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May 22, 2024

Mr. Alan Pineda, P.E.
Bureau of Industrial Site Cleanup
Nevada Division of Environmental Protection
375 E. Warm Springs Road, Suite 200
Las Vegas, Nevada 89119

RE: Compilation of Select Health Risk Assessment Documents for Parcel E: 2008 to 2023, and Request for a No Further Action Determination
NDEP Facility ID # H-000539
Nevada Environmental Response Trust Site
Henderson, Nevada

Dear Mr. Pineda:

On behalf of the Nevada Environmental Response Trust (NERT or the Trust), this letter requests the issuance of a No Further Action (NFA) determination for Parcel E. NERT has completed an investigation of this parcel and submitted several reports documenting the conditions at the property. Attached to this letter is the *Compilation of Select Health Risk Assessment Documents for Parcel E: 2008 to 2023*, dated May 22, 2024. Consistent with the process established at the time of NFA requests for NERT's other sale parcels, this Compilation was prepared with the objective of assembling into one "binder" the key health risk assessment (HRA) documents that have been completed for soil, soil gas, and groundwater at Parcel E. In this letter, the Trust is requesting an NFA determination for Parcel E with regards to the soil direct contact pathway as well as the vapor intrusion pathway from soil gas and groundwater. In support of this request, the risk estimates for Parcel E from the final HRA report (*Health Risk Assessment for Parcel E Revision 1*, dated November 17, 2023, and approved by the Nevada Division of Environmental Protection [NDEP] on December 27, 2023) are summarized and presented below.

Summary of the HRA

Parcel E is located approximately 200 feet northwest and discontinuous with, and was not utilized as part of, the former Kerr-McGee/Tronox manufacturing operations. There were no reported industrial activities that would be expected to result in chemical impact to Parcel E. Currently, an extraction well field and the recharge trench for a groundwater treatment system (GWTS) jointly operated by Pioneer Americas LLC d/b/a Olin Chlor Alkali Products, Stauffer Management Company LLC, Syngenta Crop Protection, LLC, and Montrose Chemical Corporation of California (collectively referred to as OSSM) is present on Parcel E. The terms of the easement and the presence and configuration of OSSM's GWTS would prevent the development of this parcel in the foreseeable future.

Based on the conceptual site model (CSM) for Parcel E, the HRA was conducted to evaluate potential risks to future onsite workers from exposures to residual levels of chemicals, radionuclides, and asbestos in soils and volatile organic compounds (VOCs) released from soil gas and groundwater to indoor, outdoor, and trench air.

- Soil: Potential exposure to soil was evaluated for future onsite indoor and outdoor commercial/industrial workers and construction workers via direct contact with soil (i.e., incidental ingestion and dermal contact) and inhalation of airborne particulates, based on the shallow soil data collected at 10 feet or less below ground surface (bgs) in Parcel E as part of the Phase 2 RI Modification No. 12 in 2019. Through a multi-step process consisting of a concentration/toxicity screen, background evaluation for metals and radionuclides, and chemical-specific considerations, only asbestos (long amphibole fibers and long chrysotile fibers) was identified as a chemical of potential concern (COPC) in soil for Parcel E.

  For asbestos (long amphibole and long chrysotile fibers), a best estimate and an upper-bound estimate of potential cancer risk via inhalation of airborne particulates for indoor commercial/industrial workers, outdoor commercial/industrial workers, and construction workers were calculated for Parcel E even though no asbestos fibers were detected in any soil samples.[1] The estimated combined risks for death from lung cancer and mesothelioma associated with asbestos exposures were below the NDEP and the United States Environmental Protection Agency (USEPA) cancer risk management range of one in a million (10^{-6}) to one hundred in a million (10^{-4}). In addition, and through approval of the Parcel E HRA, NDEP concurred that since Parcel E is a relatively small parcel and is bordered to the south, east, and north by former Parcels C and D, the results of the asbestos evaluation conducted for former Parcels C and D reported in the Health Risk Assessment for Parcels C, D, and G[2] are considered representative of Parcel E and have been included in the Parcel E evaluation.[3] All risk results for asbestos exposure in former Parcels C and D were below or within the NDEP and USEPA cancer risk management range of 10^{-6} to 10^{-4} (the maximum estimated excess lifetime cancer risk was 4×10^{-6}).

- Soil Gas: Potential exposure to soil gas was evaluated for future onsite indoor and outdoor commercial/industrial workers and construction workers via inhalation of VOCs migrating from soil gas to indoor air, outdoor air, and trench air respectively, based on the soil gas data collected in Parcel E at five and fifteen feet bgs. One sample was collected within Parcel E during the 2008 Soil Gas Investigation while the 15 remaining samples were collected as part of the Phase 2 and Phase 3 RI Modifications in 2019. All VOCs detected in at least one soil gas sample were selected as soil gas COPCs. A total of 52 VOCs were identified as soil gas COPCs for Parcel E.

  Non-cancer hazard indexes (HIs) and excess lifetime cancer risks associated with inhalation of vapors migrating from soil gas to indoor air, outdoor air, and trench air were estimated for all identified soil gas COPCs based on the maximum detected soil gas concentrations within Parcel E. For future onsite indoor and outdoor commercial/industrial workers and construction workers in Parcel E, the estimated HIs were well below the NDEP and USEPA target HI of less than or equal to one for non-cancer effects (the maximum HI was 0.003). The estimated excess lifetime cancer risks were below the NDEP and USEPA cancer risk management range of 10^{-6} to 10^{-4}. For the five-foot soil gas samples, the maximum estimated excess lifetime cancer risk was 4×10^{-7}. For

[1] Asbestos was selected as a COPC even though no asbestos fibers were detected in any soil samples. Asbestos remained identified as a COPC because exposure and risk assessments for asbestos are highly dependent on sample size. Even for the case where fibers are not identified (i.e., zero fibers), upper-bound cancer risk estimates can be greater than 1×10^{-6}, depending on sample size.

[2] Ramboll Environ. 2017a. Health Risk Assessment for Parcels C, D, and G, Revision 1. Nevada Environmental Response Trust Site, Henderson, Nevada. November 3.

[3] This approach was agreed upon by NDEP during the meeting on April 6, 2023 to discuss the NDEP comments received on February 8, 2023, on the Parcel E HRA Report, Revision 0.

the fifteen-foot soil gas samples, the maximum estimated excess lifetime cancer risk was 4×10^{-7}. Chloroform was the primary contributor to the total estimated lifetime cancer risk.

- Groundwater: Potential exposure to shallow groundwater (approximately 25-30 feet bgs) was evaluated as an additional line of evidence for the vapor intrusion pathway for future onsite indoor and outdoor commercial/industrial workers and construction workers via inhalation of vapors migrating from groundwater to indoor air, outdoor air, and trench air respectively, based on the shallow groundwater data collected within Parcel E between 2015 and 2019. All VOCs detected in at least one shallow groundwater sample were selected as groundwater COPCs. A total of 18 VOCs were identified as groundwater COPCs for Parcel E.

  Non-cancer HIs and excess lifetime cancer risks associated with inhalation of vapors migrating from groundwater to indoor air, outdoor air, and trench air were estimated for all identified groundwater COPCs based on the maximum detected groundwater concentrations within Parcel E. For future onsite indoor and outdoor commercial/industrial workers and construction workers in Parcel E, the estimated HIs were below the NDEP and USEPA target HI of less than or equal to one for non-cancer effects (the maximum HI was 0.4). The estimated excess lifetime cancer risks were below or within the NDEP and USEPA cancer risk management range of 10^{-6} to 10^{-4}. The maximum estimated excess lifetime cancer risk was 5×10^{-6}. As with soil gas, chloroform is the primary contributor in groundwater to the total estimated cancer risk.

The cumulative cancer risk and non-cancer HI for each receptor population can be estimated by summing the results from direct contact with soil and the results from inhalation of soil gas migrating to air. Soil gas data is the preferred primary line of evidence for assessing vapor intrusion risks as opposed to groundwater or soil data primarily due to higher uncertainties associated with vapor intrusion modeling based on groundwater or soil data (i.e., uncertainty in predicting contaminant partitioning from groundwater or soil moisture to soil gas and in predicting transport through the capillary fringe). As asbestos was the only identified COPC, and its risks are not additive with other chemicals, the cumulative cancer risk and non-cancer HI is identical to that presented for the soil gas evaluation. As reported above, the estimated HIs were below the NDEP and USEPA target HI of less than or equal to one for non-cancer effects (the maximum HI was 0.003). Likewise, the estimated excess lifetime cancer risks were below the lower end of the NDEP and USEPA cancer risk management range of 10^{-6} to 10^{-4}.

No Further Action Determination

Acknowledging NDEP's prior approval of the Parcel E HRA, the environmental investigations and HRA tasks for Parcel E are complete. Accordingly, and consistent with the NFAs granted for former NERT Parcels C, D, F, G, and H, the Trust requests that NDEP issue a Parcel E NFA determination for soil less than 10 feet bgs (direct contact pathways) as well as soil gas and shallow groundwater (vapor intrusion pathways). The Trust acknowledges that an Environmental Covenant must be recorded prior to issuance of the NFA. A draft of the Environmental Covenant is attached herein for NDEP review.

If you have any questions or concerns regarding this matter, feel to contact me at (702) 960-4309 or at steve.clough@nert-trust.com.

Office of the Nevada Environmental Response Trust

Stephen R. Clough

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