



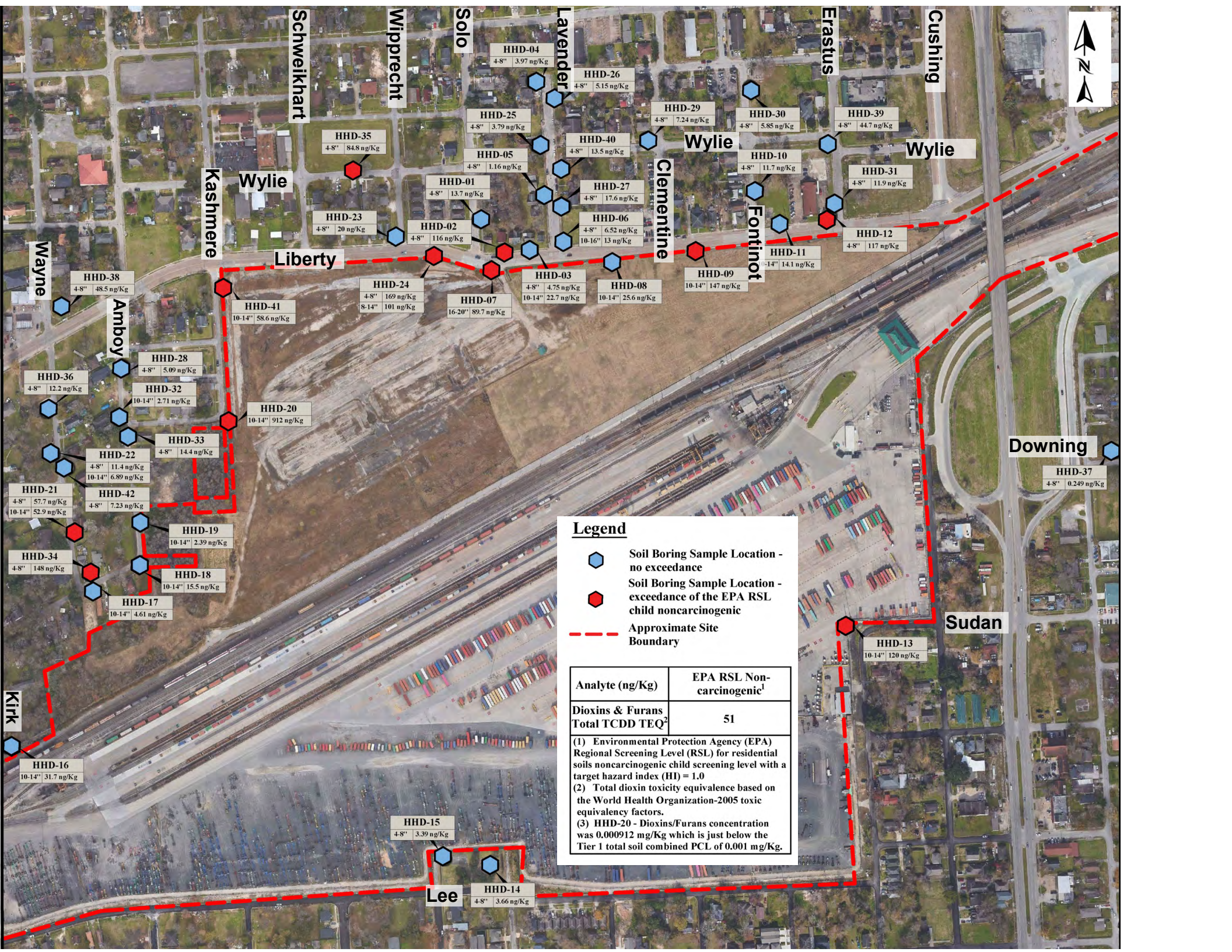
Prepared for Fifth Ward and Kashmere Gardens Neighborhoods
September 2022

Dioxin Safety Guidelines

Because elevated dioxins/furans concentrations were identified in soil samples across the study area (shown in the map provided), further surface soil sampling is necessary to determine the extent of concentrations in the neighborhoods. To protect the community from additional potential dioxin exposure, the City of Houston Health Department and EPA strongly recommend community members take the following actions to minimize exposure from soil:

- It is important to note that dioxins are found throughout the world in the environment, and they accumulate mainly in the fatty tissue of animals. EPA estimates that more than 90% of typical human exposure is by eating animal fats, mainly meat, dairy products, fish, and shellfish. For this reason, follow these guidelines to reduce potential exposure:
 - Chicken eggs, especially the yolks, could contain higher levels of dioxin if the chickens eat bugs or worms from soil that contains dioxin. To reduce chickens' exposure to dioxin, use commercial feed. If this is not possible, do not eat egg yolks from these chickens.
 - Trim fat from meat and consume low-fat dairy products to decrease exposure to dioxin compounds.
 - Remove skin from chicken and fish where dioxins are more concentrated.
 - Check local fishing advisories when catching your own fish.
- In general, minimize contact with soils in the study area.
- Do not allow children to play in soils that may contain higher levels of dioxins, and discourage them from eating dirt or putting toys or other objects in their mouths.
- Minimize inhalation and ingestion of airborne soil particles. Consider wearing a face mask in dusty conditions.
- Wash hands and under fingernails frequently if working with soil.
- Do not eat fruits and vegetables grown in home gardens unless they have been thoroughly peeled or washed, preferably with mild soap.
- While gardening, do not drink, smoke or eat to reduce the chance of getting soil into the mouth. Keep soil moist while gardening to control dust.
- When gardening or working in close contact with soil, choose certain clothing, including footwear and tight-fitting disposable gloves, to wear only during these activities. Remove footwear before entering the house and store all tools, supplies and clothing used for these activities outdoors.
- Wash all exposed body surfaces, preferably by showering, as soon as possible after gardening.
- Before pets come inside, wipe their paws and fur with a wet cloth or towel to remove loose soil. Removing the loose soil will reduce the amount of potential contamination entering the house and will help to limit the transfer of potentially contaminated soil to children. Children also should wash their hands after playing with the pet.

Information on references and scientific studies can be found at <https://www.epa.gov/up-houston-fifth-ward>



Legend

- ⬡ Soil Boring Sample Location - no exceedance
- ⬡ Soil Boring Sample Location - exceedance of the EPA RSL child noncarcinogenic
- - - - - Approximate Site Boundary

Analyte (ng/Kg)	EPA RSL Non-carcinogenic ¹
Dioxins & Furans Total TCDD TEQ ²	51

(1) Environmental Protection Agency (EPA) Regional Screening Level (RSL) for residential soils noncarcinogenic child screening level with a target hazard index (HI) = 1.0
 (2) Total dioxin toxicity equivalence based on the World Health Organization-2005 toxic equivalency factors.
 (3) HHD-20 - Dioxins/Furans concentration was 0.000912 mg/Kg which is just below the Tier 1 total soil combined PCL of 0.001 mg/Kg.

Sample ID	Depth	Concentration (ng/Kg)	Exceedance Status
HHD-01	4-8"	13.7	No
HHD-02	4-8"	116	Yes
HHD-03	4-8"	4.75	No
HHD-04	4-8"	3.97	No
HHD-05	4-8"	1.16	No
HHD-06	4-8"	6.52	No
HHD-07	16-20"	89.7	Yes
HHD-08	10-14"	25.6	No
HHD-09	10-14"	147	Yes
HHD-10	4-8"	11.7	No
HHD-11	1-4"	14.1	No
HHD-12	4-8"	117	Yes
HHD-13	10-14"	120	Yes
HHD-14	4-8"	3.66	No
HHD-15	4-8"	3.39	No
HHD-16	10-14"	31.7	No
HHD-17	10-14"	4.61	No
HHD-18	10-14"	15.5	No
HHD-19	10-14"	2.39	No
HHD-20	10-14"	912	Yes
HHD-21	4-8"	57.7	Yes
HHD-22	4-8"	11.4	No
HHD-23	4-8"	20	No
HHD-24	4-8"	169	Yes
HHD-25	4-8"	3.79	No
HHD-26	4-8"	5.15	No
HHD-27	4-8"	17.6	No
HHD-28	4-8"	5.09	No
HHD-29	4-8"	7.24	No
HHD-30	4-8"	5.85	No
HHD-31	4-8"	11.9	No
HHD-32	10-14"	2.71	No
HHD-33	4-8"	14.4	No
HHD-34	4-8"	148	Yes
HHD-35	4-8"	84.8	Yes
HHD-36	4-8"	12.2	No
HHD-37	4-8"	0.249	No
HHD-38	4-8"	48.5	Yes
HHD-39	4-8"	44.7	Yes
HHD-40	4-8"	13.5	No
HHD-41	10-14"	58.6	Yes
HHD-42	4-8"	7.23	No

July 2022 Soil Sampling Event

Surface Soil Sample Locations taken by the Houston Health Department on July 2022

Legend



Soil Boring Sample Location -
no exceedance



Soil Boring Sample Location -
exceedance of the EPA RSL
child noncarcinogenic



Approximate Site
Boundary

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Figure 2 Soil Sample Results Dioxin & Furans

July 2022

Houston Health Dept.
Neighborhood Around Former
UPRR-Houston Wood Preserving
Works Site



Photo: Google Earth December 2018