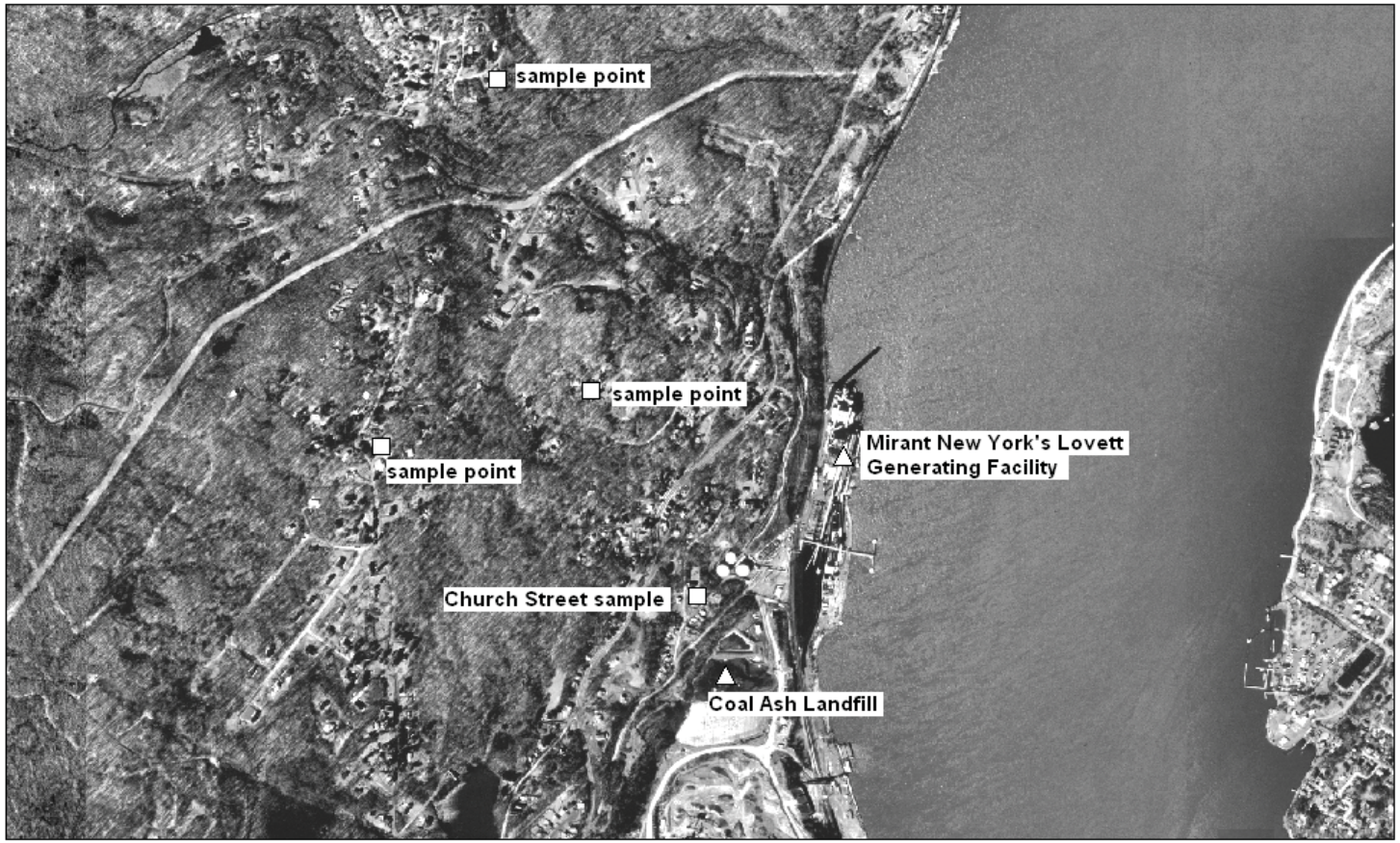
Table 2. Comparison of Metal Concentrations in Coal Ash to Comparison Values.
(all values in units of milligrams (mg) per kilogram (kg) or parts-per-million)

Metal	Coal Ash Pile (sample ID: 1A-1B)	Coal Ash Pile (sample ID: 2A-2B)	Coal Ash Pile (sample ID: 3A-3B)	NYS Soil Cleanup Objectives For Residential Land Use [1]	Range of Soil Concentrations in Rural Soils [2]	Range of Soils Concentrations in Rural Roadside Soils [2]
Aluminum	15,100	16,200	16,800	N/A [3]	561 - 20,000	1,860 - 14,400
Antimony	<30	<30	<30	N/A	<0.6 - 5.0	0.6 - 1.5 (ND)*
Arsenic	11	12	13	16[4]	<0.2 – 69 [5]	<0.3 - 14.1
Barium	308	308	337	350[4]	4 - 743	11 - 188
Beryllium	7.5	8.9	9.1	14	0.1 - 2.5	0.2 - 1.3
Cadmium	<2	<2	<2	2.5	<0.05 - 4.2	<0.1 - 2.3
Calcium	7470	36,000	8110	N/A	100 - 74,500	465 - 56,500
Chromium	**40**	**42.3**	**46.3**	**36**	**1 - 36**	**1.3 - 17.5**
Cobalt	**24.4**	**28.9**	**27.1**	**N/A**	**0.3 - 15.1**	**<0.2 - 24.1**
Copper	72.4	78.1	79.3	270	2 - 98	3.4 - 29.6
Iron	10,800	14,200	14,000	N/A	783 - 29,500	3,090 - 25,700
Lead	26.5	30.8	27.4	400 [6]	3 - 110	9 - 133
Magnesium	1530	18,200	14,110	N/A	177 - 46,000	220 - 31,400
Manganese	113	174	122	2000 [4]	13 - 4,550	17 - 1,560
Mercury	0.12	0.096	0.09	0.81	0.01 - 0.34	<0.01 - 0.28
Molybdenum	<8	<8	<8	N/A	N/A	N/A
Nickel	45.3	54.1	49.5	140	0 - 49	1.2 - 29.5
Potassium	2,120	2,550	2,400	N/A	116 - 2,440	126 - 1,660
Selenium	30	35	32	36	<0.4 - 6.5	0.4 - 5.1
Silver	<4.0	<4.0	<4.0	36	<0.1 - 1.6	<0.1 - 1.2
Sodium	459	263	591	N/A	<39 - 422	<39 - 627
Strontium	**488**	**396**	**553**	**N/A**	**N/A**	**N/A**
Thallium	<30	<30	<30	N/A	N/A	N/A
Tin	<20	<20	<20	N/A	N/A	N/A
Titanium	**877**	**819**	**974**	**N/A**	**N/A**	**N/A**
Vanadium	**111**	**107**	**120**	**N/A**	**2 - 38**	**3 - 44**
Zinc	25.8	55.6	31.6	2,200	10 - 454	42

(1) NYS Soil Cleanup Objectives (SCO) were developed by NYS DEC and NYS DOH to be used to guide decisions on the cleanup of hazardous waste sites (NYS DEC & NYS DOH, 2006). These values are protective of human health and the environment.
(2) NYS conducted a survey of chemical levels in rural soils (NYS DEC & NYS DOH, 2005). The values presented here are the minimum and maximum values measured in soils easily accessible by residents (e.g., yards) and in roadside soils.
(3) N/A = SCO is not available.
(4) SCO based on an evaluation of typical soil concentrations in NYS.
(5) The maximum value for arsenic in this data set may be an outlier; 98% of the sample results were below 14.1 mg/kg.
(6) The residential SCO for lead is equal to the 2001 Federal soil standard for lead in bare soils (US EPA, 2001)

Figure 1. Area around the Lovett Power Plant. The three sample points were monitored in the 1990 and 1991 DEC studies and in the 1991 ORU Study. A sample of settled dust was collected by NYSDEC in 1992 from the Church Street location.

Figure 1. Location map of Mirant New York's Lovett Coal Ash Landfill and NYS DEC sampling locations.



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STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

Antonia C. Novello, M.D., M.P.H., Dr.P H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

October 10, 2000

Hon. Benjamin A. Gilman
Member of Congress
U.S. House of Representatives
377 Route 59
Monsey, New York 10952

Dear Congressman Gilman:

Thank you for your letter of July 31, 2000, to Commissioner Novello requesting assistance for your constituent, who has expressed concern over the possible toxicity of the Lovett Coal Ash Landfill located in Tompkins Cove.

While the New York State Department of Health (NYSDOH) is concerned about potential health effects that may be associated with any landfill, the information in your letter does not provide sufficient information to evaluate a relationship between the landfill and the reported cancer. We would need further information from the treating physician about the patient's diagnosis, the nature of the cancer, and the basis for the statement that the landfill caused the cancer.

Please have your constituent's physician provide this information to Matthew Mauer, D.O., of this Department's Bureau of Occupational Health. You may reach him at Flanigan Square, 547 River St., Troy. NY 12180-2216; phone (518) 402-7900.

If you have additional concerns or questions about site-related health issues, please contact me at (518) 402-7500 or have your staff contact G. Anders Carlson. Ph.D., of our Bureau of Environmental Exposure Investigation at (518) 402-7850.

Sincerely,

Ronald Tramontano

Ronald Tramontano
Director
Center for Environmental Health

Cc: J. Signor
R. Hinckley
M. McHugh
N. Kim, Ph.D.
A. Carlson, Ph.D.
Mr. S. Bates/Mr. W. Gilday
M. Mauer,D.O.
Mr. M. Moran, NYSDEC Reg 3
ECU #220.50106

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BENJAMIN A. GILMAN
20TH DISTRICT, NEW YORK

INTERNATIONAL RELATIONS
COMMITTEE
CHAIRMAN

REPUBLICAN POLICY
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SUBCOMMITTEES:
POSTAL SERVICE
CRIMINAL JUSTICE, DRUG POLICY
AND HUMAN RESOURCES

Congress of the United States
House of Representatives
Washington, DC 20515–3220

July 31, 2000

Dr. Antonia C. Novello, M.D.
Commissioner
New York State Department Of Health
Empire State Plaza Corning Tower
Albany, New York 12237
Dear Commissioner Novello:

I have recently been contacted by a constituent from the Tompkins Cove area of Rockland County who has expressed great concern over the possible toxicity of the Lovett Coal Ash Landfill located in Tompkins Cove.

Please note, the constituent has requested anonymity in this matter but assures me that the coal flyash presents a serious health risks to himself and his neighbors.

He has further been informed by a medical professional that " It is my unequivocal and professional opinion, that a landfill constructed in the environs... is a etiological and directly causative agent of cancer".

I will appreciate any assistance or information you may be able to render with regard to this matter.

With best wishes,

Very truly Yours,

BENJAMIN A. GILMAN
Member of Congress

BAG:rm
Enc.
Please reply to my Monsey Office

PLEASE REPLY TO:
377 Rt. 59
Monsey, NY 10952

WASHINGTON OFFICE:
2449 RAYBURN HOB
WASHINGTON, DC 20515–3220
TELEPHONE: (202) 225–3776
FAX: (202) 225–2541

DISTRICT OFFICE:
418 EAST MAIN STREET
SUITE 2
P.O. BOX 358
MIDDLETOWN, NY 10940–0358
TELEPHONE: (914) 343–6666
FAX: (914) 342–2900

DISTRICT OFFICE:
377 ROUTE 59
MONSEY, NY 10952–3498
TELEPHONE: (914) 357–3000
FAX: (914) 357–0984

DISTRICT OFFICE:
HASTINGS-ON-HUDSON
TELEPHONE: (914) 478–55

Web Page: http://www.house.gov/gilman

CERTIFICATION

The letter health consultation for the Lovett Coal Ash Landfill was prepared by the New York State Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the letter health consultation was initiated. Editorial review was completed by the cooperative agreement partner.

Technical Project Officer, CAT, CAPEB, DHAC

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation, and concurs with its findings.

Team Leader, CAT, CAPEB, DHAC, ATSDR