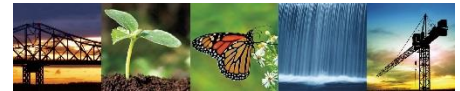




Known for excellence.
Built on trust.

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION
MANAGEMENT

GZA GeoEnvironmental of NY
300 Pearl Street
Suite 700
Buffalo, NY 14202
T: 716.685.2300
F: 716.248.1472
www.gza.com



October 11, 2019
File: 21.0056811.00

Mr. George Streit
george.streit@nrgenergy.com
Huntley Power LLC
3500 River Road
Tonawanda, NY 14150

Re: CCR Landfill 2019 Annual Inspection Report
Huntley Generating Station
Tonawanda, New York

Dear Mr. Streit:

GZA GeoEnvironmental of New York (GZA) presents this 2019 Annual Landfill Inspection report to Huntley Power LLC (Huntley) for the existing coal combustion residuals (CCR) landfill units at the Huntley Generating Station landfill located in Tonawanda, New York (Site). This annual inspection is required by the United States Environmental Protection Agencies (USEPA) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, as presented in the Federal Register Volume 80 No 74 dated April 17, 2015. In accordance with the CCR Rule (40 CFR 257.84), owners/operators of CCR landfill units are required to be inspected on a periodic basis by a qualified professional engineer to check the design, construction, operation and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards.

Document Review

The required periodic inspections presented in the CCR Rule are intended for open and active landfills and are not required for closed or inactive landfills. As such, the active/open ash waste cells for the Huntley Power Site are identified as upper portions of Cells A and D, and all of Cell C. The remaining landfill cells at the Site are considered inactive (i.e., closed) and are not included with this annual inspection report. The limits of the active cells requiring this annual inspection report are shown on the attached figure prepared by Wendel for the 2018 fill progression survey. An area designated as future Cell B (located between Cells A and C) and Cell E (located south of Cell A) were never constructed.



The Huntley Power landfill is currently permitted (ID#9-1464-00089/000010) with the New York State Department of Environmental Conservation (NYSDEC) to accept residual coal ash waste generated from the Huntley Power facility through January 3, 2023. We note that the Huntley Power plant has ceased electrical generation operations and is in the process of being shut down. A review of Wendel’s 2018 (most recent) fill progression report for the Cells A, C and D indicates the following information.

Landfill Cell	Waste Received in 2018* (cy)	Current Ash Volume (cy)	Volume Remaining (cy)
A	10,588	498,994	195,958
C	14,391	417,528	361,515
D	-8,183	537,609	48,051
Totals for A, C & D	16,796	1,464,719	605,524

cy = cubic yards

*Wendel report indicated materials previously placed in Cells C&D had been moved around within cells C& D to provide a more uniform slope from Cell C to Cell D.

NRG indicated the volume of waste received for the three cells was comprised of coal, coal ash and clean soil material that was placed for a temporary cover system. Specifically, an approximate 3,000 cy of clean cover material was reportedly placed on Cell A and an approximate 15,000 cy of clean cover material was placed on Cells C and D.

The 2019 weekly landfill inspection forms prepared by Huntley Power Site personnel did not identify any concerns or complaints related to the operation and/or maintenance of the active ash landfill cells.

Site Observations

GZA visited the Huntley CCR Landfill Site on September 13th, 2019 to make observations of the active portions of landfill Cells A, C and D. The following is a summary of our observations made at each active cell.

Cell A: This cell apparently received 120 tons of bottom ash and 10,924 tons of coal waste in in 2018 and was used to grade upper slopes. This area was reportedly covered with an approximate 3,000 cy of cover soil for use as a temporary cover. The cell A side slopes at the lower elevations were observed with final cover systems previously constructed in general accordance with its intended design (side slopes not exceeding 33% or 3 Horizontal: 1 Vertical (3H:1V)) and included intermittent benches and rip-rap lined drainage channels at select locations of the cell. The upper elevations were generally observed consisting of a grassy temporary cover system with approximate 5% slopes. In general, although there have been slight modifications to the grades and upper slopes of the Cell A, no deficiencies or structural concerns were observed.



Cell C: Although this cell has received most of the waste ash in recent years from the Huntley Plant (although the 2017 fill progression survey indicated no ash was placed due to plant closure). The 2018 fill progression survey indicated Cell C received an approximate ash volume of 10,588 cy. However, this volume reportedly includes regrading of waste from Cell D into Cell C to provide a uniform slope between cells and also includes a volume of clean soil placement for a temporary cover system. During our Site visit, the side slopes and upper portions of the waste areas were observed having been regraded, covered and seeded with establishment of a grassy vegetated cover (similar to the upper portions of Cell A). Facility personnel indicated the regraded areas and temporary cover system in this cell were done to secure the cell until plans for final closure are made. The construction done in Cell C, including regrading and installation of a temporary cover system, appears to be in general accordance with intended designs and overall appears to be stable without evidence of structural instability issues (e.g., slumps, cracks, settlement, etc.). The cell side slopes were generally observed as not steeper than 33% (3H:1V). Some areas of erosion rills were observed within the temporary cover system and were reportedly due to recent heavy rain events. The observed erosion rills did not extend into the underlying ash waste and the impacted areas were being repaired and reseeded to promote vegetative growth to secure the cover and minimize erosion concerns.

Cell D: A review of the most recent fill progression survey indicated that a negative volume of waste was received in Cell D. This negative value is associated with regrading efforts made to produce more uniform side slopes between Cells C and D (so not to exceed slopes of 3H:1V). Additionally, placement of a clean soil for a temporary cover system (similar to Cells A and C) was apparent. The temporary soil cover system was placed over the cell until plans are made for final closure. The regrading activities observed within the cell appears to be in general accordance with intended designs and overall appears to be stable without evidence of structural instability issues (e.g., slumps, cracks, settlement, etc.). The northern, eastern and southern side slopes of Cell D were observed having final cover systems, including interim benches and drainage features. The cell side slopes were generally observed to be no steeper than 3H:1V.

Overall, the work face areas of the active cells appeared to be graded in general accordance with the proposed design configurations. The side slopes and other areas were observed in good condition with no evidence of actual, or potential for, structural instability or erosion or unsafe conditions. Similar to the most recent annual inspection made at the end of 2018, this inspection identified no areas of concern or areas evident of structural instability. Other than the recent grade modifications and temporary cover systems of the active Cells A, C and D, no significant changes pertaining to the design, operation and maintenance have been made to the active landfill cells. In general, the ongoing maintenance and grading of the ash waste appear to be in compliance with the cell design and permit requirements.



PROFESSIONAL ENGINEER CERTIFICATION

The undersigned registered professional engineer is familiar with the requirements of §257.84 and has visited and examined the Huntley Station Landfill or has supervised examination of the facilities by appropriately qualified personnel. The undersigned registered professional engineer attests that this Annual Inspection Report has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and meets the requirements of §257.84, and that this Report is adequate for the Huntley Station. This certification was prepared as required by §257.84(b)(2).

Name of Professional Engineer: Daniel J. Troy, P.E.

Company: GZA GEOENVIRONMENTAL OF NEW YORK

Signature: Dal Troy

Date: October 11, 2019

PE Registration State: New York

PE Registration Number: 081139-1

Professional Engineer Seal:



We trust this information satisfies your needs for this project.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

Dal Troy

Daniel J. Troy, P.E.
Senior Project Manager

Bart A. Klettke

Bart A. Klettke, P.E.
Principal

Attachments: Figure - 2018 Huntley Fill Progression Survey – General Plan



NRG ENERGY
106 POINT DRIVE, NORTH
DUNKIRK, NEW YORK 14051

HUNTLEY POWER, LLC
ENGINEERING SERVICES
ANNUAL FILL PROGRESSION SURVEY
FOR THE
HUNTLEY LANDFILL
RECORD DRAWING

GENERAL NOTES:

- EXISTING TOPOGRAPHY SHOWN FROM MAPS PREPARED BY STERNS & WHEELER, LLC ENVIRONMENTAL ENGINEERS AND SCIENTISTS. PROVIDED BY NRG
- UPDATED TOPOGRAPHY IN CELLS A, C AND D IS BASED ON FIELD SURVEY PERFORMED BY WENDEL IN NOVEMBER 2018.
- HORIZONTAL & VERTICAL CONTROL REFERENCED TO SITE DATUM(S) PROVIDED BY NRG.
- THOUGH CONVERSATION WITH NRG AND AS OBSERVED IN THE FIELD, MATERIALS PREVIOUSLY PLACED IN CELLS C & D HAD BEEN MOVED AROUND WITHIN CELLS C & D TO PROVIDE A MORE CONSISTENT SLOPE FROM CELL C TO CELL D.

CELL	TOTAL THEORETICAL WORKING CAPACITY OF CELLS AT PRESENT DEVELOPMENT STAGE (CUBIC YARDS)	TOTAL ASH VOLUME IN CELL (CUBIC YARDS)	ACTUAL USABLE REMAINING AIRSPACE AFTER DEVELOPMENT OF ADJACENT CELLS (CUBIC YARDS)	ASH RECEIVED IN 2018 (CUBIC YARDS) (SEE NOTE #4)
A	573,849	509,582	195,958	10,588
C	601,927	417,528	361,515	14,391
D	585,660	537,609	48,051	-8,183
TOTAL	1,761,436	1,464,719	605,524	16,796

LEGEND:

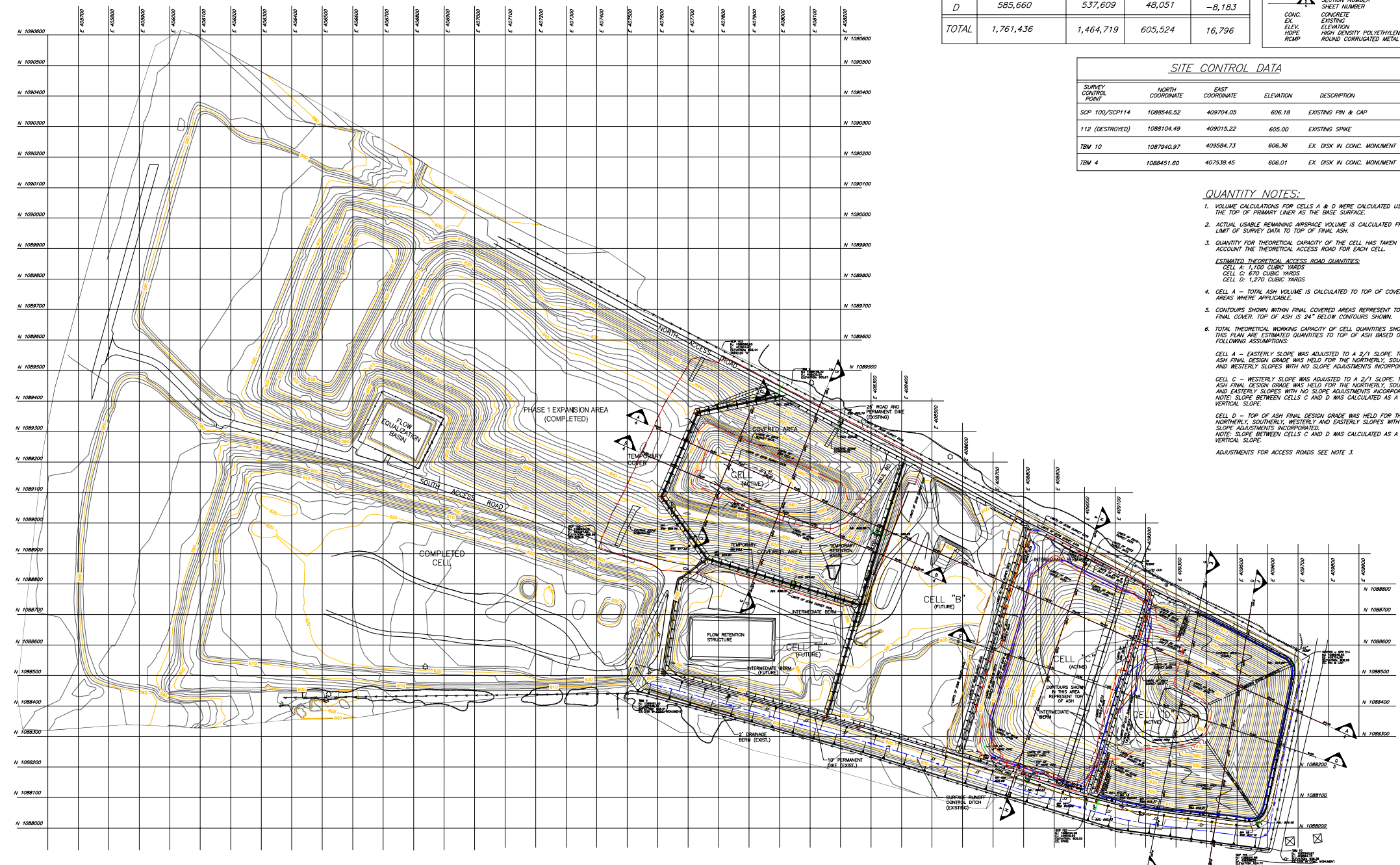
- LIMIT OF ASH 2018 SURVEY DATA
- LIMIT OF ASH 2016 & 2017 SURVEY DATA
- LIMIT OF ASH 2015 SURVEY DATA
- LIMIT OF ASH 2014 SURVEY DATA
- LIMIT OF ASH 2013 SURVEY DATA
- LIMIT OF 2012 SURVEY DATA
- LIMIT OF 2009 SURVEY DATA
- LIMIT OF 2006 SURVEY DATA
- 10' CONTOUR INTERVAL (MAJOR)
- 2' CONTOUR INTERVAL (MINOR)
- SURFACE RUNOFF CONTROL DITCH
- DITCH
- MANHOLE
- CULVERT
- SLOPE DOWN
- BRUSH ROW
- UTILITY POLE
- UNKNOWN UTILITY VALVE
- CONTROL POINT
- SECTION NUMBER
- SHEET NUMBER
- CONC. EX. ELEV. POLE
- CONCRETE EXISTING ELEVATION
- HIGH DENSITY POLYETHYLENE PIPE
- ROUND CORRUGATED METAL PIPE

SITE CONTROL DATA

SURVEY CONTROL POINT	NORTH COORDINATE	EAST COORDINATE	ELEVATION	DESCRIPTION
SCP 100/SCP 114	1088546.52	409704.05	606.18	EXISTING PIN & CAP
112 (DESTROYED)	1088104.49	408015.22	605.00	EXISTING SPIKE
TBM 10	1087940.97	409584.73	606.36	EX. DISK IN CONC. MONUMENT
TBM 4	1088451.60	407538.45	606.01	EX. DISK IN CONC. MONUMENT

QUANTITY NOTES:

- VOLUME CALCULATIONS FOR CELLS A & D WERE CALCULATED USING THE TOP OF PRIMARY LINER AS THE BASE SURFACE.
 - ACTUAL USABLE REMAINING AIRSPACE VOLUME IS CALCULATED FROM LIMIT OF SURVEY DATA TO TOP OF FINAL ASH.
 - QUANTITY FOR THEORETICAL CAPACITY OF THE CELL HAS TAKEN INTO ACCOUNT THE THEORETICAL ACCESS ROAD FOR EACH CELL.
- ESTIMATED THEORETICAL ACCESS ROAD QUANTITIES:**
CELL A: 1,700 CUBIC YARDS
CELL C: 870 CUBIC YARDS
CELL D: 1,270 CUBIC YARDS
- CELL A - TOTAL ASH VOLUME IS CALCULATED TO TOP OF COVERED AREAS WHERE APPLICABLE.
 - CONTOURS SHOWN WITHIN FINAL COVERED AREAS REPRESENT TOP OF FINAL COVER. TOP OF ASH IS 24" BELOW CONTOURS SHOWN.
 - TOTAL THEORETICAL WORKING CAPACITY OF CELL QUANTITIES SHOWN ON THIS PLAN ARE ESTIMATED QUANTITIES TO TOP OF ASH BASED ON THE FOLLOWING ASSUMPTIONS:
CELL A - EASTERLY SLOPE WAS ADJUSTED TO A 2/1 SLOPE. TOP OF ASH FINAL DESIGN GRADE WAS HELD FOR THE NORTHERLY, SOUTHERLY AND WESTERLY SLOPES WITH NO SLOPE ADJUSTMENTS INCORPORATED.
CELL C - WESTERLY SLOPE WAS ADJUSTED TO A 2/1 SLOPE. TOP OF ASH FINAL DESIGN GRADE WAS HELD FOR THE NORTHERLY, SOUTHERLY AND EASTERLY SLOPES WITH NO SLOPE ADJUSTMENTS INCORPORATED. NOTE: SLOPE BETWEEN CELLS C AND D WAS CALCULATED AS A VERTICAL SLOPE.
CELL D - TOP OF ASH FINAL DESIGN GRADE WAS HELD FOR THE NORTHERLY, SOUTHERLY, WESTERLY AND EASTERLY SLOPES WITH NO SLOPE ADJUSTMENTS INCORPORATED. NOTE: SLOPE BETWEEN CELLS C AND D WAS CALCULATED AS A VERTICAL SLOPE.
ADJUSTMENTS FOR ACCESS ROADS SEE NOTE 3.



"THIS DOCUMENT AND THE DATA HEREIN INCORPORATED THEREIN AS A PROFESSIONAL SURVEYING SERVICE BY THE FIDELITY OF HUNTLEY POWER, LLC, ENGINEERING SERVICES AND LANDSCAPE ARCHITECTURE P.C. ARE THE PROPERTY OF HUNTLEY POWER, LLC AND ARE TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. NO OTHER USES OF THIS DOCUMENT OR DATA ARE PERMITTED WITHOUT THE WRITTEN CONSENT OF HUNTLEY POWER, LLC. HUNTLEY POWER, LLC IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS DOCUMENT OR DATA. HUNTLEY POWER, LLC IS A MEMBER OF THE NEW YORK STATE COLLEGE OF LAND SURVEYORS."

NO.	REVISIONS	DATE

HUNTLEY
2018 FILL PROGRESSION SURVEY
GENERAL PLAN

GENERIC SCALE BAR
SCALE BAR SHOWN FOR REFERENCE TO OTHER DRAWINGS
IF NOT SHOWN, REFER TO SHEET 422 OF ACCORDING

DATE	11/27/2018
SCALE	NOT TO SCALE
DWG.	DTH
CHK.	RNJ
PROJ. NO.	419419
DRAW. NO.	