

EROSION & SEDIMENT CONTROL PLAN FOR PHASE 2 CONSTRUCTION - DESCRIPTION

1. THE EROSION AND SEDIMENT CONTROL MEASURES PROVIDED DURING GRADING OPERATIONS SHALL GENERALLY CONSIST OF THE FOLLOWING:
- a. PLACING EROSION CONTROL LOGS PERPENDICULAR TO STORMWATER FLOWS WITHIN THE DITCH LIMITS.
 - b. UTILIZING PHASE 1 SEDIMENT BASINS TO CAPTURE SEDIMENT TO FULLEST EXTENT POSSIBLE.
 - c. CONSTRUCTING ROCK CHECK DAMS ALONG STORMWATER CHANNELS.
 - d. PLACING SILT FENCES ALONG THE SITE PAD AND TOE OF SLOPE LIMITS.
 - e. PLACING RIP RAP IN DITCH AREAS AS SHOWN IN PLANS.
2. ALL AREAS OF LAND DISTURBANCE ASSOCIATED WITH SITE PAD GRADING, ACCESS ROAD GRADING, AND BORROW AREAS SHALL BE RESTORED AND STABILIZED BY SEEDING AFTER COMPLETION OF THE WORK.
3. GRADING ACTIVITIES SHALL NOT BE PERFORMED IN STREAMS, TRIBUTARIES, OR WETLAND AREAS.

SCHEDULE

DUKE ENERGY SHALL BE RESPONSIBLE FOR COORDINATION AND SCHEDULING OF THE PHASE 2 CONSTRUCTION. THE WORK IS CURRENTLY SCHEDULED TO START ON 2/1/2017 AND TO BE COMPLETED BY 11/1/2017.

CONSTRUCTION SEQUENCE

THIS SECTION SUMMARIZES THE SEQUENCING OF THE E&SC MEASURES REQUIRED DURING THE PROJECT. SPECIFIC DETAILS AND NOTES ARE SHOWN ON THE PERMIT DRAWINGS. EROSION CONTROL DEVICES SHALL BE CONSTRUCTED ACCORDING TO DETAILS ON DRAWING E-2.2, OR AS DESIGNED BY AMEC FOR THE PHASE 1 ASH REMOVAL. UNTIL REMOVAL OF SUCH DEVICES OR BASINS BECOMES NECESSARY, THE SEQUENCING IS NOT INTENDED TO CONTROL SPECIFIC MEANS AND METHODS OF PERFORMING THE WORK, BUT RATHER TO PROVIDE THE CONTRACTOR KNOWLEDGE OF NECESSARY CONTROLS MEASURES USED DURING THE SEQUENCE OF WORK WHICH WILL CONTROL EROSION OR DIRECT RUNOFF DURING GRADING. CERTAIN ASSUMPTIONS FOR THIS GRADING HAVE BEEN MADE FOR DIRECTION OF FLOWS DURING GRADING OPERATIONS.

CONTINUED ASH REMOVAL

REMOVAL FROM THE 1982 ASH BASIN MAY BE ON-GOING WHILE PHASE 2 GRADING BEGINS. THE CONTRACTOR(S) ON SITE SHALL BE COORDINATING TO ENSURE E&SC MEASURES ARE BEING UTILIZED FOR THE CONTINUED ASH REMOVAL OPERATIONS AS WELL AS THE NEW GRADING FOR PHASE 2.

TWO DIVERSION SUMPS HAVE BEEN CONSTRUCTED IN PHASE 1, IN ADDITION TO TWO (2) SEDIMENT BASINS AFTER THE DAM BREACH OCCURS. THE CONTINUED USE OF THESE BASINS SHALL BE COORDINATED WITH THE ON-GOING ASH REMOVAL OPERATIONS AND THE CONSTRUCTION OF THE PHASE 2 GRADING. SEE AMEC'S PHASE 1 ASH REMOVAL DRAWINGS FOR ADDITIONAL INFORMATION ON LOCATION, SIZE AND CAPACITY OF THESE BASINS. THE FOLLOWING IS A GENERAL SUMMARY OF THE E&SC MEASURES THAT SHALL BE INSTALLED AS THE ASH REMOVAL (PHASE 1) PROCEEDS: (A COLOR CODED DRAWING HAS BEEN PROVIDED WHICH OUTLINES THE LIMITS OF DISTURBANCE FOR EACH STAGE OF CONSTRUCTION)

- STAGE 1 *INSTALLATION OF DITCHES, TEMPORARY COLLECTION BASINS AND COORDINATION WITH PHASE 1*
 - CONSTRUCT NORTH PERIMETER DITCHING AND INSTALL ROCK DITCH CHECKS
 - CONSTRUCT WEST PERIMETER DITCHING AND INSTALL ROCK DITCH CHECKS
 - UTILIZE EASTERN AMEC DITCHING UNTIL ROADWAY DITCH HAS BEEN CONSTRUCTED
 - UTILIZE AMEC'S SEDIMENT POND NO. 1 IN PLACE UNTIL NEW ACCESS ROADWAY CONSTRUCTION REACHES THIS POND. (ACCESS ROADWAY GRADING SHALL BEGIN FROM NEW ROCKWOOD ROAD AND PROCEED TOWARD SEDIMENT POND NO. 1)
 - CONSTRUCT TEMPORARY DITCHES WITHIN PAD FILL AREA TO CARRY WATER TO PERIMETER DITCHES DURING PAD GRADING
 - UTILIZE EASTERN AND WESTERN SEDIMENT PONDS IN PLACE AFTER DAM BREACH
 - SEED AND MULCH LIMITS OF DISTURBANCE FOR STAGE 1 GRADING.
- THE NEW PLANT PAD GRADING BEGINS WITH THE INSTALLATION OF PERIMETER DITCHING AS SHOWN THE (PHASE 2) PLANS. THE CONTRACTOR(S) SHALL CONSTRUCT THE PERMANENT DITCHES ON THE NORTH AND WEST WIDE OF THE NEW PLANT PAD WHILE LEAVING AMEC SEDIMENT PONDS NO. 1 & 2 IN PLACE. ALL WATER SHALL CONTINUE TO UTILIZE BOTH OF THE AMEC BASINS DURING THE STAGE 1 GRADING OPERATIONS.
- STAGE 2 *NORTH HALF OF PAD GRADING*
 - PAD GRADING BEGINS FROM NORTH SIDE AND PROCEEDS ABOUT ¼ WAY THROUGH THE PAD GRADING TO THE SOUTH
 - WATER SHALL BE DIRECTED FROM THE MIDDLE OF THE PAD GRADING AREA EQUALLY TO THE NORTH/WEST PERIMETER DITCH AND TO THE EAST. EROSION CONTROL LOGS SHALL BE USE TO ARREST PRIMARY SILT AS PAD GRADING PROGRESSES. THESE ARE EASIER TO ADJUST AND CAN BE MOVED AND REUSED AS GRADING PROGRESSES.
 - REMOVE SEDIMENT POND NO. 2 NEAR THE END OF STAGE 2 GRADING
 - UTILIZE SEDIMENT POND NO. 1, EASTERN AND WESTERN SEDIMENT PONDS IN PLACE AFTER DAM BREACH
 - RESEED STAGE 1 AREA AS NECESSARY UNTIL VEGETATION HAS BEEN ESTABLISHED
 - SEED AND MULCH LIMITS OF DISTURBANCE FOR STAGE 2 GRADING.
 - TO PROMOTE CONTROLLED RUNOFF, THE CONTRACTOR SHALL GRADE THE EMBANKMENT WHICH WILL DIRECT RUNOFF TO THE NEW DITCHING, ROCK DITCH CHECKS, AND BASINS. THOSE AREAS WHICH HAVE BEEN ROUGH GRADED PER THE GRADING PLAN SHALL BE VEGETATED AS SOON AS WORK HAS BEEN COMPLETED IN THOSE AREAS. IT IS ANTICIPATED THAT THE ASH REMOVAL WILL BE COMPLETED BY THE END OF STAGE 2.
- STAGE 3 *SOUTH HALF OF PAD GRADING*
 - CONTINUE PAD GRADING IN THE MIDDLE OF THE PAD FOR THE SOUTHERN HALF
 - WATER SHALL BE DIRECTED FROM THE MIDDLE OF THE PAD GRADING AREA EQUALLY TO THE NORTH/WEST PERIMETER DITCH AND TO THE EAST. MULTIPLE ROWS OF EROSION CONTROL LOGS SHALL BE USE TO ARREST PRIMARY SILT AS PAD GRADING PROGRESSES. THESE ARE EASIER TO ADJUST AND CAN BE MOVED AND REUSED, AND WILL REDUCE THE SILT LOAD FOR THE SILT FENCE WHICH IS LOCATED AT THE TOP PERIMETER OF THE PAD
 - UTILIZE SEDIMENT POND NO. 1, EASTERN AND WESTERN SEDIMENT PONDS IN PLACE AFTER DAM BREACH
 - RESEED STAGE 2 AREA AS NECESSARY UNTIL VEGETATION HAS BEEN ESTABLISHED
 - SEED AND MULCH LIMITS OF DISTURBANCE FOR STAGE 3 GRADING.
 - TO PROMOTE CONTROLLED RUNOFF, THE CONTRACTOR SHALL GRADE THE EMBANKMENT WHICH WILL DIRECT RUNOFF TO THE EXISTING WESTERN AND EASTERN DITCHING. THOSE AREAS WHICH HAVE BEEN ROUGH GRADED PER THE GRADING PLAN SHALL BE VEGETATED AS SOON AS WORK HAS BEEN COMPLETED IN THOSE AREAS. IT IS ANTICIPATED THAT THE ASH REMOVAL WILL BE COMPLETED BY THE END OF STAGE 3.
- STAGE 4 *CONSTRUCTION OF NEW ACCESS ROADWAYS*
 - REMOVE AMEC SEDIMENT POND NO. 1 AND CONSTRUCT NEW ACCESS ROADWAY FROM NEW ROCKWOOD ROAD TO SEDIMENT POND NO. 1
 - REMOVE SEDIMENT POND NO. 1 AND COMPLETE NEW ACCESS ROADWAY GRADING
 - CONSTRUCT NEW CULVERTS AND EASTERN DITCHING
 - UTILIZE EASTERN AND WESTERN SEDIMENT PONDS IN PLACE AFTER DAM BREACH.
 - PAD GRADING PLACEMENT IS ANTICIPATED TO BEGIN ON THE NORTH SIDE OF THE PAD SITE AND PROCEED TO THE SOUTH TOWARD THE DAM BREACH AREA AS IDENTIFIED ON THE AMEC PLANS. (PHASE 1).
- STAGE 5 *COMPLETION OF GRADING*
 - INSTALL RIPRAP IN DITCHES AND AT CULVERT OUTLETS PER PLAN. ALL RUNOFF FROM THIS NEWLY GRADED AREA SHALL BE INTERCEPTED INTO THE DITCHES AS SHOWN AND FLOW TO THE EAST AND WEST SEDIMENT BASINS AS DESIGNED BY AMEC. THESE BASINS BUILT BY THE ASH REMOVAL CONTRACTOR(S) SHALL REMAIN IN PLACE FOR THE DURATION OF CONSTRUCTION OF THE NEW FACILITY, AND SHALL BE MAINTAINED BY DUKE OR THEIR CONTRACTOR(S) UNTIL SUCH A TIME AS THE OLD PLANT IS DECOMMISSIONED.
 - OWNER SHALL NOTIFY NCDEQ, LAND QUALITY, AND THE ASHEVILLE REGIONAL OFFICE WHEN MAJOR GRADING ACTIVITIES HAVE BEEN COMPLETED AND PERMANENT EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

ADDITIONAL DETAILS REGARDING THE CONSTRUCTION SEQUENCE AND SCOPE OF WORK ARE SHOWN ON THE ATTACHED PROJECT DRAWINGS.

EROSION AND SEDIMENT CONTROL NOTES

1. BEFORE LAND DISTURBING ACTIVITIES OCCUR, ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE DRAWINGS SHOULD BE INSTALLED. OPERATIONS SHOULD BE LIMITED TO AREAS NECESSARY FOR INSTALLATION OF THESE EROSION AND SEDIMENT CONTROL MEASURES.
2. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 14 WORKING DAYS FOLLOWING COMPLETION OF LAND DISTURBING ACTIVITIES. IF THERE ARE MORE STRINGENT SOIL STABILIZATION GUIDELINES PUT IN PLACE BY

- LOCAL, COUNTY, STATE OR FEDERAL AGENCIES OR CALLED FOR BASED ON PERMIT REQUIREMENTS, THEN THE MORE STRINGENT GUIDELINES SHALL CONTROL AND GOVERN ON THE PROJECT.
3. SEEDED AREAS SHALL BE FERTILIZED, RESEEDED AS NECESSARY AND MULCHED ACCORDING TO THE SEEDING PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. SEEDED AREAS SHALL BE INSPECTED PERIODICALLY BY DUKE ENERGY OR THEIR REPRESENTATIVE UNTIL FINAL GROUND COVER HAS BEEN ESTABLISHED. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING VEGETATION TO ITS ORIGINAL CONDITION, OR BETTER, FOR UP TO A YEAR. SEE SEEDING SPECIFICATIONS ON THIS SHEET.
4. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED UNTIL THE COMPLETION OF GRADING ACTIVITIES AND DISTURBED AREAS HAVE BEEN STABILIZED. TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED ONCE WORK IS COMPLETE AND THE SITE IS STABILIZED.
5. SEDIMENT AND EROSION CONTROL DEVICES AND PLANTED AREAS SHALL BE INSPECTED BY DUKE ENERGY OR THEIR REPRESENTATIVE EVERY SEVEN (7) CALENDAR DAYS AND AFTER EACH RAINFALL OCCURRENCE THAT EXCEEDS ONE-HALF (0.5) INCH IN A 24-HOUR PERIOD. DAMAGED OR INEFFECTIVE DEVICES SHALL BE REPAIRED OR REPLACED, AS NECESSARY, AS SOON AS PRACTICAL.
6. REMOVE SEDIMENT FROM BEHIND CONTROL DEVICES WHEN THE ACCUMULATED MATERIAL REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE OR OTHER CONTROL DEVICES AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN EVENT AND TO REDUCE PRESSURE ON THE FENCE OR DEVICE. AVOID UNDERMINING THE FENCE OR DEVICE DURING CLEANOUT. RESET AND/OR REPLACE FENCE OR DEVICE AS REQUIRED THROUGHOUT CONSTRUCTION.
7. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN SEVEN (7) DAYS FOR PERIMETER AREAS AND SLOPES GREATER THAN 3H:1V AND NO MORE THAN FOURTEEN (14) DAYS FOR OTHER AREAS AFTER WORK HAS CEASED.
8. CONTRACTOR SHALL STABILIZE AREA STEEPER THAN 3H:1V WITHIN 7 DAYS.

SELF-INSPECTIONS

EFFECTIVE OCTOBER 1, 2010, PERSONS RESPONSIBLE FOR LAND DISTURBING ACTIVITIES MUST INSPECT THE SEDIMENT AND EROSION CONTROL MEASURES ON A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. SELF-INSPECTION REPORTS ARE REQUIRED. A SAMPLE SELF-INSPECTION REPORT, AS WELL AS DETAILS OF THE SELF-INSPECTION PROGRAM, CAN BE FOUND ON THE LAND QUALITY WEB SITE: [HTTP://PORTAL.NCDENR.ORG/WEB/LR/EROSION](http://portal.ncdenr.org/web/lr/erosion)

AS A MINIMUM, THE INSPECTIONS SHALL BE PERFORMED AFTER EACH OF THE FOLLOWING PHASES OF A PLAN:

- 1. INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL MEASURES.
- 2. INSTALLATION OF SILT TRAPS/BASINS.
- 3. AFTER EACH RAINFALL EVENT EXCEEDING 1/2 INCH IN A 24-HOUR PERIOD.
- 4. CLEARING AND GRUBBING OF EXISTING GROUND COVER.
- 5. COMPLETION OF ANY PHASE OF GRADING THAT REQUIRES PROVISION OF STABILIZATION.
- 6. INSTALLATION OF MEASURES DURING ANY PHASE OF THE PROJECT.
- 7. COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
- 8. INSTALLATION OF STORMWATER RETENTION MEASURES.
- 9. QUARTERLY UNTIL THE ESTABLISHMENT OF PERMANENT GROUND COVER IS FULLY ESTABLISHED.

GENERAL SEEDING SPECIFICATIONS

SEEDBED PREPARATION

INSTALL NECESSARY MECHANICAL EROSION AND SEDIMENTATION CONTROL PRACTICES BEFORE SEEDING, AND COMPLETE GRADING ACCORDING TO THE APPROVED PLAN.

APPLY LIME AND FERTILIZER IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN THE PROVISIONS OF THE APPROVED NCDOT HIGHWAY ENCROACHMENT AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. A FAVORABLE pH RANGE FOR PLANT GROWTH IS USUALLY 6.0-6.5.

SEEDBED SHOULD HAVE ENOUGH FINE-GRAINED (SILT AND CLAY) MATERIAL TO MAINTAIN ADEQUATE MOISTURE AND NUTRIENT SUPPLY AND BE FREE FROM LARGE ROOTS, BRANCHES, STONES, LARGE CLOUDS OF EARTH, OR TRASH.

COMPLETE SEEDBED PREPARATION BY BREAKING UP LARGE CLOUDS AND RAKING INTO A SMOOTH, UNIFORM SURFACE (SLOPES LESS THAN 3:1). FILL IN OR LEVEL DEPRESSIONS THAT CAN COLLECT WATER. BROADCAST SEED INTO A FRESHLY LOOSENEED SEEDBED THAT HAS NOT BEEN SEALED BY RAINFALL.

SEEDING

APPLY SEED UNIFORMLY TO ENSURE EVEN DISTRIBUTION OF SEED ACROSS THE ENTIRE DISTURBED AREA AT RATES SHOWN IN THE SEEDING SPECIFICATIONS.

MULCH ALL PLANTINGS IMMEDIATELY AFTER SEEDING.

MAINTENANCE

GENERALLY, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL SOIL COVER HAS BEEN MAINTAINED FOR ONE FULL YEAR FROM PLANTING. INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE.

RESEEDING-IF A STAND HAS INADEQUATE COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER. RE-ESTABLISH THE STAND AFTER SEEDBED PREPARATION OR OVER-SEED THE STAND. CONSIDER SEEDING TEMPORARY, ANNUAL SPECIES IF THE TIME OF YEAR IS NOT APPROPRIATE FOR PERMANENT SEEDING.

TEMPORARY SEEDING SPECIFICATIONS

THE FOLLOWING SEEDING SPECIFICATIONS ARE A GENERAL RECOMMENDATION. PROPERTY OWNERS MAY REQUEST A DIFFERENT SEEDING MIXTURE BASED ON EXISTING VEGETATION.

SPECIES	RATE (LB/ACRE)
RYE GRAIN (SECALE CEREALE)	120

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR MULCH BY TACKING WITH ASPHALT, ROVING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

PERMANENT SEEDING SPECIFICATIONS

THE FOLLOWING SEEDING SPECIFICATIONS ARE A GENERAL RECOMMENDATION. PROPERTY OWNERS MAY REQUEST A DIFFERENT SEEDING MIXTURE BASED ON EXISTING VEGETATION.

SPECIES	RATE (LB/ACRE)
TALL FESCUE	40
CROWN VETCH	20
REDTOP	5

NURSE PLANTS
BETWEEN MAY 1 AND AUG 15, ADD 10 LB/ACRE GERMAN MILLET (SETARIA ITALICA) OR 15 LB/ACRE SUDAN GRASS. PRIOR TO MAY 1 OR AFTER AUG 15, ADD 40 LB/ACRE RYE GRAIN (SECALE CEREALE).

SOIL AMENDMENTS

APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 4,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

MULCH

APPLY 4,000-5,000 LB/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCHING MATERIAL. ANCHOR MULCH BY TACKING WITH ASPHALT, ROVING OR NETTING. NETTING IS THE PREFERRED ANCHORING METHOD ON STEEP SLOPES.

MAINTENANCE

RESEED, FERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY.

Millimeters

Scale For Microfilming

Inches



THESE DOCUMENTS WERE PREPARED
UNDER THE DIRECT SUPERVISION OF
ANDREW E. FRIES, PE # 041290.

9-28-2016

1	7/18/16	JT	AF	REVISED CONSTRUCTION SEQUENCE	
no.	date	by	ckd	description	



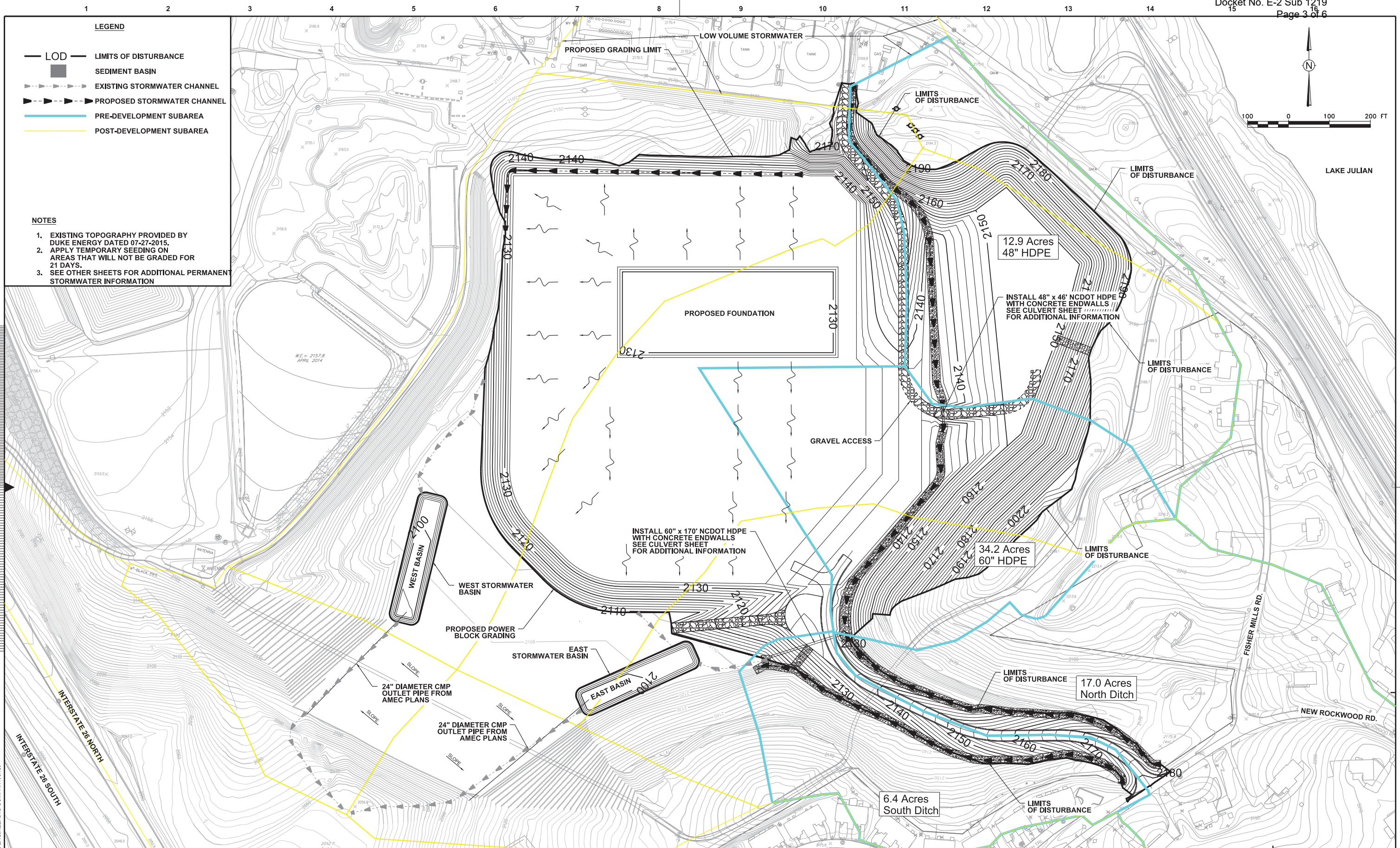
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSE # C-1435

designed J. TRONSON	detailed A. REICHERT
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NARRATIVE AND
CONSTRUCTION
SEQUENCING

project 86170	contract
drawing no. ASV_C901.013.004	rev. 0
sheet	
file NOTES.dgn	



**THESE DOCUMENTS WERE PREPARED
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no.	date	by	ckd	description



**BURNS
MCDONNELL**

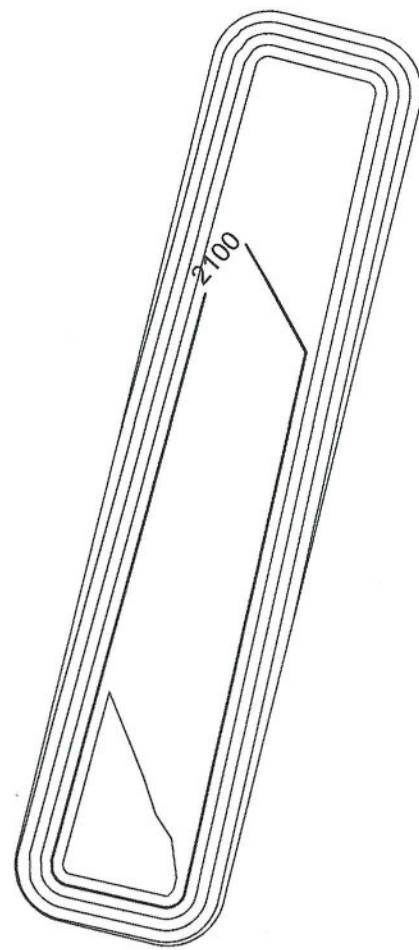
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KANSAS CITY, MO 64114
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LICENSE # C-1435

designed	detailed
J. TRONSON	A. REICHERT

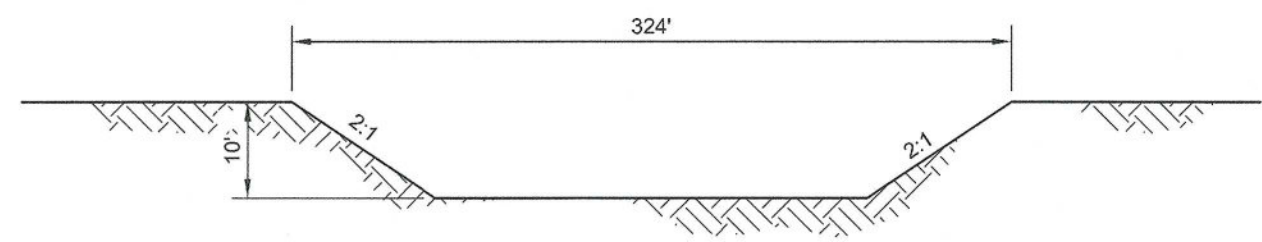


FINAL GRADING AND DRAINAGE

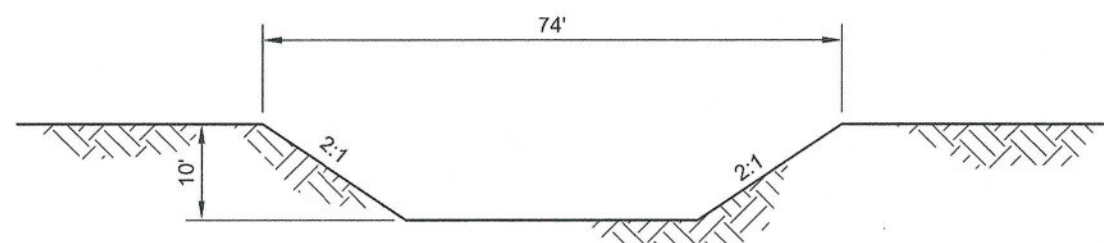
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PLAN VIEW



PROFILE

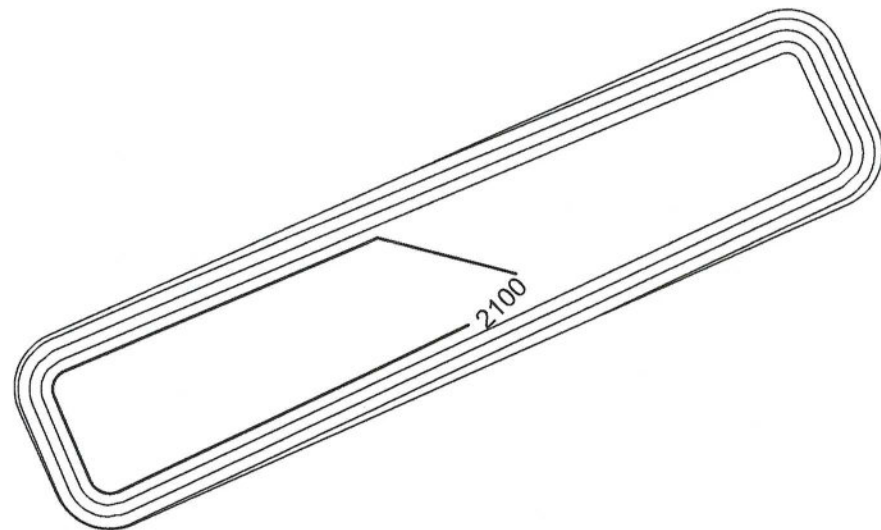


SECTION

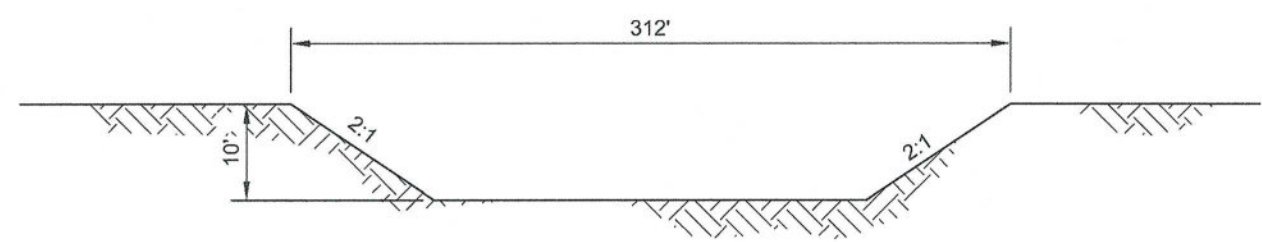
WEST PERMANENT STORMWATER BASIN
NTS



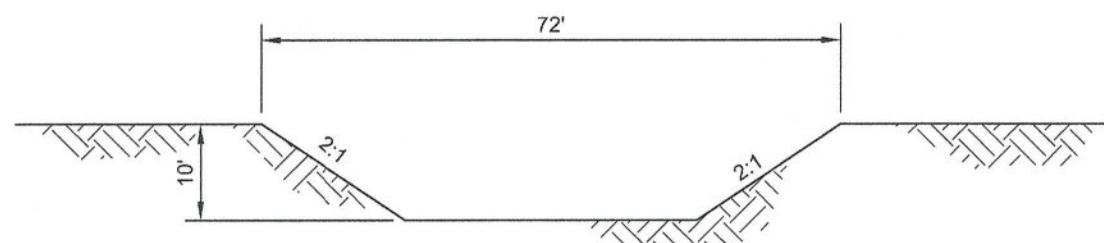
STORMWATER BASIN CONSTRUCTION DATA	
BASIN FEATURE	WEST STORMWATER BASIN
TOP OF BASIN ELEV.	2107
BOTTOM OF BASIN ELEV.	2097
MAXIMUM SEDIMENT LEVEL ELEV.	2099.8
TOP OF PRINCIPAL SPILLWAY RISER ELEV.	2101
PRINCIPAL SPILLWAY RISER INVERT ELEV.	2097
RISER DIAMETER (FT)	3
BARREL DIAMETER (FT)	2
BARREL OUTLET INVERT ELEV.	2094
BARREL LENGTH (FT)	300
MINIMUM OUTLET PIPE SLOPE (%)	1
EMERGENCY SPILLWAY INVERT ELEV.	2105
1-YEAR, 24-HOUR PEAK POOL ELEV.	2101.0
10-YEAR, 24-HOUR PEAK POOL ELEV.	2102.1



PLAN VIEW

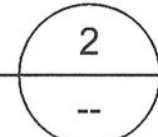


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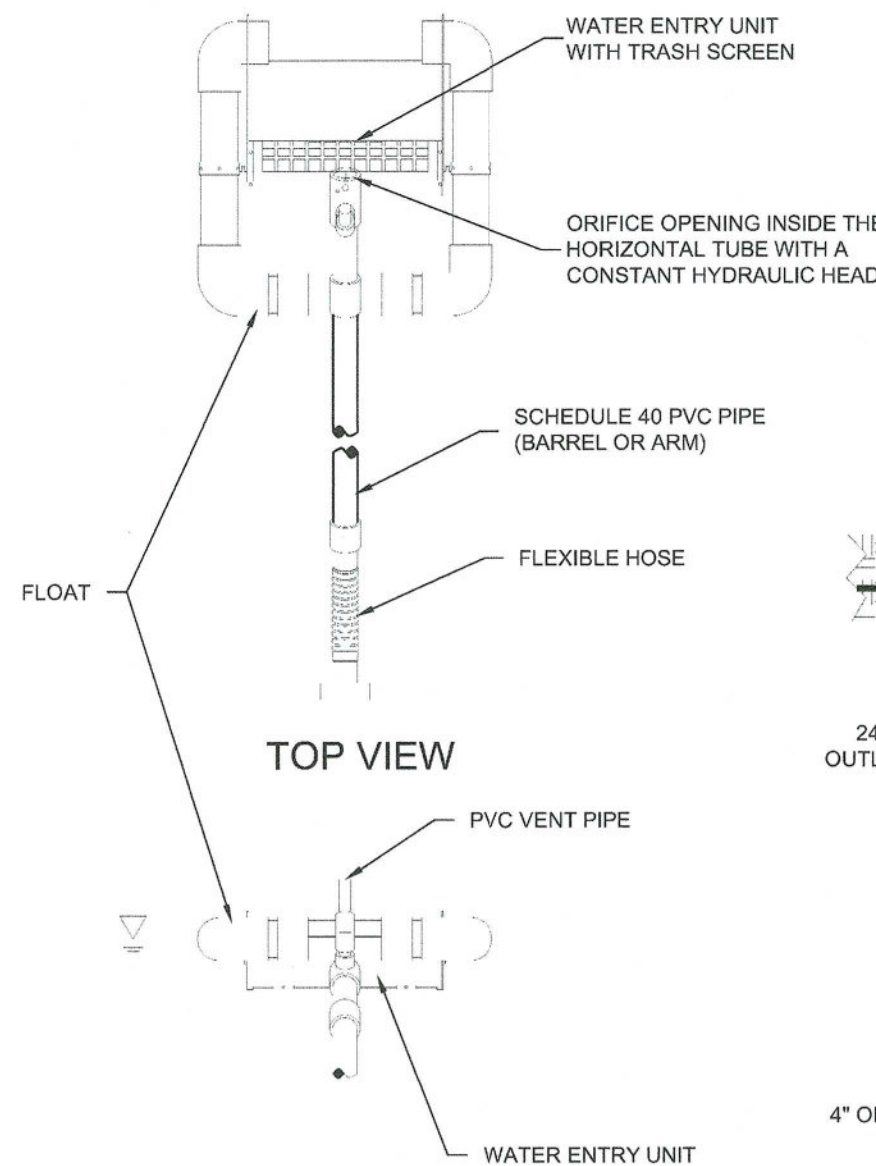


SECTION

EAST PERMANENT STORMWATER BASIN
NTS

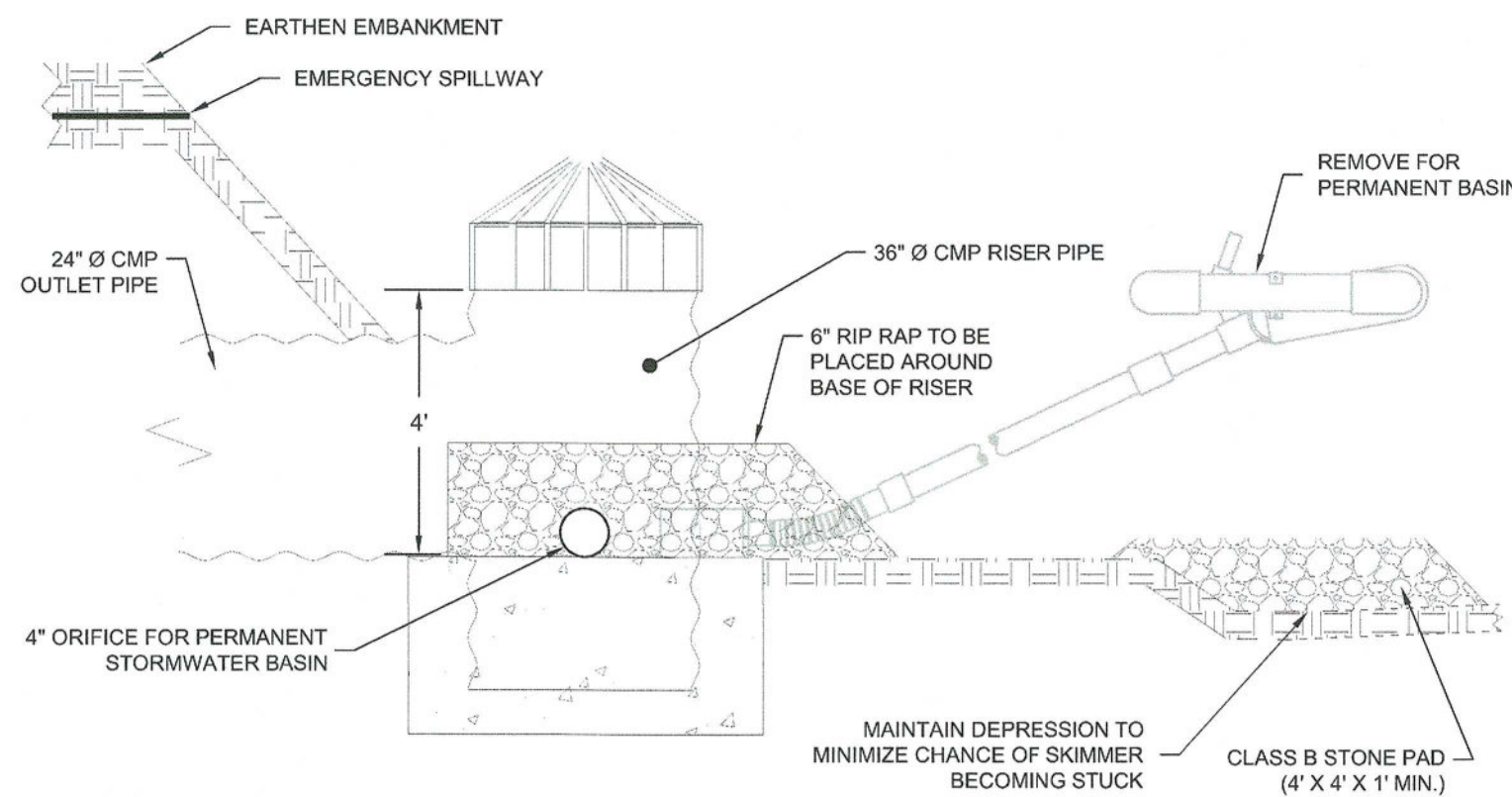


SEDIMENT BASIN CONSTRUCTION DATA	
BASIN FEATURE	EAST STORMWATER BASIN
TOP OF BASIN ELEV.	2108
BOTTOM OF BASIN ELEV.	2098
MAXIMUM SEDIMENT LEVEL ELEV.	2100.4
TOP OF PRINCIPAL SPILLWAY RISER ELEV.	2104
PRINCIPAL SPILLWAY RISER INVERT ELEV.	2098
RISER DIAMETER (FT)	3
BARREL DIAMETER (FT)	2
BARREL OUTLET INVERT ELEV.	2095
BARREL LENGTH (FT)	300
MINIMUM OUTLET PIPE SLOPE (%)	1
EMERGENCY SPILLWAY INVERT ELEV.	2105
1-YEAR, 24-HOUR PEAK POOL ELEV.	2102.4
10-YEAR, 24-HOUR PEAK POOL ELEV.	2106.0



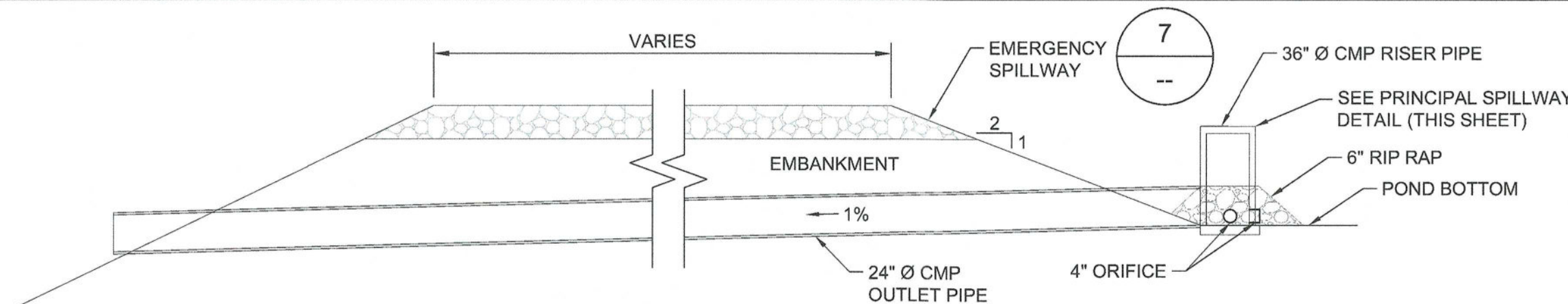
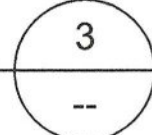
TOP VIEW

END VIEW

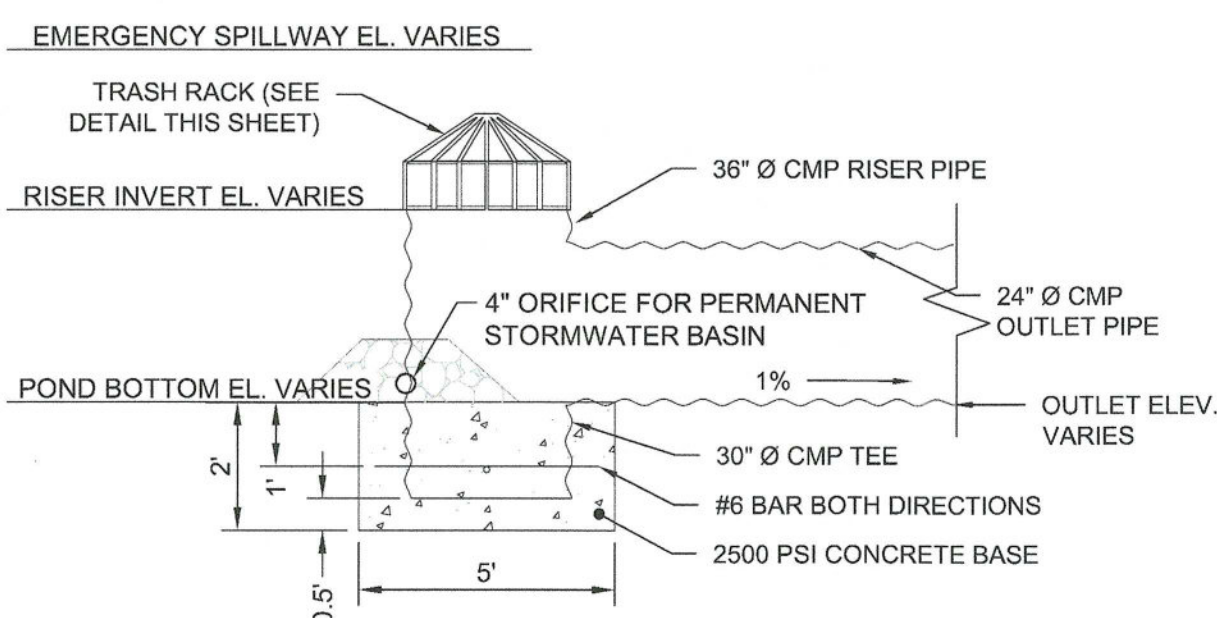
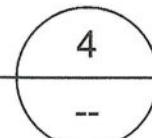


SIDE VIEW
(NO SCALE)

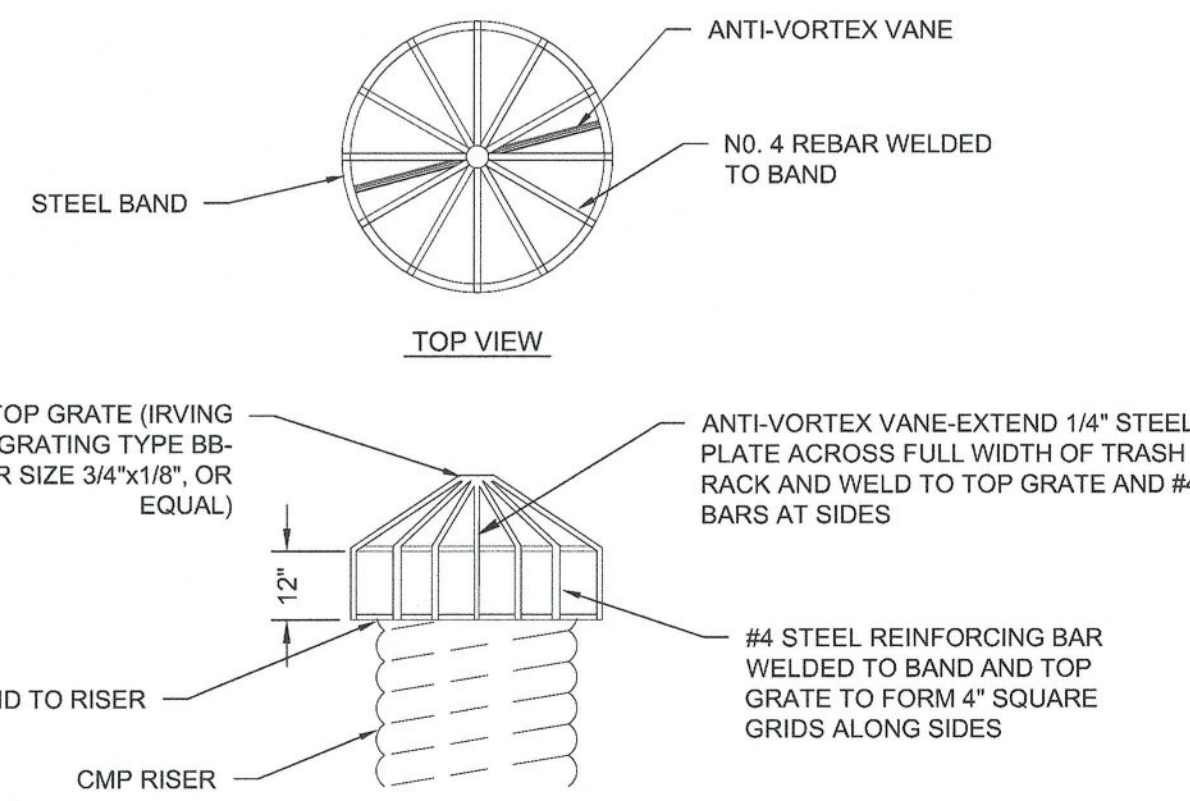
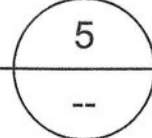
FAIRCLOTH SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE



PERMANENT BASIN SPILLWAY CONFIGURATION
NTS

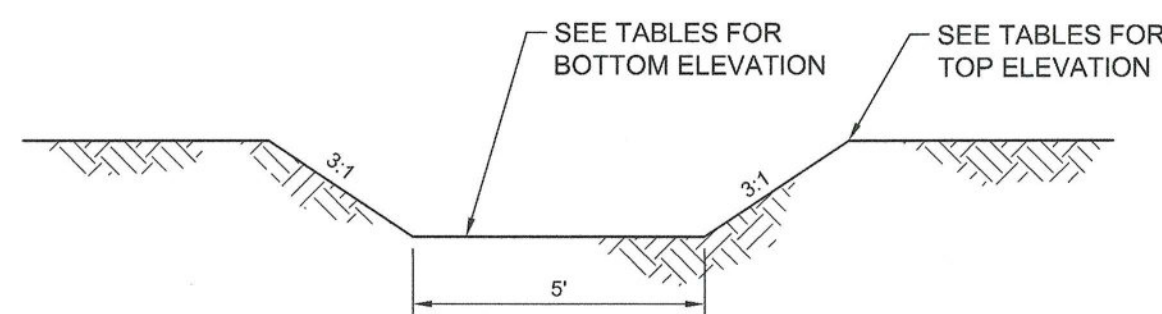
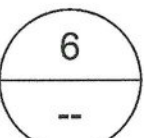


PRINCIPAL SPILLWAY DETAIL (TYP)
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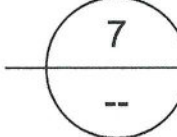


SIDE VIEW

TRASH RACK DETAIL (TYP)
NTS





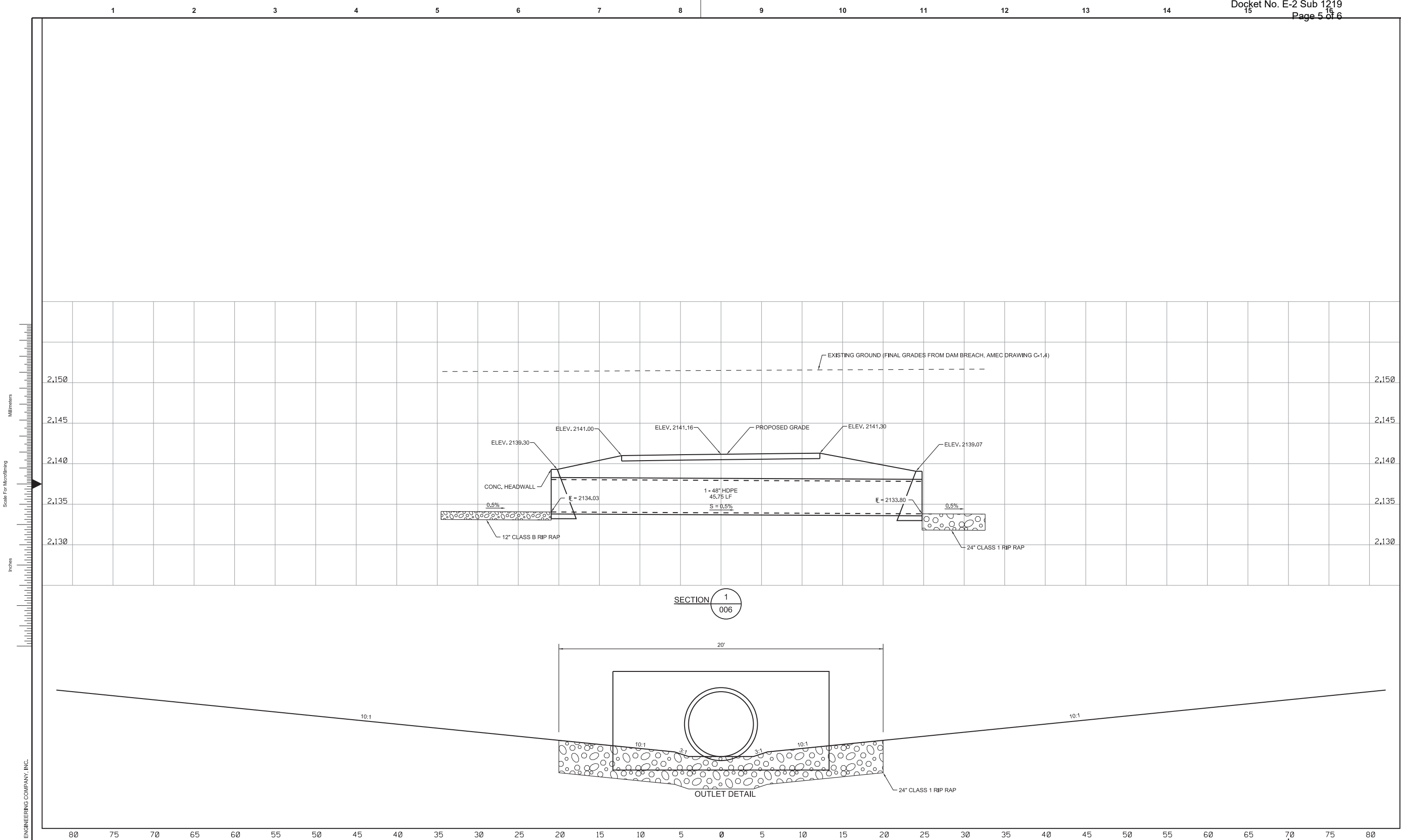
EMERGENCY SPILLWAY
NTS



Environment & Infrastructure
2030 FALLING WATERS ROAD, SUITE 300
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TEL: (865) 671-6774
FAX: (865) 671-6254
LICENSE: NC ENG. F-1253
NC GEOLOGY: C-247



TITLE		STORMWATER MANAGEMENT PLAN	
		1982 ASH BASIN - BUNCO 089	
		STORMWATER BASIN DETAILS	
FOR		ISSUED FOR PERMITTING	
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		DWG TYPE: DWG	DFTR: APT
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		DATE: 09-27-2016	ENGR: [Signature]
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DWG SIZE	DRAWING NO.		REVISION
ANSI D 22"x34"	ASV_C901.013.006		0



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9-28-2016

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UNDER THE DIRECT SUPERVISION OF
ANDREW E. FRIES, PE # 041290.**

no.	date	by	ckd	description



9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSE # C-1435

designed J. TRONSON	detailed A. REICHERT
------------------------	-------------------------



CULVERT SECTION

project	contract
86170	

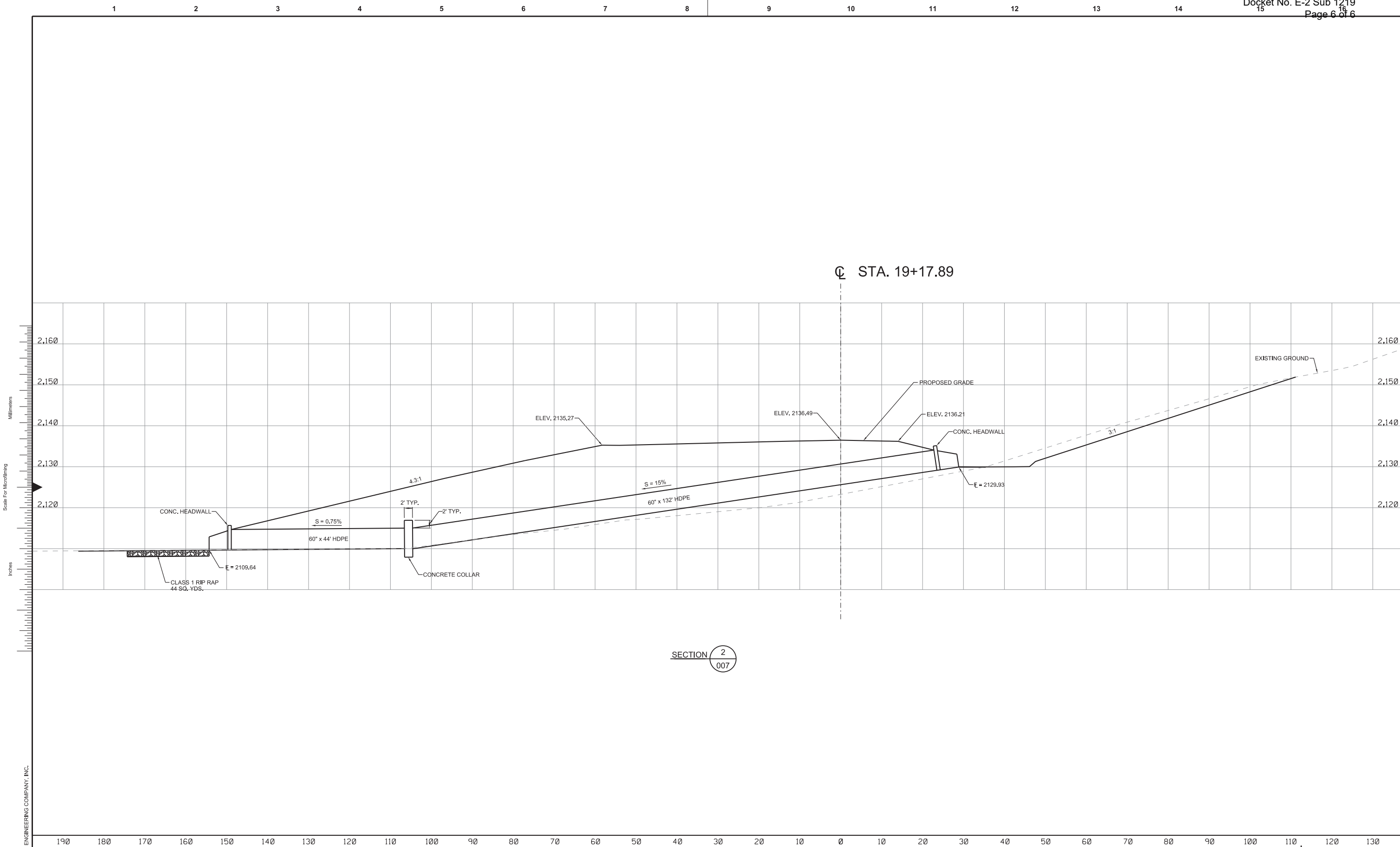
drawing no. **ASV_C901.013.007**

sheet
file Culvert 1-48in HDPE.dgn

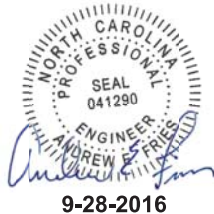
jstronson 9/28/2016

Oct 30 2019

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1	7/22/16	JT	JM	REVISED FOR PROPOSED GRADING	
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CULVERT SECTION

project 86170	contract
drawing no. ASV_C901.013.008	rev. 0
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April 2017

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APPENDIX F: CONSTRUCTION QUALITY ASSURANCE PLAN (CQA PLAN)

CONSTRUCTION QUALITY ASSURANCE PLAN

ASHEVILLE STEAM ELECTRIC GENERATING PLANT

REVISION 0

Prepared for



Duke Energy
400 South Tryon Street
Charlotte, North Carolina 28202

December 2016

Prepared by



Amec Foster Wheeler Environment & Infrastructure, Inc.
Project 7810160620

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Figure 1 – Site Location Map

1. INTRODUCTION

This document presents the Construction Quality Assurance (CQA) Plan for the Asheville Steam Electric Generating Plant (Plant) Dam Decommissioning project in Buncombe County, North Carolina. A site location map of the project area is shown on Figure 1. The purpose of the CQA Plan is to identify the quality assurance procedures, standards, and methods that will be employed during the project to provide assurance that the requirements of the drawings, specifications, regulatory permits, and owner specified health, safety and environmental requirements are met. The CQA Plan is specific to the referenced project and is prepared in compliance with the North Carolina Coal Ash Management Act of 2014.

The primary objectives of the scope of work for the Dam Decommissioning project at the Plant include the excavation and removal of CCR materials currently stored in the area known as the 1964 Ash Basin, and the decommissioning of the existing ash basin dams for the 1964 Ash Basin and 1982 Ash Basin. The excavation and removal of CCR materials from the 1982 Ash Basin was completed on September 30, 2016. The scope of work includes all ancillary activities such as erection and maintenance of erosion and sediment control, dewatering, grading to design grades, permanent stabilization, and all other activities required to achieve the primary objectives. The scope of work also includes obtaining and complying with regulatory permits required for performing the work. The project will be performed with regard to safety and environmental standards in compliance with local, state, and federal regulations as included in the site specific environmental, health and safety program.

2. BACKGROUND

The Plant is located in Buncombe County in Western North Carolina, approximately 8 miles south of the City of Asheville. Fly ash and bottom ash have historically been deposited within the facility's 1964 and 1982 Ash Basins by hydraulic sluicing. The site has two regulated impoundment structures, the 1964 Ash Basin Dam (State ID BUNCO-097) and the 1982 Ash Basin Dam (State ID BUNCO-089). Excavation of the 1982 Ash Basin was completed on September 30, 2016, and the basin was turned over for dam decommissioning and the construction of a natural gas combined cycle plant after an independent qualified professional engineer concluded that primary source ash had been removed from the basin. The closure of the ash management facilities at the station is a part of the overall station decommissioning plan.

The CCR materials in the 1964 Ash Basin will be excavated and transported from the site for beneficial use or placement in an off-site permitted landfill. Per the current plan, after establishing the final design grades, the footprints of the 1982 Ash Basin will become the site for a planned combined cycle plant, and the 1964 Ash Basin footprint will be graded to drain. The potential future use of the 1964 Ash Basin is undetermined at this time.

3. PROJECT TEAM AND RESPONSIBILITIES

The following identifies the roles and responsibilities for the primary parties associated with the project, including the anticipated duties and expectations each party will fulfill in execution of the work associated with implementation of the project.

3.1. Owner

The Owner of the site and project is Duke Energy Progress, LLC (Duke). The Owner is ultimately responsible for oversight and authorization of the work and assuring that the work is performed in general accordance with the specifications, drawings, permits, this CQA Plan, and other contractual documents. The Owner has the right to delegate its oversight authority to third parties contracted with the Owner but will maintain ultimate responsibility for the successful implementation of the project. The Owner will maintain the authority to make final decisions regarding all aspects of the project in compliance with local, state, and federal regulations. For this project, the Owner will have sole authority to suspend or stop work if, in their opinion, the work is being performed in an unsafe manner, the work is not meeting quality standards, or changes to the scope of work must be enacted to comply with the spirit of the objectives of the project.

3.2. Design Engineer of Record (Engineer)

The Design Engineer of Record (Engineer) is the engineer who signs and seals the Issued for Construction Drawings and Specifications. The Engineer is delegated limited and selected authority at the discretion of the Owner. The Engineer acts in a consultant role to the Owner on aspects of the project for which the Owner seeks direction in the decision making process. The Engineer has no authority to stop or suspend work at the site, only the authority to recommend remedial actions for the Owner's consideration.

3.3. Construction Quality Assurance Engineer

The Construction Quality Assurance Engineer (CQA Engineer) will be experienced in quality assurance testing and monitoring. The CQA Engineer will report to the Owner and can be employed by the same entity as the Design Engineer of Record. The CQA Engineer may be a Duke employee. The CQA Engineer serves as the on-site representative of the Owner and is responsible for the field implementation of the approved quality assurance program as follows:

- Monitor the quality assurance activities of the field testing and document conformance with test procedures and the Technical Specifications
- Inform the Engineer of quality assurance activities and non-conformance to the approved CQA program, if any
- Observe that sample handling procedures are in accordance with the appropriate guidelines for the testing to be conducted
- Organize, assign, and direct engineering technicians

- Maintain an awareness of the overall field testing operations to identify conditions that may jeopardize the quality of testing.

3.4. Engineering Technicians

The engineering technicians (technicians) are responsible for field observations and testing at the direction of the CQA Engineer. Technicians will be assigned to the project as deemed necessary by the CQA Engineer. The CQA Engineer may perform and conduct field observations and testing himself. Technicians will be under the direct supervision of the CQA Engineer.

3.5. Prime Contractor

The Prime Contractor will be responsible for performing and managing construction activities required for completing the project. The Prime Contractor is responsible for performing the work in compliance with the requirements and to the quality standards of the specifications, drawings, permits, and this CQA Plan. The Prime Contractor is responsible for overseeing and managing their personnel, including the personnel of their Subcontractors such that the work is performed safely and effectively and in compliance with local, state, and federal safety and environmental regulations to include the Owner's site specific environmental, health, and safety rules.

3.6. Regulatory Agency

The Regulatory Agency having direct regulatory authority for the project is the North Carolina Department of Environmental Quality (NCDEQ). With respect to dam decommissioning, the lead agency is the NCDEQ, Division of Energy, Mineral, and Land Resources, Land Quality Section, Dams Program. The Regulatory Agency has the authority to inspect the project at any time during the course of the work, and has the authority to direct the Owner to suspend or stop the work with appropriate cause. Upon direction to suspend or stop the work, the Regulatory Agency should provide remedial measures to the Owner, that once implemented, should allow for work to continue.

4. DOCUMENTATION

This section provides a description of project documentation and record keeping that will be maintained during the course of the work as the project record.

4.1. Record Documentation

Reports will be completed by designated Owner personnel to serve as a record of the project. The reports are intended to summarize work activities, serve as a record of important discussions and/or decisions, action items, or other information that the Owner deems important or critical to the project record. The Owner, at their discretion, may require other entities, such as the CQA Engineer, to maintain records as well.

The CQA Engineer and technicians will be responsible for documenting construction, monitoring, and testing activities by taking photographs. Photographs should be organized and documented in photo-logs and/or by including them in reports, monitoring logs, and test data sheets. Photo-logs should include a unique identifying number corresponding to the photograph file name, the date and location where the photograph was taken, and a description of the photograph subject matter.

4.2. Design, Specification, and Drawing Changes

Design, specification, and drawing changes may be required during construction. Proposed changes may be initiated by the Design Engineer of Record, Contractor, CQA Engineer, or Owner and submitted to the Design Engineer of Record for consideration. Design, specification, and drawing changes may be made only with the approval of the Design Engineer of Record with consent from the Owner. Changes that affect the design intent will require approval of that agency.

4.3. Non-Conformances

Non-conformance reports are intended to serve as a record of nonconforming items during the course of the work and as a record of the disposition of the non-conformance. Generally, the Owner will initiate the non-conformance procedure based on the recommendation or findings of a third party such as a CQA Engineer. The non-conformance will be evaluated and resolved with the disposition will be recorded in the non-conformance report. Sample dispositions may include rework of the nonconforming item, replacement of the nonconforming item, or accepting the nonconforming item as installed based on engineering judgment. A record of all non-conformance reports will be maintained at the site during the course of the work at all times for review by requesting representatives of the Regulatory Agency.

4.4. Record Drawings

The Contractor shall retain a third-party surveyor registered in North Carolina. The Contractor shall be responsible for submitting to the Engineer the following:

- Existing conditions survey (pre-construction);
- Existing stormwater piping elevations and locations (including piping to be removed);
- Interim conditions survey (prior to removal of sediment basins);
- Installed stormwater piping elevations and locations; and
- Final conditions survey.

The existing conditions, conditions prior to removal of sediment basins, and final conditions surveys shall be performed on a 100-foot grid with berms, toes, crests, and breaks-in-slope also surveyed. Topographic surveys shall be performed on the same grid such that survey point locations are consistent with the survey points of the underlying layer. Surveys shall also show contours of the completed surface at two-foot contour intervals.

As-built locations and details for existing and installed stormwater piping shall also be submitted to the Engineer by the Contractor. Drawings shall include pipe locations at a spacing that is adequate to identify the position of the pipe. Survey timing should be coordinated so as not to impact the construction schedule of the geosynthetics and overlying materials.

4.5. Certification Report

The Engineer will prepare a certification report upon completion of dam decommissioning activities. The certification report will include as-built and record documents that are intended to serve as documentation of the project. For this project, the primary purpose of the record drawings is to capture final grades at the site for use in future projects. A secondary purpose is to fulfill regulatory requirements for developing as-built drawings for decommissioned ash basins. The as-built and record documents will generally include:

- Record drawings detailing final grades;
- Record of quality assurance/control testing including compacted fill, stormwater piping information, instrumentation monitoring, and verification of CCR removal;
- Record of non-conformance reports; and
- Other relevant information or data at the discretion of the Owner.

5. QUALITY ASSURANCE PROGRAM

The intent of the Quality Assurance Program is to provide observations, test data, and other recorded information at a sufficient frequency to assure that the work is completed in general accordance with the requirements of the specifications, drawings, regulatory permits, and other controlling documents.

5.1. Fill Density Testing

Final grades at the site will be established by placing and compacting soil materials excavated from onsite sources. The requirements for fill placement are provided in the Technical Specifications. The general requirements for fill density testing include establishing moisture-density relationships for fill materials, visually observing placement of fill materials during construction, performing fill density tests to assess the level of compaction achieved, and recording the results of testing for project records.

5.2. Verification of Ash Removal

Verification and documentation that CCRs have been removed will be required during ash basin closure implementation. In order to meet the basin closure performance standard, Duke's CCR Removal Verification Procedure will be used to verify that primary source ash has been removed from the basin. Subsequent to removal of the ash pursuant to the CCR Removal Verification Procedure, Duke will implement its "Excavation Soil Sampling Plan, Asheville Steam Electric Plant, 1964 Ash Basin, For Ash Basin Excavation, North Carolina Ash Basin Closure"

which was developed for the purpose of closing the 1964 Ash Basin in a manner that meets the closure performance standards set out in Part II, Section 3.(c) of the Coal Ash Act and 40 C.F.R. § 257.102(c). The Excavation Soil Sampling Plan is attached to the Asheville Steam Electric Generating Plant Coal Ash Excavation Plan (2016 Update).

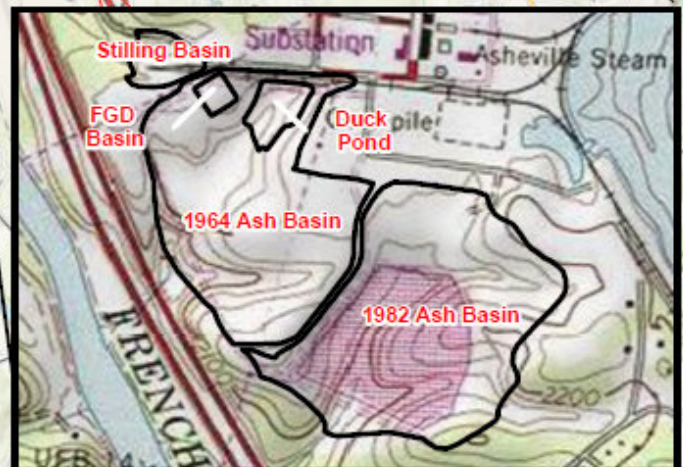
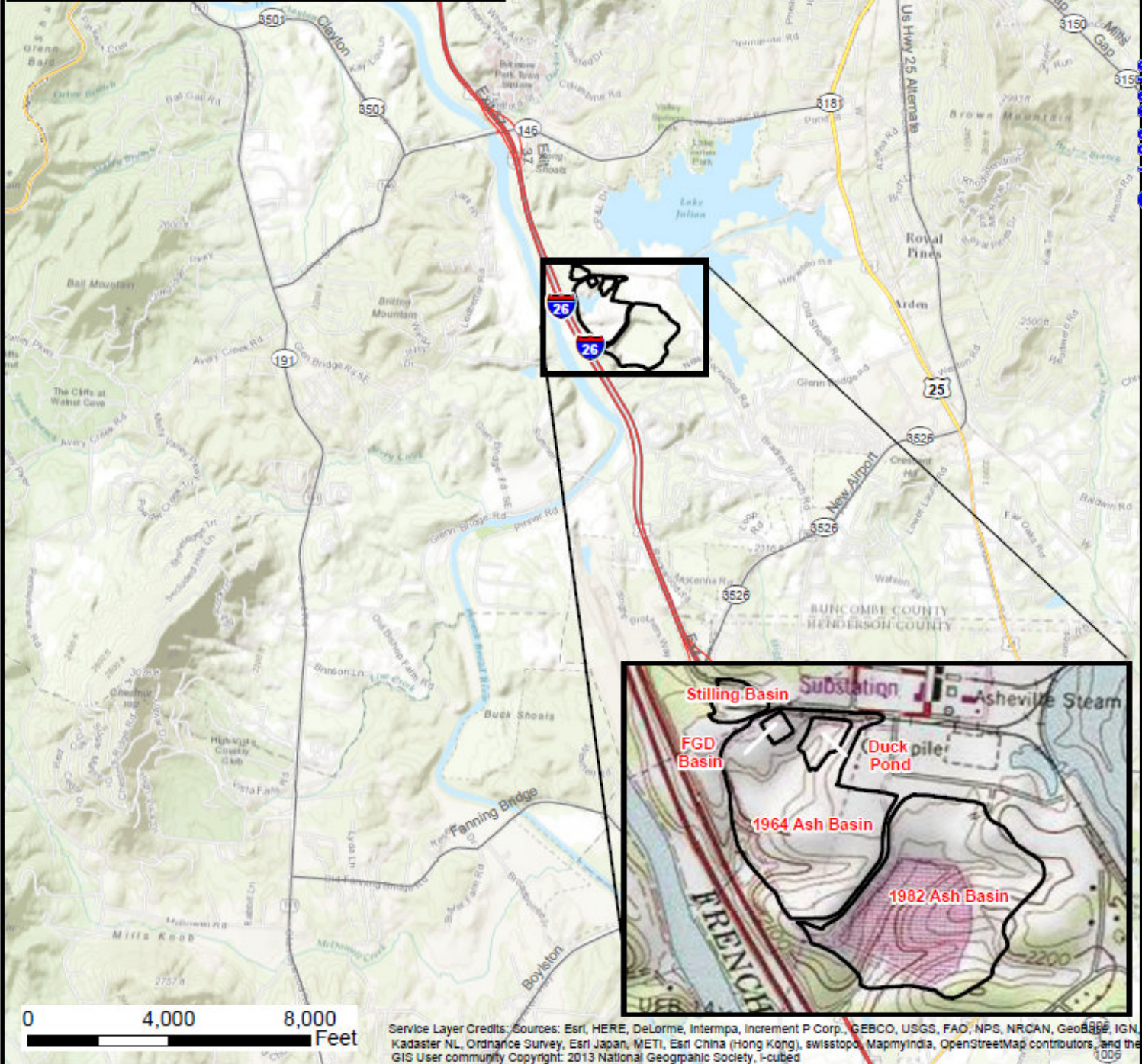
5.3. Surveying

The Owner may, at their discretion, contract with a CQA Engineer to perform surveying services for the project to validate or verify the surveys performed by the Prime Contractor. A specific scope of work and frequency or quantity of measurements for the CQA Engineer performing the surveying services for the Owner will be developed if and when such services are contracted. The scope of work for surveying to be performed by the Prime Contractor is contained in this CQA Plan and the technical specifications.

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Oct 30 2019

FIGURES



amec foster wheeler

**SITE LOCATION MAP
DUKE ENERGY ASHEVILLE PLANT
SKYLAND, NORTH CAROLINA**

PREPARED BY JMS	DATE 10/8/15	CHECKED BY SS	DATE 10/8/15	JOB NUMBER 7810-15-0250	FIGURE 1
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APPENDIX H: CLOSURE AND POST-CLOSURE CARE COST ESTIMATES

This business and technical information requested by NCDEQ is “confidential” pursuant to N.C.G.S. 132-1.2 and, therefore, is not a public record subject to public disclosure under North Carolina’s Public Records Law. Accordingly, it is being submitted under separate cover concurrent herewith.

April 2017

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Oct 30 2019

Appendix I: NPDES Permit No. NC0000396 2016 Permit Renewal Supplemental Information Package



Garry A. Whisnant
Plant General Manager
Asheville Steam Electric Plant

Duke Energy Progress
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File: 12520B - 01

December 1, 2016

Mr. Jeff Poupart, Environmental Program Manager
Water Quality Permitting Section
NCDEQ, Division of Water Resources
1617 Mail Service Center
Raleigh, NC 27699-1617

Subject: Duke Energy Progress, LLC
Asheville Steam Electric Generating Plant
NPDES Permit No. NC0000396
Buncombe County
2016 Permit Renewal Supplemental Information Package

Dear Mr. Poupart:

Duke Energy Progress, LLC (Duke) is submitting supplemental information in support of the Asheville Steam Electric Plant's NPDES permit renewal application of June 11, 2010. This submittal, in addition to the previous renewal application addendums and permit modification requests submitted since the June 11, 2010 renewal application, is requested that the information provided be included during the permit renewal process.

This submittal is intended to provide an update of modifications that will be necessary to comply with recently enacted laws and regulations including the Federal Steam Electric Effluent Guidelines (ELG), Federal Coal Combustion Residual (CCR) rule, the North Carolina Coal Ash Management Act (NC-CAMA) of 2014 and HB 630 of 2016.

Information is provided for a modified process flow path to Outfall 001, removal of the 1982 ash basin, removal of sampling requirements for internal outfall 005, removal of the industrial stormwater outfalls, updated seeps information, a request with justification for alternate applicability dates for the Steam Electric Effluent Guidelines and an alternate schedule request for section 316 (b) of the Clean Water Act. Revised site and flow diagrams are attached.

We appreciate your attention to these requests and look forward to finalizing the NPDES permit for the Asheville plant in the near future. Should you have any questions regarding this letter or require additional information, please contact Ms. Tina Woodward at (704) 382-4585 or at Tina.Woodward@Duke-Energy.com.

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Sincerely,



Garry A. Whisnant
Plant Manager
Asheville Steam Electric Generating Plant

Enclosures:

Supplemental Information Package
Attachment A – Site Plan
Attachment B – NPDES Outfalls
Attachment C – Process Flow Diagram
Attachment D – Effluent Guidelines Rule Justification for Applicability Dates
Attachment E – Alternate Schedule Request §316(b) of the Clean Water Act
Attachment F – NPDES Seeps
Attachment G – NPDES Individual Stormwater Permit (NCS000575)
Attachment H – Updated Form 2C

cc: Sergei Chernikov
Complex NPDES Permit Supervisor
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bc: Teresa Williams
Anne Pifer
Jim Wells
Richard Baker
Matt Hanchey
Shannon Langley
Erika Tuchbaum
Tina Woodward

Permit renewal submissions and addendums:

Date	Title
06-11-2010	Permit Renewal Application
09-29-2012	Email to Sergi Chernikov from S.L. with requested 2007=2008 Environmental Monitoring Report in Lake Julian.
11-05-2010	Verbal approval documented in email from S.L. approving installation of R.O. System
03-17-2011	Groundwater Monitoring Plan Updated from DEQ
05-13-2011	Approval to relocate outfall 001
11-01-2011	Administrative update to permit application – (6) chemical additions
10-11-2012	Administrative update to permit application – (1) chemical addition
07-30-2014	Update of renewal application originally submitted on June 16, 2014
02-04-2015	Addendum to NPDES wastewater permit application – chemical characterization of water for dewatering of ash basins
07-22-2015	Notice of pending facility closure – Wetlands demolition
02-01-2016	Notice of pending facility closure – Removal of Duck Pond

**Duke Energy Progress, LLC.
Asheville Steam Electric Plant
NPDES Permit # NC0000396
Supplemental Information Package**

Introduction and Background

Duke Energy Progress, LLC. (Duke) is submitting this additional supplemental information in support of the pending NPDES permit renewal for the Asheville Steam, Electric Plant. This submittal is intended to provide an update of modifications that will be necessary to comply with recently enacted laws and regulations including the Federal Steam Electric Effluent Limitations Guidelines (ELG), Federal Coal Combustion Residual (CCR) rule, the North Carolina Coal Ash Management Act of 2014 and HB 630 of 2016.

Supplemental information is also provided for the following: (See attachment A entitled Site Plan)

1. A modified process flow path to Outfall 001.
2. A request to remove the 1982 ash basin from the permit.
3. A request to remove sampling requirements for internal Outfall 005.
4. A request to remove the industrial stormwater outfalls from the permit.
5. A request and justification for alternate applicability dates for the Steam Electric Effluent Guidelines.
6. A request and justification for alternate schedule for compliance with CWA Section 316(b)
7. Updated seeps information.
8. A discussion regarding the extraction wells.
9. Updated Form 2C Potential Discharges Not Covered By Analysis.

In total, there will remain two final outfalls to waters of the State: outfalls 001 and 002. The process flows to Outfall 001 have changed and these changes have been documented with the state NPDES regulatory permitting agency as described below. There are no changes to Outfall 002; therefore, that outfall is not discussed in this supplemental information packet. (See attachment B entitled NPDES Outfalls)

Revised site and flow diagrams are included as attachments.

Outfall 001

As of October 2016, the 1982 ash basin has been fully excavated of ash. This area will now become the construction site for the future Natural Gas Combined Cycle station that is scheduled for completion at the end of 2019. Upon completion of the Natural Gas fired combined cycle generation station, the coal fired facility will be retired. All ash wastes are expected to be removed completely from the 1964 ash basin by applicable regulatory deadlines. The Plant's remaining ash basin (hereinafter referred to as the 1964 ash basin), is located east of the French Broad River, south of the plant and discharges into the French Broad River. With the approval of the North Carolina Department of Environmental Quality (NC DEQ), Duke relocated treated waters from the 1982 ash basin and lined rim ditch to a slightly downstream outfall location on the French Broad River. This relocation was necessary to allow for enhancement to the dam of the 1964 ash basin to bring it up to current engineering standards.

Additionally, Duke engineered and constructed a temporary lined rim ditch as approved by the North Carolina Division of Water Resources (March 2014), to process wastewater generated while the remaining ash in the 1982 ash basin was being excavated. The lined rim ditch is located within the footprint of the 1964 ash basin. To accommodate closure of the 1982 ash basin, several approved changes to wastewater systems and routing have occurred since the July 2014 update.

The flue gas desulfurization (FGD) waste stream and wetland wastewater treatment system were removed service in October 2015. Notice of this change was provided to DEQ in a letter dated July 22, 2015. The wetland wastewater treatment system materials were excavated, characterized and disposed of in an approved landfill. Currently, the FGD waste stream is pretreated onsite and then discharged from the wastewater treatment building to the Metropolitan Sewerage District of Buncombe County as authorized by industrial user permit # S-074-15. The FGD waste stream description will remain in this application pending engineering research that may allow an ultra-filtration (UF) treatment system to allow FGD flows to be combined back into Outfall 001. This UF system will have clean-in-place chemicals consisting of an acid and caustic cleaning. There may be the need for an additional coagulant chemical before the UF to prevent plugging. These exact chemicals will be defined with the selection of the technology at a later date.

Also to accommodate 1982 ash basin closure, low volume waste and stormwater flows have been re-routed to enter the 1964 ash basin's remaining open water area. The final polishing treatment previously provided by the 1964 ash basin's remaining treatment volume was replaced by a filter system. The 1964 ash basin open water area will now also act as the collection point for wastewater flows associated with ash excavation of the 1964 ash basin and will discharge to the rim ditch system for treatment through a floating suction intake and pump systems.

The ash basin and/or rim ditch receives ash sluice water, various low volume wastes, coal pile runoff, limestone pile runoff, gypsum pile runoff, air pre-heater cleaning water, fire protection system drainage, chemical metal cleaning wastes, reverse osmosis system reject water, storm water, collected basin seepage and other waters from the Combustion Turbine Facility on the Plant's site. Wastewater from the plant's truck wash and weigh stations also are directed to the plant's rim ditch.

The ash basin and/or rim ditch provides treatment by sedimentation and neutralization to the above-referenced individual waste streams. Water leaves the rim ditch via weirs and curtains to the lined center pond where a skimmer pulls water into 1 of 4 filter trains and flows by pipe via either the 1964 ash pond or direct discharge by pipe to a lined stilling pond, where the discharge is treated by an automated pH system, where it is then discharged by overflow to a pipe that conveys it to the French Broad River. Toe drains from the former 1982 basin drain to the French Broad River. Toe drains from the 1964 basin are currently collected and pumped to the rim ditch and flow through the treatment system to outfall 001 and the French Broad River. Upon permit issuance, toe drains flows may be released to the French Broad River. Detailed descriptions of the individual waste streams are below. Additionally, a detailed map with the location of various seeps on the property is being provided as part of this permit application.

Ash Sluice Water

Fly ash and bottom ash from both units are hydraulically conveyed by an ash sluice pipeline to the ash pond and/or lined rim ditch. As needed, alum and/or other chemical flocculants and coagulants may be added to the ash sluice influent to aid settling. A Selective Catalytic Reduction system (SCR) is operated on both Unit 1 and Unit 2 for NOx emissions control. Urea is injected to reduce NOx emissions. A byproduct of this process is an "ammonia slip" which will be carried to the 1964 ash basin and/or lined rim ditch via ash sluice water. As necessary, a system to mitigate SO3 emissions may also inject additional

ammonia into the combustion process. This mitigation system has not been needed to date but may become necessary as fuel sources change. Various wastewater boiler sediments and ash accumulations from wastewater processes collected during maintenance activities may also be physically transported to the 1964 ash basin and/or lined rim ditch. The ash basin and/or lined rim ditch discharge into the secondary settling pond prior to discharging to the French Broad River. With the approval of the North Carolina Division of Water Quality, Duke Energy Progress, Inc. relocated this secondary settling pond and discharge point to facilitate modifications designed to enhance the 1964 ash pond dam's safety factor.

Coal Pile Runoff

Storm water runoff from the coal pile is collected in drainage ditches that surround the coal pile. The drainage ditches are routed to the 1964 ash basin or lined rim ditch for treatment. During maintenance activities, wastewater sludges removed from catch basins, sumps, etc. may be transported to either the lined rim ditch or the 1964 ash basin for treatment and further handling.

Limestone and Gypsum Piles Runoff

Storm water runoff from the limestone and gypsum piles is collected in drainage ditches which are routed to the lined rim ditch for treatment. During maintenance activities, sludge removed from catch basins, sumps, etc. may be transported to the 1964 ash basin, and/or lined rim ditch for treatment and further handling.

Stormwater

Storm water runoff from the plant area, parking lots, combustion turbine area, oil storage and handling facility and the plant's substations is routed to the ash ponds and/or lined rim ditch for treatment. During maintenance activities, sludge removed from catch basins, sumps, etc. may be transported to the 1964 ash basin, and/or lined rim ditch for treatment and further handling.

Low Volume Wastes

Boiler water make up is withdrawn from Lake Julian and purified utilizing vendor supplied equipment. Boiler water is treated with ammonia, hydrazine, and sodium hydroxide. Boiler blowdown and drainage is sent to the ash basin and/or lined rim ditch and may contain small quantities of the chemicals. A Reverse Osmosis system or alum coagulation/filtration service is used in conjunction with the vendor supplied

equipment to provide water for various plant processes. The reject stream from the Reverse osmosis unit is sent to the 1964 ash basin and/or lined rim ditch. Some molybdate waste from the closed cooling water system is created through valve leakage and maintenance activities and is discharged to the 1964 ash basin and/or lined rim ditch. A furnace ash hopper seal is maintained by using plant service water. A standard operation water level is maintained in a seal trough for the ash hopper seal. Overflow from this trough is discharged to the 1964 ash basin and/or lined rim ditch. A sodium hydroxide solution is fed into this flow stream as necessary for ash basin /rim ditch pH adjustment. Sulfuric acid is fed to the ash sluice water as necessary for 1964 ash basin and/or rim ditch pH adjustment to comply with NPDES permit requirements. Coal dust suppression is achieved by spraying a proprietary chemical on coal at different stages of coal use. Small amounts of excess dust suppression chemical have the potential to be discharged to the 1964 ash basin and/or lined rim ditch via plant drains or coal pile runoff. Small amounts of urea waste from bulk urea unloading operations are discharged to the 1964 ash basin and/or lined rim ditch. All plant area floor drains are routed to the 1964 ash basin and/or lined rim ditch and include equipment drainage and wash down along with rainfall runoff. During maintenance activities sludge removed from catch basins, sumps, etc. may be transported to the 1964 ash basin, and/or the lined rim ditch for treatment and further handling.

In many cases, added chemicals are consumed or chemically altered during the plant processes. Only trace amounts might be recoverable in water entering the 1964 ash basin and/or lined rim ditch. Detectable levels of these chemicals would not be expected to occur in ash basin or rim ditch discharges.

Flue Gas Desulfurization Blowdown (Low Volume Waste)

This system is currently discharging to the Metropolitan Sewerage District (MSD) from waste water treatment building. The Flue Gas Desulfurization (FGD) system directs flue gas into an absorber where a limestone (calcium carbonate) slurry is sprayed. Sulfur dioxide in the flue gas reacts with the limestone to produce calcium sulfate (gypsum). This system reclaims any unreacted limestone slurry to be reused in the absorber. A small blowdown stream is used to maintain the chloride concentration in the reaction tank. The blowdown stream is passed through a clarifier to remove solids and the chloride concentration in the waste stream. Chemicals are used to adjust pH and to aid solids removal in the clarifier. The waste stream enters a weir box and is discharged into a connection to MSD.

Air Preheater Cleaning (Low Volume Waste)

The air preheater will be water washed approximately once per year or more frequently as needed. The wastewater from this activity will be discharged to the 1964 ash basin or lined rim ditch.

Chemical Metal Cleaning Wastes

The boilers are chemically cleaned every five-to-eight years using tetraammonia ethylene diamine tetraacetic acid (EDTA) solution. This cleaning solution and its rinses are stored on site for disposal by evaporation in an operating unit's furnace. Typical cleanings would result in a waste of approximately 80,000 gallons. Should evaporation not be used, the wastewater can be treated by neutralization and precipitation prior to being conveyed to the 1964 ash basin, and/or lined rim ditch, or other means of disposal. Cleaning of other heat exchanger surfaces may produce 5,000-10,000 gallons of wastewater every three-to-five years.

Other Low volume Wastes

Operation of the combustion turbine (CT) generation facility may produce turbine blade wash water, inlet filter cooling water, various condensate waters, and water from equipment and tank drains. These wastewaters will be collected in the storm water collection system of the CT site and routed to the 1964 ash basin and/or lined rim ditch. During maintenance activities, sludge removed from catch basins, sumps, etc. may be transported to the 1964 ash basin, and/or the lined rim ditch for treatment and further handling.

Duke anticipates the 1982 ash basin will be decommissioned in April 2017. At that time Duke will provide notification to the agency for removal of the 1982 ash basin as a treatment system from the NPDES Permit #NC0000396.

Internal Outfall 005

Duke initially discussed treatment of the FGD system in a letter to NC DWQ dated February 25, 2015, this change in the treatment system was necessary to facilitate the decommissioning of the 1964 ash basin. In a letter dated July 22, 2015, Duke provided notice that the wetlands wastewater treatment system was being removed from service when the FGD system was connected to the Metropolitan Sewage District (MSD). Based on requirements found in the recently updated Federal Stream Electric Effluent Guidelines,

Duke will need to disconnect from the MSD on or before November 1, 2018. Once disconnected from the MSD, Duke would need to add an alternate treatment for the FGD wastewater in lieu of the wetlands until the Plant ceases operations in 2019. Internal outfall 005 was decommissioned when the wetlands were removed from process flows. **For these reasons, Duke requests for the designation of internal outfall 005 and the FGD waste stream description to remain in the permit but to remove the sampling requirements until waste from FGD operations is once again directed to the French Broad River.**

Steam Electric Effluent Guidelines

Duke requests an alternate applicability date for the Steam Electric ELGs in accordance with the request found in Attachment E. The Asheville Steam Station currently consists of a two unit coal-fired generating station with a capacity totaling 384 MW/378 MW (winter/summer). Treated bottom ash transport water (BATW) and treated fly ash transport water (FATW) are currently discharged from the station. FGD wastewater is currently permitted to discharge through internal outfall 005 and ultimately discharged through outfall 001. As discussed in the above paragraph, the wetlands have been removed and the FGD wastewater is temporarily being routed to the sanitary sewerage district for final treatment and discharge.

The ELG Rule sets a range of possible applicability dates for compliance with the new best available technology (BAT) limits for bottom ash transport water (zero discharge) and FGD wastewater (numeric limits for selenium, arsenic, mercury, and nitrate/nitrite), as well for fly ash transport water (zero discharge). The regulation provides that all permits issued after the effective date of the rule (January 4, 2016) should contain applicability dates for compliance with the BAT limits, and that those dates should be “as soon as possible” but not sooner than November 1, 2018 and not later than December 31, 2023. Per the Mountain Energy Act of 2015, both coal-fired steam stations are scheduled to retire by January 31, 2020. The generation will be replaced with a new combined-cycle station expected to be operational in late 2019. Due to the retirement dates for these units, Duke Energy is requesting an ELG applicability date of **January 31, 2020** for BATW, FATW and FGD wastewater.

CWA Section 316(b)

With the pending retirement of the Asheville Steam Station, Duke is contending the 316(b) Rule for Existing Facilities is not applicable to the coal-fired station. Per 40 C.F.R. §122.21 (r)(1)(ii)(F), if the owner of an existing facility plans to retire the facility before the current NPDES permit expires, then the 316(b) submittal requirements listed in §122.21 (r)(1)(ii)(A), (B) and (C) do not apply. With the assumption the renewed NPDES permit for Asheville Steam Station will expire after the scheduled retirement date, no further action is required for the Asheville Steam Station to meet the 316(b) requirements for existing facilities. The planned Asheville Combined-cycle station is expected to be classified as a new unit at an existing facility per 40 C.F.R. §125.92(u). As required by 40 C.F.R. §125.95(b)(1), Duke will be submitting information stated in 40 C.F.R. §122.21(r)(2) – (8) and (14) within 180 days before the planned commencement of cooling water withdrawals for the operation of the new unit. A copy of the applicability analysis can be found in Attachment E entitled Applicability of §316(b) of the Clean Water Act (CWA) to the Asheville Steam Station.

Seeps Categorization and Disposition

Duke previously identified twenty-four (24) Areas of Wetness (AOWs) within the site property. A map of AOW locations is provided in Attachment F. AOWs SD-01, N-01 and PO-1 are requested to be eliminated from the NPDES permit since their analytical values indicate they are not influenced by CCR materials. It is requested that AOWs B-01, E-01, F-02, and ponded water F be designated as effluent channels. A group of AOWs 64-E01, 64E-02, 64E-03, C-02, C-03, C-05, and D-01 all discharge to AOW C-01, we request that these AOWs are combined into a single effluent channel with the representative sampling location being at C-01. Another group of AOWs 82E-01, 82E-02, K-01, K-02, F-03, and M-01 all discharge to AOW F01, we request that this group of AOWs are combined into a single effluent channel with the representative sampling location being at F-01. Duke requests that AOWs A-01 and A-02 be combined into a single effluent channel with A-01 being designated as the sampling point. **Duke requests removal of the collection system located at the toe of the 64 ash basin, as these areas would be covered in the effluent channel designations described above. Duke requests that DEQ provide concurrence or acknowledgement of this request in the NPDES Fact Sheet for the permit.**

Industrial Stormwater Outfalls

DEQ Division of Energy, Mineral, and Land Resources issued the Industrial Stormwater Permit (NCS000575) May 24, 2016. The permit became effective on the date of issuance. Outfalls SW001, SW002, and SW003 are covered in the aforementioned permit. There are provisions in the permit for two new outfalls upon completion of an new access road. The stormwater outfalls identified as SW004, SW005, and SW006 are not associated with industrial activities, therefore were not included in the Industrial Stormwater Permit. **Duke requests that outfalls SW004, SW005, SW006 and the qualitative monitoring requirements be removed from the NPDES permit.**

Extraction Wells

A Settlement Agreement between the North Carolina Department of Environmental Quality (NCDEQ) and Duke Energy signed on September 29, 2015 provided an additional requirement to implement accelerated remediation at sites that demonstrated off-site groundwater impacts. Based on data collected for the Comprehensive Site Assessment, potential off-site groundwater impacts were identified west of the 1964 ash basin, beneath a 12 acre parcel within the adjacent I-26 right of way. An Interim Action Plan was submitted in April 2016 that outlines the tasks to meet the accelerated remediation requirement. Initial groundwater modeling has indicated removal of constituent mass from the area of highest constituent concentrations will accelerate mitigation of groundwater impacts. Two extraction wells were installed in July 2016 (EXT-01 and EXT-02) and aquifer pumping tests were conducted during August and September 2016. Results of the pumping tests indicate one viable extraction well (EXT-01) has been installed with two additional extraction wells recommended. Potential total discharge from a 3 well system extracting groundwater from the transition zone and upper bedrock formation is estimated to range from 60 to 90 gallons per minute (86,000 – 130,000 gallons per day). The extracted groundwater will be treated prior to discharge through outfall 001. Treatment of the discharge may be provided by a new treatment basin, new direct groundwater treatment system or sent to the MSD as domestic waste.

List of Attachments:

Attachment A – Site Plan

Attachment B – NPDES Outfalls

Attachment C – Process Flow Diagram

Attachment D – Effluent Guidelines Rule Justification for Applicability Dates

Attachment E – Alternate Schedule Request §316(b) of the Clean Water Act

Attachment F – NPDES Seeps

Attachment G – NPDES Individual Stormwater Permit (NCS000575)

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Attachment A - Site Plan



Attachment A - Site Map
Duke Energy Progress, LLC
Asheville Steam Electric Plant
Buncombe County October 2016

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Oct 30 2019

Attachment B - NPDES Outfalls



660 330 0 660 1,320 1,980 Feet

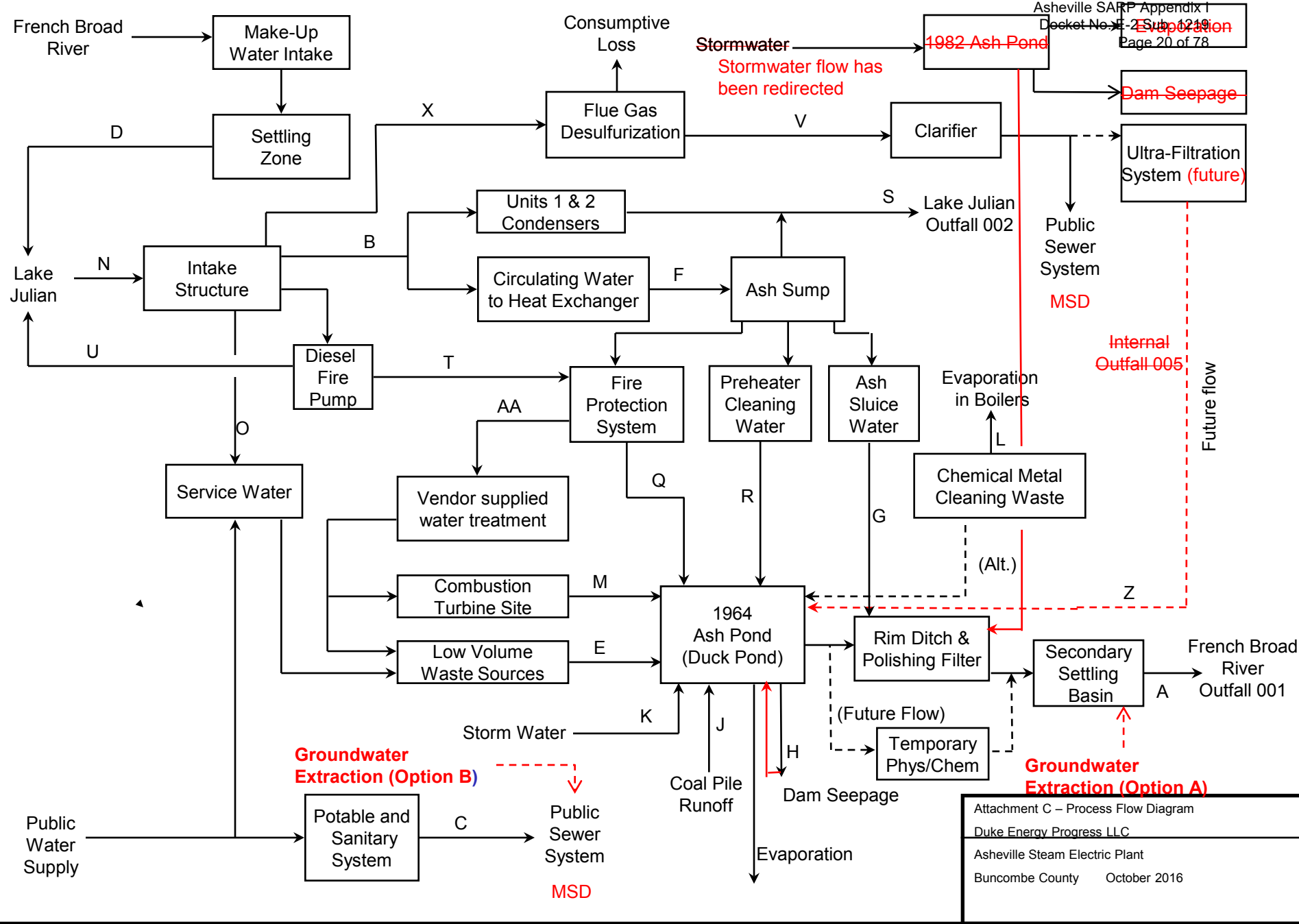


Attachment B – Outfall Locations

Carolina Power & Light Company
Asheville Steam Electric Plant
Buncombe County

October 2016

Attachment C - Process Flow Diagram



Attachment C – Process Flow Diagram
Duke Energy Progress LLC
Asheville Steam Electric Plant
Buncombe County October 2016

Attachment D - Effluent Guidelines Rule Justification

Asheville Steam Station: Effluent Guidelines Rule Justification for Applicability Dates

A. Introduction

Duke submits the following information as a justification for appropriate applicability dates for compliance with the new Effluent Guidelines Rule (ELG Rule) (80 Fed. Reg. 67,838 (Nov. 3, 2015)) at Asheville Steam Station (Asheville), located in Asheville, North Carolina.

The Asheville Steam Station currently consists of a two unit coal-fired generating station with a capacity totaling 384 MW/378 MW (winter/summer). Treated bottom ash transport water (BATW) and treated fly ash transport water (FATW) are currently discharged from the station. FGD wastewater is permitted to discharge through internal outfall 005 and ultimately discharged through outfall 001.

The ELG Rule sets a range of possible applicability dates for compliance with the new best available technology (BAT) limits for bottom ash transport water (zero discharge) and FGD wastewater (numeric limits for selenium, arsenic, mercury, and nitrate/nitrite), as well for fly ash transport water (zero discharge). The regulation provides that all permits issued after the effective date of the rule (January 4, 2016) should contain applicability dates for compliance with the BAT limits, and that those dates should be “as soon as possible” but not sooner than November 1, 2018 and not later than December 31, 2023.

For Asheville, since the plant’s final NPDES permit will be issued after January 4, 2016, but before November 1, 2018, EPA specifically instructs permit writers to “apply limitations based on the previously promulgated BPT limitations or the plant’s other applicable permit limitations until *at least* November 1, 2018.” 80 Fed. Reg. at 67,883, col. 1 (emphasis added). As the rule makes clear, however, BAT limits may apply – depending on the individual circumstances of the facilities subject to the rule – any time within the window of November 1, 2018 to December 31, 2023. In selecting an appropriate applicability date for each waste stream subject to the new BAT limits, the permitting authority is called upon to determine an “as soon as possible” date.

The ELG Rule provides a very specific definition for “as soon as possible.” The permit writer – when supplied with appropriate information by the permittee – must consider a range of factors that affect the timing of compliance. Those factors are as follows:

- (1) Time to expeditiously plan (including to raise capital), design, procure, and install equipment to comply with the requirements of this part.
- (2) Changes being made or planned at the plant in response to:
 - (i) New source performance standards for greenhouse gases from new fossil fuel-fired electric generating units, under sections 111, 301, 302, and 307(d)(1)(C) of the Clean Air Act, as amended, 42 U.S.C. 7411, 7601, 7602, 7607(d)(1)(C);
 - (ii) Emission guidelines for greenhouse gases from existing fossil fuel-fired electric generating units, under sections 111, 301, 302, and 307(d) of the Clean Air Act, as amended, 42 U.S.C. 7411, 7601, 7602, 7607(d); or

- (iii) Regulations that address the disposal of coal combustion residuals as solid waste, under sections 1006(b), 1008(a), 2002(a), 3001, 4004, and 4005(a) of the Solid Waste Disposal Act of 1970, as amended by the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. 6906(b), 6907(a), 6912(a), 6944, and 6945(a).
 - (3) For FGD wastewater requirements only, an initial commissioning period for the treatment system to optimize the installed equipment.
 - (4) Other factors as appropriate.
- 40 C.F.R. § 423.11(t).

Per the Mountain Energy Act of 2015, both coal-fired steam stations are scheduled to retire by January 31, 2020. The generation will be replaced with a new combined-cycle station expected to be operational in late 2019. Due to the retirement dates for these units, Duke Energy would like to request an ELG applicability date of **January 31, 2020** for BATW, FATW and FGD wastewater.

The steam electric industry is in the midst of major transitions driven by new environmental regulatory requirements in the air, waste, and water arenas. In the ELG Rule, EPA explicitly acknowledged the complications of planning and executing ELG retrofits while developing and executing compliance strategies under other rules. EPA made it clear that the range of applicability dates provided in the ELG Rule are supposed to be implemented in a manner that avoids stranded costs and promotes orderly decision making. For instance, EPA states:

“From an environmental protection/coordination standpoint, with the increased use of flue gas desulfurization scrubbers and flue gas mercury controls in response to air pollution-related requirements, this rule makes sense from a holistic environmental protection perspective and from the perspective of coordinating across rules affecting the same sector. This final ELG controls the discharges associated with these particular waste streams.”

Response to Comments, p. 8-388.

The ELG Rule clearly allows consideration of stranded cost avoidance in setting the ELG applicability date based on the need to account for any applicable obligations under the CPP. However, in statements in the Response to Comments, EPA indicates stranded costs apply to any rule, not just the CPP. EPA explains in the Response to Comments that it provided flexibility in applicability dates so that facilities could consider all new regulatory requirements and then have an adequate time to plan and implement accordingly, and thus avoid stranded costs:

“EPA is sensitive to the need to provide sufficient time for steam electric power plants to understand, plan for, and implement any changes to their operation to meet their environmental responsibilities, and agrees with the commenter that transparency of requirements is important for minimizing “stranded investments.” ...Furthermore, as described in the preamble, the final rule provides time for plant owners or operators to implement changes to plant operations in order to meet the final limitations and standards, as well as flexibility to permitting authorities in implementing the final rule. The Agency specifically considered the timing of requirements of other environmental

regulations in establishing implementation requirements for the ELGs, in order to provide steam electric power plants time to consider and implement their strategy for compliance.”

Response to Comments, p. 8-388.

Furthermore, EPA also states that the permitting authority may “account for time the facility needs to coordinate all the requirements of this rule, along with other regulatory requirements, to make the correct planning and *financing decisions*, and to implement the new requirements in an orderly and feasible way.” Response to Comments, p. 8-129 (emphasis added).

In addition to stranded cost avoidance, EPA explicitly notes that the permitting authority should consider grid reliability in setting applicability dates: “EPA’s decision is also designed to allow, more broadly, for the coordination of generating unit outages in order to maintain grid reliability and prevent any potential impacts on electricity availability, something that public commenters urged EPA to consider.” 80 Fed. Reg. at 67,854, col. 2. *See also* Response to Comments, p. 8-138. This statement clearly applies to scheduling tie-ins with generating unit outages, but also implies the ELG applicability date should consider grid reliability associated with unit retirements. In order to maintain grid reliability in the area, the coal-fired units must remain operational until the new combined-cycle is commercially available

To avoid stranded costs and maintain grid reliability, establishing an EGL applicability date of January 31, 2020 is justified.

Attachment E - Alternate Schedule Request 316(b)

Applicability of §316(b) of the Clean Water Act (CWA) to the Asheville Steam Station

Final regulations to establish requirements for cooling water intake structures at existing facilities were published in the Federal Register on August 15, 2014 (i.e. regulations implementing §316(b) of the Clean Water Act) with an effective date of October 14, 2014. The Asheville Steam Station currently consists of a two unit coal-fired generating station with a capacity totaling 384 MW/378 MW (winter/summer). Per the Mountain Energy Act of 2015, both coal-fired steam stations are scheduled to retire by January 31, 2020. The generation will be replaced with a new combined-cycle station expected to be operational in late 2019. The following provides a discussion of the applicability of the 316(b) regulations to the Asheville Steam Station and the new combined-cycle unit.

Asheville Steam Station

Per §125.91(a)(1)-(3) *Applicability*, the Asheville Steam Station is subject to the requirements at §125.94 through §125.99 (316(b) requirements) based on the following:

- The facility is defined as an existing facility;
- The facility has a point source discharge;
- The facility uses a cooling water intake with a design intake flow (DIF) of greater than 2 million gallons (MGD) to withdraw water from waters of the U.S.; and
- Twenty-five percent or more of the water withdraws on an actual intake flow basis are exclusively used for cooling purposes.

However, per §122.21 (r)(1)(ii)(F), if the owner of an existing facility plans to retire the facility before the current NPDES permit expires, then the 316(b) submittal requirements listed in §122.21 (r)(1)(ii)(A), (B) and (C) do not apply¹. Therefore, with the assumption the renewed NPDES permit for Asheville Steam Station will expire after the scheduled retirement date, no further action is required for the Asheville Steam Station to meet the 316(b) requirements for existing facilities.

Asheville Combined-cycle Station

The planned Asheville Combined-cycle station is expected to be classified as a new unit at an existing facility. The unit will be stand alone, will utilize the existing intake structure to obtain cooling water, and the existing intake will not be modified to increase the design intake flow. Therefore, §125.94(e) *BTA standards for impingement mortality and entrainment for new units at existing facilities* is anticipated to be applicable to the planned Asheville Combined-cycle Station. As such, Duke Energy plans to demonstrate compliance under §125.94(e)(1) by operating the cooling water system as a closed-cycle recirculating system. Per §122.21 (r)(1)(ii)(D) *New units at existing facilities*, Duke Energy will submit the following information:

¹ §122.21 (r)(1)(ii)(A) requires all existing facilities to submit information listed in §122.21 (r)(2) – (8).

§122.21 (r)(1)(ii)(B) requires all existing facilities with an Actual Intake Flow (AIF) greater than 125 MGD to submit information listed in §122.21 (r) (9), (10), (11), (12), and (13).

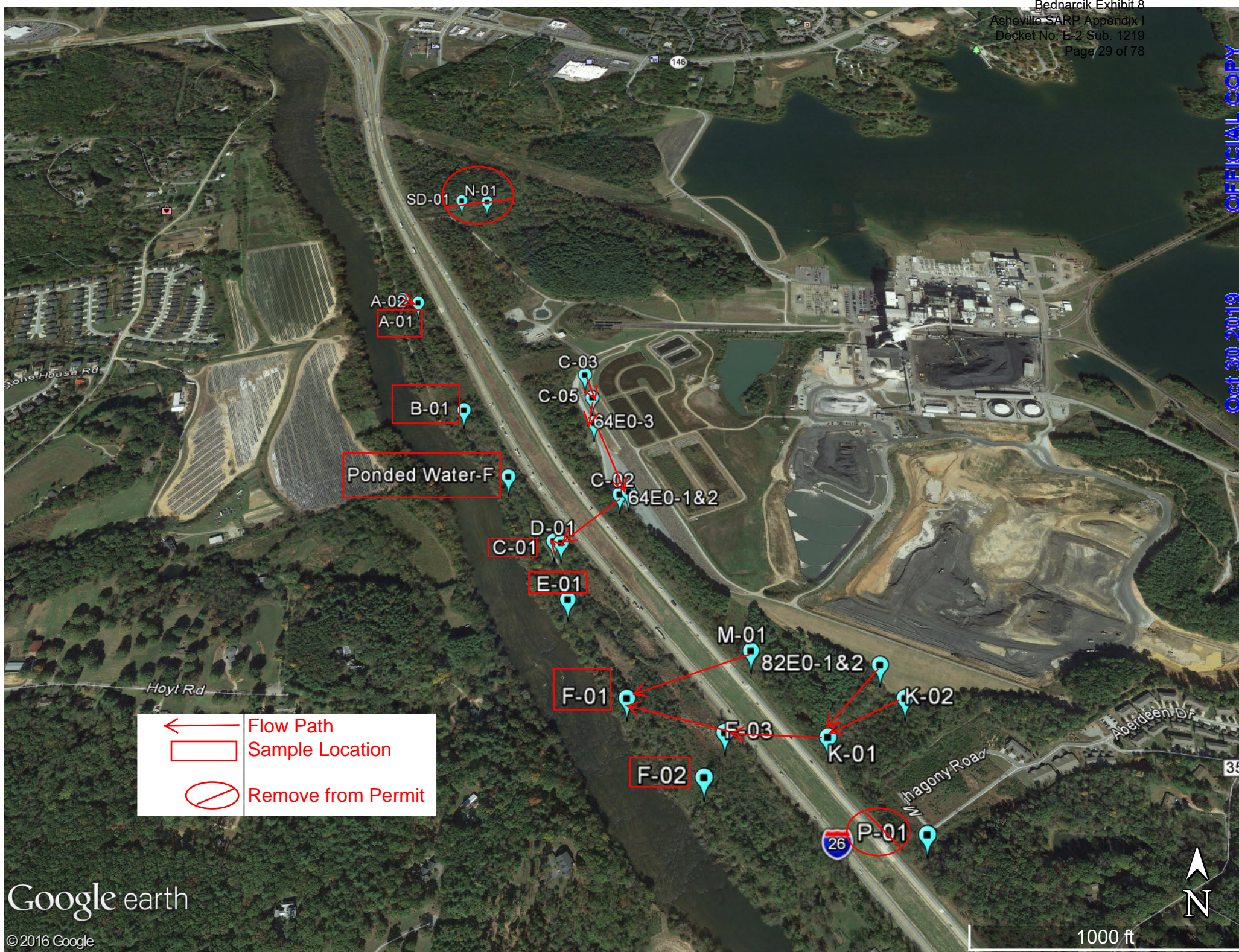
§122.21 (r)(1)(ii)(C) requires existing facility must also submit such additional information as the Director determines is necessary.

- §122.21(r)(2) *Source Water Physical Data*
- §122.21(r)(3) *Cooling Water Intake Structure Data*
- Applicable provisions of §122.21(r)(4) *Source Water Baseline Biological Characterization Data*
- §122.21(r)(5) *Cooling Water System Data*
- Applicable provisions of §122.21(r)(6) *Chosen Method(s) of Compliance with Impingement Mortality Standard*
- Applicable provisions of §122.21(r)(7) *Entrainment Performance Studies*
- §122.21(r)(8) *Operational Status*
- §122.21(r)(14) *New Units*

Furthermore, the actual intake flow (AIF) is expected to be well below 125 million gallons per day (MGD). The additional information requested under §122.21(r)(9), (10), (11), (12) and (13), therefore, are not applicable to the combined-cycle station. In accordance with §125.95(b) *Permit application submittal timeframe for new units*, Duke Energy will submit information required in §122.21(r) within 180 days before the planned commencement of cooling water withdrawals for the operation of the new unit.

Attachment F - NPDES Seeps

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Attachment G-NPDES ISP (NCS000575)

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES

PERMIT

TO DISCHARGE STORMWATER UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Duke Energy Progress, LLC

is hereby authorized to discharge stormwater from a facility located at

Asheville Steam Electric Plant
200 CP&L Drive
Arden, NC
Buncombe County

to receiving waters designated as Lake Julian, a class C and an unnamed tributary to unnamed Class C tributary to the French Broad River Basin, in accordance with the discharge limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

This permit shall become effective May 24, 2016.

This permit and the authorization to discharge shall expire at midnight on April 30, 2021.

Signed this day May 24, 2016.

Original Signed by Micheal F. Randall for

Tracy E. Davis, P.E., CPM, Director
Division of Energy, Mineral and Land Resources
By the Authority of the Environmental Management Commission

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PART IV DEFINITIONS

PART I INTRODUCTION

SECTION A: INDIVIDUAL PERMIT COVERAGE

During the period beginning on the effective date of the permit and lasting until expiration, the permittee is authorized to discharge stormwater associated with industrial activity. Such discharges shall be controlled, limited and monitored as specified in this permit.

If industrial materials and activities are not exposed to precipitation or runoff as described in 40 CFR §122.26(g), the facility may qualify for a No Exposure Exclusion from NPDES stormwater discharge permit requirements. Any owner or operator wishing to obtain a No Exposure Exclusion must submit a No Exposure Certification Notice of Intent (NOI) form to the Division; must receive approval by the Division; must maintain no exposure conditions unless authorized to discharge under a valid NPDES stormwater permit; and must recertify the No Exposure Exclusion annually.

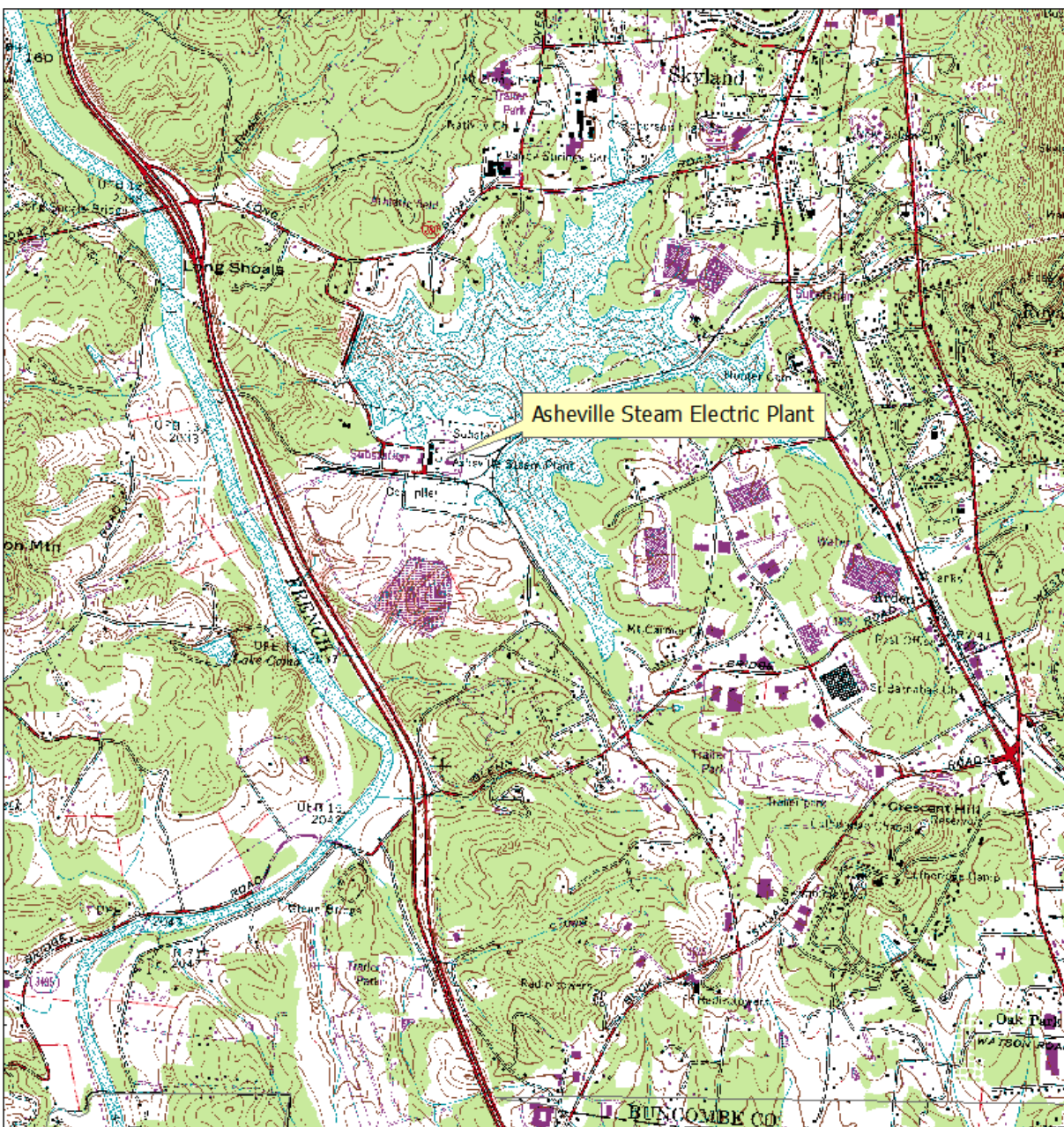
SECTION B: PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the permittee is authorized to discharge stormwater to the surface waters of North Carolina or separate storm sewer system that has been adequately treated and managed in accordance with the terms and conditions of this permit. All stormwater discharges shall be in accordance with the conditions of this permit.

Any other point source discharge to surface waters of the state is prohibited unless it is an allowable non-stormwater discharge or is covered by another permit, authorization, or approval. The stormwater discharges allowed by this permit shall not cause or contribute to violations of Water Quality Standards.

This permit does not relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law, rule, standard, ordinance, order, judgment, or decree.

SECTION C: LOCATION MAP



NCS000575

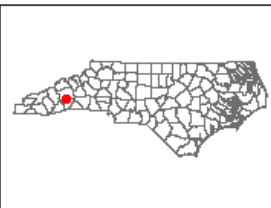


Map Scale 1:24,000

Duke Energy Progress, LLC Asheville Steam Electric Plant

Latitude: 35° 28' 1" N
 Longitude: 82° 32' 13" W
 County: Buncombe
 Receiving Stream: Lake Julian and a UT to the French
 Broad River

Stream Class: C
 River Basin: French Broad River Basin



Facility Location

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PART II MONITORING, CONTROLS, AND LIMITATIONS FOR PERMITTED DISCHARGES

SECTION A: STORMWATER POLLUTION PREVENTION PLAN

The permittee shall **develop and implement** a Stormwater Pollution Prevention Plan (SPPP). The SPPP shall be maintained on site unless exempted from this requirement by the Division. The SPPP is public information in accordance with Part III, Standard Conditions, Section E, paragraph 3 of this permit. The SPPP should also specifically and separately address deconstruction, demolition, coal, and/or coal ash hauling or disposal activities. The SPPP shall include, at a minimum, the following items:

1. **Site Overview.** The Site Overview shall provide a description of the physical facility and the potential pollutant sources that may be expected to contribute to contamination of stormwater discharges. The Site Overview shall contain the following:
 - (a) A general **location map** (USGS quadrangle map or appropriately drafted equivalent map), showing the facility's location in relation to transportation routes and surface waters; the name of the receiving waters to which the stormwater outfalls discharge, or if the discharge is to a municipal separate storm sewer system, the name of the municipality and the ultimate receiving waters; and accurate latitude and longitude of the points of stormwater discharge associated with industrial activity. The general location map (or alternatively the site map) shall identify whether any receiving waters are **impaired** (on the state's 303(d) list of impaired waters) or if the site is located in a **watershed for which a TMDL has been established**, and what the parameters of concern are.
 - (b) A **narrative description** of storage practices, loading and unloading activities, outdoor process areas, dust or particulate generating or control processes, and waste disposal practices. A **narrative description** of the potential pollutants that could be expected to be present in the stormwater discharge from each outfall. The narrative should also reference deconstruction, demolition, coal, and/or coal ash hauling or disposal activities where applicable.
 - (c) A **site map** drawn at a scale sufficient to clearly depict: the site property boundary; the stormwater discharge outfalls; all on-site and adjacent surface waters and wetlands; industrial activity areas (including storage of materials, disposal areas, process areas, loading and unloading areas, and haul roads); site topography and finished grade; all drainage features and structures; drainage area boundaries and total contributing area for each outfall; direction of flow in each drainage area; industrial activities occurring in each drainage area; buildings; stormwater Best Management Practices (BMPs); and impervious surfaces. The site map must indicate the percentage of each drainage area that is impervious, and the site map must include a graphic scale indication and north arrow.

- (d) A **list of significant spills or leaks** of pollutants during the previous three (3) years and any corrective actions taken to mitigate spill impacts.
 - (e) Certification that the stormwater outfalls have been evaluated for the presence of non-stormwater discharges. **The permittee shall submit the first certification no later than 90 days after the effective date of this permit to the Stormwater Permitting Program Central Office and shall re-certify annually that the stormwater outfalls have been evaluated for the presence of non-stormwater discharges.** For any non-stormwater discharge identified, the permittee shall indicate how that discharge is permitted or otherwise authorized. The certification statement will be signed in accordance with the requirements found in Part III, Standard Conditions, Section B, Paragraph 3.
2. **Stormwater Management Strategy.** The Stormwater Management Strategy shall contain a narrative description of the materials management practices employed which control or minimize the stormwater exposure of significant materials, including structural and nonstructural measures. This strategy should also address deconstruction, demolition, coal, and/or coal ash hauling or disposal activities where applicable. The Stormwater Management Strategy, at a minimum, shall incorporate the following:
- (a) **Feasibility Study.** A review of the technical and economic feasibility of changing the methods of operations and/or storage practices to eliminate or reduce exposure of materials and processes to rainfall and run-on flows. Wherever practical, the permittee shall prevent exposure of all storage areas, material handling operations, and manufacturing or fueling operations. In areas where elimination of exposure is not practical, this review shall document the feasibility of diverting the stormwater run-on away from areas of potential contamination.
 - (b) **Secondary Containment Requirements and Records.** Secondary containment is required for: bulk storage of liquid materials; storage in any amount of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) water priority chemicals; and storage in any amount of hazardous substances, in order to prevent leaks and spills from contaminating stormwater runoff. A table or summary of all such tanks and stored materials and their associated secondary containment areas shall be maintained. If the secondary containment devices are connected to stormwater conveyance systems, the connection shall be controlled by manually activated valves or other similar devices (which shall be secured closed with a locking mechanism). Any stormwater that accumulates in the containment area shall be observed for color, foam, outfall staining, visible sheens and dry weather flow, prior to release of the accumulated stormwater. Accumulated stormwater shall be released if found to be uncontaminated by any material. Records documenting the individual making the observation, the description of the accumulated stormwater, and the date and time of the release shall be kept for a period of five (5) years. For facilities subject to a federal oil Spill Prevention, Control, and Countermeasure Plan (SPCC), any portion of the SPCC Plan fully compliant with the requirements of this permit may be used to demonstrate compliance with this permit.

In addition to secondary containment for tankage, the permittee shall provide drip pans or other similar protection measures for truck or rail car liquid loading and unloading stations.

- (c) **BMP Summary.** A listing of site structural and non-structural Best Management Practices (BMPs) shall be provided. The installation and implementation of BMPs shall be based on the assessment of the potential for sources to contribute significant quantities of pollutants to stormwater discharges and on data collected through monitoring of stormwater discharges. The BMP Summary shall include a written record of the specific rationale for installation and implementation of the selected site BMPs. The BMP Summary should also address deconstruction, demolition, coal, and/or coal ash hauling or disposal activities where applicable. The permittee shall refer to the BMPs described in EPA's Multi-Sector Permit (MSGP) and Industrial Stormwater Fact Sheet for Steam Electric Power Generating Facilities (EPA-833-F-06-030) for guidance on BMPs that may be appropriate for this site. The BMP Summary shall be reviewed and updated annually.
3. **Spill Prevention and Response Procedures.** The Spill Prevention and Response Procedures (SPRP) shall incorporate an assessment of potential pollutant sources based on a materials inventory of the facility. Facility personnel responsible for implementing the SPRP shall be identified in a written list incorporated into the SPRP and signed and dated by each individual acknowledging their responsibilities for the plan. A responsible person shall be on-site at all times during facility operations that have increased potential to contaminate stormwater runoff through spills or exposure of materials associated with the facility operations. The SPRP must be site stormwater specific. Therefore, an oil Spill Prevention Control and Countermeasure plan (SPCC) may be a component of the SPRP, but may not be sufficient to completely address the stormwater aspects of the SPRP. The common elements of the SPCC with the SPRP may be incorporated by reference into the SPRP.
4. **Preventative Maintenance and Good Housekeeping Program.** A preventative maintenance and good housekeeping program shall be developed and implemented. The program shall address all stormwater control systems (if applicable), stormwater discharge outfalls, all on-site and adjacent surface waters and wetlands, industrial activity areas (including material storage areas, material handling areas, disposal areas, process areas, loading and unloading areas, and haul roads), all drainage features and structures, and existing structural BMPs.

The program shall establish schedules of inspections, maintenance, and housekeeping activities of stormwater control systems, as well as facility equipment, facility areas, and facility systems that present a potential for stormwater exposure or stormwater pollution where not already addressed under another element of the SPPP. Inspection of material handling areas and regular cleaning schedules of these areas shall be incorporated into the program. Compliance with the established schedules for inspections, maintenance, and housekeeping shall be recorded and maintained in the SPPP. The program should also address deconstruction, demolition, coal, and/or coal ash hauling or disposal activities where applicable. The Good Housekeeping Program shall also include, but not be limited to, BMPs to accomplish the following:

- (a) Minimize contamination of stormwater runoff from oil-bearing equipment in switchyard areas;
 - (b) Minimize contamination of stormwater runoff from delivery vehicles and rail cars arriving and departing the plant site;
 - (c) Inspect all residue-hauling vehicles for proper covering over the load, adequate gate-sealing, and overall integrity of the container body. Repair vehicles as necessary; and
 - (d) Reduce or control the tracking of ash and residue from ash loading and storage areas;
5. **Facility Inspections.** Inspections of the facility (including tanks, pipes, and equipment) and all stormwater *systems* shall occur as part of the Preventative Maintenance and Good Housekeeping Program at a minimum on a semi-annual schedule, once during the first half of the year (January to June), and once during the second half (July to December), with at least 60 days separating inspection dates (unless performed more frequently than semi-annually). These facility inspections are different from, and in addition to, the stormwater discharge characteristic monitoring *at the outfalls* required in Part II B, and C of this permit.
6. **Employee Training.** Training programs shall be developed and training provided at a minimum on an annual basis for facility personnel with responsibilities for: spill response and cleanup, preventative maintenance activities, and for any of the facility's operations that have the potential to contaminate stormwater runoff. The facility personnel responsible for implementing the training shall be identified, and their annual training shall be documented by the signature of each employee trained.
7. **Responsible Party.** The SPPP shall identify a specific position or positions responsible for the overall coordination, development, implementation, and revision of the SPPP. Responsibilities for all components of the SPPP shall be documented and position assignments provided.
8. **SPPP Amendment and Annual Update.** The permittee shall amend the SPPP whenever there is a change in design, construction, operation, site drainage, maintenance, or configuration of the physical features which may have a significant effect on the potential for the discharge of pollutants to surface waters. **All aspects of the SPPP shall be reviewed and updated on an annual basis.** The annual update shall include:
- (a) an *updated list of significant spills or leaks* of pollutants for the previous three (3) years, or the notation that no spills have occurred (element of the **Site Overview**);
 - (b) a written *re-certification that the stormwater outfalls have been evaluated for the presence of non-stormwater discharges* (element of the **Site Overview**);
 - (c) a documented re-evaluation of the effectiveness of the on-site stormwater BMPs (*BMP Summary* element of the **Stormwater Management Strategy**).
 - (d) a *review and comparison of sample analytical data* to benchmark values (if applicable) over the past year, including a discussion about Tiered Response

status. The permittee shall use the Division's Annual Summary Data Monitoring Report (DMR) form, available from the Stormwater Permitting Program's website (See 'Monitoring Forms' here: <http://portal.ncdenr.org/web/lr/npdes-stormwater>).

If the Director notifies the permittee that the SPPP does not meet one or more of the minimum requirements of the permit, the permittee shall have 30 days to respond. Within 30 days of such notice, the permittee shall submit a time schedule to the Director for modifying the SPPP to meet minimum requirements. The permittee shall provide certification in writing (in accordance with Part III, Standard Conditions, Section B, Paragraph 3) to the Director that the changes have been made.

9. **SPPP Implementation.** The permittee shall implement the Stormwater Pollution Prevention Plan and all appropriate BMPs consistent with the provisions of this permit, in order to control contaminants entering surface waters via stormwater. Implementation of the SPPP shall include documentation of all monitoring, measurements, inspections, maintenance activities, and training provided to employees, including the log of the sampling data and of actions taken to implement BMPs associated with the industrial activities, including vehicle maintenance activities. Such documentation shall be kept on-site for a period of five (5) years and made available to the Director or the Director's authorized representative immediately upon request.

SECTION B: ANALYTICAL MONITORING REQUIREMENTS

Analytical monitoring of stormwater discharges shall be performed as specified in **Tables 1-3**. All analytical monitoring shall be performed during a **measurable storm event** at the specified stormwater discharge outfalls (SDOs) that discharge *stormwater associated with industrial activity* (See Definitions).

A **measurable storm event** is a storm event that results in an **actual discharge** from the permitted site outfall. The previous measurable storm event must have been at least 72 hours prior. The 72-hour storm interval does not apply if the permittee is able to document that a shorter interval is representative for local storm events during the sampling period, and the permittee obtains approval from the local DEMLR Regional Engineer. *See Definitions.*

The following parameters shall be monitored during a measurable storm event from the back entrance **access road area**, designated as Outfall SW001, SW002, SW003, SW-7, and SW-8 discharging to an unnamed tributary to the French Broad River.

Table 1. Analytical Monitoring Requirements for Outfall SW001, SW002, SW003, SW-7 and SW-8

Discharge Characteristics	Units	Measurement Frequency ¹	Sample Type ²	Sample Location ³
Total Suspended Solids (TSS)	mg/L	semi-annual (quarterly, during coal or ash transport only)	Grab	SDO
Total Rainfall ⁴	inches	semi-annual (quarterly, during coal or ash transport only)	Rain Gauge	-
40 CFR Part 423 Appendix A: Priority Pollutant Metals – Ag, As, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, Zn ⁵	mg/L	quarterly, during coal or ash transport only	Grab	SDO
Boron ⁵	mg/L	quarterly, during coal or ash transport only	Grab	SDO
pH ⁵	standard	semi-annual (quarterly, during coal or ash transport only)	Grab	SDO

Footnotes:

- ¹ Measurement Frequency: Twice per year (unless other provisions of this permit prompt quarterly or monthly sampling) during a **measurable storm event**, until either another permit is issued for this facility or until this permit is revoked or rescinded. If the facility is monitoring monthly because of Tier Two or Three response actions under the previous permit, the facility shall continue a monthly monitoring and reporting schedule in Tier Two or Tier Three status until relieved by the provisions of this permit or the Division.
- ² Grab samples shall be collected within the first 30 minutes of discharge. When physical separation between outfalls prevents collecting all samples within the first 30 minutes, sampling shall begin within the first 30 minutes, and shall continue until completed.

- 3 Sample Location: Samples shall be collected at each stormwater discharge outfall (SDO) specified above unless representative outfall status (ROS) has been granted. The permittee may petition the Director for ROS using DEMLR's ROS Request Form. DEMLR may grant ROS if stormwater discharges from a single outfall are representative of discharges from multiple outfalls. Approved ROS will reduce the number of outfalls where the analytical sampling requirements apply and will be documented in a letter to the permittee. A copy of the Division's letter granting ROS shall be kept on site.
- 4 For each sampled measureable storm event, the total precipitation must be recorded. An on-site rain gauge is required. Where isolated sites are unmanned for extended periods of time, a local rain gauge reading may be substituted for an on-site reading.
- 5 These parameters shall be monitored only if coal or coal ash is transported through the drainage areas of these outfalls during the quarterly monitoring period in Table 3. Mercury shall be measured by EPA Method 1631E.

The stormwater outfall identified as SW004, SW005, and SW006 (outfalls along the main entrance) is not associated with industrial activities. Any modifications to these outfalls that result in a potential stormwater discharge associated with past or present industrial activities will require a modification to this permit.

Should the permittee **identify or create any new stormwater outfalls; remove any stormwater outfalls** identified in this permit; or **alter any drainage areas** that change the potential pollutants in runoff discharged through corresponding outfalls, the permittee will submit a request to NC DEMLR to modify this permit. For any newly discovered pipes or outfalls, the permittee must evaluate the structure and provide a report of the status and planned actions to NC DENR within 14 days. The permittee must either (1) request modification of this permit and modify the SPPP accordingly, or (2) eliminate potential discharges by removal, plugging, or combination of both.

The permittee shall complete the analytical samplings in accordance with the schedule specified in **Table 2**, unless *adverse weather* conditions prevent sample collection (see *Adverse Weather* in Definitions). Similarly, sampling is not required outside of the facility's normal operating hours. **A minimum of 60 days must separate Period 1 and Period 2 sample dates**, unless monthly monitoring has been instituted under a "Tier Two" response. Inability to sample because of adverse weather conditions must be documented in the SPPP and recorded on the DMR. The permittee must report the results from each sample taken within the monitoring period (see Part III, Section E). However, for purposes of benchmark comparison and Tiered response actions, the permittee shall use the analytical results from **the first sample with valid results** within the monitoring period.

Table 2. Monitoring Schedule

Monitoring period ^{1,2}	Sample Number	Start	End
Year 1 – Period 1	1	May 24, 2016	December 31, 2016
Year 1 – Period 2	2	January 1, 2017	June 30, 2017
Year 2 – Period 1	3	July 1, 2017	December 31, 2017
Year 2 – Period 2	4	January 1, 2018	June 30, 2018
Year 3 – Period 1	5	July 1, 2018	December 31, 2018
Year 3 – Period 2	6	January 1, 2019	June 30, 2019
Year 4 – Period 1	7	July 1, 2019	December 31, 2019
Year 4 – Period 2	8	January 1, 2020	June 30, 2020

Year 5 – Period 1	9	July 1, 2020	December 31, 2020
Year 5 – Period 2	10	January 1, 2021	April 30, 2021

Footnotes:

- 1 Maintain monitoring until either another permit is issued for this facility or until this permit is revoked or rescinded. The permittee must submit an application for renewal of coverage before the submittal deadline (180 days before expiration) to be considered for renewed coverage under the permit. The permittee must continue analytical monitoring throughout the permit renewal process, even if a renewal permit is not issued until after expiration of this permit.
- 2 If no discharge occurs during the sampling period, the permittee must submit a monitoring report indicating “No Flow” or “No Discharge” within 30 days of the end of the sampling period.

Failure to monitor per permit terms may result in the Division requiring monthly monitoring for all parameters for a specified time period. “No discharge” from an outfall during a monitoring period does not constitute failure to monitor, as long as it is properly recorded and reported.

Proposed NPDES Wastewater Permit NC0000396 requires the facility to conduct **fish tissue monitoring** once during that permit term for arsenic (As), selenium (Se), and mercury (Hg) in accordance with a Sampling Plan approved by the Division of Water Resources. The permittee shall submit annually a summary of the results of the fish tissue monitoring results to the DEMLR Stormwater Permitting Program (Central Office) and indicate the location of sampling in relation to stormwater discharge outfalls. This reporting timeframe differs from the NPDES Wastewater Permit, which directs that fish tissue analysis results be submitted with the wastewater discharge permit renewal application.

The permittee shall compare monitoring results to the benchmark values in **Table 3**. Exceedances of benchmark values require the permittee to increase monitoring, increase management actions, increase record keeping, and/or install stormwater Best Management Practices (BMPs) in a tiered program. See below the descriptions of **Tier One**, **Tier Two**, and **Tier Three** response actions below. In the event that the Division releases the permittee from continued monthly monitoring and reporting under Tier Two or Tier Three, the Division’s release letter may remain in effect through subsequent reissuance of this permit, unless the release letter provides for other conditions or duration.

Table 3. Benchmark Values for Analytical Monitoring

Discharge Characteristics	Units	Benchmark
Antimony (Sb), Total Recoverable	mg/L	0.09
Arsenic (As), Total Recoverable	mg/L	0.34
Beryllium (Be), Total Recoverable	mg/L	0.065
Cadmium (Cd), Total Recoverable ¹	mg/L	0.003
Chromium (Cr), Total Recoverable ¹	mg/L	0.9
Copper (Cu), Total Recoverable ¹	mg/L	0.010

Discharge Characteristics	Units	Benchmark
Lead (Pb), Total Recoverable ¹	mg/L	0.075
Mercury (Hg), Total Recoverable ²	ng/L	N/A ²
Nickel (Ni), Total Recoverable ¹	mg/L	0.335
Polychlorinated biphenyl compounds (PCBs)	µg/L	Detected
Selenium (Se), Total Recoverable	mg/L	0.056
Silver (Ag), Total Recoverable ¹	mg/L	0.0003
Zinc (Zn), Total Recoverable ¹	mg/L	0.126
Total Suspended Solids (TSS)	mg/L	100
Non-Polar Oil & Grease by <i>EPA Method 1664 (SGT-HEM)</i>	mg/L	15
pH ³	standard	6 – 9 ³
Boron (B)	mg/L	N/A (monitor only)
Thallium (Tl), Total Recoverable ¹	mg/L	N/A (monitor only)

Footnotes:

- 1 Hardness- dependent. Benchmark based on translation of dissolved value into total recoverable with an assumed hardness of 25 mg/l and a total suspended solids (TSS) concentration of 10 mg/l.
- 2 Values above the North Carolina water quality standard for mercury (12 ng/l) should be noted on the DMR but **do not trigger Tier responses**. *Concentrations in field blanks or method blanks associated with the sample may be subtracted from the results for that sample, as long as all documentation of the adjustment is provided with the DMR.*
- 3 If pH values outside this range are recorded in sampled stormwater discharges, but ambient precipitation pH levels are lower, then the lower threshold of this benchmark range is the pH of the precipitation (within instrument accuracy) instead of 6 S.U. Readings from an on-site or local rain gauge (or local precipitation data) must be documented to demonstrate background concentrations were below the benchmark pH range of 6- 9.

The benchmark values in **Table 3** are not permit limits but should be used as guidelines for implementation of the permittee's SPPP. An **exceedance of a stormwater benchmark value is not a permit violation**; however, failure to respond to the exceedance as outlined in this permit is a violation of permit conditions.

Tier One	
If: The first valid sampling results are above a benchmark value, or outside of the benchmark range, for any parameter at any outfall;	
Then: The permittee shall:	
<ol style="list-style-type: none"> 1. Conduct a stormwater management inspection of the facility within two weeks of receiving sampling results. 2. Identify and evaluate possible causes of the benchmark value exceedance. 3. Identify potential, and select the specific feasible: source controls, operational controls, or physical improvements to reduce concentrations of the parameters of concern, and/or to bring concentrations within the benchmark range. 4. Implement the selected feasible actions within two months of the inspection. 5. Record each instance of a Tier One response in the SPPP. Include the date and value of the benchmark exceedance, the inspection date, the personnel conducting the inspection, the selected actions, and the date the selected actions were implemented. 6. Immediately institute monthly monitoring and reporting for <u>all parameters</u>. The permittee shall conduct monthly monitoring at every outfall where a sampling result exceeded the benchmark value. Monthly (analytical and qualitative) monitoring shall continue until three consecutive sample results are below the benchmark values or within benchmark range. 7. Note: Benchmark exceedances for a different parameter separately trigger a tiered response. 	

Tier Two	
If: The first valid sampling results from two consecutive monitoring periods are above the benchmark values, or outside of the benchmark range, for any specific parameter at a specific discharge outfall;	
Then: The permittee shall:	
<ol style="list-style-type: none"> 1. Repeat all the required actions outlined above in Tier One. 2. Continue monthly monitoring and reporting for <u>all parameters</u>. The permittee shall conduct monthly monitoring at every outfall where a sampling result exceeded the benchmark value for two consecutive samples. Monthly (analytical and qualitative) monitoring shall continue until three consecutive sample results are below the benchmark values or within benchmark range. 3. If no discharge occurs during the sampling period, the permittee is required to submit a monthly monitoring report indicating "No Flow" to comply with reporting requirements. 4. <i>Alternatively</i>, in lieu of steps 2 and 3, the permittee may, after two consecutive exceedances, exercise the option of contacting the DEMLR Regional Engineer as provided below in Tier Three. The Regional Engineer may direct the response actions on the part of the permittee as provided in Tier Three, including reduced or additional sampling parameters or frequency. 5. If pursuing the alternative above after two consecutive exceedances, the permittee may propose an alternative monitoring plan for approval by the Regional Engineer. 6. Maintain a record of the Tier Two response in the SPPP. 7. Continue Tier Two response obligations throughout the permit renewal process. 	

Tier Three	
If: The valid sampling results required for the permit monitoring periods exceed the benchmark value, or are outside the benchmark range, for any specific parameter at any specific outfall on four occasions , the permittee shall notify the DEMLR Regional Engineer in writing within 30 days of receipt of the fourth analytical results;	
Then: The Division may but is not limited to:	
<ul style="list-style-type: none"> • require that the permittee revise, increase, or decrease the monitoring and reporting frequency for some or all of the parameters herein; • require sampling of additional or substitute parameters; • require the permittee to install structural stormwater controls; • require the permittee to implement other stormwater control measures; 	

- require the permittee to perform upstream and downstream monitoring to characterize impacts on receiving waters; or
- require the permittee implement site modifications to qualify for a No Exposure Exclusion;
- require the permittee to continue Tier Three obligations through the permit renewal process.

If a Total Maximum Daily Load (TMDL) is developed and approved for Lake Julian, or if this body of water becomes impaired, the permittee may be required to monitor for the pollutant(s) of concern in the future and submit results to the Division. The Division will consider the monitoring results in determining whether additional BMPs are needed to control the pollutant(s) of concern to the maximum extent practicable.

If additional BMPs are needed to achieve the required level of control, the permittee will be required to (1) develop a strategy for implementing appropriate BMPs, and (2) submit a timetable for incorporation of those BMPs into the Stormwater Pollution Prevention Plan.

SECTION C: QUALITATIVE MONITORING REQUIREMENTS

The purpose of qualitative monitoring is to evaluate the effectiveness of the Stormwater Pollution Prevention Plan (SPPP) and identify new potential sources of stormwater pollution. Qualitative monitoring of stormwater outfalls must be performed during a **measurable storm event**.

Qualitative monitoring requires a visual inspection of each stormwater outfall *regardless of* representative outfall status. Qualitative monitoring shall be performed quarterly as specified in **Table 4**, and during required analytical monitoring events (unless the permittee is required to perform further qualitative monitoring per the **Qualitative Monitoring Response**, below). Inability to monitor because of adverse weather conditions must be documented in the SPPP and recorded on the Qualitative Monitoring Report form (see *Adverse Weather* in Definitions). Only SDOs discharging *stormwater associated with industrial activity* must be monitored (See Definitions).

In the event an atypical condition is noted at a stormwater discharge outfall, the permittee shall document the suspected cause of the condition and any actions taken in response to the discovery. This documentation will be maintained with the SPPP.

Table 4. Qualitative Monitoring Requirements

Discharge Characteristics	Frequency ¹	Monitoring Location ²
Color	quarterly	SDO
Odor	quarterly	SDO
Clarity	quarterly	SDO
Floating Solids	quarterly	SDO
Suspended Solids	quarterly	SDO
Foam	quarterly	SDO
Oil Sheen	quarterly	SDO

Discharge Characteristics	Frequency ¹	Monitoring Location ²
Erosion or deposition at the outfall	quarterly	SDO
Other obvious indicators of stormwater pollution	quarterly	SDO

Footnotes:

- 1 Monitoring Frequency: Four times per year during a **measureable storm event** unless other provisions of this permit prompt monthly monitoring. See **Table 5** for schedule of monitoring periods through the end of this permitting cycle. The permittee must continue qualitative monitoring throughout the permit renewal process until a new permit is issued.
- 2 Monitoring Location: Qualitative monitoring shall be performed at each stormwater discharge outfall (SDO) regardless of representative outfall status.

Table 5. Monitoring Schedule

Monitoring period ^{1,2}	Sample Number	Start	End
Year 1 – Period 1	1	May 24, 2016	September 30, 2016
Year 1 – Period 2	2	October 1, 2016	December 31, 2016
Year 1 – Period 3	3	January 1, 2017	March 31, 2017
Year 1 – Period 4	4	April 1, 2017	June 30, 2017
Year 2 – Period 1	5	July 1, 2017	September 30, 2017
Year 2 – Period 2	6	October 1, 2017	December 31, 2017
Year 2 – Period 3	7	January 1, 2018	March 31, 2018
Year 2 – Period 4	8	April 1, 2018	June 30, 2018
Year 3 – Period 1	9	July 1, 2018	September 30, 2018
Year 3 – Period 2	10	October 1, 2018	December 31, 2018
Year 3 – Period 3	11	January 1, 2019	March 31, 2019
Year 3 – Period 4	12	April 1, 2019	June 30, 2019
Year 4 – Period 1	13	July 1, 2019	September 30, 2019
Year 4 – Period 2	14	October 1, 2019	December 31, 2019
Year 4 – Period 3	15	January 1, 2020	March 31, 2020
Year 4 – Period 4	16	April 1, 2020	June 30, 2020
Year 5 – Period 1	17	July 1, 2020	September 30, 2020
Year 5 – Period 2	18	October 1, 2020	December 31, 2020
Year 5 – Period 3	19	January 1, 2021	March 31, 2021
Year 5 – Period 4	20	April 1, 2021	April 30, 2021

Footnotes:

- 1 Maintain quarterly monitoring until either another permit is issued for this facility or until this permit is revoked or rescinded. The permittee must continue qualitative monitoring throughout the permit renewal process, even if a renewal permit is not issued until after expiration of this permit.
- 2 If no discharge occurs during the sampling period, the permittee must complete a monitoring report indicating “No Flow” or “No Discharge” within 30 days of the end of the sampling period.

Failure to monitor quarterly per permit terms may result in the Division requiring **monthly monitoring** for all parameters for a specified time period. “No discharge” from an outfall during a monitoring period does not constitute failure to monitor, as long as it is properly recorded.

If the permittee’s qualitative monitoring indicates that existing stormwater BMPs are ineffective, or that significant stormwater contamination is present, the permittee shall investigate potential causes, evaluate the feasibility of corrective actions, and implement those corrective actions within 30 days, per the **Qualitative Monitoring Response**, below. A **written record** of the permittee’s investigation, evaluation, and response actions shall be kept in the Stormwater Pollution Prevention Plan.

Qualitative Monitoring Response
<p>Qualitative monitoring is for the purposes of evaluating SPPP effectiveness, identifying new potential sources of stormwater pollution, and prompting the permittee’s response to pollution. If the permittee repeatedly fails to respond effectively to correct problems identified by qualitative monitoring, or if the discharge causes or contributes to a water quality standard violation, the Division may but is not limited to:</p> <ul style="list-style-type: none">• require that the permittee revise, increase, or decrease the monitoring frequency for some or all parameters (analytical or qualitative)• require the permittee to install structural stormwater controls;• require the permittee to implement other stormwater control measures;• require the permittee to perform upstream and downstream monitoring to characterize impacts on receiving waters; or• require the permittee implement site modifications to qualify for a No Exposure Exclusion.

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PART III STANDARD CONDITIONS FOR NPDES STORMWATER INDIVIDUAL PERMITS

SECTION A: COMPLIANCE AND LIABILITY

1. Compliance Schedule

The permittee shall comply with Limitations and Controls specified for stormwater discharges in accordance with the following schedule:

Existing Facilities already operating but applying for permit coverage for the first time: The Stormwater Pollution Prevention Plan shall be developed and implemented within 6 months of the effective date of the initial permit and updated thereafter on an annual basis. Secondary containment, as specified in Part II, Section A, Paragraph 2(b) of this permit, shall be accomplished within 12 months of the effective date of the initial permit issuance.

New Facilities applying for coverage for the first time: The Stormwater Pollution Prevention Plan shall be developed and implemented prior to the beginning of discharges from the operation of the industrial activity and be updated thereafter on an annual basis. Secondary containment, as specified in Part II, Section A, Paragraph 2(b) of this permit shall be accomplished prior to the beginning of stormwater discharges from the operation of the industrial activity.

Existing facilities previously permitted and applying for renewal: All requirements, conditions, limitations, and controls contained in this permit (except new SPPP elements in this permit renewal) shall become effective immediately upon issuance of this permit. New elements of the Stormwater Pollution Prevention Plan for this permit renewal shall be developed and implemented within 6 months of the effective date of this permit and updated thereafter on an annual basis. Secondary containment, as specified in Part II, Paragraph 2(b) of this permit shall be accomplished prior to the beginning of stormwater discharges from the operation of the industrial activity.

2. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit upon renewal application [40 CFR 122.41].

- a. The permittee shall comply with standards or prohibitions established under section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement [40 CFR 122.41].
- b. The CWA provides that any person who violates section[s] 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$37,500 per day for each violation [33 USC 1319(d) and 40 CFR 122.41(a)(2)].
- c. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both [33 USC 1319(c)(1) and 40 CFR 122.41(a)(2)].

- d. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both [33 USC 1319(c)(2) and 40 CFR 122.41(a)(2)].
 - e. Any person who *knowingly* violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions [40 CFR 122.41(a)(2)].
 - f. Under state law, a civil penalty of not more than \$25,000 per violation may be assessed against any person who violates or fails to act in accordance with the terms, conditions, or requirements of a permit [North Carolina General Statutes § 143-215.6A].
 - g. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$16,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$37,500. Penalties for Class II violations are not to exceed \$16,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$177,500 [33 USC 1319(g)(2) and 40 CFR 122.41(a)(3)].
3. Duty to Mitigate
The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment [40 CFR 122.41(d)].
 4. Civil and Criminal Liability
Except as provided in Part III, Section C of this permit regarding bypassing of stormwater control facilities, nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties for noncompliance pursuant to NCGS 143-215.3, 143-215.6, or Section 309 of the Federal Act, 33 USC 1319. Furthermore, the permittee is responsible for consequential damages, such as fish kills, even though the responsibility for effective compliance may be temporarily suspended.
 5. Oil and Hazardous Substance Liability
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under NCGS 143-215.75 et seq. or Section 311 of the Federal Act, 33 USC 1321.
 6. Property Rights
The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations [40 CFR 122.41(g)].

7. Severability
The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby [NCGS 150B-23].
8. Duty to Provide Information
The permittee shall furnish to the Permit Issuing Authority, within a reasonable time, any information which the Permit Issuing Authority may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit issued pursuant to this permit or to determine compliance with this permit. The permittee shall also furnish to the Permit Issuing Authority upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].
9. Penalties for Tampering
The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both [40 CFR 122.41].
10. Penalties for Falsification of Reports
The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both [40 CFR 122.41].
11. Onshore or Offshore Construction
This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.
12. Duty to Reapply
If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit [40 CFR 122.41(b)].

SECTION B: GENERAL CONDITIONS

1. Permit Expiration

The permittee is not authorized to discharge after the expiration date. In order to receive automatic authorization to discharge beyond the expiration date, the permittee shall submit forms and fees as are required by the agency authorized to issue permits **no later than 180 days prior to the expiration date**, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit) [40 CFR 122.21(d)]. Any permittee that has not requested renewal at least 180 days prior to expiration, or any permittee that does not have a permit after the expiration and has not requested renewal at least 180 days prior to expiration, will be subjected to enforcement procedures as provided in NCGS §143-215.36 and 33 USC 1251 et. seq.

2. Transfers

This permit is not transferable to any person without prior written notice to and approval from the Director in accordance with 40 CFR 122.61. The Director may condition approval in accordance with NCGS 143-215.1, in particular NCGS 143-215.1(b)(4)b.2., and may require modification or revocation and reissuance of the permit, or a minor modification, to identify the new permittee and incorporate such other requirements as may be necessary under the CWA [40 CFR 122.41(l)(3), 122.61] or state statute. **The Permittee is required to notify the Division in writing in the event the permitted facility is sold or closed.**

3. Signatory Requirements

All applications, reports, or information submitted to the Permitting Issuing Authority shall be signed and certified [40 CFR 122.41(k)].

a. All permit applications shall be signed as follows:

- (1) For a corporation: by a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means: (a) a president, secretary, treasurer or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or (b) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures .
- (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- (3) For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official [40 CFR 122.22].

b. All reports required by the permit and other information requested by the Permit Issuing Authority shall be signed by a person described in paragraph a. above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

- (1) The authorization is made in writing by a person described above;
- (2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or well field, superintendent, a position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company.

(A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The written authorization is submitted to the Permit Issuing Authority [40 CFR 122.22].

- c. Changes to authorization: If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative [40 CFR 122.22].

- d. Certification. Any person signing a document under paragraphs a. or b. of this section, or submitting an electronic report (e.g., eDMR), shall make the following certification [40 CFR 122.22]. NO OTHER STATEMENTS OF CERTIFICATION WILL BE ACCEPTED:

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

- e. Electronic Reports. All electronic reports (e.g., eDMRs) submitted to the Permit Issuing Authority shall be signed by a person described in paragraph a. above or by a duly authorized representative of that person as described in paragraph b. A person, and not a position, must be delegated signatory authority for eDMR or other electronic reporting purposes.

The Permit Issuing Authority may require the permittee to begin reporting monitoring data electronically during the term of this permit. The permittee may be required to use North Carolina's Electronic Discharge Monitoring Report (eDMR) internet application for that purpose. For eDMR submissions, the person signing and submitting the eDMR must obtain an eDMR user account and login credentials to access the eDMR system.

4. Permit Modification, Revocation and Reissuance, or Termination

The issuance of this permit does not prohibit the Permit Issuing Authority from reopening and modifying the permit, revoking and reissuing the permit, or terminating the permit as allowed by the laws, rules, and regulations contained in Title 40, Code of Federal Regulations, Parts 122 and 123; Title 15A of the North Carolina Administrative Code, Subchapter 2H .0100; and North Carolina General Statute 143-215.1 et al.

5. Permit Actions

The permit may be modified, revoked and reissued, or terminated for cause. The notification of planned changes or anticipated noncompliance does not stay any permit condition [40 CFR 122.41(f)].

6. Annual Administering and Compliance Monitoring Fee Requirements

The permittee must pay the administering and compliance monitoring fee within 30 (thirty) days after being billed by the Division. Failure to pay the fee in timely manner in accordance with 15A NCAC 2H .0105(b)(2) may cause the Division to initiate action to revoke the permit.

SECTION C: OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit [40 CFR 122.41(e)].

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the condition of this permit [40 CFR 122.41(c)].

3. Bypassing of Stormwater Control Facilities

Bypass is prohibited and the Director may take enforcement action against a permittee for bypass unless:

- a. Bypass was unavoidable to prevent loss of life, personal injury or severe property damage; and
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary control facilities, retention of stormwater, or maintenance during normal periods of equipment downtime or dry weather. This condition is not satisfied if adequate backup controls should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- c. The permittee submitted notices as required under, Part III, Section E of this permit.

If the Director determines that it will meet the three conditions listed above, the Director may approve an anticipated bypass after considering its adverse effects.

SECTION D: MONITORING AND RECORDS

1. Representative Sampling

Samples collected and measurements taken, as required herein, shall be characteristic of the volume and nature of the permitted discharge. Analytical sampling shall be performed during a measureable storm event. Samples shall be taken on a day and time that is characteristic of the discharge. All samples shall be taken before the discharge joins or is diluted by any other waste stream, body of water, or substance. Monitoring points as specified in this permit shall not be changed without notification to and approval of the Permit Issuing Authority [40 CFR 122.41(j)].

2. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information [40 CFR 122.41]:

- a. The date, exact place, and time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

3. Flow Measurements

Where required, appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to the EMC regulations published pursuant to NCGS 143-215.63 et. seq, the Water and Air Quality Reporting Acts, and to regulations published pursuant to Section 304(g), 33 USC 1314, of the Federal Water Pollution Control Act, as Amended, and Regulation 40 CFR 136.

To meet the intent of the monitoring required by this permit, all test procedures must produce minimum detection and reporting levels and all data generated must be reported down to the minimum detection or lower reporting level of the procedure. If no approved methods are determined capable of achieving minimum detection and reporting levels below permit discharge requirements, then the most sensitive (method with the lowest possible detection and reporting level) approved method must be used.

5. Representative Outfall

If a facility has multiple discharge locations with substantially identical stormwater discharges that are required to be sampled, the permittee may petition the Director for representative outfall status. If it is established that the stormwater discharges are substantially identical and the permittee is granted representative outfall status, then sampling requirements may be performed at a reduced number of outfalls.

6. Records Retention

Visual monitoring shall be documented and records maintained at the facility along with the Stormwater Pollution Prevention Plan. Copies of analytical monitoring results shall also be maintained on-site. The permittee shall retain records of all monitoring information, including

- all calibration and maintenance records,
- all original strip chart recordings for continuous monitoring instrumentation,
- copies of all reports required by this permit, including Discharge Monitoring Reports (DMRs) and eDMR or other electronic DMR report submissions,
- copies of all data used to complete the application for this permit

These records or copies shall be maintained for a period of at least 5 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time [40 CFR 122.41].

7. Inspection and Entry

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Director), or in the case of a facility which discharges through a municipal separate storm sewer system, an authorized representative of a municipal operator or the separate storm sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location [40 CFR 122.41(i)].

SECTION E: REPORTING REQUIREMENTS

1. Discharge Monitoring Reports

Samples analyzed in accordance with the terms of this permit shall be submitted to the Division on Discharge Monitoring Report (DMR) forms provided by the Director or submitted electronically to the appropriate authority using an approved electronic DMR reporting system (e.g., eDMR). DMR forms are available on the Division's website (<http://portal.ncdenr.org/web/lr/npdes-stormwater>). Regardless of the submission method (paper or electronic), submittals shall be delivered to the Division or appropriate authority **no later than 30 days from the date the facility receives the sampling results from the laboratory.**

When no discharge has occurred from the facility during the report period, the permittee is required to submit a discharge monitoring report, within 30 days of the end of the specified sampling period, giving all required information and indicating "NO FLOW" as per NCAC T15A 02B .0506.

If the permittee monitors any pollutant more frequently than required by this permit using test procedures approved under 40 CFR Part 136 and at a sampling location specified in this permit or other appropriate instrument governing the discharge, the results of such monitoring shall be included in the data submitted on the DMR.

The permittee shall record the required qualitative monitoring observations on the SDO Qualitative Monitoring Report form provided by the Division and shall retain the completed forms on site. Qualitative monitoring results should not be submitted to the Division, except upon the Division's specific requirement to do so. Qualitative Monitoring Report forms are available at the website above.

2. Submitting Reports

Two signed copies of Discharge Monitoring Reports (DMRs) shall be submitted to:

Central Files
Division of Water Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

The Permit Issuing Authority may require the permittee to begin reporting monitoring data electronically during the term of this permit. The permittee may be required to use North Carolina's eDMR internet application for that purpose. Until such time that the state's eDMR application is compliant with EPA's Cross-Media Electronic Reporting Regulation (CROMERR), permittees will be required to submit all discharge monitoring data to the state *electronically* using eDMR and will be required to complete the eDMR submission by printing, signing, and **submitting one signed original and a copy of the computer printed eDMR** to the address above.

3. Availability of Reports

Except for data determined to be confidential under NCGS 143-215.3(a)(2) or Section 308 of the Federal Act, 33 USC 1318, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division. As required by the Act, analytical data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NCGS 143-215.6B or in Section 309 of the Federal Act.

4. Non-Stormwater Discharges

If the storm event monitored in accordance with this permit coincides with a non-stormwater discharge, the permittee shall separately monitor all parameters as required under all other

applicable discharge permits and provide this information with the stormwater discharge monitoring report.

5. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned changes at the permitted facility which could significantly alter the nature or quantity of pollutants discharged [40 CFR 122.41(l)]. This notification requirement includes pollutants which are not specifically listed in the permit or subject to notification requirements under 40 CFR Part 122.42 (a).

6. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes at the permitted facility which may result in noncompliance with the permit [40 CFR 122.41(l)(2)].

7. Spills

The permittee shall report to the local DEMLR Regional Office, within 24 hours, all significant spills as defined in Part IV of this permit. Additionally, the permittee shall report spills including: any oil spill of 25 gallons or more, any spill regardless of amount that causes a sheen on surface waters, any oil spill regardless of amount occurring within 100 feet of surface waters, and any oil spill less than 25 gallons that cannot be cleaned up within 24 hours.

8. Bypass

Notice [40 CFR 122.41(m)(3)]:

- a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass; including an evaluation of the anticipated quality and effect of the bypass .
- b. Unanticipated bypass. The permittee shall submit notice within 24 hours of becoming aware of an unanticipated bypass.

9. Twenty-four Hour Reporting

- a. The permittee shall report to the central office or the appropriate regional office any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

The written submission shall contain a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time compliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR 122.41(l)(6)].

- b. The Director may waive the written report on a case-by-case basis for reports under this section if the oral report has been received within 24 hours.
- c. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

10. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under 24 hour reporting at the time monitoring reports are submitted [40 CFR 122.41(l)(7)].

11. Other Information

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information [40 CFR 122.41(l)(8)].

PART IV DEFINITIONS

1. Act
See Clean Water Act.
2. Adverse Weather
Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make sampling impractical. When adverse weather conditions prevent the collection of samples during the sample period, the permittee must take a substitute sample or perform a visual assessment during the next qualifying storm event. Documentation of an adverse event (with date, time and written narrative) and the rationale must be included with your SPPP records. Adverse weather does not exempt the permittee from having to file a monitoring report in accordance with the sampling schedule. Adverse events and failures to monitor must also be explained and reported on the relevant DMR.
3. Allowable Non-Stormwater Discharges
This permit regulates stormwater discharges. However, non-stormwater discharges which shall be allowed in the stormwater conveyance system include:
 - a. All other discharges that are authorized by a non-stormwater NPDES permit.
 - b. Uncontaminated groundwater, foundation drains, air-conditioner condensate without added chemicals, springs, discharges of uncontaminated potable water, waterline and fire hydrant flushings, water from footing drains, flows from riparian habitats and wetlands.
 - c. Discharges resulting from fire-fighting or fire-fighting training, or emergency shower or eye wash as a result of use in the event of an emergency.
4. Best Management Practices (BMPs)
Measures or practices used to reduce the amount of pollution entering surface waters. BMPs may take the form of a process, activity, or physical structure. More information on BMPs can be found at: <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>.
5. Bypass
A bypass is the known diversion of stormwater from any portion of a stormwater control facility including the collection system, which is not a designed or established operating mode for the facility.
6. Bulk Storage of Liquid Materials
Liquid raw materials, in-process liquids and reactants, intermediate products, manufactured products, waste materials, or by-products in a single above ground container, tank, or vessel having a capacity of greater than 660 gallons or contained in multiple above ground containers, tanks, or vessels located in close proximity to each other having a total combined capacity of greater than 1,320 gallons.
7. Certificate of Coverage
The Certificate of Coverage (COC) is the cover sheet which accompanies a General Permit upon issuance and lists the facility name, location, receiving stream, river basin, effective date of coverage under any General Permit and is signed by the Director.
8. Clean Water Act
The Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), as amended, 33 USC 1251, et. seq.
9. Division or DEMLR
The Division of Energy, Mineral, and Land Resources, Department of Environment and Natural Resources.

10. Director
The Director of the Division of Energy, Mineral, and Land Resources, the permit issuing authority.
11. EMC
The North Carolina Environmental Management Commission.
12. Grab Sample
An individual sample collected instantaneously. Grab samples that will be analyzed (quantitatively or qualitatively) must be taken within the first 30 minutes of discharge.
13. Hazardous Substance
Any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act.
14. Landfill
A disposal facility or part of a disposal facility where waste is placed in or on land and which is not a land treatment facility, a surface impoundment, an injection well, a hazardous waste long-term storage facility or a surface storage facility.
15. Measureable Storm Event
A storm event that results in an actual discharge from the permitted site outfall. The previous measurable storm event must have been at least 72 hours prior. The 72-hour storm interval may not apply if the permittee is able to document that a shorter interval is representative for local storm events during the sampling period, and obtains approval from the local DEMLR Regional Office. Two copies of this information and a written request letter shall be sent to the local DEMLR Regional Office. After authorization by the DEMLR Regional Office, a written approval letter must be kept on site in the permittee's SPPP.
16. Municipal Separate Storm Sewer System (MS4)
A stormwater collection system within an incorporated area of local self-government such as a city or town.
17. No Exposure
A condition of no exposure means that all industrial materials and activities are protected by a storm resistant shelter or acceptable storage containers to prevent exposure to rain, snow, snowmelt, or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products [40 CFR 122.26 (b)(14)]. DEMLR may grant a No Exposure Exclusion from NPDES Stormwater Permitting requirements only if a facility complies with the terms and conditions described in 40 CFR §122.26(g).
18. Notice of Intent
The state application form which, when submitted to the Division, officially indicates the facility's notice of intent to seek coverage under a General Permit.
19. Permit Issuing Authority
The Director of the Division of Energy, Mineral, and Land Resources (see "Director" above).
20. Permittee
The owner or operator issued this permit.
21. Point Source Discharge of Stormwater
Any discernible, confined and discrete conveyance including, but not specifically limited to, any pipe, ditch, channel, tunnel, conduit, well, or discrete fissure from which stormwater is or may be discharged to waters of the state.

22. Representative Outfall Status
When it is established that the discharge of stormwater runoff from a single outfall is representative of the discharges at multiple outfalls, the Division may grant representative outfall status. Representative outfall status allows the permittee to perform analytical monitoring at a reduced number of outfalls.
23. Secondary Containment
Spill containment for the contents of the single largest tank within the containment structure plus sufficient freeboard to contain the 25-year, 24-hour storm event.
24. Section 313 Water Priority Chemical
A chemical or chemical category which:
 - b. Is listed in 40 CFR 372.65 pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986, also titled the Emergency Planning and Community Right-to-Know Act of 1986;
 - c. Is present at or above threshold levels at a facility subject to SARA title III, Section 313 reporting requirements; and
 - d. Meets at least one of the following criteria:
 - i. Is listed in appendix D of 40 CFR part 122 on Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table IV (certain toxic pollutants and hazardous substances);
 - ii. Is listed as a hazardous substance pursuant to section 311(b)(2)(A) of the CWA at 40 CFR 116.4; or
 - iii. Is a pollutant for which EPA has published acute or chronic water quality criteria.
25. Severe Property Damage
Substantial physical damage to property, damage to the control facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
26. Significant Materials
Includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.
27. Significant Spills
Includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or section 102 of CERCLA (Ref: 40 CFR 302.4).
28. Stormwater Discharge Outfall (SDO)
The point of departure of stormwater from a discernible, confined, or discrete conveyance, including but not limited to, storm sewer pipes, drainage ditches, channels, spillways, or channelized collection areas, from which stormwater flows directly or indirectly into waters of the State of North Carolina.
29. Stormwater Runoff
The flow of water which results from precipitation and which occurs immediately following rainfall or as a result of snowmelt.
30. Stormwater Associated with Industrial Activity

The discharge from any point source which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw material storage areas at an industrial site. Facilities considered to be engaged in "industrial activities" include those activities defined in 40 CFR 122.26(b)(14). The term does not include discharges from facilities or activities excluded from the NPDES program.

31. Stormwater Pollution Prevention Plan
A comprehensive site-specific plan which details measures and practices to reduce stormwater pollution and is based on an evaluation of the pollution potential of the site.
32. Total Maximum Daily Load (TMDL)
TMDLs are written plans for attaining and maintaining water quality standards, in all seasons, for a specific water body and pollutant. A list of approved TMDLs for the state of North Carolina can be found at <http://portal.ncdenr.org/web/wq/ps/mtu/tmdl>.
33. Toxic Pollutant
Any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act.
34. Vehicle Maintenance Activity
Vehicle rehabilitation, mechanical repairs, painting, fueling, lubrication, vehicle cleaning operations, or airport deicing operations.
35. Visible Sedimentation
Solid particulate matter, both mineral and organic, that has been or is being transported by water, air, gravity, or ice from its site of origin which can be seen with the unaided eye.
36. 25-year, 24 hour Storm Event
The maximum 24-hour precipitation event expected to be equaled or exceeded, on the average, once in 25 years.

Attachment H – Updated Form 2C

Attachment H

Form 2C - Item VI - Potential Discharges Not Covered By Analysis

Chemical	Estimated Quantity Used (per year)	Frequency	Purpose
Hydrazine (35%)	1840 lb./yr.	Continuous	Oxygen scavenger in boiler
Ammonium hydroxide	2730 lb./yr.	Continuous	pH control of boiler water
Sodium hydroxide (25 %)	141,139 lb./yr	Continuous	pH control of ash pond
Sodium hydroxide (50%)	30 gallons	As required	pH control of boiler water
Sodium hypochlorite (15%)	91,072 lb./yr.	As required	Control of biological fouling on heat exchangers
Sodium molybdate	100 pounds	As required	Corrosion control in closed cooling water system
Tetraammonia EDTA (38%)	35,000 pounds	Every 5 to 8 years	Boiler cleaning
Urea (50%)	4165 tons/yr.	Continuous during high ozone months	NOx control
Sulfuric acid (93%)	Variable	As needed	pH control of ash pond
Sulfuric acid (50%)	Variable	As needed	pH control of ash pond
BetzDearborn Dustreat DC9136	11,400 pounds - estimated	As required	Coal dust suppression - proprietary chemical
Fyrewash (detergent)	200 gallons	As needed	Combustion turbine blade washing
Detergents/cleaning agents	Variable	As needed	Housekeeping
Limestone (Calcium carbonate)	40,000 tons/yr.	Continuous	Flue Gas Desulfurization
Polymer (high weight, anionic, emulsion-type)	3255 lb./yr.	Continuous	Solids removal – FGD wastewater
Calcium Hydroxide (Hydrated Lime)	435 ton/yr	Continuous	Applied to flue gases for treatment
Coagulant (Sodium Sulphide)	3060 lb./yr.	Continuous	Solids removal – FGD wastewater
Sodium Hydroxide (25%)	17600 lb./yr.	Continuous	pH adjustment – FGD wastewater
Hydrochloric Acid (30%)	400 gallons - estimated	Continuous	pH adjustment – FGD wastewater
Lime Away	Variable	As needed	Remove scale on UV light system
Trac 101	11,177 lb/yr	Continuous	Algae growth inhibitor for FGD service water
Magnesium Hydroxide	Variable	Continuous	Applied to coal for slag

			control
Calcium Carbonate	355 ton/yr	Continuous	Applied to coal for slag control
Aluminum Chloride Hydroxide 25%-50% (Alum)	variable	As required	Water treatment processes, TSS control
Sumachlor 50		As needed	Coagulant for water treatment filter
PW74AS or Hypersperse MCD772 (Organic Polymer)		As needed	R.O. Anti-scalant
50% Caustic	Variable for R.O. pH adjustment 1000 gallons for R.O. cleaning per event	As needed for pH adjustment Periodic Typically 4/yr for R.O. cleaning	R.O. pH adjustment and R.O. cleaning
Hydrochloric Acid	1000 gallons/event	Periodic Typically 4/yr	R.O. membrane cleaning
Citric acid	1000 gallons/event	Periodic Typically 4/yr	R.O. membrane cleaning
Verseen 100	~ 12 gallons	Periodic Typically 4/yr	R.O. Cleaning
Hydrogen Peroxide (35%)	~ 1 gallon	Periodic Typically 2/yr	R.O. Cleaning
Biomate MBC781	~ 1 gallon	Variable	2/yr for R.O. cleaning and at each shut down for layup.
Bisulfite (sodium bisulfite)	600 gallons/event	As needed	R.O. layup
Defoamer (Nalco 60103)	10 gallons	As needed	Used once for foaming in absorber tower sump
Alkyl alcohol	Variable	As needed	Freeze conditioning agent
Propylene Glycol	Variable	As needed	Freeze conditioning agent
Calcium Chloride	Variable	As needed	Freeze conditioning agent
Diethylene glycol	Variable	As needed	Freeze conditioning agent
Glycerin	variable	As needed	Freeze conditioning agent
Fertilizer	Variable	As needed	Wetland treatment cell plant management
Pelletized Lime	Variable	As needed	Wetland treatment cell plant management
PolyFloc 12	Variable	Continuous	TSS Control
PolyClean 7	Variable	As needed	Organic growth inhibitor

			for WWT polymer tank
EcoGreen	Variable	As needed	Dust suppression for ash stockpile
Nalclear 7738	Variable	Continuous	TSS control in rim ditch
VpCI-690		As needed	Corrosion inhibitor

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SAFETY DATA SHEET

NALCLEAR® 7768

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCLEAR® 7768

Other means of identification : Not applicable.

Recommended use : FLOCCULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 01/16/2015

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Eye irritation : Category 2B

GHS Label element

Signal Word : Warning

Hazard Statements : Causes eye irritation.
If swallowed a jelly mass may form which in digestion may cause blockage.

Precautionary Statements : **Prevention:**
Wash skin thoroughly after handling. Water in contact with the product will cause slippery floor conditions.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. Do NOT induce vomiting.
Storage:
Mix thoroughly before use. Protect product from freezing.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Concentration: (%)
Hydrotreated Light Distillate	64742-47-8	10 - 30
Oxyalkylated alcohol	Proprietary	1 - 5

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Section: 4. FIRST AID MEASURES

In case of eye contact	: Rinse with plenty of water. Get medical attention if symptoms occur.
In case of skin contact	: Wash off with soap and plenty of water. Get medical attention if symptoms occur.
If swallowed	: If swallowed, DO NOT induce vomiting. Get medical attention immediately.
If inhaled	: Get medical attention if symptoms occur.
Protection of first-aiders	: In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	: If swallowed a jelly mass may form which in digestion may cause blockage. Treat symptomatically.
Most important symptoms and effects, both acute and delayed	: See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: None known.
Specific hazards during firefighting	: Not flammable or combustible.
Hazardous combustion products	: Carbon oxides
Special protective equipment for firefighters	: Use personal protective equipment.
Specific extinguishing methods	: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Spills of this product are very slippery. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	: Do not allow contact with soil, surface or ground water.
Methods and materials for containment and cleaning up	: Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

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Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Wash hands thoroughly after handling. Use only with adequate ventilation. Stir well prior to use.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers. Store separately from oxidizers. Protect product from freezing.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Hastelloy C-276, Stainless Steel 316L, Stainless Steel 304, Plasite 7122, Inconel 625, Plasite 4300, CPVC (rigid), Polypropylene (rigid), Polyethylene (rigid), PTFE, Fluoroelastomer
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Brass, Neoprene, Buna-N, Natural rubber, Polyurethane, EPDM, Mild steel, Galvanized metals, Polyethylene tubing, Chlorosulfonated polyethylene rubber

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Hydrotreated Light Distillate	64742-47-8	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³	ACGIH

- Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

- Eye protection : Safety glasses
- Hand protection : Wear protective gloves.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Wear suitable protective clothing.
- Respiratory protection : No personal respiratory protective equipment normally required.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use.
Wash face, hands and any exposed skin thoroughly after handling.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Emulsion
- Colour : off-white
- Odour : mild

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Flash point	: > 93.3 °C Method: ASTM D 93, Pensky-Martens closed cup
pH	: 6.8, 1 % Method: ASTM E 70
Odour Threshold	: no data available
Melting point/freezing point	: FREEZING POINT: -3 °C, ASTM D-97
Initial boiling point and boiling range	: 102 °C Method: ASTM D 86
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 1.04 (25 °C) ASTM D-1298
Density	: 8.55 - 9.05 lb/gal
Water solubility	: emulsifiable
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition temperature	: no data available
Viscosity, dynamic	: 200 - 1,700 mPa.s (25 °C) Method: ASTM D 2983
Viscosity, kinematic	: 194 mm ² /s (25 °C)
VOC	: 26.2 %

Section: 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Freezing temperatures.
Incompatible materials	: Addition of water results in gelling. Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Hazardous decomposition products	: Oxides of carbon Oxides of nitrogen

Section: 11. TOXICOLOGICAL INFORMATION

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Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes eye irritation.

Skin : Health injuries are not known or expected under normal use.

Ingestion : Health injuries are not known or expected under normal use.

Inhalation : Health injuries are not known or expected under normal use.

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Irritation

Skin contact : No symptoms known or expected.

Ingestion : No symptoms known or expected.

Inhalation : No symptoms known or expected.

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg

Acute inhalation toxicity : no data available

Acute dermal toxicity : no data available

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : Result: Mild eye irritation

Respiratory or skin sensitization : no data available

Carcinogenicity

IARC : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA : No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP : No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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Reproductive effects : no data available
Germ cell mutagenicity : no data available
Teratogenicity : no data available
STOT - single exposure : no data available
STOT - repeated exposure : no data available
Aspiration toxicity : no data available

Components

Acute inhalation toxicity : Oxyalkylated alcohol
LC50 rat: > 50 mg/l
Exposure time: 4 h

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Harmful to aquatic life.

Product

Toxicity to fish : LC50 Cyprinodon variegatus (sheepshead minnow): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: 1% Aqueous Solution of a Similar Product

LC50 Oncorhynchus mykiss (rainbow trout): 8,500 mg/l
Exposure time: 96 hrs
Test substance: 1% Aqueous Solution of Product

LC50 Inland Silverside: 90.7 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Oncorhynchus mykiss (rainbow trout): 157.5 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Cyprinodon variegatus (sheepshead minnow): 1,000 mg/l
Exposure time: 96 hrs

NOEC Oncorhynchus mykiss (rainbow trout): 1,300 mg/l
Exposure time: 96 hrs
Test substance: 1% Aqueous Solution of Product

NOEC Inland Silverside: 50 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Oncorhynchus mykiss (rainbow trout): 62.5 mg/l
Exposure time: 96 hrs
Test substance: Product

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Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna (Water flea): 200 mg/l
Exposure time: 48 hrs
Test substance: 1% Aqueous Solution of Product

LC50 Mysid Shrimp (*M. litoralis*): 188.9 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Mysid Shrimp (*Mysidopsis bahia*): 67.4 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Daphnia magna (Water flea): 400 mg/l
Exposure time: 96 hrs
Test substance: 1% Aqueous Solution of a Similar Product

LC50 Daphnia magna (Water flea): 0.12 mg/l
Exposure time: 48 hrs
Test substance: Similar Product

LC50 Daphnia magna (Water flea): 0.694 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC Daphnia magna (Water flea): 130 mg/l
Exposure time: 48 hrs
Test substance: 1% Aqueous Solution of Product

NOEC Mysid Shrimp (*Mysidopsis bahia*): 12.5 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Daphnia magna (Water flea): 180 mg/l
Exposure time: 96 hrs
Test substance: 1% Aqueous Solution of a Similar Product

NOEC Daphnia magna (Water flea): 0.065 mg/l
Exposure time: 48 hrs
Test substance: Similar Product

NOEC Daphnia magna (Water flea): 0.313 mg/l
Exposure time: 48 hrs
Test substance: Product

EC50 Daphnia magna (Water flea): 2.0 mg/l
Exposure time: 48 h
Test substance: Tested with 20 mg/L Humic Acid

NOEC Daphnia magna (Water flea): 0.81 mg/l
Exposure time: 48 h
Test substance: Tested with 20 mg/L Humic Acid

Toxicity to algae : EC50 Marine Algae (*Skeletonema costatum*): 23 mg/l
Exposure time: 72 hrs
Test substance: Product

Components

Toxicity to bacteria : Hydrotreated Light Distillate
> 1,000 mg/l

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Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Chemical Oxygen Demand (COD): 429,000 mg/l

Biochemical Oxygen Demand (BOD):

Incubation Period	Value	Test Descriptor
5 d	200,000 mg/l	Product

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	: 5 - 10%
Water	: 30 - 50%
Soil	: 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING

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TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

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JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

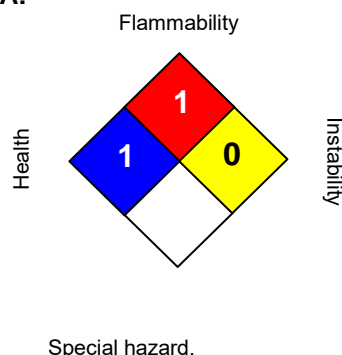
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 01/16/2015
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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