UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

MEMORANDUM

DATE: July 17, 2024

SUBJ: Nuclear Metals, Inc. Superfund Site, Concord, Massachusetts
CERCLIS No: MAD062166335

RE: Operational & Functional Determination (O&F) for the Knox Trail Groundwater Extraction System Expansion

FROM: Kara Nierenberg, Remedial Project Manager

TO: Nuclear Metals Superfund Site File

CC: Matt Audet, Massachusetts Section Chief, Massachusetts Superfund Site
Dan Wainberg, Acting Remediation Branch Chief
Garry Waldeck, MassDEP
Andrew Schkuta, AECOM
Bruce Thompson, de maximis

In accordance with December 6, 2019 Consent Decree (CD) for Remedial Design / Remedial Action (RD/RA) Statement of Work (SOW) for the Nuclear Metals, Inc. Site, a pre-final/final inspection of the Knox Trail Groundwater Extraction System Expansion (also referred to as ex-situ off-property groundwater) was conducted by EPA at the site on May 22, 2024. The pre-final inspection shall also serve as the final inspection because there are no remaining punch list items to complete. EPA submitted a site inspection letter to file dated May 23, 2024 (SEMS Document No. 100030105). The Operational and Functional period for the treatment system expansion began at system start up on December 28, 2023, and ended on July 17, 2024, with the issuance of this memo to file.

The Knox Trail treatment system was initially constructed as part of the 2017 Groundwater Non-Time Critical Removal Action (NTCRA)[1] at 16 Knox Trail in Acton, Massachusetts in the downgradient area at the Nuclear Metals, Inc. Superfund Site (the NMI Site) located in Concord, Massachusetts. The Knox Trail treatment system was implemented as a NTCRA and relied on a

[1] de maximis, 2020. Groundwater Non-Time Critical Removal Action Construction Completion and Final Report, Nuclear Metals, Inc. Superfund Site, Concord, Massachusetts. May 29, 2020. EPA SEMS ID # 100014317

deep overburden extraction well, EW-1, to intercept Site groundwater upgradient of the Town of Acton wellfield. To date, the Knox Trail treatment system has operated well.

The Knox Trail Groundwater Treatment System Expansion included the addition of two new extraction wells (bedrock extraction well BEW-5 and overburden extraction well EW-2) to the existing treatment system. The wells are pumped through horizontal directional drilling (HDD) conduits under the Assabet River to the treatment building on Knox Trail in Acton, Massachusetts. The Remedial Action work was performed consistent with the *100% Design – Knox Trail Groundwater Extraction System Expansion* (dated September 15, 2022)[2] and the *Knox Trail Groundwater Extraction System Expansion Remedial Action Work Plan* (dated December 5, 2022)[3].

The Knox Trail Groundwater Treatment System Expansion construction started in May 2023 and shake-down pumping started in November 2023. The system has been operating continuously since December 28, 2023. System optimization began in February 2024 to adjust the key system variables on a step wise basis to identify the optimal settings to achieve the required 1,4-dioxane discharge criteria.

EPA has received and reviewed the *Remedial Action Report: Knox Trail Groundwater Extraction System Expansion* (dated June 13, 2024) and the *Knox Trail Groundwater Pump & Treatment System Optimization Report* (dated June 25, 2024), which document the construction of the Knox Trail Groundwater Extraction System Expansion and its current operation. Included in the reports are data that indicate that the system is operating and functioning as it was designed. Final EPA approvals of both documents are expected in August 2024.

Based on the data provided, the Knox Trail Groundwater Treatment System Expansion appears to be meeting the objective to extend hydraulic capture of the dissolved phase plume in overburden and shallow bedrock groundwater and meeting effluent discharge criteria. EPA, in conjunction with MassDEP, has determined that the Knox Trail Groundwater Treatment System Expansion is now Operational and Functional.

[2] Geosyntec, 2022. 100% Design – Knox Trail Groundwater Extraction System Expansion Report, Nuclear Metals, Inc. Superfund Site, Concord, Massachusetts. September 15, 2022. EPA SEMS ID # 100022002

[3] Geosyntec, 2022. Knox Trail Groundwater Extraction System Expansion Remedial Action Work Plan, Nuclear Metals, Inc. Superfund Site, Concord, Massachusetts. December 5, 2022. EPA SEMS ID # 100023344