OHIO VALLEY ELECTRIC CORPORATION
3932 U. S. Route 23
P. O. Box 468
Piketon, Ohio 45661
740-289-7200

WRITER'S DIRECT DIAL NO:
740-897-7768

January 17, 2020

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Laurie Stevenson, Director
Ohio Environmental Protection Agency
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

Dear Ms. Stevenson:

Re: Ohio Valley Electric Corporation
Kyger Creek Station's 2019 Annual Landfill Inspection

As required by 40 CFR 257.106(g)(7), the Ohio Valley Electric Corporation (OVEC) is providing notification to the State Director of the Ohio Environmental Protection Agency that a qualified professional engineer has completed the 2019 CCR annual landfill inspection for OVEC's Kyger Creek Station. The inspection report has been placed in the facility's operating record as well as on the company's publicly accessible internet site, which can be viewed at http://www.ovec.com/CCRCompliance.php.

If you have any questions, or require any additional information, please call me at (740) 897-7768.

Sincerely,

Tim Fulk
Engineer II

TLF:klr

Stantec Consulting Services Inc.
11687 Lebanon Road, Cincinnati OH 45241-2012

January 16, 2020

File: 175534017, 200.209

Ohio Valley Electric Corporation
Indiana-Kentucky Electric Corporation
Attention: Mr. Gabriel Coriell
3932 U.S. Route 23
P.O. Box 468
Piketon, Ohio 45661

Reference: 2019 CCR Rule Inspection
Annual Landfill Inspection
Kyger Creek Generating Station
Cheshire, Ohio

Dear Mr. Coriell,

Attached is the 2019 report from the annual landfill inspection for the Kyger Creek Generating Station's Class III Residual Solid Waste Landfill. The site visit was performed on October 29, 2019. Rainfall received by the site 72 hours prior to the visit was 0.89 inch. As a summary:

- In general, the exterior slopes of the active coal combustion residual (CCR) landfill were uniform and well vegetated. Active waste slopes were uniform without signs of visual slope instability on the day of the site visit. A few erosion rills and small animal burrows were observed.

- Mow the vegetation along the western edge of Phase 1 above the West Sedimentation Pond to understand potential stability concerns in this area (between the perimeter road and the pond access road). Characterize and remediate the sloughs as needed. A scarp was reforming on the northwestern exterior slope of the West Sedimentation Pond in the area of recent repair.

- Monitor the termination of the Phase 1 underdrain system during site inspections. Characterize and address the seepage as part of operations. This area is contained within the waste footprint with surface water controls in place downstream.

- Maintain the vegetation near the Interim Leachate Collection Pond (ILCP) and address the erosion gullies along the southern and especially the western interior embankment. The scarp on the southern embankment was enlarged, when compared to previous annual inspection reports, with seepage observed at the toe of the embankment. A new scarp, unobserved in previous annual inspection reports, was observed along the crest in the

Reference: 2019 CCR Rule Inspection
Annual Landfill Inspection
Kyger Creek Generating Station
Cheshire, Ohio

same vicinity of the existing scarp. This may indicate instability of this embankment, with failure of the slope progressing into the impoundment. Attention to this area should be immediate.

- The development of the scarp on the northern perimeter road north of the ILCP has compromised the guardrail and the roadside boulder barrier.

- Development of an Operations and Maintenance Manual is recommended, if not currently in place, to maintain consistency of landfill operations during its life cycle.

Observations and recommendations are detailed in the associated annual landfill inspection report. A figure is included with a GPS location table and photo log to assist in addressing the observations.

Please contact this office with any questions or concerns. We appreciate the opportunity to continue to work with the Kyger Creek Generating Station and the Ohio Valley Electric Corporation.

Regards,

Stantec Consulting Services Inc.

John G. Banton, P.E.
Senior Project Engineer
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Jacqueline S. Harmon, P.E.
Project Manager
Phone: (513) 842-8200 ext 8220
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Attachment: 2019 CCR Rule Inspection Kyger Creek Landfill

c. James Swindler, Jr.; Stan Harris, Stantec

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2019 CCR Rule Inspection
Kyger Creek Landfill

Kyger Creek Generating Station
Cheshire, Ohio
Gallia County

January 16, 2020

Prepared for:

Ohio Valley Electric Corporation
Piketon, Ohio

Prepared by:

Stantec Consulting Services Inc.
Cincinnati, Ohio

Sign-off Sheet

This document entitled 2019 CCR Rule Inspection Kyger Creek Landfill was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of the Ohio Valley Electric Corporation (OVEC) (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule, and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use that a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by _____
(signature)

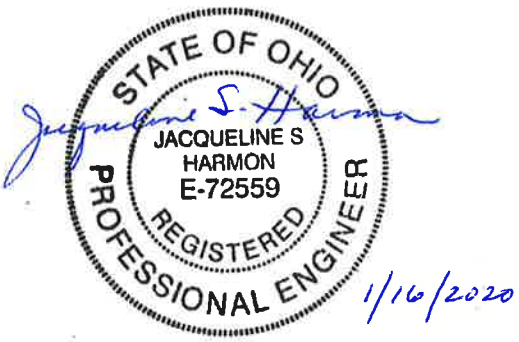
John G. Banton, P.E.

Reviewed by _____
(signature)

James R. Swindler Jr., P.E.

Reviewed by _____
(signature)

Jacqueline S. Harmon, P.E.



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LIST OF APPENDICES

1.0 OVERVIEW

Stantec Consulting Services Inc. (Stantec) performed the annual landfill inspection of the existing coal combustion residual (CCR) landfill at the Kyger Creek Generating Station in Cheshire, Ohio on October 29, 2019.

This annual landfill inspection is intended to fulfill the requirements of 40 CFR 257.84(b) for the *Disposal of Coal Combustion Residuals from Electric Utilities* rule (CCR Rule) signed by the U.S. Environmental Protection Agency (EPA) Administrator on December 19, 2014 and published in the Federal Register on April 17, 2015.

The landfill is a residual solid waste facility (270834, RSWL018814) under the regulations of the Gallia County General Health District – RW3L and the Ohio Environmental Protection Agency (OEPA), Division of Materials and Waste Management. Below is a summary of conditions for the day of the inspection:

Date performed:	October 29, 2019
Weather:	Mostly sunny, slightly breezy, 55ºF - 65ºF
Rainfall over last 72 hours:	October 26, 2019 – 0.02 inches October 27, 2019 – 0.87 inches October 28, 2019 – 0.00 inches October 29, 2019 – 0.00 inches

Precipitation data was collected by the National Environmental Satellite Data and Information Service of NOAA for Athens, Ohio, approximately 20.3 miles north of the landfill. Precipitation during the 72-hour period prior to the site visit was 0.89 inch.

Stantec's team that performed the fieldwork included:

- John Banton, P.E., Senior Project Engineer
  24 years of experience in geotechnical exploration and civil engineering design.
- James R. Swindler, Jr., P.E., Senior Project Engineer
  13 years of geotechnical engineering experience for a variety of infrastructure projects including dams, levees, and coal combustion byproduct storage facilities.

The estimated volume of CCRs contained in the landfill is 3,888,400 cubic yards. Inspections are being performed by plant personnel according to the CCR Rule at least once every seven days. Weekly reports performed between January 3, 2019 and October 31, 2019 were provided for review. The Gallia County General Health District performs quarterly inspections in accordance with OEPA guidelines.

Fieldwork was coordinated with Mr. Paul Hutchins, Kyger Creek Station's Landfill Engineer. Observations were briefly discussed with onsite personnel during and after completion of the field activities.

2.0 DESCRIPTION OF KYGER CREEK LANDFILL

The Kyger Creek Generating Station, located in Cheshire, Gallia County, Ohio, is a coal combustion power plant owned and operated by the Ohio Valley Electric Corporation (OVEC). The Kyger Creek Station's five units were commissioned in 1954 and 1955 and have a total generating capacity of 1,086 megawatts (OVEC, 2016).

The CCRs produced by the Kyger Creek Generating Station are placed in the Kyger Creek restricted waste landfill. OVEC received its restricted waste permit and approval from the OEPA to begin construction on the landfill in April 2009. The landfill is a 98-acre Class III residual solid waste landfill, divided into five phases, with a capacity of 20.4 million cubic yards (Applied Geology and Environmental Science, 2015) that includes:

- A composite liner system consisting of an 18-inch recompacted soil liner, 30-mil polyvinyl chloride (PVC) geomembrane in Phases 1, 3, 4, and 5 with a 40-mil linear low-density polyethylene (LLDPE) geomembrane in Phase 2;
- Leachate collection system, including two lined leachate collection ponds;
- Contact and non-contact surface water management systems, including four sedimentation ponds, multiple sediment traps, drainage channels, and chimney drains;
- Groundwater monitoring system; and
- A final closure cap design.

Operation of the landfill began in 2010 with placement of Class III residual waste, including flue-gas-desulfurization (FGD) sludge, chloride purge steam filter cake, fly ash, and boiler slag. The landfill's anticipated lifespan is 20 years.

The CCRs are transported by conveyor to a stacking pad southeast of the landfill and/or trucked to the Kyger Creek Landfill. Based on conversations with site personnel, the ash is placed in the landfill at approximately 30-percent moisture. The ash is placed in roughly one-foot lifts and then compacted. At times, the fly ash is mixed with other material, such as gypsum, with no segregation of the material during placement.

The landfill is divided into five phases with Phase 1 currently receiving CCRs. As previously noted, there are multiple ponds, both temporary and permanent, associated with the landfill. See the 2017 As-Built Map provided in Appendix C, Reference Drawings (OVEC, 2017). The ponds include:

- East Sedimentation Pond – a permanent pond located east of the landfill.
- West Sedimentation Pond – a permanent pond located at the toe of the west slope of Phase 1.
- Leachate Collection Pond – a permanent pond located east of the landfill and adjacent to the East Sedimentation Pond.
- Interim Leachate Collection Pond – temporary pond located within Phase 3 at the east end of Phases 1 and 2.
- Sediment Pond #1 – a temporary pond located to the east of Phase 1. This pond has been capped.
- Sediment Pond #2 – a temporary pond located within the Proposed Clay Borrow area to the south of Phase 1.
- Temporary Contact Pond – a temporary pond located on the southeast end of Phase 2.

The stormwater sedimentation traps were also observed during the site visit.

An Operations and Maintenance Manual discussing the landfill or the ponds was not available for review.

2.1 KYGER CREEK LANDFILL – PHASE 1

The active waste cell is Phase 1, located in the southwestern portion of the landfill footprint. A series of chimney drains lie in the center portion of the phase and outlet on the east end into the Interim Leachate Collection Pond. Temporary soil cover has been placed and vegetated on the exterior slopes of Phase 1 where it is nearing final CCR grades (2017 As-Built Map, Appendix C).

On October 29, 2019 a portion of the eastern slope was being excavated to place fill in another section of the phase. Temporary CCR within the landfill are being placed at a slope of approximately 3H:1V. Signs of instability such as sloughs or slides were not observed. A table of slope measurements is presented in Appendix A.

2.2 KYGER CREEK LANDFILL – PHASES 2 THROUGH 5

Phases 2, 3, 4, and 5 have yet to be constructed. Phase 2 has been used as a borrow area and is vegetated and inactive. The general phasing plan is included in Appendix C.

3.0 OBSERVATIONS

3.1 KYGER CREEK LANDFILL – ACTIVE PHASE

The following observations were made while walking within and around the active Phase 1 landfill footprint. Appendix A includes a plan of the active landfill with GPS-located points. The GPS points of the 2019 inspection (30 through 72) are numbered successively from the 2018 points (1 to 29). The photographic log is provided in Appendix B.

- The exterior temporary northern, western, and eastern slopes of Phase 1 are mowed sufficiently for a visual inspection, uniform, and vegetated (Point 30, Appendix A; Photos 1, 8, 9, 10 to 13, 20, 21, 23 Appendix B).

- There were several instances of boulders, erosion, and heavy vegetation in the ditches at the toe of the western exterior temporary slopes that may reduce the effectiveness of the ditches. (Points 30, 31, 34, 37, 45, Appendix A; Photos 2, 4, 6; 9, Appendix B)

- A few small animal burrows were observed on the west side of the active phase. (Points 32, 46, 47, Appendix A; Photos 3,10, Appendix B)

- Dense vegetation and small trees block the inlets of five pipe culverts that underlie the access road west of Phase 1. (Point 34, Appendix A; Photos 4, Appendix B)

- A severe erosion feature (3 feet deep and 2 feet wide) affecting the road was observed on the west perimeter road above the outlets of the 5-pipe culvert. (Point 36, Appendix A; Photo 5, Appendix B)

- The Phase 1/Phase 2 separation/transition berm on the north side of the active phase has been regraded and improved from last year, but erosion and standing water were observed in this area. (Points 49–55, Appendix A, Photos 11 to 13, Appendix B)

- Erosion, standing water, and vegetation were observed in the ditch from the Interim Leachate Collection Pond crossing the access road to the pond at the base of the east temporary slope of the active phase. (Point 58, Appendix A; Photo 17, Appendix B)

- An erosion gully affects the access road to the Interim Leachate Collection Pond. (Point 59, Appendix A; Photo 18, Appendix B)

- The scarp in the embankment above the access road to the Interim Leachate Collection Pond has enlarged with visible signs of seepage. (Point 59, Appendix A; Photo 19, Appendix B)

- A scarp along the crest of the Interim Leachate Collection Pond has formed in the vicinity of the existing scarp. There is standing water on the crest. This may be a sign that the soil embankment is saturated thereby reducing its strength. (Points 61 to 62, Appendix A; Photo 20, Appendix B)

- The riprap of the exit channel of the Interim Leachate Collection Pond is sparse and covered in vegetation. (Point 63, Appendix A; Photo 21, Appendix B)

- Erosion gullies on the western and southern interior slopes of the Interim Leachate Collection Pond were observed, similar to the 2018 annual inspection. (Point 65, Appendix A; Photo 22, Appendix B) Small animal burrows were observed on the west exterior slope.

- The leachate pipe outlet from Phase 1 was observed within the Interim Leachate Collection Pond and appeared to be freely flowing.

- The overflow pipe of the Interim Leachate Collection Pond does not have a grating to minimize debris carried into the pipe.

3.2 WEST SEDIMENTATION POND

The following observations were made during the site visit at the West Sedimentation Pond. Appendix A includes an aerial of the active landfill with GPS-located points. The photographic log is provided in Appendix B.

- An erosion gully in forming on the north side of the access road to the West Sedimentation Pond (Point 37, Appendix A; Photo 6, Appendix B).

- The scarp on the slope above the access road to the West Sediment Pond appears to have enlarged. (Point 38, Appendix A; Photo 7, Appendix B)

- Scarps and cracks are forming in the surface of the recent slope repair at the north end of the exterior slope of the West Sediment Pond. (Points 42, 43, Appendix A; Photo 8, Appendix B)

- Vegetation growth to a height of 12 to 48 inches was observed on the western exterior slope of the pond, obscuring visual observation.

3.3 EAST SEDIMENTATION POND

The following observations were made during the site visit at the East Sedimentation Pond. Appendix A includes an aerial of the active landfill with GPS-located points. The photographic log is provided in Appendix B.

- As observed in previous reports, several erosion gullies are located along the northwest slope of the pond connecting the East Sedimentation Pond to the paved haul road.

3.4 LEACHATE COLLECTION POND

The following observations were made during the site visit at the Leachate Collection Pond. Appendix A includes an aerial of the active landfill with GPS-located points. The photographic log is provided in Appendix B.

- Small areas void of vegetation were observed on the interior of the embankment (east side) at the Leachate Collection Pond. (Points 67, 68, Appendix A; Photo 23, Appendix B)

- Standing water and vehicle rutting were observed on the west side of Leachate Collection Pond (Points 70, 71, Appendix A; Photo 24, Appendix B). Evidence of seepage through the concrete joints, as in years past, was observed.

3.5 PERIMETER OF KYGER CREEK LANDFILL

The perimeter of the landfill was visited to observe surface water controls for the facility. The following observations were made:

- Erosion and washout were observed in a ditch adjacent to the perimeter road to the stacker. (Near Point 72, Appendix A; Photo 25, Appendix B)

- There is a slip forming along the perimeter road to the stacker. (Point 72, Appendix A; Photo 26, Appendix B)

- A scarp that undermines the guardrail and boulder barrier has formed on the downhill side of the north perimeter road. (Point 57, Appendix A; Photo 15, Appendix B)

- A vegetation-filled inlet of a pipe culvert beneath the northern access road was observed. (Point 57, Appendix A; Photo 16, Appendix B)

4.0 RECOMMENDATIONS

The following recommendations are offered for the Kyger Creek Landfill. The recommendations are not listed in order of priority.

Stability Issues:

- Mow the vegetation along the western edge of Phase 1 above the West Sedimentation Pond to understand potential stability concerns in this area. Characterize and remediate the sloughs as needed.
- Maintain the vegetation along the interior and exterior slopes of the Interim Leachate Collection Pond. Redress the interior gullies as needed and characterize the slough on the southern side.
- The scarp on the south side of the embankment of the Interim Leachate Collection Pond has enlarged. Below the scarp, on the road, is a wet area. The formation of a scarp on the crest may mean the embankment is unstable. A program of exploration and stability analyses leading to stability improvement is recommended.
- The repaired north/west slope of the West Sediment Pond shows signs of sliding. This slope should be monitored closely for additional movement.

Operational Issues:

- Several wet or standing water zones were identified during this field visit. Seepage conditions appeared to be a known issue for the design but should be monitored during operations for future planning purposes.
- An Operations and Maintenance Manual should be developed that includes provisions for the placement of materials within the landfill, the maintenance of the landfill, and the procedures to follow if issues arise during the operation of the landfill.
- Continue to conduct field surveys to measure current topography and compare to design geometry. Regrade surface to conform to design if needed. Areas near final completion grade are recommended to be capped, closed, and vegetated. Further engineering evaluation of slope stability may be warranted, if deformations, steepened slopes, or sloughing indicate potential for significant instabilities.

Maintenance Issues:

- Remove the sediment and vegetation restricting flow through the five HDPE pipes flowing from the Phase 1 western slope to the West Sedimentation Pond. Repair and maintain the stormwater best management practices (BMPs) for the channels flowing to the pipes. Remediate the eroded area at the pipe outlets to protect the access road for Phase 1.
- Maintain the vegetation along the exterior slopes and within the surface drainage channels to facilitate inspections by removing taller weeds and trees as needed.

- Continue to repair erosion gullies, reestablish grass vegetation, and monitor in future inspections.
- A cover grate is recommended for the overflow pipe at the Interim Leachate Collection Pond to minimize debris carried into the pipe.
- Small landslides beside the perimeter road should be monitored and regraded as necessary to maintain the integrity of the road.

5.0 REFERENCES

American Electric Power Service Corporation (AEPSC) (2018). "2018 Dam and Dike Inspection Report, Bottom Ash Pond Complex, South Fly Ash Pond. Kyger Creek Plant, Ohio Valley Electric Corporation (OVEC), Gallipolis, Ohio." Prepared by Geotechnical Engineering, Columbus, Ohio. September 26. GERS-18-045.

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Ohio Environmental Protection Agency (OEPA) (2009). "Ohio Environmental Protection Agency, Permit to Install." FINAL. Application Number 06-08283. Received March 15, 2007. Ohio Valley Electric Corporation Kyger Creek Plant Landfill. New Residual Solid Waste Landfill. Effective Date: *not listed*.

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Ohio Valley Electric Corporation (2018). "7-Day Inspection Checklist. Kyger Creek Plant. Landfill." Weekly reports for January 4, 2018 to December 27, 2018.

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Professional Service Industries, Inc. (PSI) (2010). "Construction Certification Report. Area 1 Part 1, Kyger Creek Plant Landfill, 212 Shaver Road, Cheshire, Ohio 45620." PSI Report 114-80062-1531. November 30. Columbus, Ohio.

APPENDIX A
FIGURE 1 – PLAN VIEW

Kyger Creek Ash Landfill
2019 Annual Inspection

Point ID	Comment	Latitude, N.	Longitude, W.
30	Slope Measurement: 2.75H:1V	38.923920	-82.168933
31	Boulder in ditch (typical along this ditch)	38.924123	-82.169345
32	Animal burrow 8 inches wide	38.924276	-82.169391
33	Erosion\cut in perimeter ditch	38.924240	-82.169444
34	3-inch dia tree at 5-pipe inlet	38.924974	-82.169386
35	High vegetation growth at inlets	38.924995	-82.169441
36	Erosion at pipes	38.925022	-82.169532
37	Erosion of road to West Sediment Pond	38.925347	-82.169611
38	Scarp on slope above road to West Sediment Pond	38.925767	-82.169668
39	Possible ash on access road to West Sediment Pond	38.926010	-82.169767
40	Slope (Lower) Measurement (West Sediment Pond): 1.8H:1V	38.926237	-82.170616
41	Slope (Middle) Measurement (West Sediment Pond): 2.25H:1V	38.926261	-82.170497
42	Slope Measurement: 3.7H:1V / Begin scarp at top of slope	38.926342	-82.170285
43	End scarp at top of slope	38.926174	-82.170425
44	Slope Measurement: 3.7H:1V	38.925646	-82.169321
45	Erosion in access road on west side of active phase	38.925699	-82.169462
46	Ash exposed on exterior slope of active phase	38.925870	-82.169279
47	Animal burrow	38.926292	-82.169037
48	Slope Measurement: 9.5H:1V	38.926722	-82.168426
49	Wet surface area	38.925352	-82.164117
50	Wet surface area	38.925294	-82.164297
51	Erosion rills on new slope	38.925428	-82.164414
52	Erosion rills on new slope; Slope Measurement: 3.1H:1V	38.925788	-82.165655
53	Standing water with sheen	38.926450	-82.166636
54	Standing water	38.926600	-82.167130
55	Erosion gulley in ditch	38.926689	-82.167763
56	Slope Measurement: 2.9H:1V	38.926515	-82.167646
57	Erosion/scarp of access road	38.925930	-82.162381
58	Standing water with erosion on access road	38.925189	-82.161872
59	Erosion gulley affecting access road	38.924990	-82.162018
60	Wet area with ash on crest of embankment	38.924627	-82.162920
61	Begin scarp on crest of embankment	38.924687	-82.162651
62	End of scarp on crest of embankment	38.925053	-82.162194
63	Sparse riprap in channel	38.925305	-82.162293
64	Tire rutting in crest	38.925427	-82.162455
65	Erosion gully along crest, wet	38.925388	-82.163019
66	Slope Measurement: 2.9H:1V	38.924454	-82.163532
67	Bare spots, Leachate Collection Pond	38.925788	-82.157540
68	Bare spots, Leachate Collection Pond	38.925896	-82.157852
69	Erosion on interior slope of East Sedimentation Pond	38.925823	-82.158767
70	Standing water	38.925426	-82.158421
71	Standing water	38.925109	-82.158119
72	Slip in road to stacker	38.920328	-82.154520

Kyger Creek Ash Landfill
2019 Annual Inspection

Point ID	Comment	Latitude, N.	Longitude, W.
30	Slope Measurement: 2.75H:1V	38.923920	-82.168933
40	Slope (Lower) Measurement: 1.8H:1V	38.926237	-82.170616
41	Slope (Middle) Measurement: 2.25H:1V	38.926261	-82.170497
42	Slope Measurement: 3.7H:1V	38.926342	-82.170285
44	Slope Measurement: 3.7H:1V	38.925646	-82.169321
48	Slope Measurement: 9.5H:1V	38.926722	-82.168426
52	Slope Measurement: 3.1H:1V	38.925788	-82.165655
56	Slope Measurement: 2.9H:1V	38.926515	-82.167646
66	Slope Measurement: 2.9H:1V	38.924454	-82.163532

OVEC/IKEC
Ohio Valley Electric Corporation / Indiana-Kentucky Electric Corporation

Stantec

Legend

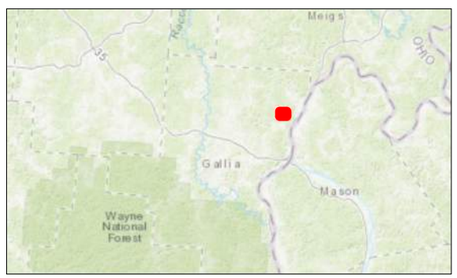
- Inspection Locations
- Phases
- Erosion gullies on interior crest
- Phases 1/2 separation transition berm
- Seepage zone above concrete apron and through joints
- Phase 1 western slope above West Sedminentation Pond

0 400 800 Feet

1:4,800 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Base features - 2015 NAIP
3. Ortho-Imagery does not represent current conditions.



Project Location
Kyger Fossil Plant
Gallia County, OH

175534017
Prepared by ANP on 2019-11-11
Technical Review by JB on 2019-11-11
Independent Review by JSH on 2019-11-11

Client/Project
Ohio Valley Electric Corporation
Kyger Creek Landfill

Figure No.
1

Title
2019 Annual CCR Landfill Inspection

APPENDIX B
PHOTOGRAPHIC LOG

Photo 1

Photo of temporary slope of west side of active phase showing uniform and vegetated 2.75H:1V slope. (Point 30, Appendix A)

Photo 2

One of several locations of boulders in ditch on west side of active phase. (Point 31, Appendix A)

Photo 3

Animal burrow on temporary slope of west side of active phase. (Point 32, Appendix A)

Photo 4

Inlet of five HDPE pipes on the west side of the active phase, with dense vegetation, including 3-inch diameter trees. (Point 34, Appendix A)

Photo 5

Erosion feature in road above outlet of five HDPE pipes on west side of active phase. (Point 36, Appendix A)

Photo 6

Erosion along access road to West Sediment Pond. (Point 37, Appendix A)

Photo 7

Scarp above access road to West Sediment Pond. (Point 38, Appendix A)

Photo 8

Scarps and rills forming along the west side of the West Sediment Pond embankment. (Points 42 to 43, Appendix A)

Photo 9

Erosion and occasional boulder along east side of access road west of active phase and above West Sediment Pond access road. (Point 45, Appendix A)

Photo 10

Temporary slope on west end of active phase with few animal burrows and small areas of exposed ash. (Points 46 to 47 Appendix A)

Photo 11

Standing water and erosion north of active phase. (Points 54 to 55, Appendix A)

Photo 12

Standing water below erosion. (Point 53, Appendix A)

Photo 13

Erosion rills on the new slopes and standing water at toe on the north side of the active phase. (Points 49 to 52, Appendix A)

Photo 14

Eroded drainageway to temporary sediment pond at base of east external temporary slope of active phase. (Point 66, Appendix A)

Photo 15

Erosion/scarp along south side of northern access road. (Point 57, Appendix A)

Photo 16

Vegetation-filled inlet of road culvert on north side of northern access road across from Point 57 (Appendix A).

Photo 17

Erosion and standing water at access road to Interim Leachate Collection Pond. (Point 58, Appendix A)

Photo 18

Erosion gully affecting access road to Interim Leachate Collection Pond. Road was wet in this area. (Point 59, Appendix A)

Photo 19

Scarp on Interim Leachate Collection Pond external slope of embankment (near Point 59, Appendix A)

Photo 20

Scarp along length of Interim Leachate Collection Pond embankment. (Points 61 to 62, Appendix A)

Photo 21

Sparse riprap in exit channel of Interim Leachate Collection Pond. (Point 63, Appendix A)

Photo 22

Gully on west side of Interim Leachate Collection Pond embankment. (Point 65, Appendix A)

Photo 23

Bare spots on interior of embankment (east side) at Leachate Collection Pond. (Points 67 to 68, Appendix A)

Photo 24

Standing water and rutting on west side of Leachate Collection Pond. (Points 70 to 71, Appendix A)

Photo 25

Erosion/washout on uphill side of perimeter access road to stacker. (near Point 72, Appendix A)

Photo 26

Slip forming on downhill side of perimeter access road to stacker. (Point 72, Appendix A)

Photo 28

Dense vegetation along invert of drainage ditch along south side of landfill.

Photo 29

Rock check dam at capacity on south side of landfill near top of active area. (Point 64, Appendix A)

Photo 30

Unseeded/bare area above full rock check dam at southeastern edge of active ash area on south side of landfill. (Point 65, Appendix A)

Photo 31

Southeastern corner of active ash area. (Point 66, Appendix A)

Photo 32

Western edge of active cell.

Photo 33

Erosion rills and/or small animal burrowing at eastern toe of landfill. (Point 55, Appendix A)

Photo 34

Rock check dam at capacity on northeast corner of active landfill. (Point 73, Appendix A)

Photo 35

Erosion feature at south edge of check dam on northeast corner of active landfill (Point 74, Appendix A)

Photo 36
Unseeded area on north side of active landfill. Sediment apparently from regrading/revegetation of slope above. (Point 79, Appendix A)

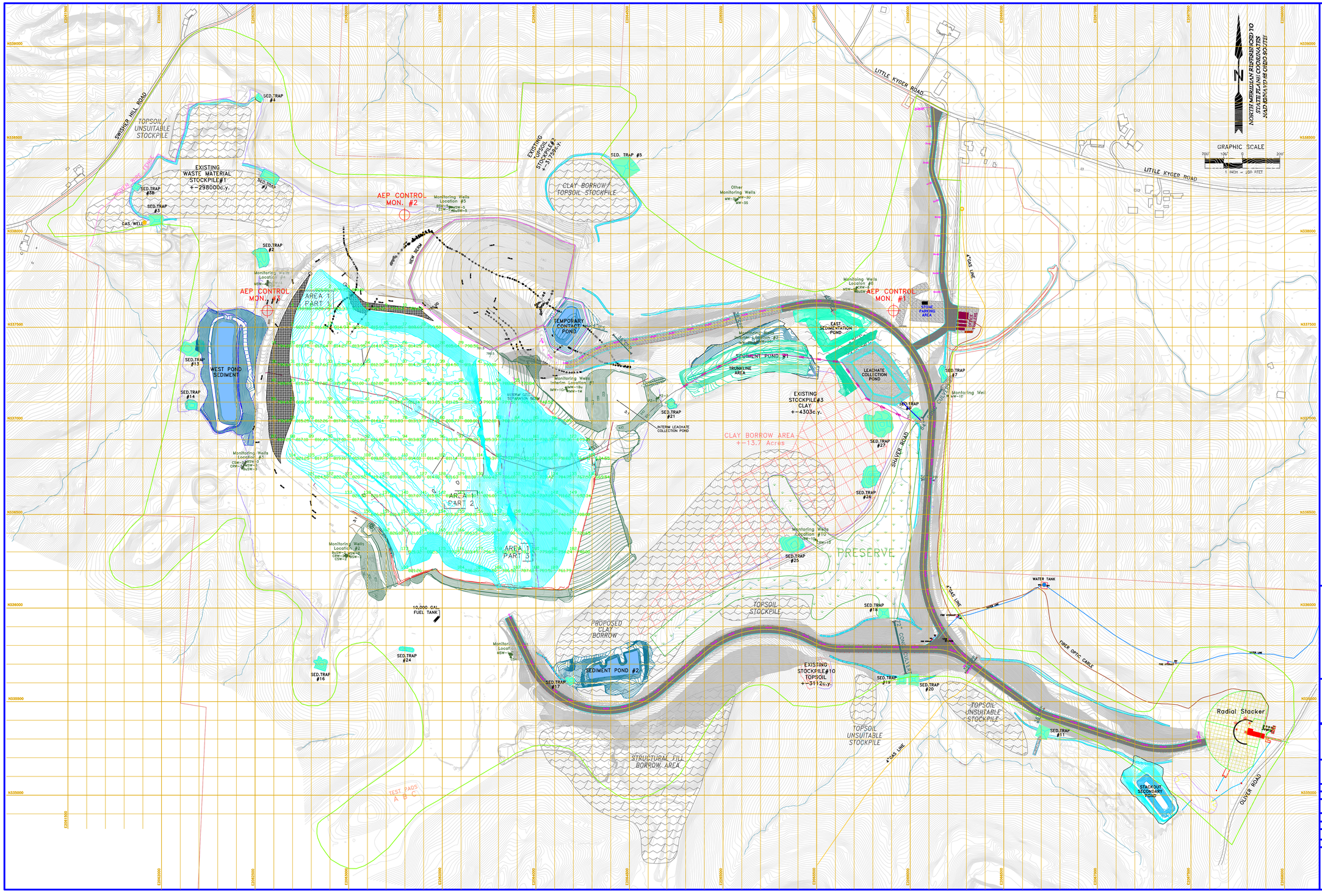
Photo 37
Full rock check dam on north side of active landfill. (Point 87, Appendix A)

Photo 38
Outlet of underdrain on west end of landfill. (Point 88, Appendix A)

Photo 39
Pond at west end of active landfill.

Photo 40
Sediment trap of pond at west end of landfill.

APPENDIX C
REFERENCE DRAWINGS



LEGEND

- Denotes O.V.E.C. Boundary Line
- Denotes Permit Limits
- Denotes Super Silt Fence
- Denotes Diversion Ditch
- Denotes Gas Line
- Denotes Water Line
- Denotes Fiberoptic Line
- Denotes G.W.I. w/ 4"HDPE SDR7
- Denotes G.W.I. w/ No Pipe
- Denotes Toe Drain w/ 4" Schedule7
- Denotes Collection Trunk Piping 12"HDPE SDR7
- Denotes Culverts
- Denotes Creeks/Drains
- Denotes Woven Wire Fence
- Denotes Guardrail 2008
- Denotes Guardrail 2009
- Denotes Waste Limits
- Denotes Sediment Traps
- Denotes Sediment Pond
- Denotes Preserve Area
- Denotes Actual Clay Borrow Area
- Denotes Rip Rap
- Denotes Pavement
- Denotes Gravel
- Denotes Completed Earth Work
- Denotes 2011 Work
- Denotes Temporaty Cover
- Denotes Waste
- Denotes Protective Cover
- Dumpster Areas

NOTE: One area has final or transitional cover.

NOTE: Projected fill for 2013 will be above 2012 fill, and in phase one areas two and three.

NOTE: +- 3936' @ +- 4' depth of

NOTE: +- 9486' of installed guardrail

NOTE: Gas Line is at +- 2.5' depth

OHIO VALLEY ELECTRIC COMPANY

KYGER CREEK LANDFILL

CHESHIRE OHIO

KYGER CREEK LANDFILL
2018 ASBUILT GRID MAP

NAD 83/NAVD 88 OHIO SOUTH
CONTOUR INTERVAL = 1' FOOT

Drawing Name: KYGER CREEK LANDFILL ASBUILT MAP
Drawing Number: KYG - 270834 -2 -R8
SCALE: 1" = 200'
Revision Date: 31 DECEMBER 2018
Drawn By: R. A. Shouldis and Paul R. Hutchins

OVEC/IKEC

DWG. NO. 15-30501-13-D

GENERAL PHASING CHART		
DRAWING NO.	ACTIVE RESIDUAL WASTE FILLING	FILLED TO PHASING GRADE
37	PHASE 1	-
37	PHASE 2	PHASE 1
38	PHASE 3	PHASES 1 AND 2
38	PHASE 4	PHASES 1, 2 AND 3
39	PHASE 5	PHASES 1, 2, 3 AND 4
39	PHASE 6 - FINAL CLOSURE	PHASES 1, 2, 3, 4 AND 5

NOTES:

1) EXCAVATION AHEAD OF THE AREA THAT WILL BE CONSTRUCTED IS NECESSARY FOR THE PROPER OPERATION OF THE FACILITY.

2) THE SIZE OF THE ACTIVE FACE AND TIMING OF FINAL GRADE PLACEMENT LISTED IS BASED ON WHAT IS FEASIBLE PER THE OPERATIONS OF THE FACILITY. FINAL COVER AND INTERMEDIATE COVER WILL BE PLACED AS NEEDED WHEN FINAL GRADES ARE REACHED. SEE PHASING ON DRAWINGS 37 THROUGH 39 FOR MORE INFORMATION.

SCALE IN FEET
0 50 100 200

PHASE 1
PHASE 2
PHASE 3
PHASE 4
PHASE 5

E 2062500
E 2063000
E 2063500
E 2064000
E 2064500
E 2065000
E 2065500
N 337000
N 336500
N 336000

PREVAILING WIND INFORMATION:

WINDS WINDS WINDS WINDS

PREDOMINANT WINDS OUT OF THE SOUTHWEST

NOTES:

1) AERIAL TOPOGRAPHY SHOWN WAS OBTAINED FROM HENDERSON AERIAL SURVEYS INC. (DATE OF PHOTOGRAPHY: 3-17-05). ADDITIONAL TOPOGRAPHY TO THE NORTH, SOUTH AND EAST WAS TAKEN FROM THE ADDISON, OHIO USGS QUADRANGLE DATED 1981.

2) SEE DRAWINGS 37 THROUGH 39 FOR SPECIFIC PHASING INFORMATION.

3) ABOVE-GRADE RESIDUAL WASTE PLACEMENT TO ACHIEVE CONTOURS SHOWN ON DRAWING 19. FINAL GRADE TO ACHIEVE CONTOURS SHOWN ON DRAWING 20.

4) PHASES MAY BE DIVIDED INTO SMALLER SUBPHASES BASED ON ANTICIPATED FILLING NEEDS, CONSTRUCTION CONDITIONS, ETC.

LEGEND - EXISTING

- PROPERTY LINE
- 730 10-FOOT CONTOUR INTERVAL
- 745.6 SPOT ELEVATION
- TREE LINE
- BUILDING
- (MT) MORGANTOWN SANDSTONE SPRING
- (CN) CONNELLSVILLE SANDSTONE SPRING

LEGEND - PROPOSED

- WASTE LIMIT
- FILL PROGRESSION
- WINDS PREVAILING WIND DIRECTION
- PHASE DIVISION LINE
- FACILITY BOUNDARY/ AREA OF DISTURBANCE

REFERENCE DRAWINGS

DATE	NO.	DESCRIPTION	APPD.
11/20/08	D	NOD 3 RESPONSE	
5/08/08	C	NOD 2 RESPONSE	JHH
4/24/07	B	NOD 1 RESPONSE	JHH
3/28/07	A	ISSUED FOR PERMIT	JHH

REVISIONS

s:/mt/15/geo_hydro_site/vendor/hull/15-30501-09

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STATE OF OHIO
JOHN HARRISON HULL
E-46128
REGISTERED PROFESSIONAL ENGINEER

SIGNATURE
11/19/08
DATE

OHIO VALLEY ELECTRIC CORP.

KYGER CREEK PLANT

CHESHIRE OHIO

KYGER CREEK PLANT LANDFILL

GENERAL PHASING PLAN

PROJECT NO.:	AP0008
FILE NO.:	AP0008.100.0016
LAYOUT BY:	TRB
DRAWN BY:	DAC/SB
CHECKED BY:	AWG/JHH
SCALE:	1"=100'
SUBMITTAL DATE:	MAY 2008

OEPA DRAWING NO. 3G

DRAWING 13 OF 56

DWG. NO. 15-30501-13-D

SCALE: 1"=100' CIVIL ENGINEERING DIVISION

DR:
CH:
ENGR:
PROJ MGR
ENGR.
DATE: 11/7/08

APPROVED BY

AEP AMERICAN ELECTRIC POWER

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COLUMBUS, OH 43215