MINNESOTA MDH DEPARTMENT OF HEALTH

Protecting, maintaining and improving the health of all Minnesotans

April 16, 2010

Mr. William Pesek
City of St. Paul
Department of Parks and Recreation
400 City Hall Annex
25 West 4th Street
St. Paul, Minnesota 55102

RE: Oxford Community Center Playground

Dear Mr. Pesek:

At the request of the City of St. Paul - Department of Parks and Recreation, the Minnesota Department of Health (MDH) has reviewed information and data and conducted a site visit to the Oxford Community Center playground in St. Paul, Minnesota.

Site Background

The Oxford Community Center / Jimmy Lee Recreational Center is located south of Concordia Avenue and between Lexington Parkway and Oxford Street in St. Paul. It is a heavily used urban facility that serves the 18,000 residents of the Summit-University neighborhood and surrounding areas, and consists of a community center and pool, playground, and athletic fields. Geotechnical and environmental investigations conducted on the lower athletic field in preparation for installation of an artificial playing surface detected the presence of fill materials that contained elevated levels of lead, polycyclic aromatic hydrocarbons (PAHs), and other contaminants at various locations and depths.

Because one of the locations where lead and other contaminants were detected at a shallow depth was near the playground area, concern was expressed regarding the potential for similar contamination in the playground area itself. The playground area contains multiple play structures on a deep sand base, separated from the lower athletic field by an asphalt path and a grassy area.

Playground Investigation and Site Visit

Samples of soil/sand were collected in early April from the playground for analysis for heavy metals (including lead) and PAHs. The sand play areas were divided into six

approximately equal sections; within each section five sub-samples were collected from a depth of 0-3 inches. The sub-samples were screened for the presence of lead using an X-ray Fluorescence (XRF) analyzer, and then the sub-samples were mixed together for composite analysis for heavy metals and PAHs at a fixed laboratory.
Two shallow soil borings were drilled in the grassy area between the playground and the asphalt path. Discreet samples were collected from 0-3 inches and at several other depths in the borings, down to 3-4 feet, for analysis for lead using the XRF and for heavy metals and PAHs at the fixed laboratory.

MDH staff visited the site on April 14, 2010. Access to the athletic fields and playground area were restricted by temporary fencing, and signs were posted indicating the possible presence of soil contamination. The sample locations were marked with small flags, and the area did not appear to have been recently disturbed.

Data Evaluation

Draft sample results were received by MDH on April 12, 2010; a final report was received on April 14, 2010. MDH staff compared the results of each sample to the appropriate Soil Reference Value (SRV) developed by the Minnesota Pollution Control Agency (MPCA) for recreational land uses. An SRV represents the concentration of a contaminant below which MPCA and MDH conclude that normal dermal contact, inhalation of dust, and incidental soil ingestion do not represent a human health risk.

The following table summarizes the laboratory data from the playground area samples and the shallow (0-3 inches) soil samples collected in the grassy area:

Contaminant	Maximum Level Found, mg/kg	Average Level Found, mg/kg	MPCA Recreational SRV, mg/kg
Lead	41	12	300
Arsenic	6.4	2.8	11
Barium	77	38	1100
Cadmium	0.4	0.4	35
Chromium	14	8.5	120*
PAHs			
Fluoranthene	1.1	0.86	1290
Pyrene	0.88	0.79	1060
cPAHs (as BaP)	0.54	0.29	2

mg/kg = milligrams of chemical per kilogram of soil
cPAHs (as BaP) = total carcinogenic PAHs as benzo(a)pyrene equivalents
* SRV for Chromium VI

Other metals such as mercury, selenium, and silver were not detected in the surface soil samples. PAHs were detected in both samples from the grassy area, but in only one sample from the sand play area. Screening of the surface soil samples for lead using the XRF did not detect lead in any of the samples. The detection limit of the XRF is higher than the fixed laboratory, however – typically between 75 and 100 parts per million (ppm; equivalent to mg/kg).

Laboratory analysis of soil samples collected from below two feet in the grassy area did detect the presence of lead at levels above the SRV. These samples appear to contain fill materials similar to that found below the athletic fields.

Conclusion

The laboratory analyses of soil samples collected from the Oxford Community Center playground did not detect the presence of lead or other contaminants at levels of health concern. MDH concludes that exposure to the sand and surface soil in the playground will not harm people's health, including children, and concurs with the City of St. Paul - Department of Parks and Recreation plans to reopen the playground.

Recommendations

Any future improvements to the playground should take into account that fill materials may be present below a depth of two feet. Steps should also be taken to contain dust during maintenance or improvements to the adjacent athletic fields.

If you have any questions regarding this letter or the site, please contact me at 651-201-4910, or james.kelly@state.mn.us.

Sincerely,

James Kelly
Health Assessor
Site Assessment & Consultation Unit
Environmental Health Division

CC: David Knight, Minnesota Pollution Control Agency
Jim Yannarelly, St. Paul-Ramsey County Department of Public Health