Department of Energy
Fermi Site Office
Post Office Box 2000
Batavia, Illinois 60510

December 21, 2017

Ms. Martha E. Michels
Chief Safety Officer
Fermilab
P.O. Box 500
Batavia, IL 60510

Dear Ms. Michels:

SUBJECT: NATIONAL ENVIRONMENTAL POLICY ACT DETERMINATION AT FERMI NATIONAL ACCELERATOR LABORATORY – GEOTECHNICAL INVESTIGATION FOR THE PROTON IMPROVEMENT PLAN (PIP)-II

Reference: Letter, from M. Michels to R. Hersemann, dated December 20, 2017, Subject: National Environmental Policy Act Environmental Evaluation Notification Form for the Geotechnical Investigation for the Proton Improvement Plan (PIP)-II

The Fermi Site Office (FSO) has reviewed the National Environmental Policy Act (NEPA) Environmental Evaluation Notification Form (EENF) for the Geotechnical Investigation for the PIP-II. Based on the information provided in the EENF, the following categorical exclusion (CX) is approved:

Project Name	Approved	CX
Geotechnical Investigation for the Proton Improvement Plan (PIP)-II	12/21/2017	B3.1

Enclosed is signed copy of the EENF for your records. No further NEPA review is required. This project falls under categorical exclusions provided in 10 *CFR* 1021, as amended in November 2011.

Sincerely,

Michael J. Weis
Site Manager

Enclosure:
As Stated

cc: N. Lockyer, w/o encl.
J. Lykken, w/o encl.
T. Meyer, w/o encl.
B. Iverson, w/o encl.
T. Dykhuis, w/encl.

FERMILAB ENVIRONMENTAL EVALUATION NOTIFICATION FORM (EENF) for documenting compliance with the National Environmental Policy Act (NEPA), DOE NEPA Implementing Regulations, and the DOE NEPA Compliance Program of DOE Order 451.1B

Project/Activity Title: Geotechnical Investigation for the Proton Improvement Plan (PIP)-II
ES&H Tracking Number: 01142

I hereby verify, via my signature, the accuracy of information in the area of my contribution for this document and that every effort would be made throughout this action to comply with the commitments made in this document and to pursue cost-effective pollution prevention opportunities. Pollution prevention (source reduction and other practices that eliminate or reduce the creation of pollutants) is recognized as a good business practice which would enhance site operations thereby enabling Fermilab to accomplish its mission, achieve environmental compliance, reduce risks to health and the environment, and prevent or minimize future Department of Energy (DOE) legacy wastes.

Fermilab Action Owner: Steve Dixon (X8501)
Signature and Date _____ 9/28/17

I. Description of the Proposed Action and Need

Purpose and Need:
The purpose of this activity is to perform a geotechnical engineering investigation and it is needed to better understand the subsurface conditions in the vicinity of the PIP-II proposed project site. The geotechnical engineering investigation would identify and report representative subsurface conditions, analyze these conditions, and furnish a detailed geotechnical report. The geotechnical data would provide design engineers with a geotechnical basis to design and construct safe and dependable support facilities for the PIP-II accelerator.

The investigation would sample and classify the soil strata, to determine the presence or absence of rock, to locate the elevation of groundwater, to determine the net allowable bearing pressure of the soil/rock at various depths, to determine the total and differential settlement which may occur under the assumed loadings and to discover any other conditions which would affect the design or construction of the foundations for the project.

Proposed Action:
The onsite work would involve twenty-three (23) soil borings as indicated in the Appendix. The soil borings would be made to the suggested depths below existing grade as follows:

S-1470 to S-1481 55 ft
S-1482 to S-1484 30 ft
S-1485 & S-1486 55 ft
S-1487 to S-1492 30 ft

Borings would be drilled to the depths listed above unless refusal is encountered at a shallower depth. The sampling would be in accordance with current American Society for Testing and Materials (ASTM): D-1586 requirement. Thin walled tube sampling in cohesive soils would be done in accordance with ASTM: D-1587 requirement.

If rock is encountered, at least two (2) borings would be extended 5 feet (minimum) into rock in accordance with American National Standards Institute (ANSI)/ASTM: D-2113 to determine the soundness of the rock. Should the rock be highly weathered or fractured, the borings would be extended to the depth deemed appropriate by the subcontractor's geotechnical engineer to accurately determine the strength and/or anchorage characteristics of the bearing material.

Soil samples would be collected from each boring in order to perform the laboratory tests and evaluations required. A formal report describing the nature and results of the work performed would be submitted upon completion of all field, laboratory, and engineering work. The report would describe all phases of the field and laboratory investigation and would contain geotechnical recommendations for the proposed structures and improvements.

Alternatives Considered:
This project would examine the general area proposed for PIP-II. This site was selected after considerations of science requirements and hydrologic, geologic and geochemical attributes to provide for safety, constructability, and minimal environmental impact. A No Action alternative would not fulfill the need, and would leave designers with inadequate data to either prepare a safe design, or understand potential impacts to water resources.

II. Description of the Affected Environment

This investigation would take place over a total area of approximately 8 acres; however, the total impacted area is less than 1 acre. It is a routine drilling operation, requiring some minor excavation to construct drill pads, access roads, etc. There is no planned effluent. All materials would be contained at the site.

III. Potential Environmental Effects (If the answer to the questions below is "yes", provide comments for each checked item and where clarification is necessary.)

A. Sensitive Resources: Would the proposed action result in changes and/or disturbances to any of the following resources?

- ☐ Threatened or endangered species
- ☐ Other protected species
- ☐ Wetland/Floodplains
- ☐ Archaeological or historical resources
- ☐ Non-attainment areas

B. Regulated Substances/Activities: Would the proposed action involve any of the following regulated substances or activities?

- ☒ Clearing or Excavation
- ☐ Demolition or decommissioning
- ☐ Asbestos removal
- ☐ PCBs
- ☐ Chemical use or storage
- ☐ Pesticides
- ☒ Air emissions
- ☐ Liquid effluents
- ☐ Underground storage tanks
- ☐ Hazardous or other regulated waste (including radioactive or mixed)
- ☐ Radioactive exposures or radioactive emissions
- ☐ Radioactivation of soil or groundwater

C. Other Relevant Disclosures: Would the proposed action involve any of the following actions/disclosures?

- ☐ Threatened violation of ES&H permit requirements
- ☐ Siting/construction/major modification of waste recovery or TSD facilities
- ☒ Disturbance of pre-existing contamination
- ☐ New or modified permits
- ☐ Public controversy
- ☐ Action/involvement of another federal agency

☒ Public utilities/services
☐ Depletion of a non-renewable resource

IV. Comments on checked items in section III.

Clearing and Excavation
The boring cuttings (less than 1 cubic yard) would be spread out adjacent to the boring location and no excess material would leave the project site. The action is less than 1 acre; therefore, a Storm Water Pollution Prevention Plan is not necessary and soil erosion control measures would not be necessary.

Air Emissions
There may be possible minor internal combustion emissions from truck mounted drill rigs.

Disturbance of pre-existing contamination
The soil borings are near existing Solid Waste Management Unit (SWMU) 12 (Clay Tile Field) located in the Main Ring. No work would occur within the existing SWMU.

Public utilities/services
Utilities would be located via standard Fermilab methods. Boring locations would be adjusted to avoid any existing utilities.

V. NEPA Recommendation

Fermilab staff has evaluated the proposed action and believe a Categorical Exclusion is appropriate. It is believed that the proposed action meets the description found in DOE's NEPA Implementation Procedures, 10 CFR 1021, Subpart D, Appendix B3.1.

B3.1 Site characterization and environmental monitoring, (including but not limited to siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging or boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Fermilab NEPA Program Manager: Teri L. Dykhuis
Signature and Date Teri L. Dykhuis 12/21/2017

VI. DOE/Fermi Site Office (FSO) NEPA Review

Based upon my review of information conveyed to me and in my possession concerning the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1A), I have determined that the proposed action fits within the specified class of actions, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

FSO NEPA Compliance Officer: Rick Hersemann
Signature and Date Rick Hersemann 12/21/17

VII. Appendix – Diagram of Proposed Soil Borings