



DWR - Coal Ash Activities Update

Roanoke River Basin Bi-State Commission

December 18, 2014

Ponds & Coal Ash Tonnage

Facility	Ash Pond Name	Status*	Aug 2014 ash inventory as per Duke (tons)**
Allen Power Station	Allen Active Ash Basin	Active	7,660,000
Allen Power Station	Allen Retired Ash Basin	Inactive	3,920,000
Asheville	Asheville 1982 Ash Pond	Inactive	800,000
Asheville	Asheville 1964 Ash Pond	Active	2,200,000
Belews Creek Steam Station	Belews Creek Active Ash Basin	Active	12,610,000
Buck Power Station	Buck Steam Station Basin 1	Inactive	2,840,000
Buck Power Station	Buck Steam Station Basin 2	Inactive	1,950,000
Buck Power Station	Buck Steam Station Basin 3	Inactive	270,000
Cape Fear Power Station	Cape Fear 1956 Ash Pond (Inactive)	Inactive	420,000
Cape Fear Power Station	Cape Fear 1963 Ash Pond (Inactive)	Inactive	760,000
Cape Fear Power Station	Cape Fear 1970 Ash Pond (Inactive)	Inactive	840,000
Cape Fear Power Station	Cape Fear 1978 Ash Pond	Inactive	830,000
Cape Fear Power Station	Cape Fear 1985 Ash Pond	Inactive	2,820,000
Cliffside Power Station	Cliffside Active Ash Basin	Active	5,410,000
Cliffside Power Station	Cliffside Inactive Ash Basin 1-4	Inactive	320,000
Cliffside Power Station	Cliffside Inactive Ash Basin #5	Inactive	810,000
Dan River Power Station	Dan River Active Primary Ash Basin	Inactive	960,000
Dan River Power Station	Dan River Active Secondary Ash Basin	Inactive	210,000
Lee Power Station	H.F. Lee Ash Pond 1 (Inactive)	Inactive	190,000
Lee Power Station	H.F. Lee Ash Pond 2 (Inactive)	Inactive	440,000
Lee Power Station	H.F. Lee Ash Pond 3 (Inactive)	Inactive	670,000
Lee Power Station	H.F. Lee Active Ash Pond	Inactive	4,590,000
Lee Power Station	H.F. Lee Ash Polishing Pond	Inactive	9,000
Marshall Steam Station	Marshall Active Ash Basin	Active	22,270,000
Mayo Power Station	Mayo Ash Pond	Active	6,900,000
Riverbend Power Station	Riverbend Active Ash Basin 1	Inactive	2,050,000
Riverbend Power Station	Riverbend Active Ash Basin 2	Inactive	680,000
Roxboro Power Station	Roxboro West Ash Pond	Active	7,310,000
Roxboro Power Station	Roxboro East Ash Pond	Inactive	9,130,000
Sutton Power Station	Sutton 1971 Ash Pond	Inactive	3,540,000
Sutton Power Station	Sutton 1984 Ash Pond	Inactive	2,780,000
Weatherspoon Power Station	Weatherspoon 1979 Ash Pond	Inactive	1,700,000
			107,889,000



Groundwater - Receptor Survey

- Protection of public health is highest priority
- Duke required to identify wells w/i ½ mile
- Subset of these wells to be sampled for a wide range of constituents associated with coal ash
- Follow on sampling may be mandated based upon the results of the initial sampling
- Dan River Facility – 4 wells < 2,640 ft..



Groundwater Assessment Plans (GAPs)

- Critical component of overall coal ash effort
- Used to determine vertical and horizontal extent of groundwater contamination underneath facilities
- This information is currently unknown
- Impossible to make classification/prioritization decisions on coal ash ponds without this info
- Used to determine if impacts to wells are from coal ash
- Used to determine extent groundwater contamination beyond compliance boundaries



Groundwater Assessment Plans

- Draft GAPs received from Duke on Oct 26
 - Date mandated by EO 62
- Draft plans received for all 14 facilities
- Reviewed extensively by DWR Staff
- DWR responded to all 14 plans requesting a wide range of additional information & modifications
- Duke currently in the process of modifying plans
 - Technical meeting with DWR Staff on Nov 21
- Modified plans due back to DWR by Dec 31



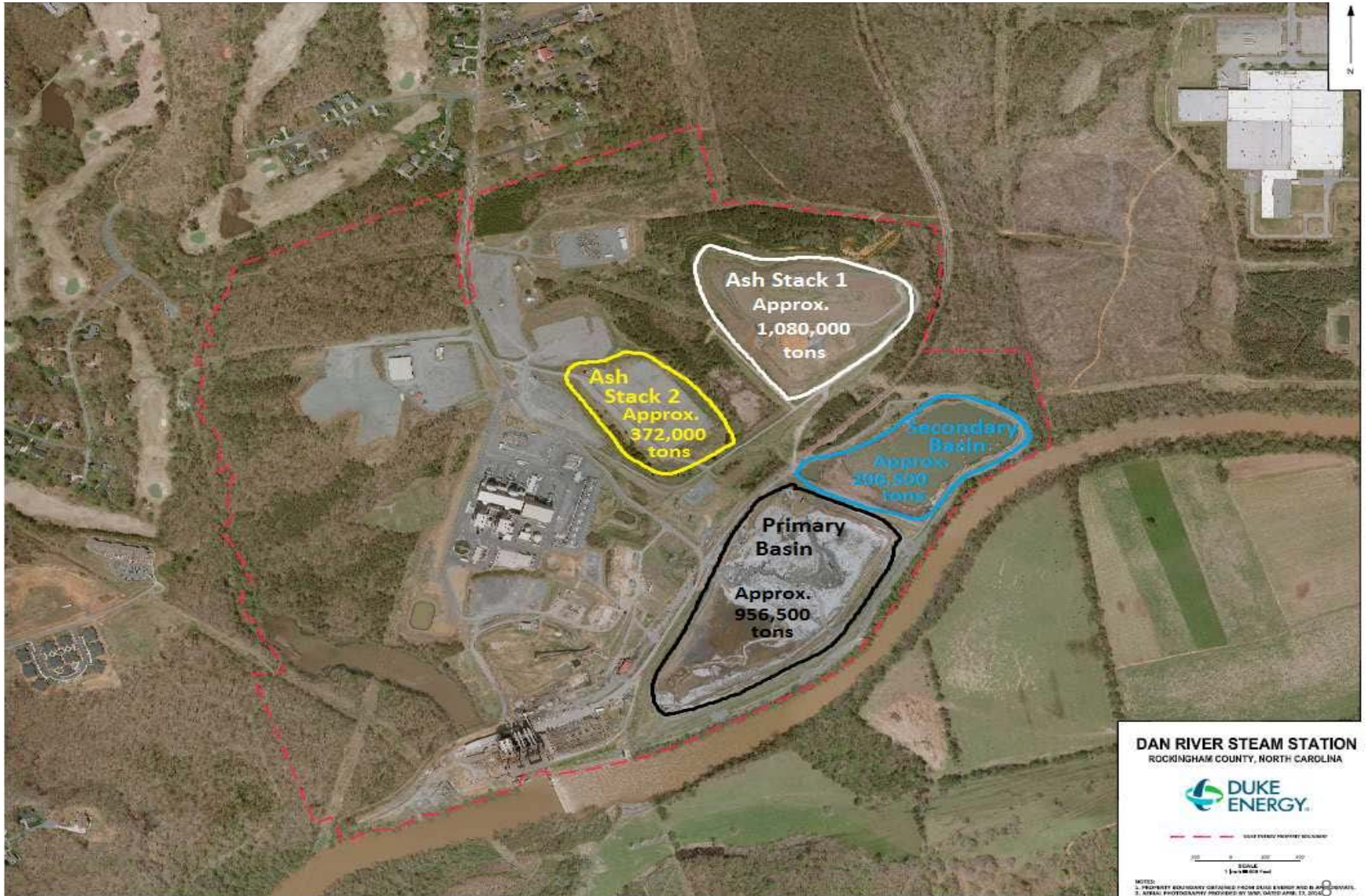
Closure Activities


- EO 62 required excavation plans for 4 facilities
- Move forward with ash removal at “Big 4” facilities
 - Dan River
 - Sutton
 - Riverbend
 - Asheville
- Draft excavation plans submitted on Nov 15
- Currently undergoing DENR review

Excavation Plans

- Common elements of all four plans
 - Covers next 12 to 18 months (Phase 1)
 - Initial closure activities for ponds & ash removal
 - Finalize and obtain required permits
 - Commence decanting/dewatering activities
 - Conduct planning for subsequent closure phases

Dan River





Dan River – Phase 1

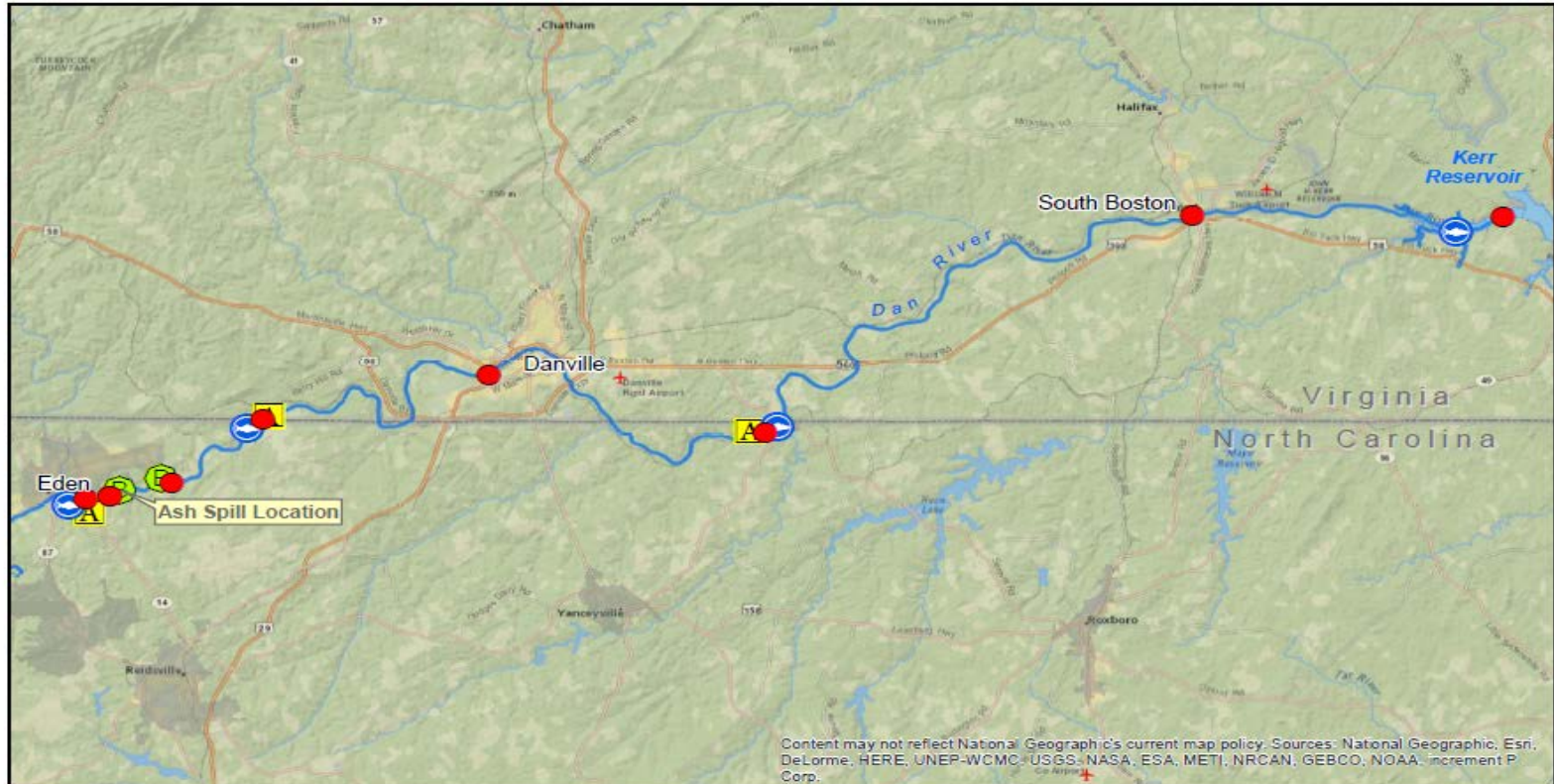
- Excavate & transport approx. 1.2M tons of ash from primary secondary ash basins / ash stacks
 - Install rail spur for transport
 - Disposal at Maplewood Landfill – Jetersville, VA
 - Transport by rail car
 - 2.5 to 3 trains per week of 65 gondola cars
- Obtain permit to construct on-site landfill
 - October 24, 2015

Enforcement Activities

- Joint enforcement action with EPA
 - Still ongoing
 - Dan River release & unauthorized surface discharges

Dan River Monitoring Update

Duke Power Eden Coal Ash Spill and Monitoring Locations for Dan River, NC



0 5 10 20 Miles

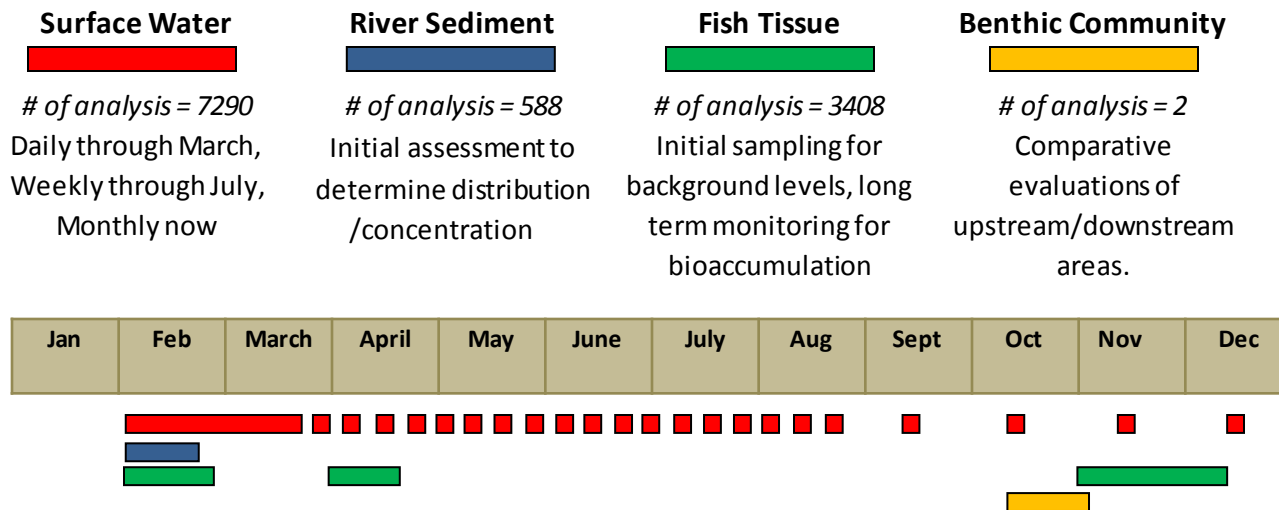


- DWR Sediment and Water Sample Stations
- Ⓟ Macroinvertebrate Stations
- Ⓢ Fish Tissue Station
- ⓐ Ambient Water Quality Station



NC DWR Activities Related to Dan River Coal Ash Spill

2014 Monitoring



Results

Surface Water

Winston Salem Regional Office and Water Sciences Staff

Arsenic decreased from 40µg/L to <2.0µg/L by mid March 5 miles downstream of spill.

Aluminum and iron remain high due to natural watershed conditions.

River Sediment

Water Sciences Staff

100yds downstream of spill
Danville

Aluminum, arsenic, barium, copper, iron and mercury were above EPA screening values.
Aluminum, boron, iron, and strontium were above EPA screening values.

Fish Tissue

Water Sciences Staff

First round of background monitoring showed nothing above state guidelines.

Second round of extended background monitoring showed

10% of samples exceeded mercury fish consumption advisory action levels (NCDPH)

12% of samples exceeded arsenic fish tissue screening levels (NCDPH)

Third round of tissue collection is under way.

Benthic Community

Water Sciences Staff

Data suggest no significant difference between upstream of spill site and downstream of spill site benthic communities.

Plan Development/Public Information

Winston Salem Regional Office and Water Sciences Staff

DWR staff represented NCDENR during all phases of the Dan River event through participating in and/or presenting information at Public Information Sessions, weekly/monthly interagency meetings, and initial response daily/hourly situation briefings (approx 65).

Fish Tissue Sampling

- Background analyses complete – no surprises
- Mercury elevated - statewide
- All similar to historic data

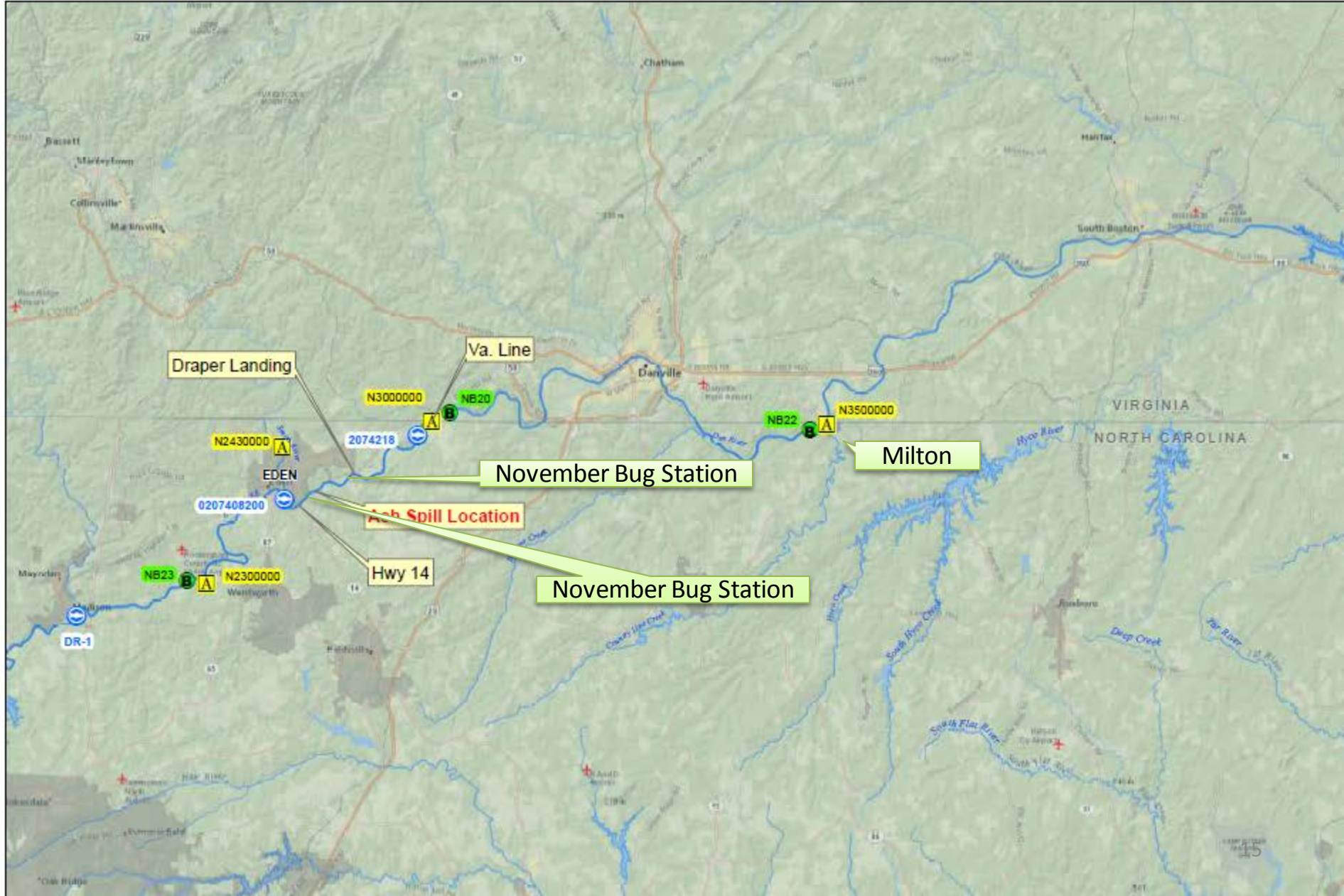


Sediment Sampling

- Sediment
 - 100 yards from release:
 - Aluminum, Arsenic, Barium, Copper, Iron, Mercury Above EPA Screening Values
 - Danville:
 - Aluminum, Boron, Iron & Strontium Above EPA Screening Values



Duke Power Eden Coal Ash Spill and DWR Monitoring Locations for 2015

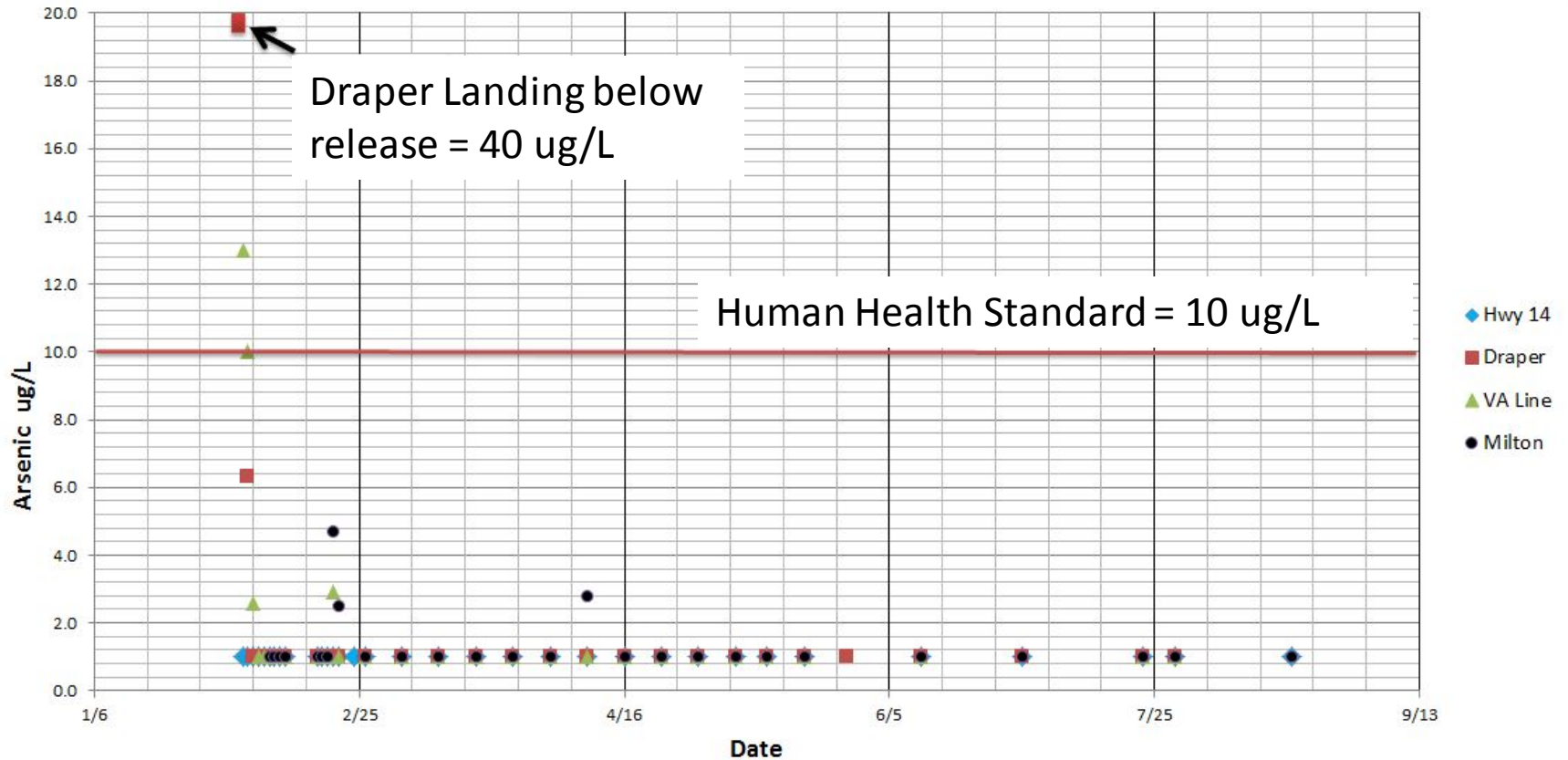


October 28th Benthic Macroinvertebrate Sampling Results

- Upstream ~1/2 mile above release
- Downstream ~ 2 miles below release
- Similar habitats
- Excellent Water Quality



Water Quality Sampling Results - Arsenic



All values below 2 ug/L were reported as non-detect

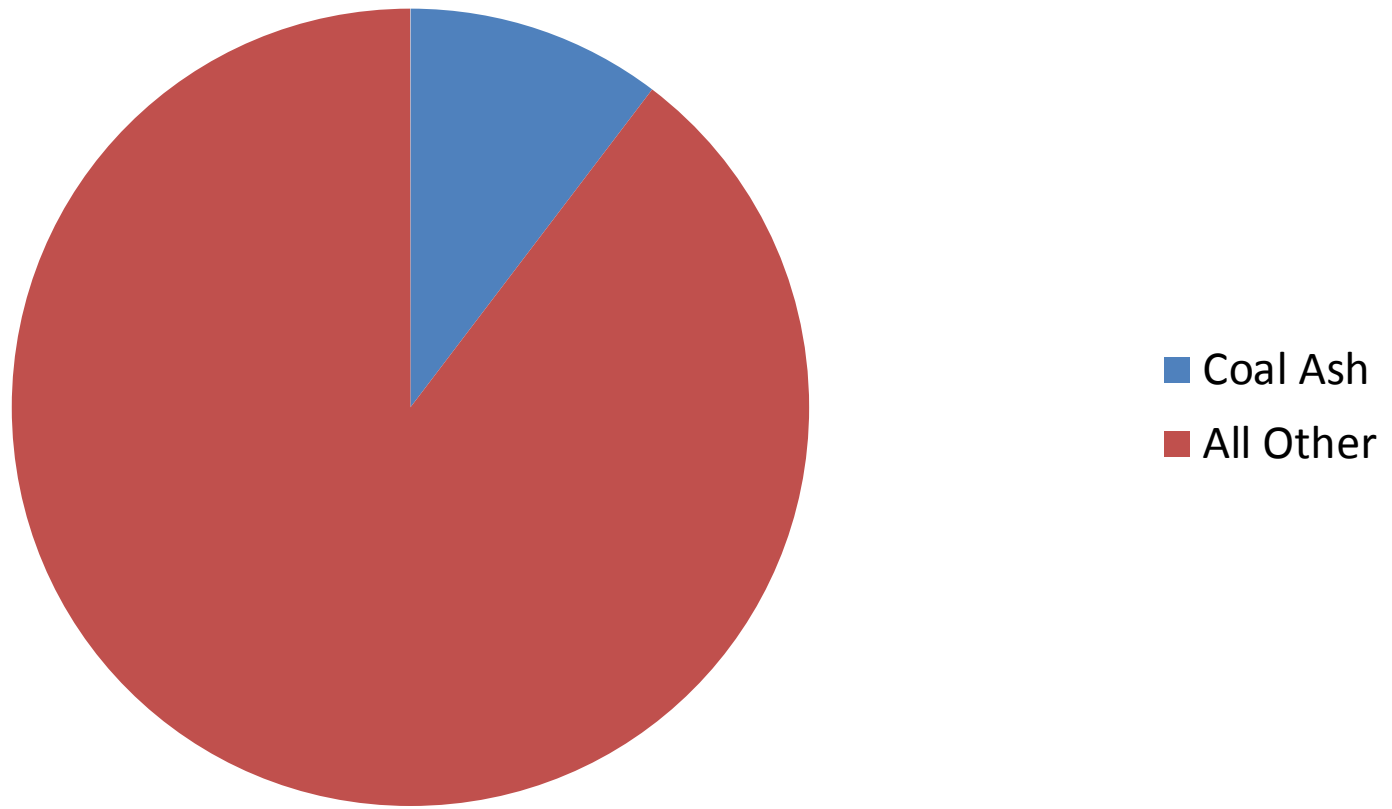
On-Going Monitoring

- NC
 - 3 Stations – Hwy 14, VA Line & Milton
 - Monthly surface water
 - Yearly fish tissue
 - Yearly benthos



Dan River Chemistry Lab Analyses – 10% for 2014 = Dan River & Statewide Coal Ash

Number of Analyses for January through November 2014



Next Steps

- Well sampling to protect public health
- Approval & implementation of groundwater assessment plans
 - Critical information needed to classify facilities
- Public notice & hearings for NPDES permit modifications
- Implementation of excavation plans at “Big 4”
- Classification & prioritization of remaining facilities
 - Due December 2015

Questions

