CLOSURE & POST-CLOSURE PLANS

CHESWICK ASH DISPOSAL FACILITY
INDIANA TOWNSHIP, ALLEGHENY COUNTY, PENNSYLVANIA

Prepared for:

NRG POWER MIDWEST LP
384 LEFEVER HILL ROAD
CHESWICK, PA 15024

Prepared by:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 BALDWIN ROAD
PITTSBURGH, PA 15205

CEC Project 154-532.0003

October 2016

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APPENDICES

1.0 PURPOSE

On behalf of NRG Power Midwest LP (NRG), Civil & Environmental Consultants, Inc. (CEC) has prepared this Closure & Post-Closure Plan for the Cheswick Ash Disposal Facility (Site) in accordance with the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule in 40 CFR 257.102 (§257.102), §257.103, and §257.104 dated April 17, 2015. This Closure & Post-Closure Plan has been prepared to describe the steps necessary to close the landfill at any point during the active life consistent with recognized and generally accepted good engineering practices.

For existing CCR landfills, the plans must be prepared no later than October 17, 2016 and placed in the facility's operating record. The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the design meets the requirements of this section. The professional engineer certification is provided in Appendix A.

2.0 BACKGROUND

The Site is a Class II residual waste landfill located at 384 Lefever Hill Road, Cheswick, Pennsylvania as shown on the 2015 Annual Topographic Survey Plan provided in Appendix B. The Site operates under Pennsylvania Department of Environmental Protection (PADEP) Solid Waste Permit No. 300720 issued March 24, 1982. The Site accepts CCR and other residual wastes from the Cheswick Generating Station.

The Site has been constructed to meet the requirements of PADEP Solid Waste Permit No. 300720. The active disposal area is managed to either promote infiltration into the CCR or direct run-off towards the underdrain system. Run-off from active areas does not enter the perimeter run-off control system. CCR is placed and compacted above a 3-feet thick bottom ash drainage layer which functions as a leachate collection zone. The permitted final grading plan is based on 2H:1V slopes with 15-feet wide benches constructed every 15 feet vertically. The Proposed Final Cover Grading Plan is provided in Appendix B. Closure of the Site is completed in stages as described in Section 3.0

Only the southern disposal area shown on Permit Drawing No. 12079-B10 provided in Appendix B has been constructed for the disposal of CCRs generated at the Cheswick Generating Station. The northern disposal area that has not been utilized is not addressed in this Plan.

3.0 COMPLIANCE WITH 40 CFR 257.102(b) – CRITERIA FOR CONDUCTING THE CLOSURE OF CCR UNITS

The Site will be closed in accordance with §257.102 and the PADEP approved Form 18R: Closure/Post-Closure Land Use Plan dated November 1996. Permit Drawings are provided in Appendix B. The PADEP approved Form 16R: Liner System provides the design of the final cover system and meets the requirements under §257.102. The following sections address the information required by §257.102(b).

3.1 NARRATIVE OF CLOSURE – §257.102(b)(1)(i)

The Site will be closed by leaving CCR in-place and placing a minimum 2 feet of final cover soil above in-place CCR. Final cover grades are 2H:1V on the side slopes and 3 percent on the top of the landfill. Benches designed into the final cover grades provide stormwater management to reduce the potential for erosion of the final cover system. Final cover soils will be vegetated to minimize the potential for erosion and infiltration into the CCR. The final cover system is further explained in Section 3.3.

CCR placement and final cover soil placement are completed in stages. As the height of the landfill increases in elevation, an earthen berm is constructed so that the exterior slopes of the landfill are higher than the active CCR disposal area and run-off from the active disposal area is directed away from the exterior slopes. Final cover is placed as CCR grades reach final elevations. The final cover soil is then seeded and mulched.

3.2 CCR REMOVAL AND DECONTAMINATION – §257.102(b)(1)(ii)

This Site will be closed by leaving CCR in-place so this section is not applicable.

3.3 FINAL COVER REQUIREMENTS – §257.102(b)(1)(iii) and §257.102(d)

§257.102 (b)(1)(iii) requires a description of the final cover system if closure will be accomplished by leaving CCR in place, and refers to §257.102(d) for final cover system requirements. The final cover system specified in PADEP Solid Waste Permit No. 300720 issued March 24, 1982 is 2-feet thick soil layer that must meet specific gradation and soil texture requirements. The final cover system meets the requirements of §257.102(d)(3)(i) as noted below.

- §257.102(d)(3)(i)(A), the permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1 x 10^{-5} cm/sec whichever is less. The Site does not have a bottom liner system but has a 3-feet thick bottom ash layer which functions as a leachate collection zone. Laboratory test results of the final cover soil borrow source indicate that the permeability of the soil is approximately 1.4 x 10^{-6} cm/sec, which is less than the required maximum permeability of 1 x 10^{-5} cm/sec. The 2-feet thick final cover soil layer will minimize post-closure infiltration into the underlying residual wastes, and releases of CCRs, leachate and contaminated run-off to ground or surface waters.
- §257.102(d)(3)(i)(B), infiltration of liquids through the closed landfill will be minimized by the installation of an 18-inch thick soil infiltration layer.
- §257.102(d)(3)(i)(C), erosion of the final cover system will be minimized by the installation of a 6-inch thick soil erosion layer that is capable of sustaining native plant growth.
- §257.102(d)(3)(i)(D), localized settling and subsidence is not anticipated as residual wastes are placed and compacted in accordance with the approved Permit. If localized settling or subsidence occurs, the slopes of the final grades will still provide positive drainage during final conditions.

The final cover soil will be compacted sufficiently to allow loaded vehicles to successfully maneuver without excessive rutting; however, the cover soils are not compacted excessively to preclude the establishment of vegetation.

Additionally, the final cover system must meet the performance requirements of §257.102(d)(1), which are addressed below:

- §257.102(d)(1)(i), the final cover system will minimize the potential for infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere.
- §257.102(d)(1)(ii), the final cover system must preclude the probability of future impoundment of water, sediment, or slurry. The permitted final grades have maximum slopes of 2H:1V and minimum slopes of 3 percent which promotes surface water runoff. The installation of the final cover system will reduce the probability of future impoundment of water on the disposal area.
- §257.102(d)(1)(iii), the final cover system must include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period. The cap system consists of compacted soil components and is stable on the 2H:1V slopes. The stability of the final cover system was evaluated in the Solid Waste Permit Application, dated November 1996.
- §257.102(d)(1)(iv), the final cover system must minimize the need for further maintenance of the CCR unit. The design of the final cover minimizes the need for further maintenance of the CCR unit. The post-closure land use is grassland, open pasture which requires minimal maintenance activities.
- §257.102(d)(1)(v), the final cover system must be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices. The final cover system is installed as waste is placed. The final cover system installation will be completed when the site is filled to permitted grades as discussed in Section 3.6.

3.4 MAXIMUM CCR INVENTORY – §257.102(b)(1)(iv)

The 2015 Annual Landfill Operations Report indicates that the total permitted capacity of the landfill is approximately 7,200,000 tons.

3.5 MAXIMUM AREA REQUIRING FINAL COVER – §257.102(b)(1)(v)

As indicated on the Permit Drawing provided in Appendix C, the maximum area of the southern disposal area is approximately 38.6 acres. As of January 2016, the remaining portion of the disposal area to be constructed is approximately 29.8 acres.

3.6 CLOSURE SCHEDULE – §257.102(b)(1)(vi)

The 2015 Annual Landfill Operations Report dated June 2016, calculates the estimated remaining life of the facility as approximately 101 months from the end of 2015. Based on the current CCR disposal rate, the landfill will provide disposal capacity until 2024. The CCR disposal rate is variable and may impact the beginning of closure activities.

The initiation of closure activities will begin no later than 30 days after the final receipt of waste in accordance with §257.102(e)(1). The landfill final cover system is installed in stages as described in Section 3.1. The closure process is initiated by the state closure permit process and posting of a notification of intent to close the CCR facility. The notification must include a certification by a qualified professional engineer that the design of the final closure system meets the requirements of §257.102(d)(3)(iii) [§257.102(g)]. In accordance with §257.102(f)(1), NRG must complete closure within six months of commencing closure activities. If the proposed closure construction schedule cannot be met, NRG will submit a demonstration in accordance with paragraph §257.102(f)(2)(i) providing the basis for the additional time to complete closure. CCR landfills may extend the timeframe to complete closure of the CCR unit two times in one-year increments.

Once closure is complete, a professional engineer will verify and certify that closure has been completed in accordance with the §257.102(f)(3). Within 30 days of completing closure, a notification of closure will be prepared including the professional engineer's certification of completion [§257.102(h)]. A notation must also be recorded on the deed to the property, or some other instrument that is normally examined during title search [§257.102(i)], to notify potential

buyers that the land has been used as a CCR unit and its use is restricted under the post-closure care requirements as provided by §257.104(d)(1)(iii).

4.0 COMPLIANCE WITH §257.103 – ALTERNATE CLOSURE REQUIREMENTS

NRG is not currently proposing alternative closure requirements for the landfill. If an alternate closure is proposed in the future, NRG will document that the conditions required in this section are met.

5.0 COMPLIANCE WITH §257.104 – POST-CLOSURE CARE REQUIREMENTS

The post-closure care for the Site will be performed in accordance with §257.104 and the PADEP approved Form 18R: Closure/Post-Closure Land Use Plan, dated November 1996. The following sections address the information required by §257.104.

5.1 POST CLOSURE CARE MAINTENANCE – §257.104(b)(1)

The final cover system will be repaired during the post-closure care period to address settlement, subsidence, erosion and other events and prevent run-on and run-off from eroding or otherwise damaging the final cover during the post-closure care period.

5.2 POST CLOSURE CARE MAINTENANCE FOR LEACHATE COLLECTION SYSTEM – §257.104(b)(2)

A bottom ash blanket drain and underdrain system function as the leachate collection zone which conveys leachate to the Monarch Mine Dewatering Plant for treatment and discharge as authorized by PADEP under NPDES Permit No. PA0001627. The integrity and effectiveness of the leachate collection and removal system and operations of the leachate collection and removal system will be maintained in accordance with §257.70.

5.3 GROUNDWATER MONITORING – §257.104(b)(3)

The groundwater monitoring system will be maintained and monitored in accordance with §257.90 through §257.98.

5.4 POST-CLOSURE CARE PERIOD – §257.104(c)

Post-closure care will be conducted for 30 years. If at the end of the post-closure care period the CCR unit is operating under assessment monitoring in accordance with §257.95, NRG will continue to conduct post-closure care until returning to detection monitoring in accordance with §257.95.

5.5 WRITTEN POST-CLOSURE PLAN – §257.104(d)

As required by §257.104(b), the final cover system and groundwater monitoring system will be maintained during the post-closure care period. During the post-closure care period, the following measures will be implemented.

- Water Quality Monitoring – Groundwater and surface water monitoring will be performed in accordance with the groundwater monitoring plan.
- Leachate Management – The leachate collection and treatment system will be periodically inspected and properly maintained during the post-closure period to ensure efficient operation.
- Erosion and Sedimentation Control – Temporary erosion and sedimentation control devices will be placed and maintained as necessary until all areas of the site have been vegetated and stabilized. The surface water management system will be inspected periodically. Sediment accumulation, erosion or other conditions that could affect the operational efficiency of the storm water management system will be remediated.
- Maintenance of Final Cover – Periodic inspection of the final cover will be performed and impacted areas will be remediated.

- Access Control – Access will be primarily controlled with the use of the existing security fence and swing gate at the site entrance. The gate shall remain locked at all times when the site is unattended. Additional existing measures will also be in-place.
- Other Maintenance Activities – The site will be inspected on a monthly basis for the first year following closure. Every year thereafter, the facility will be inspected quarterly or after major storm events. Any corrective measures with respect to roads, ponds, channels or final cover will be performed as required.

The initial Closure Plan and Post-Closure Plan can be amended [§257.102(b)(3) and §257.104(d)(3), respectively] at any time, and must be amended whenever a change in operations substantially affects the written plan in effect. The Closure Plan must be amended at least 60 days prior to a planned change in operation, or no later than 60 days after an unanticipated event. In addition, if closure activities have commenced for the Cheswick Station Disposal Site, then the initial written Closure Plan must be revised within 30 days of the event.

5.6 FACILITY CONTACT – §257.104(d)(1)(ii)

The NRG contact for the Site during the post-closure period is

Environmental Specialist
Cheswick Generating Station
P.O. Box 65
Cheswick, Pennsylvania 15024
Phone: 724-275-1400

The contact information that is being provided is for an office and a position; therefore, an e-mail address has not been provided.

6.0 CONCLUSION

The Closure/Post Closure Plan demonstrates compliance with §257.102, §257.103, and §257.104 of the CCR Rule. The certification statement by a qualified professional engineer is provided in Appendix A. Supporting drawings are provided in Appendix B

This demonstration will be placed in the operating record by October 17, 2016. The Closure and Post-Closure Plans may be amended at any time.

7.0 REFERENCES

1. Solid Waste Permit Application dated November 1996. Lefever Ash Disposal Site. Permit I.D. No. 300720.

APPENDIX A

ENGINEER'S CERTIFICATION STATEMENT

PROFESSIONAL ENGINEER CERTIFICATION

This Closure Plan and Post-Closure Plan fulfills the CCR Rule Closure and Post-Closure requirements for a Written Closure Plan (§257.102(b)), Final Cover System (§257.102(d)(3)), and Written Post-Closure Plan (§257.104(d)). This Closure Plan and Post-Closure Plan will be placed in the operating record by October 17, 2016.

I, Rick J. Buffalini, P.E., a registered professional engineer in the state of Pennsylvania certify that the Closure Plan and Post-Closure Plan for the Cheswick Ash Disposal Facility fulfills the requirements of §257.102(b) and §257.104(d), respectively, and that the final cover system design fulfills the requirements for §257.102(d)(3). This certification is based on my review of the Cheswick Ash Disposal Facility Closure Plan and Post-Closure Plan.

Rick J. Buffalini, P.E.

Printed Name of Professional Engineer

Signature

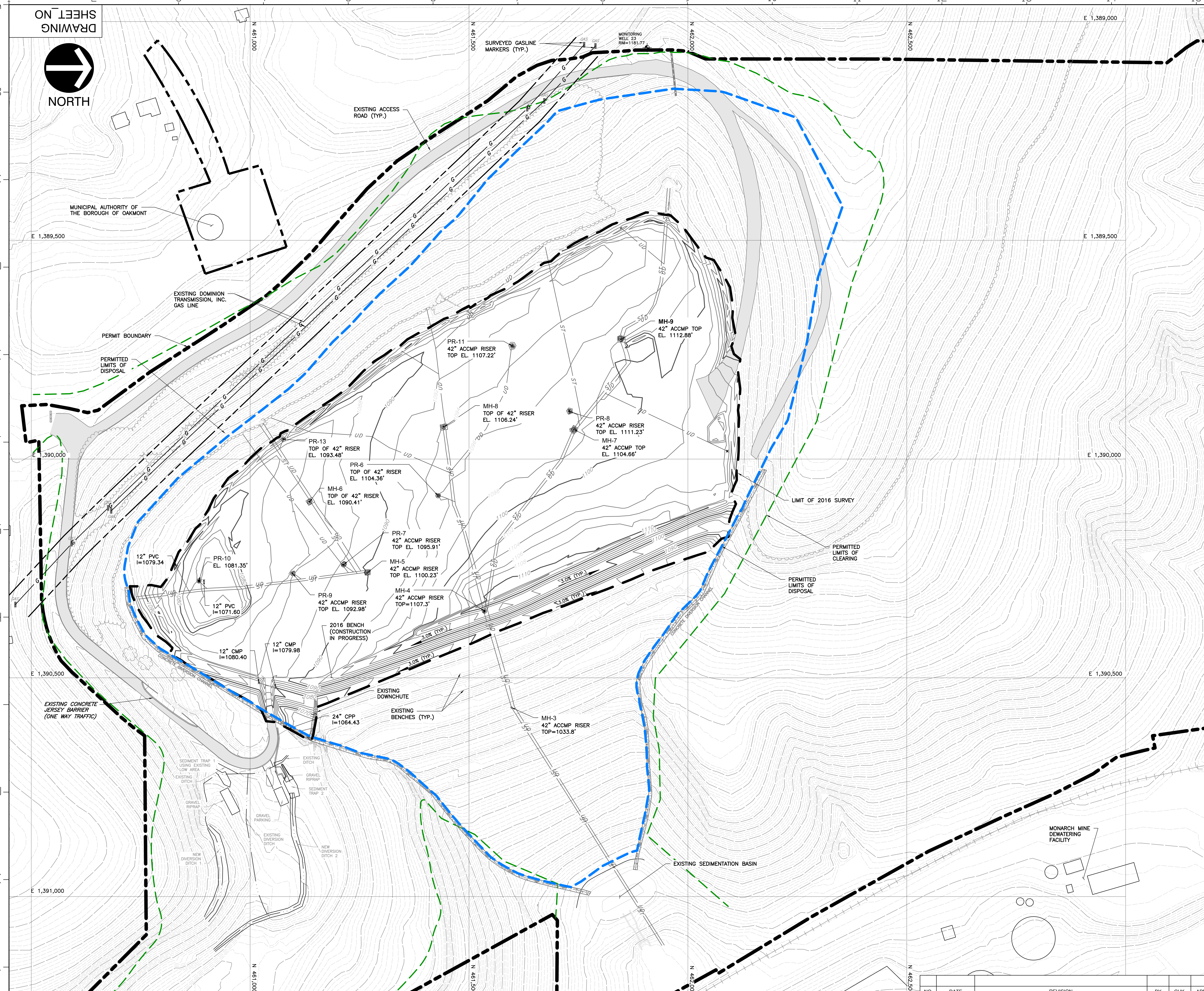
041196-E	Pennsylvania	10-14-16
Registration No.	Registration State	Date

Stamp/Seal:

APPENDIX B

DRAWINGS

2015 Annual Topographic Survey Plan
Conservation Plan for Disposal Area
Proposed Final Cover Grading Plan


NORTH
SURVEYED GASLINE MARKERS (TYP.)
MONITORING WELL 23 RIM=1181.77
EXISTING ACCESS ROAD (TYP.)
MUNICIPAL AUTHORITY OF THE BOROUGH OF OAKMONT
EXISTING DOMINION TRANSMISSION, INC. GAS LINE
PERMIT BOUNDARY
PERMITTED LIMITS OF DISPOSAL
E 1,389,000
E 1,389,500
E 1,390,000
E 1,390,500
E 1,391,000
N 461,000
N 461,500
N 462,000
N 462,500
MH-9 42" ACCMP TOP EL. 1112.88'
PR-11 42" ACCMP RISER TOP EL. 1107.22'
MH-8 TOP OF 42" RISER EL. 1106.24'
PR-8 42" ACCMP RISER TOP EL. 1111.23'
MH-7 42" ACCMP TOP EL. 1104.66'
PR-13 TOP OF 42" RISER EL. 1093.48'
PR-6 TOP OF 42" RISER EL. 1104.36'
MH-6 TOP OF 42" RISER EL. 1090.41'
PR-7 42" ACCMP RISER TOP EL. 1095.91'
MH-5 42" ACCMP RISER TOP EL. 1100.23'
PR-10 EL. 1081.35'
12" PVC I=1079.34
12" PVC I=1071.60
PR-9 42" ACCMP RISER TOP EL. 1092.98'
MH-4 42" ACCMP RISER TOP=1107.3'
2016 BENCH (CONSTRUCTION IN PROGRESS)
12" CMP I=1080.40
12" CMP I=1079.98
24" CPP I=1064.43
EXISTING DOWNCHUTE
EXISTING BENCHES (TYP.)
MH-3 42" ACCMP RISER TOP=1033.8'
LIMIT OF 2016 SURVEY
PERMITTED LIMITS OF CLEARING
PERMITTED LIMITS OF DISPOSAL
3.0% (TYP.)
EXISTING CONCRETE JERSEY BARRIER (ONE WAY TRAFFIC)
CONCRETE DIVERSION CHANNEL
EXISTING SEDIMENTATION BASIN
MONARCH MINE DEWATERING FACILITY

LEGEND

	PERMIT BOUNDARY
1080	EXISTING CONTOUR
1090	SURVEYED CONTOUR
	LIMIT OF 2016 SURVEY
	PERMITTED LIMITS OF WASTE DISPOSAL
ST ST ST	EXISTING STORM DRAIN PIPING
UD	EXISTING UNDERDRAIN PIPING
	EXISTING CONCRETE CHANNEL/DOWNCHUTE
MH-7	MANHOLE
	EXISTING ACCESS ROAD
G	EXISTING GAS LINE
	GAS LINE RIGHT-OF-WAY
GAS	SURVEYED GASLINE MARKER
	TREE LINE
ST ST ST	EXISTING CULVERT
	EXISTING JERSEY BARRIER
	EXISTING RAILROAD TRACKS
	PERMITTED LIMIT OF CLEARING AND GRUBBING

REFERENCE

1. FIELD SURVEY BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 1-5-2016. SURVEY INCLUDES TOPOGRAPHY INSIDE THE 2016 LIMIT OF SURVEY AND TOP OF EXISTING MANHOLES. PLAN NORTH IS BASED UPON PENNSYLVANIA STATE PLANE NAD83 AND VERTICAL DATUM IS BASED UPON NAVD88.
2. THE EXISTING TOPOGRAPHY, THE EXISTING UNDERDRAIN AND STORMDRAIN PIPING AND CORRESPONDING MANHOLES, SHOWN WERE REFERENCED FROM THE 2014 ALOR TOPOGRAPHIC MAP FOR JANUARY 2014 THROUGH DECEMBER 2015 PREPARED BY MORRIS KNOWLES & ASSOCIATES, INC. THE EXISTING CONTOURS SHOWN ON THE ASH DISPOSAL FACILITY ARE DATED JANUARY 2015.
3. THE EXISTING PERMITTED LIMIT OF DISPOSAL WAS REFERENCED FROM DUQUESNE LIGHT COMPANY PERMIT DRAWING 12079-B10, DATED 3/1/79. LOCATIONS SHOWN ARE APPROXIMATE.
4. THE APPROXIMATE LOCATION OF THE TREELINE IS BASED ON INFORMATION PROVIDED BY CHARAH, INC IN MAY 2015.
5. DOMINION TRANSMISSION, INC. (DTI) GAS LINES LN-30 AND TL-469 HAVE AN ASSUMED RIGHT-OF-WAY WIDTH ON THE OUTSIDE OF EACH GAS LINE OF 25 FEET.
6. RAILROAD ALIGNMENT WAS OBTAINED FROM AERIAL IMAGERY.

SCALE IN FEET
0 100 200

CHESWICK GENERATION STATION
UNIT NO.

CHESWICK ASH DISPOSAL SITE
2015 ANNUAL TOPOGRAPHIC SURVEY

DRAWN 1/20/2016	JAS	DRAWING NUMBER	
CHECKED DMD	CHK	DRAWING NO. 1	
APPROVED RJB	APP	SHEET: SHEET	
SIZE: 24X36		REV: REVNO	
DISCIPLINE: CIVIL	SCALE: NTS	FILE: FILENAME	

NO.	DATE	REVISION	BY	CHK.	APP.

APPROXIMATE TOTAL CAPACITY	
PHASE I (SOUTH VALLEY)	6,000,000 ¥
PHASE II (NORTH VALLEY)	3,346,000 ¥

REV-5 NOTE: PERMIT DRAWING ONLY, SEE DRAWINGS AA12079-B12 THRU B26 FOR PHASE I, STEP 1 AS BUILT CHANGES

SOIL DESCRIPTION

SYMBOL	SOIL	BRIEF DESCRIPTION
34-D-2	GILPIN-UPSHUR COMPLEX, 15 TO 25% SLOPES	MODERATELY DEEP AND DEEP, WELL DRAINED SOILS FORMED FROM RELATIVELY ACID SHALE AND SOME SANDSTONE INTERBEDDED WITH NONACID RED CLAY SHALE.
34-F-1	GILPIN-UPSHUR COMPLEX, 25 TO 80% SLOPES	(SAME AS 34-D-2)
34-E-2	COMPLEX OF 34-D-2 AND 34-F-1	(SAME AS 34-D-2)
65-C-2	GURNSEY-VANDERGRIFT SILT LOAMS 8 TO 15% SLOPES	DEEP, MODERATELY WELL DRAINED SOILS FORMED FROM INTERBEDDED SHALE, LIMESTONE & RED CLAY SHALE BEDROCK. THEY OCCUR ON UPLAND SLOPES.
65-D-2	GURNSEY-VANDERGRIFT SILT LOAMS, 15 TO 25% SLOPES	(SAME AS 65-C-2)
26-B-2	GURNSEY SILT LOAM, FINE LOAMY VARIANT, 2 TO 8% SLOPES	DEEP, MODERATELY WELL DRAINED SOILS FORMED FROM INTERBEDDED SHALE AND LIMESTONE BEDROCK. THEY OCCUR ON UPLAND SLOPES. THEY HAVE SLOW PERMEABILITY AND HAVE A WATER TABLE WITHIN 2 TO 3 FT. OF THE SURFACE IN THE WINTER.
26-C-2	GURNSEY SILT LOAM, FINE LOAMY VARIANT, 8 TO 15% SLOPES	(SAME AS 26-B-2)

GENERAL NOTES

1. CLEARING-ALL TREES, ROOTS, AND ORGANIC MATERIAL INCLUDING TOPSOIL SHALL BE REMOVED FROM THE AREA WITHIN THE CLEARING LINES.
2. CONSTRUCTION OF THE ROADWAYS INCLUDING ALL CLEARING, GRUBBING, INSTALLATION OF DRAINAGE STRUCTURES AND PLACEMENT OF FILLS SHALL BE IN ACCORDANCE WITH FORM 408, LATEST REVISION OF THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS UNLESS OTHERWISE NOTED, OR AS DIRECTED BY THE ENGINEER.
3. ALL STRIPPED ORGANIC TOPSOIL AND SUBSOIL (SILTS AND SILTY CLAYS ONLY) SHALL BE STORED ON THE SITE AT THE DESIGNATED STOCKPILE AREAS. MATERIAL UNSUITABLE FOR USE AS ROADWAY FILL, EMBANKMENTS FOR THE SEDIMENTATION BASIN OR TOPSOIL COVER SHALL BE STOCKPILED IN AREAS DIRECTED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
4. SEEDING-ALL DISTURBED AREAS, EARTH DIVERSIONS, TOPSOIL STOCKPILES, AND THE COVERED SLOPE AREAS SHALL BE SEEDED IN ACCORDANCE WITH THE 1976 PENNSYLVANIA DEPT. OF TRANSPORTATION FORM 408, SECTION 804, AS AMENDED TO DATE.
5. SEEDING MIXTURE PER ACRE SHALL BE AS FOLLOWS:

KENTUCKY-31 TALL FESCUE	35 LBS.	FERTILIZER (12-12-12)	420 LBS.
PERENNIAL RYEGRASS	15 LBS.	LIME (AGRICULTURAL GRADE)	6000 LBS.
CROWN VETCH	28 LBS.	GRASS HAY AND CEREAL	4000-5000 LBS.
(MIN. 35% HARD SEED)		GRAIN STRAW MULCH	
		WATER	3500 LBS.

AN INOCULANT FOR THE CROWN VETCH IS TO BE USED. IF HYDRO-SEEDING, USE FOUR (4) TIMES THE RATE OF INOCULANT RECOMMENDED ON THE PACKAGE BY THE MANUFACTURE. FOR THE STOCKPILE AREAS AND EARTH DIVERSIONS, USE ABOVE MIX WITH THE FOLLOWING EXCEPTIONS: ELIMINATE THE CROWN VETCH; AND THE RYEGRASS MAY BE SUBSTITUTED WITH REDTOP AT 5 LBS./ACRE.
6. ALL BENCHES SHALL BE SLOPED A MINIMUM OF 1% TOWARDS THE CONCRETE DIVERSION DITCH. THE MAXIMUM LENGTH OF THE BENCH SLOPE SHALL BE 600 FEET. RUNOFF ON THE BENCHES WILL BE COLLECTED IN THE CONCRETE DIVERSION DITCH, VERTICAL MANHOLE, OR BENCH CATCH BASINS. RUNOFF ON THE FINISHED PLATEAU AT ELEV. 1200 WILL BE DIRECTED TO THE VERTICAL MANHOLES NOS. 6, 8, 10, AND 11 FOR PHASE I, AND DIRECTED TO THE DIVERSION DITCH FOR PHASE II.

LEGEND

M.H. ●	MANHOLE
P.R. ▲	PERFORATED RISER
S.D.	STORM DRAIN
U.D.	UNDERDRAIN
HW	HEADWALL
EW	ENDWALL

Professional Engineer No. 5169E
Commonwealth of Pennsylvania

DUQUESNE LIGHT COMPANY
ENGINEERING & CONSTRUCTION DIVISION — PITTSBURGH, PA.

CHESWICK POWER STATION
LAND ACQUISITION FOR FLY ASH DISPOSAL
INDIANA TOWNSHIP — ALLEGHENY COUNTY, PA.

CONSERVATION PLAN
FOR DISPOSAL AREA

SCALE 1"=100'	DATE FEB. 14, 1979	ARCH. APP.	
	DRAWN G. Wozniak	ELECT. APP.	
	CHECKED	MECH. APP.	
	INSPECTED JHL	STRUCT. APP. 3/1/79	

3-1-79

APP. COMPLETE WHEN INITIALED HERE
O.F.E. No. 12079
E.O. No. SWO 758
AA No. 12079-B10

FORM D-16-1564

RETURN TO VAULT

DRAWING SHEET_NO

NORTH

SURVEYED GASLINE MARKERS (TYP.)

MONITORING WELL 23 SGM=1181.77

EXISTING CULVERT

PROPOSED HEADWALL

CHANNEL (TYP)

MUNICIPAL AUTHORITY OF THE BOROUGH OF OAKMONT

EXISTING DOMINION TRANSMISSION, INC. GAS LINE (SEE REFERENCE 3)

PERMIT BOUNDARY

PERMITTED LIMITS OF DISPOSAL

PR-Y

PR-X

MH-10

MH-11

MH-9

PR-11

PR-8

MH-8

MH-7

PR-13

PR-6

MH-6

PR-7

PR-9

PR-10

MH-5

MH-4

MH-3

3% MIN.

DOWNCHUTE (TYP)

STORMWATER BENCH (TYP)

PERMITTED LIMITS OF DISPOSAL (SEE REFERENCE 2)

PERMITTED LIMITS OF CLEARING

CONCRETE EMERGENCY SPILLWAY

EXISTING CONCRETE JERSEY BARRIER (ONE WAY TRAFFIC)

CONCRETE DIVERSION CHANNEL

SEDIMENT TRAP 1 USING EXISTING LOW AREA

EXISTING DITCH

GRAVEL RIPRAP

SEDIMENT TRAP 2

EXISTING DITCH

GRAVEL RIPRAP

GRAVEL PARKING

EXISTING DIVERSION DITCH

NEW DIVERSION DITCH 1

NEW DIVERSION DITCH 2

EXISTING SEDIMENTATION BASIN

E 1,389,500

E 1,390,000

N 461,000

N 461,500

N 462,000

N 462,500

LEGEND

- PERMIT BOUNDARY
- 1120 EXISTING CONTOUR
- 1120 PROPOSED CONTOUR (TOP OF CCR)
- PERMITTED LIMITS OF DISPOSAL
- EXISTING SURFACE WATER CHANNEL
- PROPOSED SURFACE WATER CHANNEL
- ST EXISTING STORM DRAIN PIPING
- UD EXISTING UNDERDRAIN PIPING
- ST PROPOSED STORM DRAIN PIPING
- UD PROPOSED UNDERDRAIN PIPING
- PROPOSED SURFACE WATER SUMP
- EXISTING CONCRETE CHANNEL/DOWNCHUTE
- PROPOSED CONCRETE CHANNEL/DOWNCHUTE
- PS COMPOSITE FILTER SOCK OR APPROVED EQUAL
- MH-7
- PROPOSED MANHOLE
- EXISTING TREELINE
- PERMITTED LIMIT OF CLEARING AND GRUBBING
- EXISTING ACCESS ROAD
- 1/6 DETAIL NUMBER / SHEET NUMBER WHERE DETAIL IS SHOWN
- G EXISTING GAS LINE
- GAS LINE RIGHT-OF-WAY
- GAS SURVEYED GASLINE MARKER
- TREE LINE
- ST EXISTING CULVERT
- EXISTING JERSEY BARRIER
- EXISTING RAILROAD TRACKS

REFERENCE:

1. THE EXISTING TOPOGRAPHY, THE EXISTING UNDERDRAIN AND STORMDRAIN PIPING AND CORRESPONDING MANHOLES, SHOWN WERE REFERENCED FROM THE 2014 ALOR TOPOGRAPHIC MAP FOR JANUARY 2014 THROUGH DECEMBER 2015 PREPARED BY MORRIS KNOWLES & ASSOCIATES, INC. THE CONTOURS SHOWN ON THE ASH DISPOSAL FACILITY ARE DATED JANUARY 2015.
2. THE EXISTING PERMITTED LIMIT OF DISPOSAL WAS REFERENCED FROM DUQUESNE LIGHT COMPANY PERMIT DRAWING 12079-B10, DATED 3/1/79. LOCATIONS SHOWN ARE APPROXIMATE.
3. DOMINION TRANSMISSION, INC. (DTI) GAS LINES LN-30 AND TL-469 HAVE AN ASSUMED RIGHT-OF-WAY WIDTH ON THE OUTSIDE OF EACH GAS LINE OF 25 FEET.

ONE CALL SERIAL NO.: X

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776

PENNSYLVANIA ACT 38 (1991) REQUIRES NO LESS THAN 3 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO: DIG, DRILL, BLAST, AUGER, BORE, GRADE, TRENCH, OR DEMOLISH WHEN IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF PENNSYLVANIA, CALL TOLL FREE 1-800-242-1776. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION. IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

SCALE IN FEET
0 100 200

nrg

CHESWICK GENERATION STATION
UNIT NO.

CHESWICK ASH DISPOSAL SITE PROPOSED FINAL COVER GRADING PLAN

DRAWN 9/2/2015		DRAWING NUMBER	
CHECKED DMD	CHK	DRAWING NO. 1	
APPROVED RJB	APP	SHEET: SHEET	
SIZE: 24X36		REV: REVNO	
DISCIPLINE: CIVIL	SCALE: NTS	FILE: 154532-SW02-001-PROPOSED FINAL GRADING PLAN	

NO.	DATE	REVISION	BY	CHK	APP.

P:\2015\154-532\-CAD\Dwg\SW02\154532-SW02-001-PROPOSED FINAL GRADING PLAN.dwg[FINAL GRADES] LS:9/26/2016 - mlapalucci) - LP: 9/26/2016 3:16 PM