STATE OF NEW YORK
DEPARTMENT OF HEALTH

584 Delaware Avenue, Buffalo New York 14202

Richard F. Daines, M.D.
Commissioner

Wendy E. Saunders
Chief of Staff

September 19, 2008

Mr. Kevin Matheis
U.S. Environmental Protection Agency
186 Exchange Street
Buffalo, NY 14203

Re. MRS Plating Site
Site # 932851N
Health Consultation/Technical Assist

Dear Mr. Matheis:

In December of 2007, the United States Environmental Protection Agency (US EPA) requested assistance from the Agency for Toxic Substances and Disease Registry (ATSDR) and the New York State Department of Health (NYS DOH) to evaluate possible exposures to site-related contamination from the MRS Plating site in the City of Lockport in Niagara County, and to determine the need for and extent of soil removal. The results of a supplemental investigation conducted by EPA in June 2007 form the basis of this request, and this letter is a summary of our public health evaluation of the potential current and future exposures to contamination from the site using those data.

SITE BACKGROUND:

The site is located in a mixed commercial and residential area in the City of Lockport in Niagara County. A site location map is attached as Figure 1. The site is about one acre in size with a single story block building containing the main plating operations, and a separate building serving as the offices. The northeast portion of the site is covered with a gravel parking lot, and the north part of the site is covered by a grassy area and walkway. A furniture store is located to the west, a residential property to the east, Park Avenue and a railroad yard to the north, and a residential property across Rene Place to the south. The site is relatively flat and drainage from the site flows in all directions.

The NYS DOH previously prepared a Technical Assist in July 2007 that determined nearby residential properties are not impacted from site conditions, but the site did impact off-site areas on the neighboring furniture store property. Since the initial technical consultation was prepared, US EPA has removed all equipment, and bulk and containerized waste from inside the site building; removed contaminated solids and liquids from sumps and troughs within the building; and conducted a supplemental investigation to delineate areas of volatile and metals contamination under the building slab and within the site. Additionally, US EPA responsibility for the site has allowed for long-term observation of site conditions during all four seasons, with a critical observation being the formation of suspected metals salt precipitate over the southern portion of the site surface after precipitation events.

DISCUSSION:

In June of 2007, EPA conducted a supplemental site investigation to delineate areas of contamination in support of a remedial design to address contamination on the property. Surface and subsurface soils, concrete, and soil vapor samples were collected for volatile, semi-volatile, pesticide, and metals analysis from locations within the building, as well as on the MRS property and the neighboring business/furniture store property. Metals analysis was limited to TAL Metals, mercury, cyanide, hexavalent chromium, and TCLP metals.

Soil sample results were compared to chemical-specific Soil Cleanup Objectives (SCOs) for restricted commercial use (Table 375-6.8(b)).

SCOs are contaminant-specific remedial action objectives for soil based on a site's current, intended or reasonably anticipated future use. In developing the SCOs, NYS DEC and NYS DOH considered many factors including multiple human exposure pathways (soil ingestion, dermal contact, inhalation, homegrown vegetable consumption, home-produced animal product consumption), short-term and long-term exposures, protection of ecological resources, protection of groundwater and background levels of chemicals in rural soils. Soil cleanup objectives have been developed for several land use categories, including "unrestricted" land use

NYS DOH used the SCOs for the "commercial" land use category because we believe the most likely uses of this property in the future will remain commercial. The health-based SCOs for commercial land use are derived to be protective of young children, who may be exposed to contaminants through incidental ingestion of soil.

Those analytes with maximum concentrations from the June 2007 sampling event that exceeded the chemical-specific human health-based SCOs (commercial use) are shown in the table below.

Summary of Surface Soil Sample Data from the MRS Plating Site
Compared to Restricted Use (Commercial) Soil Cleanup Objectives (SCO)
(Values in milligrams/kilogram of soil or mg/kg)

Analyte	SCO	Maximum Result (mg/kg)	Average Result (mg/kg)
Chromium (Total)*	1500	6430J	529
Chromium (Hexavalent)	400	37300J	3396
Cyanide	27	66	15

J Estimated value
Total Chromium was screened using the Commercial SCO for Trivalent Chromium
** Hexavalent and total chromium analyses conducted by different labs using separate subsamples

Significant levels of chromium and cyanide are present in samples collected on concrete surfaces within the building, and on the concrete blocks of the building where staining and corrosion are evident as noted by sample results MRS-C-601 (total chromium at 76300 mg/kg, hexavalent chromium at 146,000 mg/kg) and MRS-C-604 (cyanide at 1200 mg/kg). These results are not included in the above screening since the need

for remediation is evident at these sample locations. Areas of concrete block corrosion on the west side of the building allow migration of plating materials from the building interior to directly impact exterior soils adjoining the building, especially along the property line with the furniture store, where sampling results MRS-S-609 (chromium at 2580 mg/kg, hexavalent chromium at 34.6 mg/kg) confirm the impact. Historic run-off patterns from this area have also impacted a grassy area near the front of the furniture store along the Park Ave. sidewalk, noted by the result from sample location MRS-S-22 with 4490 mg/kg of total chromium. Information that aqueous wastes were disposed at the rear of the building is confirmed by sample results MRS-SS-612 (chromium at 1660 mg/kg, cyanide at 66.5 mg/kg) and MRS-S-606 (cyanide at 64.9 mg/kg). It is unclear why mercury levels are not significant in this sampling event as compared to the initial sampling conducted in December 2006.

The June 2007 results from samples collected along the property line of the MRS site and the neighboring furniture store confirm the results of the December 2006 sampling event that levels of chromium continue to exceed the chemical-specific protection of public health-based SCOs for commercial use.

Summary of Soil Sample Data from the between MRS Plating Site property line and neighboring business compared to Restricted Use (Commercial) Soil Cleanup Objectives (SCO)
(Values in milligrams/kilogram of soil or mg/kg)

Analyte	SCO	Maximum Result (mg/kg)	Average Result (mg/kg)
Cadmium	9.3	33.5	17
Chromium (total)**	1500	5430J	1619J
Chromium (hexavalent)	400	34.6	12

J Estimated value
** Chromium results were screened using SCOs for trivalent chromium.

EXPOSURE PATHWAYS AND PUBLIC HEALTH IMPLICATIONS:

In its present condition, the MRS Plating building continues to deteriorate, allowing precipitation to enter the interior and potentially generate additional leachate within the building. This leachate would likely exit the building in the areas where evidence of plating waste migration through the block walls is noted, acting as a continuing source of contamination to exterior soils as the building continues to deteriorate. These areas are predominantly along the building wall that faces the furniture store with only 3 feet of separation between the buildings. Run-off from this area has impacted the off-site area along the Park Avenue sidewalk in front of the furniture store. Areas to the south of the building exhibit a metals salt precipitate after storm events; this area is where the company disposed of their aqueous wastes after the City of Lockport severed the company's sanitary sewer connection for non-payment and discharge violations. Temporary controls consisting of fencing and concrete curbing surround the site perimeter and minimize the potential for exposure to the public and furniture store customers through direct contact, incidental ingestion or inhalation of impacted soil and metals salt precipiate. Additionally, the presence of a vegetated/grass cover serves to minimize potential exposures. Therefore, furniture store customers and other members of the public are not considered to be exposed to site contaminants at levels of concern. However, the presence of the soil contamination, continued deterioration of the site building, and potential for further deposition of metals salt precipitate presents the potential for future exposures, through incidental ingestion, inhalation or contact with impacted soil, or metals salt precipitates, if not remediated. Contamination identified under the building slab does not currently pose an exposure threat.

There is no evidence that furniture store customers or other members of the public are being exposed to site contaminants. While this potential exists, it is not considered likely due to site controls, vegetative cover, etc. as described above. Potential off-site impacts could occur if the site remains in its current condition. . Exposure in the future could increase the risk for adverse health effects if the site is not remediated. Levels of cadmium, chromium, and cyanide are present in on-site and off-site surface and subsurface soils at levels above the health comparison values for commercial property use. Remediation is necessary to prevent future exposures to workers at adjoining businesses and residential neighbors to these levels of contamination that could result in adverse health effects. Remedration limited to the footprint of the building would leave areas of chromium and cyanide contamination beyond the footprint to serve as a continuing source of contamination with related exposure risks to neighboring properties.

Selective removal of hot spots beyond the building footprint may be insufficient in preventing exposures since past disposal practices have allowed widespread dispersal of plating wastes at the rear of the property that currently form a precipitate of metal salts on the ground surface after storm events. These salts can become airborne as they dry, allowing for dispersal of the contaminants. While sampling efforts may not clearly define the source of salt precipitates, the fact that they form is indicative of a continuing source of contamination. Future remedial actions should address this potential for exposure either through soil removal, or proper cover, grading, and drainage improvements to the site

CONCLUSION:

Chromium and cyanide are found within the building and in areas of the site adjacent to the building and along the property line with the furniture store to the west. Further investigation conducted as recommended in the initial Technical Assist has better defined the areas of contamination, especially to the north of the property. However, the chromium and cyanide contamination noted in the June 2007 investigation exceeds the SCOs for commercial use in several areas along the furniture store property line, the grassy area along Park Avenue, and the southern portion of the property. Long-term observations of the site have noted the formation of metals salt precipitate on the southern portion of the site after storm events. While sample results point to the obvious need to remediate the building and the soils under the building slab, soils that exceed the SCOs beyond the immediate building footprint should also be removed. Additionally, the formation of metals salt precipitate on the southern portion of the property should be addressed either by soil removal, or proper cover, grading and drainage on that portion of the site to prevent potential exposures in the future.

While there is no evidence that exposure to site contaminants has occurred or is currently occurring, given the site conditions, future exposures are likely if site remediation is not performed. Therefore, site contaminants have been determined to poses no apparent public health hazard.

RECOMMENDATIONS:

ATSDR and NYS DOH recommend building demolition, and removal of all soils exceeding the Part 375 values for commercial use, including soils under the building, the southern area of the property where metals precipitates form, and the neighboring furniture store property. In addition, the final site grading should prevent off-site impacts to neighboring properties in the event unidentified localized areas of contamination remain on-site.

PUBLIC HEALTH ACTION PLAN:

The public health action plan (PHAP) for the MRS Plating site describes actions to be taken by ATSDR, USEPA and/or the NYSDOH following completion of this consultation. The purpose of the PHAP is to ensure that this health consultation not only identifies public health hazards, but provides a plan of action designed to mitigate and/or prevent adverse human health effects resulting from present and/or future exposures to hazardous substances at or near the site. The public health actions to be implemented by ATSDR, USEPA and/or NYSDOH are as follows:

1) ATSDR and NYSDOH will coordinate with the appropriate environmental agencies to implement the recommendations in this health consultation.

2) The NYSDOH will assist, if requested, with any additional sampling on properties near the MRS Plating site and in evaluating the public health implications of future sampling results.

3) ATSDR and NYSDOH will provide a follow-up to this health consultation as needed, outlining the actions completed and those in progress. Any follow-up reports will be placed in repositories that contain copies of this health consultation and will be provided to persons who request them

If you have any questions, please call me at (716) 847-4385.

Sincerely,

Matthew J. Forcucci
Public Health Specialist
Bureau of Environmental Exposure Investigation

Attachments: Figure 1

cc: G. Litwin / D. Miles / R. Fedigan
D. Luttinger / T. Johnson
G. Ulirsch – ATSDR, Central office
A. Block – ATSDR, Region 2
R. Van Houten – RFO
J. Rotola – US EPA