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MEMORANDUM

DATE: September 12, 2013

FROM: Andrew Murphy, CU EH&S

TO: Sarah Zemanick, CU E&S

CC: Bert Bland, CU E&S
Ole Gustafson, CU FE
Pat McNally, CU EH&S

RE: Solar Array near Former Radiation Disposal Site

Summary

EH&S has reviewed the plans related to the proposed solar array on land adjacent to the former Radiation Disposal Site (RDS). The proposed solar array project is not anticipated to have any short-term or long-term impacts on the RDS remedial systems that would inhibit their performance or otherwise increase environmental or public health risks associated with the RDS. Furthermore, the proposed solar array project is not anticipated to encounter any RDS-related contamination during construction, based upon the proposed solar array project's location and limited degree of shallow soil disturbance and recent monitoring data.

The former Cornell University Radiation Disposal Site (RDS) is an inactive hazardous waste site (NYSDEC site #7-55-001) located adjacent and to the east of the proposed solar photovoltaic array project site. Cornell University entered into a consent order with the State of New York in August 1996 and subsequently investigated and remediated the site. The RDS was used for land disposal of Cornell University's low-level radioactive laboratory wastes from approximately 1956 until approximately 1978.

In November 2010, the New York State Department of Environmental Conservation (NYSDEC) downgraded the site's hazard classification to a Class 4, indicating that the RDS remedial action was completed and the RDS "no longer presents a significant threat to public health and/or environment". See attached notice and site description from the NYSDEC public database. EH&S continues to operate, monitor and maintain the site and its remedial systems.

Background

The RDS-related contaminant of concern (1,4-Dioxane, aka Paradioxane) and its location on the RDS site were first established during the Remedial Investigation (RI) phase, based upon extensive environmental sampling and Cornell's records of disposal. In addition, trace radiological constituents were identified at the site, including Tritium, Carbon-14 and Strontium-90. Contaminated groundwater had migrated from the site primarily via the upper fractured bedrock, located approximately 10 to 40 feet below ground surface. Site contamination extended from the RDS to the southwest onto the airport property across Snyder Road. Historically, contaminated groundwater extended to the west onto the proposed solar array site. However, site monitoring has shown that remedial efforts to date have remediated groundwater on the subject parcel to below

cleanup objectives (50 µg/L paradioxane). This groundwater recovery and monitoring infrastructure remains in place at the proposed solar array site for future activities, if necessary.

The selected remedy included installation of a low permeability cover over the RDS, a groundwater recovery and treatment and system along Snyder Road and subsurface vertical barriers around the RDS and was completed in 2004. No additional remedial actions were undertaken or warranted at the proposed solar array site.

Based upon disposal records and results from past and current site monitoring data, no site contamination is anticipated to be encountered at the proposed project site. However, appropriate occupational safety measures should be employed and if evidence of buried waste or contamination is observed during the execution of the project, please notify EH&S to investigate.

Encl: NYSDEC Notice, November 2010
NYSDEC RDS Site Record

New York State Department of Environmental Conservation

PUBLIC NOTICE | **State Superfund Program**

Site Name: Cornell University – Radioactive Disposal Site
Site No. 755001 **Tax Map No.** 044.-01-50.2
Site Location: Snyder Road, City of Lansing, Tompkins County 14882

November 22, 2010

Inactive Hazardous Waste Disposal Site Classification Notice

The Inactive Hazardous Waste Disposal Site Program (the State Superfund Program) is the State's program for identifying, investigating, and cleaning up sites where the disposal of hazardous waste may present a threat to public health and/or the environment. The New York State Department of Environmental Conservation (Department) maintains a list of these sites in the Registry of Inactive Hazardous Waste Disposal Sites (the "Registry"). The site identified above, and located on a map on the reverse side of this page, was recently reclassified on the Registry as a Class 4 site that no longer presents a significant threat to public health and/or the environment for the following reason(s):

A Record of Decision was signed in March 2002. The selected remedy called for containment with a capping system, slurry wall and grout curtain, groundwater collection and treatment, and natural attenuation of the off-site groundwater plume. Final remedial construction began in 2003 and was completed in 2004. All remedial construction required by the Record of Decision is complete and operation, maintenance, and monitoring of the site remedial systems is underway. All remedial systems are performing as designed. The groundwater collection wells have effectively contained the off-site plume and reduced its footprint to Cornell University property; the plume collection system has been turned off and the long-term effectiveness is being monitored. Environmental monitoring of groundwater and surface water near the site and the surrounding area and biota is performed on a regular basis according to an approved site management plan. Annual reports with the results from monitoring are submitted to the Department. Periodic reviews have been completed in 2009 and 2010. A Consent Order is in effect for site management enforcement and a Part 380 facility closure permit is in development to govern long-term operation and maintenance of the radioactive disposal facility.

The Department will keep you informed throughout the investigation and cleanup of the site.

If you own property adjacent to this site and are renting or leasing your property to someone else, please share this information with them. If you no longer wish to be on the contact list for this site or otherwise need to correct our records, please contact the Department's Project Manager listed below.

Additional information about this site can be found using the Department's "Environmental Site Remediation Database Search" engine which is located on the internet at: www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=3

Comments and questions are always welcome and should be directed as follows:

Project Related Questions
Ms. Claudia Boutot
NYS Department of Env. Conservation
Region 7
615 Erie Blvd. West
Syracuse, NY 13204-2400
cjboutot@gw.dec.state.ny.us
315-426-7493

The Department is sending you this notice in accordance with Environmental Conservation Law Article 27, Title 13 and its companion regulation (6 NYCRR 375-2.7(b)(6)(ii)) which requires the Department to notify all parties on the contact list for this site of this recent action.

Site Location Map

Cornell University Radioactive Disposal Site (RDS)
Site Number 755001
Snyder Road, Lansing, New York

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Cornell University - Radioactive Disposal
Site Code: 755001
Program: State Superfund Program
Classification: 04
EPA ID Number:

Location

DEC Region: 7
Address: Snyder Road
City: Lansing Zip: 14882
County:TOMPKINS
Latitude: 42.498870000
Longitude: -76.459064500
Site Type: DUMP
Estimated Size: 2.000 Acres

Institutional And Engineering Controls

Control Type:
Deed Restriction

Control Elements:
Cover System
Fencing/Access Control
Groundwater Containment
Groundwater Treatment System
Landuse Restriction
Leachate Collection
Subsurface Barriers

Site Owner(s) and Operator(s)

Owner(s) during disposal: Cornell University-E.C.O.
Current On-Site Operator: Cornell University - E.C.O.

Stated Operator(s) Address: 129 Humphrey's Service Bldg.
Ithaca,NY 14853-3701

Hazardous Waste Disposal Period

From: 1956 **To:** 1978

Site Description

Cornell University's Radioactive Disposal Site is a 2-acre low-level radioactive waste landfill located in a rural area of the Town of Lansing, Tompkins County. The site is located approximately 350 feet north of Snyder Road. Access to the site is controlled through locked gates and a site security fence. All lands immediately adjacent to the site are owned and managed by Cornell University. North and northeast are wooded, undeveloped lands and several wetlands. Approximately one-half mile to the south are the runways of Tompkins County Airport, the closest commercial facility. Along the southeast and southwest boundaries are undeveloped fields used by Cornell for research. The nearest downgradient residential well used for drinking water purposes is located approximately 5,200 feet west-southwest of the site. The site was used from 1956 to 1978 for burial of 255,000 cubic feet of low-level radioactive wastes, buffers, acids, and scintillation vials containing liquid solvents. Disposal of wastes started in 1956 under a "non-specific exemption" license from the Atomic Energy Commission. In 1963, the NYSDOH authorized the operation of the site under license No. 5-3A, Condition 19 for use of radioactive material. Cornell completed a Preliminary Site Assessment (PSA) in September of 1994. Cornell University signed a Consent Order (CO) for a Remedial Investigation/Feasibility Study (RI/FS) in August 1995. The site was capped in 1996 under an Interim Remedial Measure (IRM). The RI/FS was completed in 1999. A Record of Decision presenting the selected remedy for the site was signed in March 2002. The selected remedy called for containment with a new capping system, slurry wall and grout curtain, groundwater collection and treatment, and natural attenuation of the off-site groundwater plume. The groundwater collection/treatment system was completed in 2002 and is in operation. Final remedial construction began in 2003 and was completed in 2004. All remedial construction is complete and operation, maintenance, and monitoring of the site remedial systems is underway. Environmental monitoring of groundwater and surface water near the site and the surrounding area is performed on a regular basis according to the site management plan approved by NYSDEC. Annual reports with the results from monitoring are submitted to the Department.

Summary of Project Completion Dates

Projects associated with this site are listed in the Project Completion Dates table and are grouped by Operable Unit (OU). A site can be divided into a number of operable units depending on the

complexity of the site and the number of issues associated with a site. Sites are often divided into operable units based on the media to be addressed (such as groundwater or contaminated soil), geographic area, or other factors.

Contaminants of Concern (Including Materials Disposed)

Type of Waste	Quantity of Waste
1,4-DIOXANE	UNKNOWN
XYLENE (F003 WASTE)	UNKNOWN

Site Environmental Assessment

Contaminants of concern include paradioxane, dichloroethene, and benzene (volatile organic compounds) and tritium and strontium (radionuclides). Contamination of groundwater and surface water at levels exceeding the NYS standards, criteria, and guidelines has been documented. Paradioxane, a common laboratory solvent used in radiological research, is the primary contaminant of concern. Paradioxane has been found in groundwater and shallow groundwater surface seeps. The primary isotope of concern, tritium, has been found in groundwater at levels exceeding background levels, but well below any health-based, environmental, or drinking water standards. No current threat to public or private drinking water supplies exists. No impacts have been noted to sensitive environmental receptors. As a result of the completion of remedial construction activities, the site no longer represents a significant environmental threat to shallow groundwater and associated surface water.

Site Health Assessment

No one is expected to come into contact with site contaminants since area is served by public water and the site is capped and fenced.

For more Information: E-mail Us

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