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Anthony,

Oregon DEQ requested that Oregon Health Authority (OHA) provide a public health interpretation of a proposed site-specific Risk-Based Concentration (RBC) of 20 parts per trillion (ppt) for dioxin, to be used in guiding remediation of Trainsong Park. This letter is OHA's response to that request. The City of Eugene and its consultant proposed this RBC to decide to what extent the park need to be cleaned up. Dioxin was discovered at Trainsong Park, in west Eugene, in early 2022.

Proposed Exposure Factors that OHA Evaluated

DEQ uses its Risk Based Decision Making Guidance (RBDM) to evaluate human health risk. A consultant hired by the City of Eugene proposed a site-specific "park user" RBC for Trainsong Park which was calculated using DEQ's RBDM guidance document. Several Exposure Factors (EFs) are required to calculate the RBC. OHA evaluated the RBDM-based EFs proposed by the City's consultant below.

Exposure Frequency – the number of times per year a person is at the park. The proposed number was based on a child playing at the park for 84 days per year.

Soil Ingestion Rate – the amount of soil ingested by a child per day, while playing at the park. The proposed ingestion rate is 200 mg/day for children and 100 mg/day for adults.

Exposure Duration – the number of years a person visits the park. The proposed exposure duration is 26 years, or roughly the average number of years a person lives in one household.

Findings

OHA has determined that the proposed site-specific RBC for Trainsong Park is protective of health for both adults and children playing at the park. The Exposure Frequency is based on the number of days that a summertime child food service program operates (40 days), plus another 44 visits per year (this equals one visit per week for the remainder of the year). This Exposure Frequency of 84 days per year, which is nearly 2 days per week over the course of a year, is plausible and similar to what OHA has used in past evaluations at parks, which was based on a survey of park use by Portland Parks and Recreation.

OHA also concurs with the soil ingestion rates of 200 mg/day for children and 100 mg/day for adults. These are the soil intake rates we use when evaluating Reasonable Maximum Exposure scenarios.

Last, OHA confirmed the proposed RBC and exposure factors using ATSDR's Public Health Assessment Screening Tool (PHAST), a human health risk assessment application. An intake rate of 200 mg/day (children) and 100 mg/day (adults) with an exposure frequency of 84 days per year, over a 26 year period fully protects all age groups from cancer and non-cancer health effects. At a soil concentration of 20 ppt (the proposed RBC), this exposure scenario results in a lifetime cancer risk of 1 out of 1 million and a non-cancer Hazard Quotient well below 1.0. OHA considers these to be a very low risks.

Recommendations

OHA has no further recommendations since the proposed RBC is protective of human health including children.

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Sincerely,

Todd Hudson
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