

ENVIRONMENTAL EVALUATION NOTIFICATION FORM

Grantee/Contractor Laboratory: Princeton University/Princeton Plasma Physics Laboratory (PPPL)
Project/Activity Title: Ground Characterization in Support of Princeton Plasma Innovation Center (PPIC) Project

CH NEPA Tracking No.: _____ Type of Funding SC

B&R Code: _____ Total Estimated Cost: \$ 30,000

DOE Cognizant Secretarial Officer (CSO): Marc Jones

Contractor Project Manager: _____ Signature: _____

Date: _____

Contractor NEPA Reviewer: Dorothy M. Strauss Signature: Dorothy

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Dorothy M. Strauss
Date: 2020.01.28
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Date: M. Strauss

I. **Description of Proposed Action:**

In support of the design and proposed construction of the Princeton Plasma Innovation Center (PPIC), ground characterization would be performed via subcontract. 6-8 soil borings would be drilled within the footprint of the proposed building in previously disturbed areas and would provide information on soil properties and preparation to consider when designing and constructing the proposed PPIC building. This characterization would also confirm if shoring and underpinning is required for adjacent buildings and structures. These properties include soil bearing capacity, allowable compaction density, and classification (e.g., clay, gravel, sand, etc.). The borings would be approximately 8" in diameter and 20 feet deep. Soil stockpiles would be evaluated for erosion and sediment control per internal procedure. A Piezometer would be temporarily inserted into one of the boring holes to monitor the water table. Vibration testing would be conducted by driving 2 rods, each containing an accelerometer (vibration meter device), no more than 20 feet into the ground in the same area as above. Another accelerometer would be placed in either the Theory Bldg., Admin Bldg., or Lab wing for interior monitoring. The vibration monitoring assessment would determine the site's base level of vibration during normal operating hours. This site vibration signature would include the standard levels of vibration created by equipment such as elevators and generators and normal activities such as truck deliveries. Establishing the maximum vibration level criteria that can be attained in the proposed PPIC building base design would be necessary to compare to the potential needs of sensitive laboratory equipment such as lasers, electron microscopes, etc. This information could also be used for pre-planning future equipment criteria. Once sufficient data is collected, the accelerometers would be removed. After completion of all testing, the holes would be backfilled with the removed soil and capped with grout that conforms to NJ environmental regulations. No sensitive resources would be disturbed or affected.

- II. **Description of Affected Environment:** C-Site grounds, west of the LSB Building and north and south of the Theory and Administrative Buildings; C-Site Theory Bldg., Admin Bldg., or Lab Wing (see attached figures 1 and 2).

PPPL is located on Princeton University's James Forrestal Campus in Plainsboro Township, Middlesex County (central New Jersey), adjacent to the municipalities of

Princeton, Kingston, East and West Windsor, and Cranbury, NJ. It occupies approximately 90.83 acres in the areas known as "C- and D-Sites." PPPL has operated on the current site since 1959. The closest urban centers are New Brunswick, 14 miles (22.5 km) to the northeast, and Trenton, 12 miles (19 km) to the southwest. Within a 50-mile (80 km) radius are the major urban centers of New York City, Philadelphia, and Newark. Princeton University's main campus is approximately three miles west of the site, primarily located within the borough of Princeton.

The estimated resident population within 10 miles (16 km) of PPPL is approximately 500,000. The total estimated population within a 50-mile radius (80km) of PPPL is approximately 17,735,164.

Surrounding the site are lands of preserved and undisturbed areas including upland forest, wetlands, open grassy areas, and a minor stream, Bee Brook, which flows along PPPL's eastern boundary. These areas are designated as open space in the James Forrestal Campus (JFC) site development plan.

The climate of central New Jersey is classified as mid-latitude, rainy climate with mild winters, hot summers, and no dry season. Temperatures may range from below zero to above 100 degrees Fahrenheit (°F) (-17.8° Celsius (C) to 37.8° C); extreme temperatures typically occur once every five years. Approximately half the year, from late April until mid-October, the days are freeze-free. Normally the climate is moderately humid with a total average precipitation of about 46 inches (116 cm) evenly distributed throughout the year.

III. **Potential Environmental Effects:** (Attach explanation for each "yes" response, and "no" responses if additional information is available and could be significant in the decision making process.)

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

	<u>Yes/No</u>
1. Threatened/Endangered Species and/or Critical Habitats	1. No
2. Other Protected Species (e.g. Burros, Migratory Birds)	2. No
3. Wetlands	3. No
4. Archaeological/Historic Resources	4. No
5. Prime, Unique or Important Farmland	5. No
6. Non-Attainment Areas	6. No
7. Class I Air Quality Control Region	7. No
8. Special Sources of Groundwater (e.g. Sole Source Aquifer)	8. No
9. Navigable Air Space	9. No
10. Coastal Zones	10. No
11. Areas w/ Special National Designation (e.g. National Forests, Parks, Trails)	11. No
12. Floodplain	12. No

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

	<u>Yes/No</u>
13. Clearing or Excavation (indicate if greater than 1 acre [43,560 sq. ft.]; if more than 5,000 sq. ft., a Soil Erosion / Sediment Control Permit may be required from Freehold Soil Conservation District.)	13. Yes
<i>Note: Soil disturbance includes clearing, grading, excavation, storage, and filling. Soil erosion and sediment control permits required if $\geq 5,000$ sq. ft.</i>	
<i>Note: Excavations expected to encounter ground water may require a permit. 6-8 borings 8" in diameter and approx. 20 feet in depth would be taken and backfilled. Estimated disturbance is 3 sq. ft. for 8 borings.</i>	
14. Dredge or Fill (under Clean Water Act section 404; indicate if greater than 1 acre)	14. No
15. Noise (in excess of regulations)	15. No
16. Asbestos Removal	16. No
17. PCBs	17. No
18. Import, Manufacture or Processing of Toxic Substances	18. No
19. Chemical Storage/Use	19. No
20. Pesticide Use	20. No
21. Hazardous, Toxic, or Criteria Pollutant Air Emissions	21. No
22. Liquid Effluent	22. No
23. Underground Injection	23. No
24. Hazardous Waste	24. No
25. Underground Storage Tanks	25. No
26. Radioactive (AEA) Mixed Waste	26. No
27. Radioactive Waste	27. No
28. Radiation Exposures	28. No

C. Other Relevant Disclosures. Will the proposed action involve the following?

	<u>Yes/No</u>
29. A threatened violation of ES&H regulations/permit requirements <i>The requirements of 10CFR851 (as implemented under the DOE-approved PPPL Worker Safety and Health Program) would be applied to work at PPPL under this proposed action.</i>	29. No
30. Siting/Construction/Major Modification of Waste Recovery, or TSD Facilities	30. No
31. Disturbance of Pre-existing Contamination <i>Note: Excavations that encounter contaminated ground water require a permit.</i>	31. No
32. New or Modified Federal/State Permits	32. No
33. Public controversy	33. No
34. Action/involvement of Another Federal Agency (e.g. license, funding, approval)	34. No
35. Action of a State Agency in a State with NEPA-type law. (Does the State Environmental Quality Review Act Apply?)	35. No
36. Public Utilities/Services	36. No
37. Depletion of a Non-Renewable Resource	37. No

IV. **Section D Determination:** Is the project/activity appropriate for a determination under Subpart D of the DOE NEPA Regulations for compliance with NEPA?

DOE-PSO NEPA Compliance Officer (NCO) Review:

Concurrence with Proposed Class of Action Recommended

CX EA EIS

Categories: B3.1 (Site characterization and environmental monitoring)

For Categorical Exclusions (CXs):

A. The proposed action fits within a class of actions that is listed in Appendix A or B to Subpart D.

For classes of actions listed in Appendix B, the following conditions are integral elements; i.e., to fit within a class, the proposal must not:

- 1) Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including DOE and/or Executive Orders;
- 2) Require siting, construction, or major expansion of waste storage, disposal, recovery, or treatment facilities, but may include such categorically excluded facilities;
- 3) Disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; or
- 4) Adversely affect environmentally sensitive resources.
- 5) Involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those of the Department of Agriculture, the Environmental Protection Agency, and the National Institutes of Health.

B. There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal; and

C. The proposal is not "connected" to other actions with potentially significant impacts, is not related to other proposed actions with cumulatively significant impacts, and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211.

V. **DOE Recommendation Approval:**

PSO Staff: Tracy Estes

Signature: _____

**TRACY
ESTES**

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TRACY ESTES
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Date: _____

SC GLD: Michael M. McCann

Signature:

Michael M. McCann

Date:

1/29/20

VI. NEPA Compliance Officer Subpart D CX Determination and Approval:

Based on my review of information conveyed to me and in my possession (or attached) concerning the proposed action, as NEPA Compliance Officer, 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.

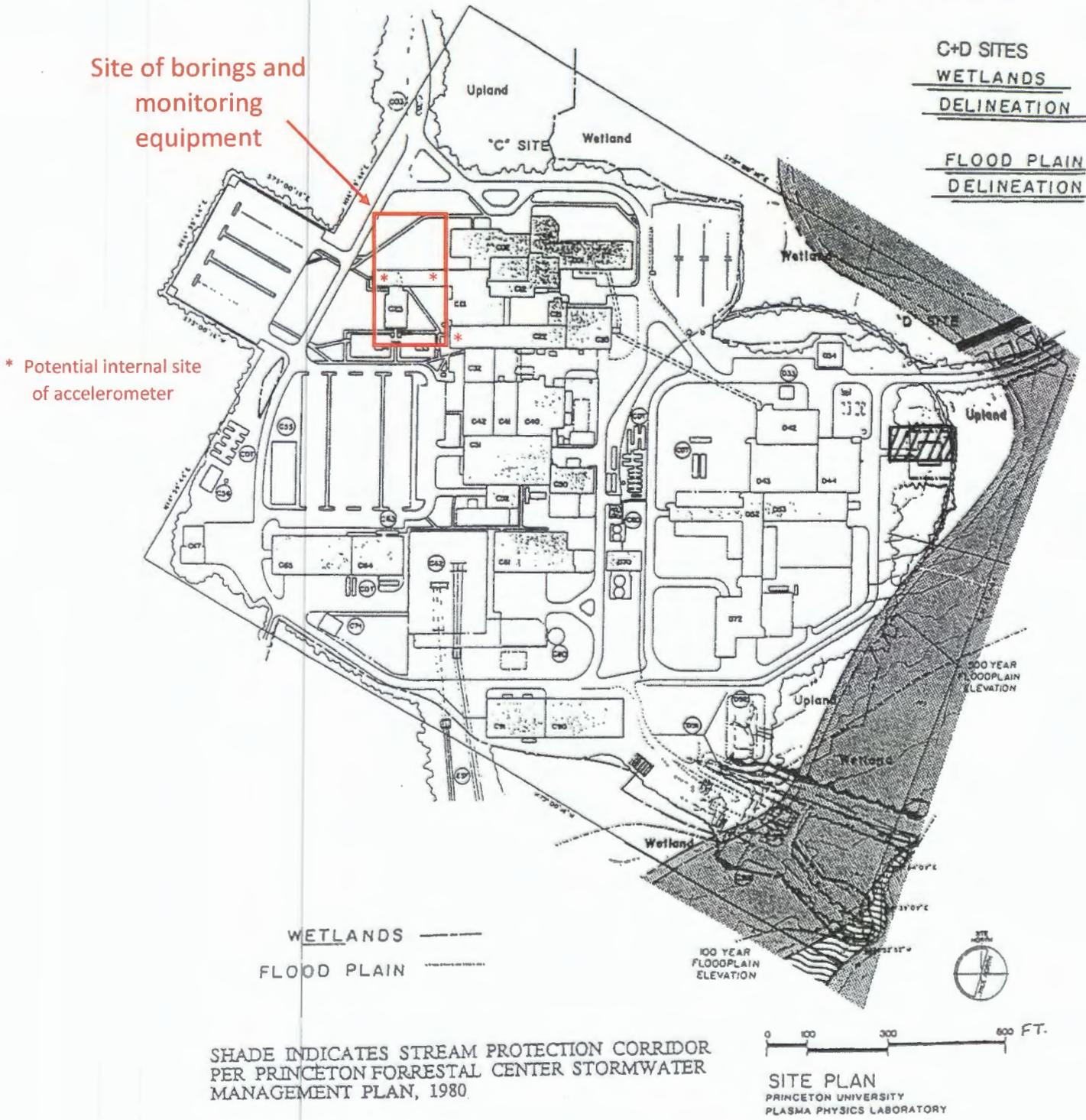
PSO NCO: Teralyn Murray

Signature:

Teralyn Murray

Date:

1/29/20



Ground Characterization in Support of PPIC Project – Figure 1

Ground Characterization in Support of PPIC Project - Figure 2



Proposed Addition
~145'x300'
+/-45,000 SF Footprint

Estimated Path of Travel for Soils Borings
3,120SF