US EPA RECORDS CENTER REGION 5
522798

I.
NP

MEMORANDUM

SUBJECT: Health Risk Consultation for MSD #4 Sludge and Barrel Dump

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Office of Strategic Environmental Assessment

TO: Larry Schmitt
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Remedial Response Section #2

Attached is an evaluation of potential health concerns at MSD #4 Sludge and Barrel Dump. This preliminary assessment is based on surface water, sediment, and soil sample data from the Expanded Site Inspection Final Report for MSD #4 Sludge and Barrel Dump, September 25, 1995. The results of the sample analyses indicate no chemicals of concern. There are no occurrences of any compounds at levels exceeding current health standards or guidelines. Toxicity information for the chemicals discussed was obtained from the Integrated Risk Information System database and the Agency for Toxic Substances and Disease Registry Toxicological Profiles. If you have any questions please call me at 6-1660.

HEALTH RISK CONSULTATION
MSD #4 SLUDGE AND BARREL DUMP
SOUTHEAST CHICAGO, ILLINOIS

Site Overview

The MSD #4 Sludge and Barrel Dump site is located near Lake Calumet and is bounded on the north by 122nd Street, on the east by Norfolk and Western Railroad, on the south by the Calumet River, and on the west by Stony Island Avenue. The vicinity around the site is industrial. Residences are within a four mile radius.

Summary

According to the ESI report samples were collected on July 14 and 15, 1993. None of the samples contained levels, of any of the chemicals analyzed for, to produce adverse health effects. The assumptions used for ingestion were very conservative and typical for residents.

Equation used to determine exposure from incidental ingestion of soil (from RAGS):

$$\text{Intake (mg/kg-day)} = \frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$$

where:

CS = concentration in soil; site specific (mg/kg)
IR = ingestion rate; default value (100 mg soil/day)
CF = conversion factor (10-6 kg/mg)
FI = fraction ingested; default value (100%)
EF = exposure frequency; default value (365 days/year)
ED = exposure duration (years)
BW = body weight; default value (70 kg)
AT = averaging time (period over which exposure is averaged--days)

Risk Equations:

Noncancer Hazard Quotient = intake/RfD Cancer Risk = intake x SF

where:

RfD = reference dose (mg/kg-day)
SF = slope factor $(mg/kg\text{-}day)^{-1}$

Conclusions

The concentrations of contaminants detected in all the samples are below levels of concern. At these levels of exposure it is unlikely that even sensitive subpopulations would experience adverse health effects.