



Outside the Law

RESTORING ACCOUNTABILITY TO THE
TENNESSEE VALLEY AUTHORITY



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ENVIRONMENTAL INTEGRITY PROJECT

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CONTENTS

Executive Summary v

Summary v

Recommendations vii

Introduction 1

TVA's Identity Crisis: Federal Corporation or Private Utility? 3

TVA's Unique, Quasi-Federal Status 3

TVA's Shifting Legal Identity 4

TVA's Claims of Sovereign Immunity & The Unitary Executive Theory 5

TVA's Unique Financial Status 6

TVA's Special Protections from Competition 7

TVA's Environmental Footprint 9

TVA's Coal Waste Spills 10

TVA's Water Pollution 11

TVA's Air Pollution 12

TVA's Track Record of Noncompliance, Neglect, and Recalcitrance 15

TVA's Clean Air Act Noncompliance 15

Clean Water Act Noncompliance 16

TVA Ignored Environmental Risks at Kingston 17

TVA's Culture of Noncompliance 18

Recommendations and Conclusion 19

Restore Accountability at TVA 19

Reform and Reduce TVA's Environmental Footprint 20

Conclusion 21

Notes 22

Appendix A. Select Coal Waste Discharges from TVA Fossil Plants 29

Figures

- Figure 1. Credit Rating of TVA and Eight Investor-Owned Utilities* 7
- Figure 2. TVA Fossil Plants* 9
- Figure 3. TVA Fossil Plants: CCW Surface Impoundments—Total Acres* 10
- Figure 4. TVA Fossil Plants—Surface Water Discharges* 11
- Figure 5. TVA Fossil Plants: CO₂ Emissions* 12



Kingston Fossil Plant—Aerial View of Coal Ash Spill

EXECUTIVE SUMMARY

Nearly one year ago, the Tennessee Valley Authority (TVA) made front page news when an 84-acre coal combustion waste (CCW or coal waste) impoundment at Kingston Fossil Plant spilled more than *1 billion gallons of toxic coal waste*—an amount nearly 100 times greater than the Exxon Valdez oil spill—into the Emory River and surrounding community. The spill covered land and water with coal sludge up to 12 feet deep, and destroyed homes, playgrounds, businesses, roads, waterways, and railroad tracks.

However, the evidence in this report reveals that the Kingston spill is only the latest and most dramatic example of environmental mismanagement at one of the nation's largest utilities. President Roosevelt established TVA nearly eighty years ago as a public utility dedicated

to progressive management on behalf of the public interest, but TVA's environmental record and conduct in recent years mock the vision that inspired its founding.

For example, a scathing report from TVA's own inspector general (IG), based on a review by an independent engineering firm, found that TVA's own negligence led to the Kingston disaster. Worse still, the IG reported that after the accident, TVA's investigation was deliberately designed to limit its scope, minimize the company's own liability, and avoid anything that might call into question the safety of the nearly 3,000 acres of coal waste ponds still in use at other TVA coal plants.¹ In separate reports, the IG found that TVA bypassed air emission controls at the Cumberland, Widows Creek and Bull Run coal plants, resulting in well

over a thousand tons of illegal emissions. According to the IG reports, TVA delayed fixing the problem or reporting the emissions to regulatory authorities.²

TVA's environmental footprint is enormous. Each year, TVA produces staggering amount of air and water pollution—over *104 million tons of CO₂*; over *20 million pounds of hazardous air pollutants*; and *7 million tons of coal waste*. In addition, TVA's coal plants discharge thousands of pounds of toxic metals like arsenic and selenium in U.S. waters every year. In fact, six of TVA's 11 coal-fired plants rank among the nation's top 20 plants for total discharges of toxic metals to U.S. waterways.³ Although EPA has determined that treatment technologies are available and the Clean Water Act requires the elimination or at least the minimization of these toxic effluents, most of TVA's permits do not include enforceable limits for discharges of toxic metals to surface waters. TVA is also home to some of the oldest and least efficient coal plants in the U.S., and spends less on their maintenance than its competitors.⁴ Unlike some utilities, there is little evidence that TVA is making the transition toward cleaner, low carbon source of electricity—its recalcitrance may be aided by federal law that prohibits competition within TVA's service area.

Equally troubling, TVA repeatedly invokes its status as a “federal” agency to avoid responsibility for its own environmental misconduct.⁵ TVA raises issues of federal “sovereign immunity” to avoid penalties in environmental enforcement cases filed by citizens in federal court, yet TVA does not receive federal funds or tax dollars drawn from the U.S. Treasury.⁶ Limitations on the ability to recover penalties from federal agencies are supposed to protect the taxpayer—but TVA is completely self-financing, and has not received federal appropriations in decades; any fines paid by TVA need not come from the U.S. Treasury.

In addition, the Justice Department (DOJ) has been reluctant to enforce environmental laws at TVA plants despite longstanding compliance problems at TVA coal plants, like the Clean Air Act violations identified by EPA at over a dozen TVA coal-fired units in 2000.⁷ For example, the Justice Department's “unitary executive” theory, advanced during the Reagan Administration, discourages enforcement actions between federal agencies because it requires two agencies to take opposing positions under the same President.⁸ The “unitary executive” theory has roots in earlier Executive Orders (No. 12,146 and 12,088) that advise federal agencies to resolve disputes outside the courtroom. The unitary executive doctrine was adopted in part to avoid conflict between the Justice Department's duty to prosecute and its duty to defend federal agencies accused of violating the law. However, this policy should not apply to TVA because TVA does not rely on DOJ for its defense and retains independent litigating authority.⁹ In addition, the 11th Circuit Court of Appeals found TVA to be an unusual federal agency, outside the bounds of centralized control in Washington, and invited EPA to file a lawsuit against TVA in federal court regardless of “unitary executive” concerns.¹⁰ The EPA has never done so despite TVA's ongoing violations of environmental law.¹¹

TVA is a federal utility, and presents Congress, the White House and U.S. EPA with a tremendous opportunity for reform. This report describes TVA's giant environmental footprint, and its poor record of compliance with environmental laws. This report documents TVA's attempts to avoid its duty to comply with environmental laws due to its status as a federal corporation. Finally, this report provides detailed recommendations to reform TVA and limit its environmental impact.

RECOMMENDATIONS

(Full Recommendations on pg. 19)

To bring TVA into compliance with all environmental laws and prevent another disaster like the Kingston coal ash spill, the Obama Administration and Congress should:

Restore Accountability at TVA:

- **Clarify that EPA and the Justice Department Can Take TVA to Court.** A directive from the White House, clarifying that the “unitary executive” theory does not prevent EPA and DOJ from taking enforcement action against TVA will help bring TVA into compliance with federal environmental laws and resolve environmental violations that have lingered for years. The “unitary executive” theory, supported by Executive Orders (No. 12,146 and No. 12,088) should not pose a roadblock to EPA and DOJ enforcement of environmental laws at TVA facilities. TVA does not rely on DOJ for its defense and retains independent litigating authority under the law.¹² Unlike most federal agencies, TVA is removed from centralized control in Washington, and designed by Congress to have enforcement action exercised against it exactly as they could be exercised against private utilities.¹³
- **Support Legislation to Eliminate TVA’s Special Protections.** The White House and Congress should support legislation to remove TVA’s special protections, such as immunity from penalties for environmental violations, and anti-competitive measures that keep rival utilities out of its service area. TVA no longer relies on tax dollars or federal appropriations and therefore, should be as accountable as any other utility for its

environmental wrongdoing. Similarly, federal legislation allows TVA to exclude competitors from its service area and restrict access to its energy transmission system. Removing these special protections would make TVA more competitive, result in a more energy-efficient grid, and create incentives for TVA to stay ahead of changing environmental and energy regulations.

- **Increase Environmental Oversight.** Congress can play a critical role in reforming TVA through its oversight authority. The House and Senate Committees charged with TVA oversight have held multiple hearings regarding the Kingston spill, but long-term oversight of TVA’s environmental management is needed to prevent another disaster and transform TVA into a national example of environmental sustainability and clean energy production.

Reform and Reduce TVA’s Environmental Footprint:

- **Create a Culture of Environmental Compliance.** TVA’s large and dirty environmental “footprint” is a product of its internal culture of neglect and cost-saving decisions made at the expense of the environment.¹⁴ Even TVA’s own inspector general reported that TVA’s “litigation strategy seems to have prevailed over transparency and accountability,”¹⁵ after the Kingston spill. However, the President has an opportunity to change TVA’s internal culture from the top down, starting with the appointment of new leadership to TVA’s Board of Directors. As of December 2009, President Obama named three nominees to TVA’s nine-member Board of Directors.¹⁶ New Board nominees should pledge to take

the specific actions below to establish greater transparency and environmental compliance at every level of TVA's operations.

- **Switch From Wet to Dry Coal Waste Disposal and Stop Toxic Discharges.** TVA must transition its wet CCW storage ponds to dry disposal systems in the immediate future. TVA promised to make this transition over twenty years ago¹⁷ and recently promised again to convert its wet CCW ponds to dry storage after the Kingston spill.¹⁸ Yet TVA owns wet coal waste impoundments at all of its coal plants, and still has not produced a timeline by which each plant will transition from wet to dry, zero-discharge systems in the near future. Since TVA's 11 coal-fired plants regularly discharge heavy metals at levels that exceed federal water quality
- **Transition from Coal to Clean, Renewable Energy.** TVA must decide whether to make investments in its aging coal-fired fleet or simply retire the oldest, most underperforming units. TVA can make capital investments in new power plants fueled by natural gas or renewable energy sources. TVA is already anticipating that retiring coal-fired units at John Sevier Fossil Plant (1955) may be more cost effective than retrofitting with pollution controls,²⁰ and may also retire the oldest units at Widows Creek Fossil Plant (1952) if forced to reduce air pollution by court order.²¹ With reform, TVA can become a leader in clean energy production and environmental stewardship.

criteria,¹⁹ TVA must eliminate its wet coal waste storage and associated toxic discharges.



Shawnee Fossil
Plant

INTRODUCTION

The Tennessee Valley Authority (TVA) is one of the nation's top polluters and operates a deteriorating fleet of coal-fired power plants that contaminate the air and water in the Tennessee River Valley and beyond. President Franklin D. Roosevelt envisioned TVA as a beacon of hope at the end of the Great Depression, bringing affordable electricity, flood control, and economic development to the Tennessee River Valley—an area long ignored by private utilities. Today, however, TVA is better known for its poor environmental record and the disastrous consequences of producing cut-rate electricity from coal without environmental safeguards.

In December 2008, TVA's coal combustion waste (CCW or coal waste) impoundment at Kingston Fossil Plant in Tennessee spilled more than 1 billion gallons of toxic coal waste into the

adjacent river and surrounding community. The spill covered land and water with coal sludge, and destroyed homes, businesses, roads, waterways, and wildlife. TVA will spend over \$1.2 billion to clean-up the Kingston Spill, and has already bought 145 neighboring properties.²²

“THIS DISASTER HAPPENED WHILE THE COMMUNITY SLEPT. I SHUDDER TO THINK OF WHAT COULD HAVE HAPPENED IF THIS WALL HAD FAILED ON A SUMMER DAY, WHEN PARENTS AND CHILDREN WERE PLAYING ON THE SHORE, SWIMMING, AND FISHING IN BOATS.”

— SENATOR BARBARA BOXER²³

Less than two weeks later, TVA reported yet another coal waste spill, this time from its Widows Creek Fossil Plant in Alabama. Just like the spill at Kingston, the earthen wall on the Widows Creek impoundment failed, releasing approximately 1,009,870 gallons of toxic coal waste into the environment. TVA owns nearly 3,000 acres of coal waste impoundments; including four impoundments the U.S. EPA considers “high hazard” sites. Meanwhile, the same month, a federal district court ordered TVA to reduce dangerous air pollution from four coal-fired power plants that were fouling the air enough to create a public nuisance in North Carolina.

TVA's own Office of Inspector General (OIG) critiqued TVA's attention to environmental risks, finding that TVA rejected proposals to fix the impoundment at Kingston decades before the spill.²⁴ Similarly, when faced with information that several TVA coal-fired plants released over a thousand tons of sulfur dioxide and nitrogen oxide into the atmosphere, TVA delayed implementing

a solution to the problem.²⁵ And while other utilities adopt pollution controls to stay ahead of new Clean Air Act laws, TVA has lagged behind, curbing pollution from its antiquated coal-fired plants when forced by court order.²⁶

TVA operates its coal-fired plants under expired water and air pollution permits, releasing millions of pounds of hazardous pollutants into the air, land and waterways each year.²⁷ As new energy and environmental regulations loom, TVA is ill-positioned to adapt to new environmental regulations to limit greenhouse gas emissions, mercury emissions, and coal combustion waste-related water pollution.

It is time to reform TVA. As a federal utility, TVA can once again become the symbol of achievement President Franklin D. Roosevelt envisioned, and can guide the country towards clean energy production and environmental stewardship. This report provides an in-depth look at TVA's environmental record and provides TVA with recommendations for change.



Paradise Fossil
Plant

TVA'S IDENTITY CRISIS: FEDERAL CORPORATION OR PRIVATE UTILITY?

TVA is a federal utility that uses its “quasi-federal agency” status to shield itself from accountability for environmental mishaps and noncompliance. TVA's primary business is electricity generation, and in 2009, TVA earned \$11.1 billion in revenues from electricity sales.²⁸ In 2009, TVA generated over fifty percent of its electricity from 11 coal-fired power plants, and in the process, burned 37 million tons of coal.²⁹

TVA acts interchangeably as a private utility and federal agency. When convenient, TVA argues it is a federal agency, immune from lawsuit.³⁰ On other occasions, TVA demands to be treated as a private utility, unencumbered by the rules typical federal agencies follow.³¹

TVA'S UNIQUE, QUASI-FEDERAL STATUS

TVA was established in 1933 as an independent, wholly owned federal corporation under the Tennessee Valley Authority Act of 1933 (TVA Act).³² TVA was formed “[f]or the purpose of maintaining and operating the properties

TVA IS “A CORPORATE ENTITY, SEPARATE AND DISTINCT FROM THE FEDERAL GOVERNMENT ITSELF.”

—PIERCE V. UNITED STATES, 314 U.S. 306, 310 (1941)

now owned by the United States in the vicinity of Muscle Shoals, Alabama, in the interest of the national defense and for agricultural and industrial development, and to improve navigation in the Tennessee River and to control the destructive flood waters in the Tennessee River and Mississippi River Basins.”³³

Until 1959, Congress supported the development of TVA's energy system with federal appropriations, and TVA built the majority of its coal-fired units prior to 1959 with federal support.³⁴

**TVA IS “A CORPORATION CLOTHED
WITH THE POWER OF GOVERNMENT BUT
POSSESSED OF THE FLEXIBILITY AND
INITIATIVE OF A PRIVATE ENTERPRISE.”**

—PRESIDENT FRANKLIN D. ROOSEVELT³⁵

Unlike most federal agencies, TVA maintains a separate corporate identity, a separate legal staff, and headquarters removed from centralized control in Washington. Instead of being represented by the Attorney General and Department of Justice, like most federal agencies, TVA has independent litigating authority and hires private law firms for its defense just like any other private utility company.³⁶ TVA enjoys discretionary ratemaking authority for its electricity rates, and is exempt from at least 16 provisions of the Administrative Procedures Act.³⁷ In addition, Congress exempted TVA from suit in the Court of Federal Claims,³⁸ provided for TVA's independent Board of Directors,³⁹ exempted TVA from the civil service laws,⁴⁰ exempted TVA from the purchasing requirements otherwise applicable to federal entities,⁴¹ and provided TVA with authority to issue bonds which are not obligations of the United States.⁴² Congress also exempted

TVA from the Federal Tort Claims Act, because it intended that legal claims “be exercised against the Tennessee Valley Authority exactly as they could have been exercised against...private utility companies.”⁴³

TVA'S SHIFTING LEGAL IDENTITY

TVA's pollution levels and environmental non-compliance make it the frequent subject of lawsuits by citizens, states and environmental organizations. TVA has repeatedly taken a position adverse to citizens, states and the federal government in environmental lawsuits,⁴⁴ and has sought to avoid liability based on its quasi-federal status. For example, when North Carolina sued TVA because uncontrolled air emissions from Bull Run, Kingston, John Sevier, and Widows Creek Fossil Plants fouled the air enough to cause a public nuisance in the state, TVA sought to avoid the lawsuit due to its federal status.⁴⁵ The court disagreed with TVA's arguments, describing TVA as the “functional equivalent of a private corporation.”⁴⁶ The court ordered TVA to install air pollution controls at Kingston Fossil Plant by December 31, 2010, at John Sevier Fossil Plant by December 31, 2011, and at Widows Creek Fossil Plant by December 31, 2013,⁴⁷ and held that TVA must operate pollution control equipment year-round.⁴⁸ However, to avoid compliance, TVA appealed the court's decision and filed a motion to delay the installation of pollution controls during the appeal process.⁴⁹

In addition, the states of Connecticut, New York, California, Iowa, New Jersey, Rhode Island, Vermont, and Wisconsin recently sued TVA and four other of the nation's biggest greenhouse gas polluters.⁵⁰ TVA attempted to distinguish itself from the other defendants by arguing that TVA is a federal agency, and therefore should not have to reduce harmful air emissions or be subject to lawsuit. However, the court disagreed, finding

that TVA was subject to lawsuit by states and environmental organizations seeking to reduce harmful air emissions.⁵¹

Environmental organizations also sued TVA alleging that TVA did not comply with the Clean Air Act's New Source Review requirements at Bull Run Fossil Plant.⁵² During the course of the litigation, TVA installed some air pollution control equipment, but continues to fight environmental groups because it is faced with the possible installation of additional emission controls on its coal-fired units.⁵³ In addition, in a recent case involving thousands of opacity violations at TVA's Colbert Fossil Plant, TVA similarly sought to avoid liability based on its federal status, but was forced to install pollution controls for opacity at the Colbert Fossil Plant nonetheless.⁵⁴

TVA is recalcitrant when it comes to adopting pollution controls for its aging fossil plants, and, most of TVA's investments in renewable energy have been forced by the Energy Policy Act of 2005, which requires a minimum investment in renewable sources by 2013.⁵⁵ For example, TVA recently agreed to purchase wind power from a South Dakota wind farm (up to 450 MW, or 1.6% of TVA's 28,000 MW capacity⁵⁶) by 2012.⁵⁷ TVA is not currently obligated under any Renewable Energy Portfolio Standard to provide a percentage of the power it sells from renewable sources, but it might be required to do so in the future.⁵⁸

TVA'S CLAIMS OF SOVEREIGN IMMUNITY & THE UNITARY EXECUTIVE THEORY

TVA has repeatedly invoked its status as a federal agency to avoid responsibility for its own environmental misconduct. When sued for violating environmental laws, TVA has argued that it is immune from lawsuit under the principles of Sovereign Immunity,⁵⁹ even though Congress specifically denied TVA the

TVA IS "REMOVED FROM THE CONTROL OF THE EXECUTIVE BRANCH, OPERATING AS THE FUNCTIONAL EQUIVALENT OF A PRIVATE CORPORATION."

— *N.C. V. TVA*, 515 F.3D 344, 349 (4TH CIR. 2008)

protections of sovereign immunity by allowing TVA to 'sue-and-be-sued' under the TVA Act.⁶⁰ In addition, TVA has argued that it should not have to pay environmental penalties for violations of the Clean Air Act under the principles of Sovereign Immunity.⁶¹ Yet TVA is self-financing and does not support its business with taxpayer funds or congressional appropriations, and should be as accountable as any other utility for its environmental wrongdoing.⁶²

In addition, the Justice Department (DOJ) and U.S. Environmental Protection Agency (EPA) have been reluctant to enforce environmental laws at TVA coal plants, despite longstanding Clean Air Act violations at over a dozen TVA coal-fired units, identified by EPA in 2000.⁶³ For example, the "unitary executive" theory, advanced by DOJ during the Reagan Administration, discourages enforcement action between federal agencies because it requires two agencies to take opposing positions under the same President.⁶⁴

Under the unitary executive theory, DOJ cannot sue another federal agency since both are part of the same government, and such a lawsuit would conflict with DOJ's duty to provide legal representation to both federal agencies.⁶⁵ This theory has roots in earlier Executive Orders, No. 12,146 and No. 12,088, issued over 30 years ago, that encourage federal agencies to resolve disputes outside the courtroom.⁶⁶ However, TVA has independent litigating authority, and does not rely on DOJ for its defense.⁶⁷ TVA hires

**“EXECUTIVE BRANCH AGENCIES MAY NOT SUE
ONE ANOTHER, NOR MAY ONE AGENCY BE
ORDERED BY ANOTHER TO COMPLY WITH AN
ADMINISTRATIVE ORDER WITHOUT THE PRIOR
OPPORTUNITY TO CONTEST THE ORDER WITHIN
THE EXECUTIVE BRANCH.”⁶⁸**

— F. HENRY HABICHT, II, U.S. DEPARTMENT OF JUSTICE

private law firms to defend against litigation, just like any other private utility.⁶⁹

As recently as 2000, EPA and DOJ argued that the “unitary executive” theory and Executive Orders No. 12,146 and 12,088, govern disputes between TVA and EPA.⁷⁰ The Eleventh Circuit Court of Appeals disagreed and found that the “unitary executive” did not apply to TVA, stating, “Our first panel decision rejected EPA’s contention that TVA could not be a defendant in a judicial enforcement action. Faced with this holding, one must wonder why the EPA did not thereafter treat this case as a typical dispute by bringing an enforcement action in district court.”⁷¹ The Eleventh Circuit made clear that “EPA should treat TVA as it does any private energy company for enforcement purposes.”⁷² Despite the Eleventh Circuit’s invitation to EPA to bring a federal lawsuit against TVA for longstanding violations of the Clean Air Act, EPA has never done so.⁷³

Ironically, TVA has sued U.S. federal agencies on several occasions.⁷⁴ TVA even argued that it is an atypical entity, unlike the federal agencies the unitary executive theory was designed to protect:

EPA and TVA are clearly adverse parties: TVA is a business separate from the United States; its power program is financed through sales of bonds that are not obligations of or

guaranteed by the United States, and through power revenues... The CAA [Clean Air Act] expressly defines TVA and other Federal agencies as “persons” and authorizes EPA to bring suit in district courts against “any person” violating the CAA. Moreover, the CAA prohibits EPA from treating TVA differently from private parties, specifically providing that Federal instrumentalities are subject to the CAA, including “process,” in the “same manner, and to the same extent as any nongovernmental entity.”⁷⁵

As the Eleventh Circuit noted, “Since both EPA’s Administrator and TVA’s board serve at the pleasure of the President, the President could bring this litigation to a close on his own initiative at any point. He has not done so.”⁷⁶ A directive from the White House or Justice Department, clarifying that the unitary executive theory and related Executive Orders do not apply to TVA, will help EPA and DOJ take necessary enforcement actions to bring TVA into compliance with federal environmental laws.

TVA’S UNIQUE FINANCIAL STATUS

Congress granted TVA the independent authority to issue bonds which are not obligations of the United States.⁷⁷ TVA uses bond sales, and revenue from electricity sales to fund all of its power-generating programs without congressional appropriations.⁷⁸ As of September 30, 2008, TVA’s total bonds, notes, and other obligations were \$25.1 billion.⁷⁹ Although TVA bonds are not supported by or backed by the U.S. Government, there is a widespread belief among bond rating agencies that the U.S. Government would back TVA should it become insolvent.⁸⁰ This widespread misperception has resulted in TVA bonds being rated ‘AAA’ the highest rating in the utility industry.⁸¹ Even TVA itself acknowledges that TVA’s high bond rating is based primarily on “legislation

that designates TVA a federal entity⁸² rather “than its financial position.”⁸³

Given TVA’s potentially massive financial liabilities due to its ownership of nearly 3,000 acres of coal waste impoundments—the U.S. EPA considers “high hazard” sites—history of environmental mismanagement, costly environmental cleanup from two coal waste spills in the last year, capital expenditures to modernize aging coal plants due to litigation and impending environmental regulations, TVA’s triple-A rating may be inflated.⁸⁴ Although TVA’s bonds are not backed by the U.S. Government, TVA is a federal entity and receives a credit rating far superior to its competitors (see Figure 1).

To correct the misperception that U.S. taxpayers may ultimately bear financial responsibility for TVA’s financial circumstances, Congress must clarify that TVA bonds will not be backed by U.S. taxpayers should TVA face financial hardship.

TVA’S SPECIAL PROTECTIONS FROM COMPETITION

TVA also lacks incentive to stay ahead of environmental and energy regulations because it is shielded from competition with other electric utilities by the TVA Act⁸⁵ and an amendment to the Federal Power Act (FPA).⁸⁶ The TVA Act contains an amendment known as the “fence” that shields TVA by prohibiting TVA from contracting to sell power outside TVA’s service area.⁸⁷ Under the Energy Policy Act of 1992, TVA is also shielded from competition by the “anti-cherry-picking provision” that prevents the Federal Energy Regulatory Commission (FERC) from ordering TVA to provide others with access to its transmission lines.⁸⁸ TVA can prevent others from transmitting power to customers within TVA’s service area,

FIGURE 1. STANDARD AND POOR’S CREDIT RATING OF TVA AND EIGHT INVESTOR-OWNED UTILITIES⁸⁹

Company	Long Term Rating
Ameren Corp.	BBB
American Electric Power Co.	BBB
Dominion Resources Inc	A-
Duke Energy Corp	A-
Entergy Corp	BBB
Florida Power & Light Co	A-
Progress Energy Inc	BBB+
Southern Company	A
Tennessee Valley Authority	AAA

a protection that shields TVA from competition and reduces its exposure to revenue loss.⁹⁰

Under the FPA, TVA is not considered a “public utility” like many investor-owned utilities. In addition, TVA is not subject to FERC’s full jurisdiction like most utilities regulated under the FPA, and FERC recently tried to force TVA to interconnect its transmission without success.⁹¹ FERC attempted to order TVA and the East Kentucky Power Cooperative to interconnect transmission systems, an effort that TVA successfully argued violated its anti-cherry-picking provision.⁹² In addition, Senators Jim Bunning and Mitch

“TVA’S CREDIT RATINGS ARE NOT BASED SOLELY ON ITS UNDERLYING BUSINESS OR FINANCIAL CONDITION WHICH, BY THEMSELVES, MAY NOT BE COMMENSURATE WITH A TRIPLE-A RATING.”

—TVA OFFICE OF INSPECTOR GENERAL⁹³

***“AS LONG AS THE LEGISLATIVE
FRAMEWORK CONTINUES TO INSULATE
TVA FROM DIRECT COMPETITION ... IT WILL
REMAIN IN A POSITION SIMILAR TO THAT
OF A REGULATED UTILITY MONOPOLY.”***

—U.S. GAO (2006)⁹⁴

McConnell introduced the “Access
to Competitive Power Act of 2007,”

to remove TVA's anti-cherry-picking
protections and allow for a more inter-
connected and energy-efficient grid.⁹⁵

These protections shield TVA from
competition and provide no incentive
for TVA to stay ahead of environmental
or energy regulations. As the United
States seeks to improve the reliability
and interconnectedness of the nation's
energy grid, and transition to renew-
able energy sources, TVA can no longer
restrict access to its transmission system
without holding up the rest of the coun-
try's progress towards a smarter, more
efficient energy grid.



Ash and Water Discharge at Kingston Fossil Plant

TVA'S ENVIRONMENTAL FOOTPRINT

The Tennessee Valley Authority's (TVA) 11 coal-fired plants create enormous amounts of air and water pollution. TVA burns millions of tons of coal—46.3 million tons of coal in 2008 alone—creating large amounts of harmful air pollutants and coal combustion waste (CCW) in the process. CCW, including Flue Gas Desulfurization (FGD) wastes, is the toxic waste product created when coal is burned, and all of TVA's 11 coal-fired power plants generate massive amounts of CCW.⁹⁶ CCW contains concentrated levels of heavy metals and other pollutants when power plants use wet scrubbers and other air pollution controls to capture air pollution.⁹⁷ Although harmful air pollutants are removed from the air, the pollution is simply transferred to CCW. CCW contains including toxic pollutants such as, "Arsenic, Chlorine, Copper, Mercury, Selenium, Zinc," and often these

dangerous contaminants "are found in much higher concentrations in the ash compared to the coal."⁹⁸ When released into water, hazardous CCW metals and

FIGURE 2. TVA FOSSIL PLANTS

Facility	Coal Burned (tons/day) ⁹⁹
Allen	7,200
Bull Run	7,300
Colbert	8,900
Cumberland	20,000
Gallatin	12,350
John Sevier	5,700
Johnsonville	9,600
Kingston	14,000
Paradise	20,000
Shawnee	9,600
Widows Creek	10,000

other pollutants may cause or contribute to cancer or severe illnesses in humans, as well as environmental devastation.¹⁰⁰

TVA is one of the nation's top polluters, and in 2008 released over 59 million pounds of toxic pollutants into the environment.¹⁰¹ In addition, TVA is a large source of carbon dioxide emissions, arsenic discharges to surface water, and owns several coal waste impoundments the EPA considers "high hazard" sites. For example, TVA releases over 100 million tons of CO₂; over 350,000 pounds of arsenic, a known human carcinogen; and produces 7 million tons of coal combustion waste each year.

TVA'S COAL WASTE SPILLS

The coal waste spill at Kingston Fossil Plant put TVA's disposal practices under a microscope. The Kingston spill consisted of more than 1 billion gallons of toxic coal waste, and it will take years for the adjacent properties and waterways to fully recover. Yet the Kingston spill was not the first or the last release of coal waste for TVA. Less than two weeks after Kingston, TVA reported yet another spill—this time from its Widows Creek Fossil Plant in Alabama.

Although the coal waste spills at Kingston and Widows Creek grabbed media headlines, TVA operates much larger coal waste impoundments and ponds with even greater potential to cause

**“WASTEWATER DISCHARGED FROM COAL
ASH PONDS... CAN CONTAMINATE DRINKING
WATER SOURCES, CAUSE FISH AND OTHER
WILDLIFE TO DIE AND CREATE OTHER
DETRIMENTAL ENVIRONMENTAL EFFECTS.”**

—U.S. EPA¹⁰²

**FIGURE 3. TVA FOSSIL PLANTS:
CCW SURFACE
IMPOUNDMENTS—TOTAL ACRES**

TVA Facility	Surface Area (acre)¹⁰³
Paradise	485
Gallatin	481
Widows Creek	420
Shawnee	380
Cumberland	330
Bull Run	140
Colbert	132
John Sevier	125
Kingston	121
Allen	93
Johnsonville*	87
Total	2,794

* all CCW now shipped off-site

environmental damage.¹⁰⁴ Most of TVA's CCW surface impoundments and ponds are larger than Kingston, and some are more than *three times larger* than Kingston's coal waste disposal area.¹⁰⁵ In addition, many of TVA's coal waste impoundments are unlined, and pollutants can leach into ground or surface waters.¹⁰⁶

U.S. EPA recently identified "high hazard" coal waste impoundments and ponds under the National Dam Safety Program at TVA's Bull Run, Colbert, Cumberland, and Widows Creek Fossil Plants.¹⁰⁷ Before the Kingston spill, TVA bragged of its strong "waste management system and the day-to-day implementation of this system at the various facilities by trained environmental personnel,"¹⁰⁸ however, TVA's history of seepage and spills from its CCW surface impoundments tell a different story.¹⁰⁹

In a 2007 report, U.S. EPA investigated three TVA coal waste impoundments—at Bull Run Fossil Plant, Colbert

Fossil Plant, and Widows Creek Fossil Plant—after high levels of aluminum, iron, cadmium, chromium, and selenium were reportedly discharged from CCW disposal areas.¹¹⁰

All of TVA's 11 coal-fired power plants have wet coal waste disposal systems like Kingston Fossil Plant.¹¹¹ In fact, eight of TVA's 11 fossil plants were built within five years of Kingston Fossil Plant, and employ similar coal waste disposal methods.¹¹² An engineering company hired by TVA to review the Kingston spill reported that, "similarly constructed ash (or gypsum and/or other byproducts) impoundments could be at risk of failure and should be properly investigated."¹¹³

After decades of inaction, and largely in response to heightened public scrutiny of its wet coal combustion waste disposal, TVA announced it would turn its wet coal waste disposal systems into dry systems within eight years.¹¹⁴ However, TVA made this same promise *21 years earlier* to avoid federal regula-

tion, stating, "because of concerns about groundwater contamination, TVA is moving away from wet CCW disposal techniques to dry stacking."¹¹⁵ The details of TVA's timeline and financial commitment to transition all wet coal combustion waste areas to dry, zero-discharge impoundments remains to be seen.

TVA'S WATER POLLUTION

Much of TVA's water pollution comes from coal combustion waste (CCW), and TVA produces approximately *7 million tons of CCW* each year from its 11 coal-fired power plants.¹¹⁶ Water pollution from unsafe disposal of CCW is particularly dangerous, as many of TVA's CCW impoundments are unlined¹¹⁷ and located on riverbanks, near recreational waters or drinking water supplies.¹¹⁸

In fact, TVA's 11 coal-fired power plants regularly discharge toxic pollutants and heavy metals into the nation's

FIGURE 4. TVA FOSSIL PLANTS: SURFACE WATER DISCHARGES—U.S. EPA TOXICS RELEASE INVENTORY

TVA Facility	2008 Total Surface Water Release (lbs) ¹¹⁹	Receiving Water ¹²⁰
Allen	19,270	McKellar Lake, Mississippi River
Bull Run	11,100	Clinch River
Colbert	9,853	Cane Creek, Tennessee River
Cumberland	214,900	Cumberland River
Gallatin	49,051	Cumberland River
John Sevier	4,170	Polly Branch, Holston River
Johnsonville	32,269	Tennessee River
Kingston	2,765,700	Clinch River, Emory River
Paradise	237,650	Green River, Jacobs Creek
Shawnee	6,750	Ohio River
Widows Creek	82,578	Tennessee River

NOTE: Surface water discharges include heavy metals and toxic pollutants such as: Arsenic, Barium, Chromium, Copper, Lead, Manganese, Mercury, Nickel, Thallium, Vanadium, and Zinc.

TVA TREATED COAL ASH “LIKE GARBAGE AT A LANDFILL RATHER THAN TREATING IT AS POTENTIAL HAZARD TO THE PUBLIC AND THE ENVIRONMENT.”

—TVA OFFICE OF INSPECTOR GENERAL ¹²¹

waters. TVA is required to report surface water discharges of toxic pollutants to U.S. EPA every year, and in 2008, released 3,433,291 pounds of toxic pollutants into surface waters.

EIP examined toxic pollutant discharges from TVA's 11 coal-fired power plants, and found that TVA regularly discharges toxic pollutants into surface waters at levels far exceeding federal Water Quality Criteria standards (see Appendix A).

Although TVA releases large amounts of toxic pollutants, TVA's arsenic discharges are of particular concern. Arsenic is a known carcinogen and

ingestion of even low levels “can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of “pins and needles” in hands and feet.”¹²² TVA's coal-fired plants rank among the nation's top utilities for total arsenic releases to water, air and land.¹²³ For example, in 2008, TVA's Kingston plant discharged more arsenic to surface waters than any other electric utility.¹²⁴ Specifically, Kingston released 142,600 lbs of arsenic to the Emory and Clinch Rivers in 2008.¹²⁵

TVA'S AIR POLLUTION

TVA's over reliance on coal-fired power plants to generate electricity results in considerable emissions of greenhouse gases, nitrogen oxide and sulfur dioxide, and hazardous air pollutants, like Mercury. In 2008, TVA released 106, 209, 576 tons of Carbon Dioxide (CO₂), ninety-eight percent (98%) of which came

FIGURE 5. TVA FOSSIL PLANTS: CO₂ EMISSIONS — U.S. EPA CLEAN AIR MARKETS DATA¹²⁶

Fossil Plant (all units)	1998 CO ₂ tons	2003 CO ₂ tons	2008 CO ₂ tons
Allen	5,072,807	5434,209	5,359,344
Bull Run	5,097,885	6,063,490	4,577,690
Colbert	7,723,744	8,380,625	7,996,675
Cumberland	17,531,369	14,309,120	17,034,409
Gallatin	6,417,473	7,882,576	8,339,455
John Sevier	5,159,768	5,283,091	4,937,983
Johnsonville	7,859,382	8,929,575	8,413,715
Kingston	10,856,627	11,200,319	11,073,117
Paradise	13,632,507	14,262,312	15,709,682
Shawnee	9,187,925	10,912,575	10,410,548
Widows Creek	8,871,777	11,399,167	1,0262,492
	97,411,264	104,057,059	104,115,110

from TVA's 11 coal-fired power plants.¹²⁷ TVA's CO₂ emissions have steadily increased over the past ten years.

In addition to TVA's Carbon Dioxide emissions, TVA coal plants also produce large amounts of Nitrogen Oxides (NO_x) and Sulfur Dioxide (SO₂) that threaten public health and the environment. Sulfur Dioxide is harmful because it contributes to the formation of acid rain which damages trees, crops, historic buildings, and monuments; and makes soil and water acidic.¹²⁸ In addition, Nitrogen Oxides and Sulfur Dioxide can contribute to respiratory illness, particularly in children and the elderly, and can aggravate existing heart and lung diseases.¹²⁹

TVA's air emissions also contribute to visibility impairment, most noticeably in national parks like the Great Smokey Mountains National Park in

Tennessee.¹³⁰ TVA coal plants are located near several Mandatory Class I Federal areas, such as national parks, wilderness areas, and international parks where visibility is of special concern.¹³¹ For example, emissions from TVA coal plants are located near the Sipsey Wilderness Area in Alabama, Mammoth Cave National Park in Kentucky, and the Great Smoky Mountains National Park and the Joyce Kilmer-Slickrock Wilderness Area in Tennessee.¹³² Pollution controls on TVA fossil plants would dramatically improve air quality in the Tennessee Valley region and beyond. Yet, the majority of TVA coal units have no SO₂ pollution controls installed, including at Allen, Colbert, Gallatin, John Sevier, Johnsonville, and Kingston Fossil Plants,¹³³ and TVA continues to fight environmental groups seeking air emission reductions at TVA coal plants.¹³⁴



Home destroyed by the Kingston coal ash spill, J. Miles Cary/ Knoxville News Sentinel

TVA'S TRACK RECORD OF NONCOMPLIANCE, NEGLECT, AND RECALCITRANCE

TVA has a long history of environmental mismanagement, which resulted in, and was ultimately exposed by, the Kingston spill.¹³⁵ TVA's own Office of the Inspector General (OIG) reports the missteps by TVA leadership, who repeatedly chose short-term savings over long-term environmental safety.¹³⁶

TVA'S CLEAN AIR ACT NONCOMPLIANCE

Nearly all of TVA's fossil plants are out of compliance with the Clean Air Act and EPA is aware of "high priority violations" at 8 of TVA's 11 coal plants.¹³⁷ Many of these violations date back to

2000, when EPA identified that several of TVA coal-fired units failed to meet the Clean Air Act's New Source Review requirements.¹³⁸ The EPA found that TVA modified its facilities, resulting in an emissions increase prohibited by the Clean Air Act, yet EPA has never prosecuted TVA for these violations.¹³⁹

In addition, TVA has repeatedly failed to report Clean Air Act violations at its coal plants. For example, TVA failed to report leaking equipment at three different coal plants, on three different occasions, which resulted in over a *thousand tons of unreported air emissions*.¹⁴⁰ At Cumberland Fossil Plant, Paradise Fossil Plant, and Widows Creek Fossil Plant, TVA failed to report leaks from

its pollution control equipment and continued to operate without fixing the problem.¹⁴¹ These types of air emission leaks are particularly damaging to the environment because the leaked emissions did not pass through any pollution controls prior to escaping and likely contained high pollutant levels.¹⁴²

The Alabama Department of Environmental Management (ADEM) noted the “significant delay between the time of discovery of the leaks and the time of repair,” finding that TVA may have benefited financially from delayed compliance and “possibly avoided the costs associated with unit downtime” by waiting to both report and repair the leaks.¹⁴³

TVA “DID NOT EXHIBIT A STANDARD OF CARE COMMENSURATE WITH APPLICABLE REGULATORY REQUIREMENTS... WHICH REQUIRES THE FACILITY TO OPERATE AND MAINTAIN CONTROL EQUIPMENT IN A MANNER SO AS TO MINIMIZE EMISSIONS.”

—ADEM¹⁴⁴

TVA's coal-fired plants are some of the oldest in the industry and have an average age of 47 years.¹⁴⁵ TVA makes substantially lower capital expenditures to maintain its coal-fired plants than other utility companies such as AEP, Progress, and Southern,¹⁴⁶ which can lead to equipment failure and emission leaks.

In response to leaking equipment, TVA's OIG investigated TVA's leaks at Cumberland Fossil Plant and Paradise Fossil Plant, and recommended that TVA “promote a culture of transparency,” a recommendation with which TVA management reportedly agreed.¹⁴⁷ However, in 2008, the TVA OIG published another

report detailing nearly the same incident of unreported non-compliance, this time at Widows Creek Fossil Plant.¹⁴⁸ Ultimately, TVA's long-term under-investment in coal plant maintenance now requires that TVA outlay large amounts of capital to repair, properly maintain, or retrofit its aging fossil plants to comply with current and upcoming federal environmental laws.¹⁴⁹

Finally, 8 of TVA's 11 coal-fired power plants operate under expired Clean Air Act operating permits.¹⁵⁰ As technical issues or compliance problems often hold-up state issuance of operating permits, TVA can expedite the permitting process by ensuring that regulators have all necessary data to issue new permits.

CLEAN WATER ACT NONCOMPLIANCE

EIP's investigation of TVA's NPDES permits revealed that most TVA permits contained *no effluent limits* for toxic CCW metals *at any outfalls* to surface waters. Despite voluminous data showing that TVA Fossil Plants discharge high levels of toxic pollutants, regulators failed to place effluent limits in TVA's NPDES permits to protect water quality and public health. State and federal regulators must limit TVA's releases of toxic pollutants to surface waters as required by the Clean Water Act. Due to the state of Tennessee's failure to follow the legal requirements of the Clean Water Act, the Environmental Integrity Project and Earthjustice, on behalf of the Sierra Club, recently filed a petition to appeal a new permit allowing one million gallons per day of untreated toxic scrubber waste discharges from TVA's Kingston power plant.¹⁵¹

Although regulators ultimately issue Clean Water Act permits, some responsibility for weak permit terms rests with TVA itself. For example, in a recent letter to Tennessee regulators

regarding Johnsonville Fossil Plant, TVA requested that the state agency *remove* monitoring requirements for total metals and cyanide.¹⁵² However, Johnsonville CCW outfall 001 discharges Arsenic, Selenium and Aluminum at levels that exceed U.S. EPA Water Quality Criteria.¹⁵³ Although water quality criteria are usually not enforceable at the end of pipe unless they are incorporated into a permit, the regular discharge of heavy metals above the toxic water quality criteria from TVA CCW outfalls warrant placing monitoring requirements in TVA water permits. Rather than removing monitoring for these metals at Johnsonville, regulators and TVA should insist on rigorous monitoring requirements and strict effluent limits that protect the environment.

TVA operates 5 of its 11 coal-fired power plants under expired Clean Water Act, National Pollution Discharge Elimination System (NPDES) permits, including Paradise Fossil Plant, Kingston Fossil Plant, Bull Run Fossil Plant, John Sevier Fossil Plant, and Johnsonville Fossil Plant.¹⁵⁴ Under the Clean Water Act, discharge of pollutants from a point source into the navigable waters of the United States is prohibited unless authorized by a NPDES permit.¹⁵⁵ By operating under expired permits, TVA can discharge CCW wastewater, laden with heavy metals, under old permit conditions based on outmoded data.

TVA IGNORED ENVIRONMENTAL RISKS AT KINGSTON

TVA management did not respond to repeated concerns about the safety of the Kingston coal ash impoundment, an irresponsible approach that put the public at risk when Kingston's coal ash impoundment dike failed, destroying a nearby community, polluting the environment, and leaving TVA with a \$1.2 billion cleanup bill.¹⁵⁶ OIG's review

of the root cause behind TVA's Kingston spill reveals that TVA could have acted decades earlier to avert the Kingston spill. OIG's report exposed TVA's inadequate coal ash management practices, deficient fossil plant maintenance, and an internal corporate culture more likely to cover-up rather than proactively eliminate known environmental risks.¹⁵⁷

“RISKS ASSOCIATED WITH ASH MANAGEMENT THAT WERE KNOWN AS EARLY AS 1987 WERE NOT ADEQUATELY MITIGATED.”

—TVA OFFICE OF INSPECTOR GENERAL¹⁵⁸

For example, in 1985, TVA was warned about “dike slide failure” at the Kingston ash pond in a memo that recommended “daily inspections of this dike by plant personnel.”¹⁵⁹ Again in 1987, despite recommendations to manage ash disposal sites under the Dam Safety Program, TVA chose to forgo complying with federal dam safety standards contending that ash pond dikes “were not dams per se” and that “TVA is not strictly subject to Federal guidelines.”¹⁶⁰ In 1995, TVA obtained a landfill permit from Tennessee state regulators, and expanded the ash ponds at Kingston.¹⁶¹ Then, in 2003, a slope around Kingston's ash ponds failed.¹⁶² In response to this incident, TVA did less than half the work its engineers recommended to solve the problem, and a TVA manager stated that the area “looked fine and that he wanted to wait to see what happened.”¹⁶³ Yet in 2006, Kingston had another slope failure.¹⁶⁴ In 2008, after decades of warnings, prior accidents, and repeated opportunities to reduce risks, the dike around Kingston

ash pond failed causing 1 billion gallons of toxic coal ash waste to spill into the surrounding community.

TVA'S CULTURE OF ENVIRONMENTAL NONCOMPLIANCE

When TVA's Office of Inspector General examined the internal culture that ignored the environmental risks leading up to Kingston, it found that TVA's non-compliance was engrained in the leadership and staff at TVA.¹⁶⁵ OIG reported that, "the audits and investigations conducted by the OIG over the last ten years indicate repeat findings of noncompliance with policies and procedures."¹⁶⁶ TVA's culture of noncompliance, OIG found, was the result of top-down leadership and management policies.¹⁶⁷

"THE AUDITS AND INVESTIGATIONS CONDUCTED BY THE OIG OVER THE LAST TEN YEARS INDICATE REPEAT FINDINGS OF NONCOMPLIANCE WITH POLICIES AND PROCEDURES."

—TVA OIG¹⁶⁸

A closer look at TVA's management shows that TVA's Board of Directors did little to properly assess environmental risks prior to the Kingston spill. The current TVA Board was established during George W. Bush's presidential terms, and under this Board's leadership, TVA's

IG found an internal culture resistant to environmental accountability.¹⁶⁹ Leadership changes at TVA may help alter TVA's culture of environmental recalcitrance from the top down. Under the TVA Act, TVA must have a nine member Board of Directors.¹⁷⁰ TVA board members are nominated by the President and confirmed by the U.S. Senate.

As of December 2009, President Obama nominated three TVA board members, leaving one additional position open for appointment.¹⁷¹ In May 2010, TVA Board member Howard Thrailkill's term will expire, allowing President Obama to establish a new majority on TVA's board of directors. In fact, President Obama can replace all remaining TVA Board members over the next three years, establishing new leadership to alter and improve TVA's internal culture and environmental compliance.¹⁷²

The current TVA Board should be replaced with new leadership committed to establishing greater transparency, and environmental compliance at all levels of TVA management. President Obama can appoint leaders in the renewable energy, environmental protection, or regulatory compliance fields to help TVA chart a new course. TVA's board of directors will make critical decisions in the coming years regarding environmental compliance with new regulations for coal waste, greenhouse gas and mercury emissions, as well as financial investments in renewable energy and fossil plant maintenance. President Obama can ensure that environmental compliance is a priority at the highest levels of TVA management.



Coal ash sludge at Kingston Fossil Plant

RECOMMENDATIONS AND CONCLUSION

To bring TVA into compliance with environmental laws and prevent another disaster like the Kingston coal ash spill, the Obama Administration and Congress should:

RESTORE ACCOUNTABILITY AT TVA:

- **Clarify that EPA and the Justice Department Can Take TVA to Court.** TVA has repeatedly invoked its federal status to avoid responsibility for its own environmental misconduct. A directive from the White House, clarifying that the “unitary executive” theory does not prevent EPA and DOJ from taking enforcement action against TVA will help bring TVA into compliance with federal environmental laws and resolve environmental violations that
- have lingered for years. Today, the “unitary executive” theory, supported by Executive Orders (No. 12,146 and 12,088) pose a roadblock to EPA and DOJ enforcement of environmental laws at TVA facilities. Yet TVA does not rely on DOJ for its defense and retains independent litigating authority.¹⁷³ TVA is an atypical federal agency, removed from centralized control in Washington, and designed by Congress to have legal claims “exercised against the Tennessee Valley Authority exactly as they could have been exercised against... private utility companies.”¹⁷⁴
- **Support Legislation to Eliminate TVA’s Special Protections.** The White House and Congress can help reform TVA by supporting legislation to remove TVA’s special protections,

such as immunity from penalties for environmental violations, and anti-competitive measures that keep rival utilities out of its service area. TVA no longer relies on tax dollars or federal appropriations and therefore, should be as accountable as any other utility for its environmental wrongdoing. Similarly, federal legislation allows TVA to exclude competitors from the TVA service area and restrict access to its transmission system. Removing these special protections would make TVA more competitive, result in a more interconnected and energy-efficient grid, and create incentives for TVA to stay ahead of changing environmental and energy regulations.

- **Increase Environmental Oversight.**

Congress plays a critical role in reforming TVA through its oversight authority. Although the House and Senate Committees charged with TVA oversight have held multiple hearings regarding the Kingston spill, TVA needs increased Congressional oversight to ensure that it takes steps to prevent another disaster and become a national example of environmental sustainability and clean energy production. Congressional oversight of TVA is exercised by two Committees—the Senate Environment and Public Works Committee chaired by Senator Barbara Boxer (D-CA), and the House Subcommittee on Water Resources and Environment (a subcommittee of the Transportation and Infrastructure Committee), chaired by Representative Eddie Bernice Johnson (D-TX). Greater oversight will extend TVA's accountability beyond the immediate disaster at Kingston and improve TVA's long-term environmental practices.

REFORM AND REDUCE TVA'S ENVIRONMENTAL FOOTPRINT:

- **Create a Culture of Environmental Compliance.**

TVA's large and dirty environmental "footprint" is a product of its internal culture of neglect and cost-saving decisions made at the expense of the environment. For example, upon examining the root cause of the Kingston Disaster, TVA's inspector general reported that "litigation strategy seems to have prevailed over transparency and accountability,"¹⁷⁵ resulting in TVA's decision not to "investigate which management practices or policies and procedures allowed to conditions to advance to the critical stage that precipitated the spill."¹⁷⁶ TVA's internal culture can change from the top down, starting with the appointment of new leadership to TVA's Board of Directors. As of December 2009, President Obama named three nominees to TVA's nine-member Board of Directors.¹⁷⁷ The current TVA Board did little to properly assess environmental risks prior to the Kingston spill,¹⁷⁸ and should be replaced with new leadership committed to establishing greater transparency, and environmental compliance at every level of TVA's operations.

- **Switch From Wet to Dry Coal Ash Disposal.**

TVA must transition its wet CCW storage ponds to dry disposal systems in the immediate future. TVA promised to make this transition over twenty years ago¹⁷⁹ and recently promised again to convert its wet coal waste ponds to dry storage after the Kingston spill. Yet TVA has still not produced a timeline, or committed the requisite organizational and financial resources to make the transition from wet to dry, zero-discharge CCW storage a reality in the near future. All of TVA's 11 coal plants

have wet coal waste storage on-site,¹⁸⁰ and all 11 regularly discharge heavy metals at levels that exceed federal water quality criteria.¹⁸¹ TVA must end its toxic discharges and develop zero discharge systems for CCW.

- **Transition from Coal to Clean, Renewable Energy.** TVA must decide whether to make investments in its aging coal-fired fleet or simply retire the oldest, most underperforming units. TVA can make capital investments in new power plants fueled by natural gas or renewable energy sources. TVA is already anticipating that retiring units at John Sevier Fossil Plant (1955) may be more cost effective than retrofitting with pollution controls.¹⁸² In addition, TVA is considering retiring the oldest units at Widows Creek Fossil Plant (1952) if forced to comply with court rulings to reduce air pollution.¹⁸³ Specifically, TVA should agree to cut its emissions of carbon dioxide at least 20% below 2005 levels, consistent with the goals established in the American Climate and Energy Security Act approved by the House of Representatives in June 2009. TVA can become a leader in the transition to clean energy sources by developing renewable energy projects and switching to cleaner burning

fuels in place of coal. Transitioning away from fossil fuels for electricity production will make TVA an example of clean energy production and environmental stewardship.

CONCLUSION

Although TVA exemplifies some of the worst environmental practices in the utility industry, TVA can once again become the symbol of economic prosperity Franklin D. Roosevelt envisioned over 75 years ago. As a federal utility, TVA presents the Obama Administration and Congress with a remarkable opportunity to transform TVA into a model of clean energy production and environmental stewardship. However, TVA must take immediate action to reduce air and water pollution, earn back the public trust, and demonstrate compliance with federal environmental laws. In addition, the White House and Congress can reform TVA by appointing new leadership, allowing for federal enforcement of environmental laws, and providing more stringent oversight of TVA's 11 coal-fired power plants. With reform, TVA can become a leader in clean, energy efficient power production and state of the art environmental protection.

NOTES

- 1 Tennessee Valley Authority (TVA), Office of the Inspector General (OIG), Inspection 2008-12283-02, *Review of the Kingston Fossil Plant Ash Spill Root Cause Study And Observations About Ash Management* (July 23, 2009) [hereinafter *Kingston OIG Report*].
- 2 TVA, OIG Report, *Review of Reportable Environmental Events at TVA Facilities*, No. 2007-019F (Dec. 17, 2007); TVA, OIG Report, *Widows Creek Fossil Plant—Environmental Matters*, No. 23C-8 (Mar. 4, 2008).
- 3 U.S. EPA, Toxics Release Inventory, Surface Water Discharges, Metals and Metal Compounds (in pounds) for Top 20 Electric Utility Facilities (2007) (Specifically, Widows Creek ranks 5; Kingston ranks 7; Cumberland ranks 13; Johnsonville ranks 16; and Gallatin ranks 20), available at www.epa.gov/triexplorer/.
- 4 TVA Board of Directors Meeting (Aug. 20, 2009) (TVA spends \$17/kilowatt on plant maintenance, however, other neighboring utilities spend more than twice that, such as AEP (\$42/kilowatt); Southern (\$40/kilowatt); and Progress (\$35/kilowatt)).
- 5 See, e.g., *State of Connecticut, et al. v. American Electric Power Co. Inc., et al.*, 582 F.3d 309, 388-92 (2d Cir. 2009) (TVA attempted to distinguish itself from the other defendants by arguing that as a federal agency, it should not have to reduce harmful air emissions or be subject to lawsuit).
- 6 Tennessee Valley Authority, Annual Report (Form 10-K), 138 (2009) [hereinafter *TVA 2009 Annual Report*] (“TVA currently receives no appropriations from Congress and funds its business using generated power system revenues, power financings, and other revenues”).
- 7 U.S. EPA, Environmental Appeals Board, *In re Tennessee Valley Authority*, 9 E.A.D. 357 (2000).
- 8 See generally, Melinda R. Kassen, *The Inadequacies of Congressional Attempts to Legislate Federal Facility Compliance with Environmental Requirements*, 54 Md.L.Rev. 1475, (1995); see also, *Hearing on Federal Facility Compliance with Environmental Laws Before the H.R. Subcomm. on Oversight and Investigations Comm. on Energy and Commerce*, 100th Cong. 19 (1987) (statement of F. Henry Habicht II, Assistant Att’y Gen., Land and Resources Division, Department of Justice).
- 9 See *Tennessee Valley Authority v. EPA*, 278 F.3d 1184, 1191 (11th Cir. 2002); *Dean v. Herrington*, 668 F. Supp. 646 (E.D.Tenn. 1987); *Cooper v. TVA*, 723 F.2d 1560 (Fed.Cir. 1983) (Finding that TVA has independent litigating authority under the TVA Act and has represented itself in thousands of cases).
- 10 *Tennessee Valley Authority v. Whitman*, 336 F.3d 1236, 1245 (11th Cir. 2003).
- 11 *In re Tennessee Valley Authority*, *supra* note 7 (finding multiple violations of the Clean Air Act’s New Source Review requirements at TVA’s coal-fired units).
- 12 See *Tennessee Valley Authority v. EPA*, 278 F.3d 1184, 1191 (11th Cir. 2002); *Dean v. Herrington*, 668 F. Supp. 646 (E.D.Tenn. 1987); *Cooper v. TVA*, 723 F.2d 1560 (Fed.Cir. 1983) (finding that TVA has independent litigating authority under the TVA Act and has represented itself in thousands of cases).
- 13 *North Carolina ex rel. Cooper v. TVA*, 515 F.3d 344, 349 (4th Cir. 2008) (citing 79 Cong. Rec. 6563-64 (1946)(statement of Sen. Hill)).
- 14 TVA, Kingston OIG Report, *supra* note 1.
- 15 TVA, Kingston OIG Report, *supra* note 1, at 4.
- 16 Erik Schelzig, *Obama Nominates Lawyer, Professor for TVA Board*, ASSOCIATED PRESS (Sept. 10, 2009); Michael Collins, *Obama’s Picks Could Alter TVA Culture*, KNOXVILLE NEWS SENTINEL (Sept. 19, 2009); Anne Paine, *Bill Sansom may remain on TVA board for another term*, THE TENNESSEAN (Dec. 5, 2009).
- 17 TVA, Kingston OIG Report, *supra* note 1 at Appendix C, page 15, (citing W.M. Bivens, Vice President of Power Engineering and Construction, to Morris G. Herndon, Manager of Dam Safety Program, December 29, 1988, Archived TVA files, Tennessee).
- 18 TVA, Press Release, *TVA Coal Combustion Products Remediation Plan Proposed* (Aug. 20, 2009) available at http://www.tva.gov/news/releases/julsep09/ccprp_other.htm (proposing to convert ponds within 8-10 years).
- 19 See Appendix A.
- 20 See Dave Flessner, *TVA May Shutter Aging Coal-Fired Plants*, CHATTANOOGA TIMES FREE PRESS (Aug. 24, 2009); see also, TVA Quarterly Report, Form 10-Q, 46 (July 31, 2009) [hereinafter *TVA 10-Q*] (“On June 4, 2009, the TVA Board approved building a gas-fired combined cycle power plant in northeast Tennessee. If the North Carolina lawsuit appeal is unsuccessful... the new power plant gives TVA the flexibility to operate, retire, or add emissions controls to some or all of the John Sevier units”).
- 21 Staff writer, *TVA May Shut Down Coal Fired Power Stations if Regulations are Modified*, ENERGY BUSINESS REVIEW (May 6, 2009), available at <http://www.energy-business-review.com/>.
- 22 See Shaila Dewan, *T.V.A. to Pay \$43 Million on Projects in Spill Area*, N.Y. TIMES (Sept. 14, 2009); Duncan Mansfield, *TVA Raises Coal Ash Tab to 1.2B, Reports 3Q Loss*, ASSOCIATED PRESS (Aug. 2, 2009); see also, TVA 2009 Annual Report, *supra* note 6 at 133 (“To settle other claims arising from the ash spill, TVA had paid approximately \$69 million as of September 30, 2009, \$42 million of which was spent to acquire 145 tracts of land consisting of approximately 600 acres”).
- 23 *Oversight Hearing on the Tennessee Valley Authority and the Recent Major Coal Ash Spill: Hearing Before the S. Comm. on Environment*

- and Public Works* (Jan. 8, 2009) (Statement of Sen. Barbara Boxer, Chairman, S. Comm. on Environment and Public Works).
- 24 See generally, Kingston OIG Report, *supra* note 1.
- 25 TVA, OIG Report, *Review of Reportable Environmental Events at TVA Facilities*, No. 2007-019F (Dec. 17, 2007); TVA, OIG Report, *Widows Creek Fossil Plant—Environmental Matters—Air*, No. 23C-8 (Mar. 4, 2008).
- 26 See e.g., *North Carolina, ex rel. Cooper v. TVA*, Slip Op., 2009 WL 2497934 (W.D.N.C. Aug 14, 2009).
- 27 As of December 2009, 8 of 11 TVA coal plants operate under expired Clean Air Act operating permits and 5 of TVA's 11 coal fired power plants operate under expired Clean Water Act Permits. According to U.S. EPA Toxics Release Inventory, these 11 plants release well over 20 million pounds of pollutants each year. EPA, Toxics Release Inventory, available at www.epa.gov/triexplorer/.
- 28 TVA 2009 Annual Report, *supra* note 6 at 41.
- 29 *Id.* at 12–21.
- 30 See, e.g., *State of Connecticut, et al. v. American Electric Power Co. Inc., et al.*, 582 F.3d 309, 388-92 (2d Cir. 2009) (TVA attempted to distinguish itself from the other defendants by arguing that as a federal agency, it should not have to reduce harmful air emissions or be subject to lawsuit).
- 31 *TVA v. U.S. E.P.A.* 278 F.3d 1184, 1192 (11th Cir. 2002) (When fighting U.S. EPA enforcement, TVA claimed it is not a typical federal agency and should not be represented by the Department of Justice like most federal agencies. Instead, TVA argued that it possesses independent litigating authority, and should be able to hire private law firms, as private utilities do, to protect its business interests).
- 32 Tennessee Valley Authority Act of 1933 (“TVA Act”), 16 U.S.C. § 831 et seq. (2009).
- 33 *Id.*
- 34 TVA 2009 Annual Report, *supra* note 6, at 45 (Congress supported TVA's energy system until 1959, after the bulk of its fossil units were operational, and supported TVA's other activities with taxpayer funds until 1999).
- 35 77 Cong. Rec. 1423 (1933).
- 36 16 U.S.C. § 831c(b); see also, *TVA v. United States*, 51 Fed.Cl. 284 (2001) (A contract dispute between TVA and Department of Energy in which the Court of Federal Claims noted that TVA “conducts its litigation independent of the Department of Justice”).
- 37 *TVA v. EPA*, 278 F.3d 1184, 1192-93 (11th Cir. 2002).
- 38 *North Carolina ex rel. Cooper v. TVA*, 515 F.3d 344, 349 (4th Cir. 2008)(citing 28 U.S.C. § 1491(c)).
- 39 *Id.* (citing 16 U.S.C. § 831a).
- 40 *Id.* (citing 16 U.S.C. § 831b).
- 41 *Id.* (citing 16 U.S.C. § 831h(b)).
- 42 *Id.* (citing 16 U.S.C. § 831n-4(b)) (“When creating the TVA in 1933, Congress indicated that it “intend[s] that the corporation shall have much of the essential freedom and elasticity of a private business corporation”).
- 43 *Id.* (citing 79 Cong. Rec. 6563-64 (1946))(statement of Sen. Hill).
- 44 See, e.g., *State of Connecticut, et al.*, 582 F.3d 309 (2d Cir. 2009); *North Carolina ex rel Cooper v. TVA*, 439 F.Supp.2d 486 (W.D.N.C. 2006); *Tenn. Valley Auth. v. EPA*, 278 F.3d 1184 (11th Cir. 2002); *Tenn. Valley Auth. v. United States*, 13 Cl. Ct. 692 (Cl. Ct. 1987).
- 45 *North Carolina ex rel. Cooper v. TVA*, 515 F.3d 344 (4th Cir. 2008).
- 46 *Id.* at 349.
- 47 *North Carolina, ex rel. Cooper v. TVA*, Slip Op., 2009 WL 2497934 (W.D.N.C. Aug 14, 2009).
- 48 TVA 10-Q, *supra* note 20 at 37 (TVA estimates that the cost of these emissions controls will be approximately \$1.7 billion in fiscal years 2009 through 2014).
- 49 *North Carolina, ex rel. Cooper v. TVA*, No. 1:06CV20, 2009 WL 2497934 (W.D.N.C. Aug 14, 2009).
- 50 *Connecticut v. American Elec. Power Co., Inc.*, slip. op., 2009 WL 2996729 (2d Cir. 2009) (Defendants are TVA, Southern Company, American Electric Power Company, XCEL Energy, and Cinergy).
- 51 *Id.* at 138 (“We hold that neither the political question doctrine nor the discretionary function exception warrant dismissal of Plaintiffs’ claims against TVA”).
- 52 *National Parks and Conservation Ass’n, Inc. v. TVA*, 502 F.3d 1316 (11th Cir. 2007).
- 53 TVA 10-Q, *supra* note 20 at 70 (July 31, 2009) (The lawsuit “could cause TVA to install additional emission control systems such as scrubbers and SCRs on units where they are not currently installed, under construction, or planned to be installed”).
- 54 See *Sierra Club v. TVA*, 592 F.Supp.2d 1357 (N.D. Ala. 2009); see also, Andrew Eder, *TVA Spending \$80M on Alabama Plant Improvements*, KNOXVILLE NEWS SENTINEL (Nov. 1, 2007).
- 55 TVA, Integrated Resource Plan, Clean Energy, available at: http://www.tva.gov/environment/reports/irp/pdf/clean_energy.pdf (“TVA complies with the Energy Policy Act of 2005, which requires that all federal agencies, to the extent economically feasible and technically practicable, use not less than the following amounts of renewable electricity in their facilities: In fiscal year 2007–2009: 3%; In fiscal year 2010–2012: 5%; In fiscal year 2013–thereafter: 7.5%”).

- 56 TVA, Energy Vision 2020, Executive Summary, 2 (Dec. 1995) available at http://www.tva.gov/environment/reports/energyvision2020/ev2020_execsumm.pdf.
- 57 Duncan Mansfield, *TVA to Buy 450 Megawatts From North Dakota Wind Turbines*, THE ASSOCIATED PRESS (Oct. 22, 2009).
- 58 TVA 2009 Annual Report, *supra* note 6 at 35 (“Such developments could require TVA to make significant capital expenditures, increase its purchased power costs, or make changes in how it operates its facilities”).
- 59 *Connecticut v. American Elec. Power Co., Inc.*, 582 F.3d 309, 388 (2d Cir. 2009); *North Carolina ex rel. Cooper v. Tennessee Valley Authority*, 515 F.3d 344, 347 (4th Cir. 2008) (“TVA’s power-generating activities are commercial in nature and thus are not immune to suit”).
- 60 16 U.S.C. § 831c(b) (2009).
- 61 See e.g., *Sierra Club v. Tennessee Valley Authority*, 430 F.3d 1337 (11th Cir. 2005).
- 62 16 U.S.C. § 831n-4 (2009).
- 63 U.S. EPA, Environmental Appeals Board, *In re Tennessee Valley Authority*, 9 E.A.D. 357 (2000).
- 64 See generally, Melinda R. Kassen, *The Inadequacies of Congressional Attempts to Legislate Federal Facility Compliance with Environmental Requirements*, 54 MD.L.REV. 1475, (1995); see also, *Hearing on Federal Facility Compliance with Environmental Laws Before the H.R. Subcomm. on Oversight and Investigations Comm. on Energy and Commerce*, 100th Cong. 19 (April 28, 1987) (statement of F. Henry Habicht II, Assistant Att’y Gen., Department of Justice).
- 65 *Id.* (noting that DOJ “is also responsible for providing legal advice to our clients, representing the federal agencies in environmental matters, and advising them on compliance with the law”). See also, United States Constitution Article II, § 1 (“[t]he executive Power shall be vested in a President of the United States of America”); see generally, Steven G. Calabresi & Kevin H. Rhodes, *The Structural Constitution: Unitary Executive; Plural Judiciary*, 105 HARV. L. REV. 1153, 1165–66 (1992) (The “unitary executive” theory of government provides that, “the President alone possesses all of the executive power and [] he therefore can direct, control, and supervise inferior officers or agencies”).
- 66 See Exec. Order No. 12,146, §§ 1-401 and 402, 44 Fed. Reg. 42,657 (July 18, 1979) (Section 1-401 states that “whenever two or more Executive agencies are unable to resolve legal disputes . . . each agency is encouraged to submit the dispute to the Attorney General. The language in Section 1-402 is more narrow, stating that “whenever two or more Executive agencies whose heads serve at the pleasure of the President are unable to resolve such a legal dispute, the agencies shall submit the dispute to the Attorney General prior to proceeding in any court”(emphasis added); see also, Exec. Order No. 12,088 § § 1-602 and 1-604, 43 Fed. Reg. 47,707 (July 18, 1979) (The EPA Administrator “shall make every effort to resolve conflicts regarding violation [of an applicable pollution control standard] between Executive agencies... If the Administrator cannot resolve a conflict, the Administrator shall request the Director of the Office of Management and Budget to resolve the conflict.” The dispute resolution procedures in this Executive Order are “in addition to, not in lieu of, other procedures, including sanctions, for the enforcement of applicable pollution control standards”)(emphasis added).
- 67 See *Tennessee Valley Authority v. EPA*, 278 F.3d 1184, 1191 (11th Cir. 2002); *Dean v. Herrington*, 668 F. Supp. 646 (E.D.Tenn.1987); *Cooper v. TVA*, 723 F.2d 1560 (Fed.Cir.1983); *Algernon Blair Indus. Contractors, Inc. v. TVA*, 540 F. Supp. 551 (M.D.Ala.1982) (finding that TVA had independent litigating authority under the TVA Act).
- 68 *Hearing on Federal Facility Compliance with Environmental Laws Before the H.R. Subcomm. on Oversight and Investigations Comm. on Energy and Commerce*, 100th Cong. 19 (April 28, 1987) (statement of F. Henry Habicht II, Assistant Att’y Gen., Department of Justice).
- 69 See *Tennessee Valley Authority v. EPA*, 278 F.3d 1184, 1191 (11th Cir. 2002); *Dean v. Herrington*, 668 F. Supp. 646 (E.D.Tenn.1987); *Cooper v. TVA*, 723 F.2d 1560 (Fed.Cir.1983); *Algernon Blair Indus. Contractors, Inc. v. TVA*, 540 F. Supp. 551 (M.D.Ala.1982) (finding that TVA had independent litigating authority under the TVA Act).
- 70 See Second Revised Brief for Respondent United States Environmental Protection Agency (Oct. 1, 2000) *TVA v. EPA*, 278 F.3d 1184 (11th Cir. 2002) (Arguing that “disputes between commonly controlled entities...lack the concrete adversity required to present an Article III case or controversy” and “that to the extent TVA has a dispute with EPA, it may avail itself of certain inter-agency dispute mechanisms created by the President pursuant to Executive Orders 12,088 and 12,146. These Executive Orders, an exercise of the President’s constitutional authority to supervise executive branch agencies, provide an opportunity for resolution of an intra-executive branch dispute”).
- 71 *TVA v. Whitman*, 336 F.3d 1236, 1245 (11th Cir. 2003).
- 72 *Id.* at 1261.
- 73 Even the Kingston coal waste spill was settled by administrative Consent Agreement rather than judicial action. See, U.S. EPA, *TVA Kingston Fossil Fuel Plant Release, Administrative Order and Agreement on Consent*, Docket No. CERCLA-04-2009-3766 (May 2009), available at <http://www.epa.gov/region4/kingston/May8TVAKingstonFinal106Order.pdf>.
- 74 See e.g., *North Carolina ex rel. Cooper v. TVA*, 515 F.3d 344, 349 (4th Cir. 2008) (“The TVA

- has, in fact, sued the United States on several occasions, successfully arguing that its separation from the Executive Branch enables it to sue both the United States and its executive agencies”).
- 75 See, Reply Brief of Petitioner Tennessee Valley Authority on Review of Decision of the Environmental Appeals Board, 2001 WL 34807644, viii, *TVA v. EPA*, 278 F.3d 1184 (11th Cir. 2002).
 - 76 *Tennessee Valley Authority v. U.S. E.P.A.*, 278 F.3d 1184, 1203 (11th Cir. 2002).
 - 77 16 U.S.C. § 831n-4(b)(2009) (“Bonds issued by the Corporation hereunder shall not be obligations of, nor shall payment of the principal thereof or interest thereon be guaranteed by, the United States”).
 - 78 16 U.S.C. § 831n-4 (2009).
 - 79 TVA OIG, *Final Report—Inspection 2007-11399—Review of TVA’S Financial Performance*, 4 (June 23, 2009).
 - 80 U.S. Government Accountability Office (GAO), *Tennessee Valley Authority: Bond Ratings Based on Ties to the Federal Government and Other Nonfinancial Factors*, GAO-01-540 (Apr. 2001).
 - 81 *Id.*
 - 82 TVA OIG, *Review of TVA’S Financial Performance*, *supra* note 79 at 33.
 - 83 *Id.* at 9.
 - 84 TVA 2009 Annual Report, *supra* note 6 at 35-40 (“A downgrade in TVA’s credit rating could have material adverse effects on TVA’s cash flows, results of operations, and financial condition as well as on investors in TVA securities... A downgrade would increase TVA’s interest expense by increasing the interest rates that TVA pays on new Bonds that it issues. An increase in TVA’s interest expense would reduce the amount of cash available for other purposes, which could result in the need to increase borrowings, to reduce other expenses or capital investments, or to increase power rates”).
 - 85 16 U.S.C. §§ 831-831ee (2009).
 - 86 Federal Power Act, 16 U.S.C. § 791a et seq., amended by: Energy Policy Act of 1992 (EPAAct).
 - 87 16 U.S.C. § 831n-4 (2009).
 - 88 Section 212(j) of the Federal Power Act, 16 U.S.C. §824k.
 - 89 TVA OIG, *Review of TVA’S Financial Performance*, *supra* note 79 at 21 (Figure 7).
 - 90 TVA 2009 Annual Report, *supra* note 6 at 23–24.
 - 91 TVA 2009 Annual Report, *supra* note 6 at 24.
 - 92 TVA 2009 Annual Report, *supra* note 6 at 23; see generally, FERC, East Kentucky Power Cooperative, Inc. Docket No. TX05-1-000, et al., *Order Directing the Filing of an Interconnection Agreement and Revised System Impact Studies* (Issued Aug. 3, 2005), available at <http://www.ferc.gov/eventcalendar/Files/20050803130126-TX05-1-0001.pdf>.
 - 93 TVA OIG, *Review of TVA’S Financial Performance*, *supra* note 79 at 20.
 - 94 U.S. GAO, *Tennessee Valley Authority, Plans to Reduce Debt While Meeting Demand for Power*, GAO-06-810, 6 (Aug. 2006), available at <http://www.gao.gov/new.items/d06810.pdf>.
 - 95 TVA 2009 Annual Report, *supra* note 6 at 23.
 - 96 TVA 10-Q, *supra* note 20 at 14.
 - 97 U.S. EPA, *Characterization of Coal Combustion Residues from Electric Utilities Using Wet Scrubbers for Multi-Pollutant Control* xvi (July 2008), available at <http://www.epa.gov/nrmrl/pubs/600r08077/600r08077.pdf>.
 - 98 Martha Keating et al, Earthjustice, *Waste Deep: Filling Mines with Coal Ash is Profit For Industry but Poison for Communities*, 2, available at http://earthjustice.org/library/reports/earthjustice_waste_deep.pdf (citing Chantal Block and Richard Dams, *Study of Fly Ash Emissions During Combustion of Coal*, 10 ENVTL. SCI. & TECH. 1011 (Oct. 1976). As coal is burned, “its volume is reduced by two-thirds to four-fifths, concentrating metals and other minerals that remain in the ash.” *Id.*
 - 99 TVA, Fossil Fuel Generation, www.tva.com/power/fossil.htm (last visited 9/11/09).
 - 100 See generally, U.S. EPA, *Human Health and Ecological Risk Assessment from Coal Combustion Wastes* (Draft) (2007) (prepared by RTI), available at http://www.pineswater.org/EPA_ccw_risk.pdf.
 - 101 U.S. EPA, Toxics Release Inventory, Federal Facility Report: Tennessee Valley Authority (2008).
 - 102 U.S. EPA, News Release, *EPA Expects to Revise Rules for Wastewater Discharges from Power Plants* (Sept. 15, 2009).
 - 103 U.S. EPA, Office of Solid Waste and Emergency Response, *Responses From TVA to EPA’s March 9, 2009 Information Request Letter* (surface area of CCW surface impoundments at each TVA plant derived by adding the surface area of various impoundments at each TVA coal plant), available at <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys/survey2.pdf>.
 - 104 See U.S. EPA, Office of Solid Waste and Emergency Response, *Responses From TVA to EPA’s March 9, 2009 Information Request Letter* (listing both the size and hazard potential of all TVA coal waste impoundments) available at <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys/survey2.pdf>.
 - 105 *Id.*
 - 106 U.S. EPA, *Office of Solid Waste, Human Ecological Risk Assessment of Coal Combustion Wastes*, Attachments B-1 & B-2 (Aug. 6, 2007).

- 107 U.S. EPA, Fact Sheet, *Coal Combustion Residues (CCR)—Surface Impoundments with High Hazard Potential Ratings*, EPA530-F-09-006, June 2009 (updated August 2009) available at <http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/ccrs-fs/national.pdf> (Although a “high hazard potential” rating is not an indication of structural integrity, it is given to coal ash ponds whose failure will probably cause loss of human life due to the proximity to homes, schools, and recreational areas).
- 108 TVA, 2008 Environmental Policy, 10 (May 2008) available at http://www.tva.gov/environment/pdf/environmental_policy.pdf.
- 109 U.S. EPA, Office of Solid Waste and Emergency Response, *Responses From TVA to EPA’s March 9, 2009 Information Request Letter*, available at <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys/survey2.pdf>.
- 110 U.S. EPA, *Coal Combustion Waste Damage Assessments*, Office of Solid Waste (July 9, 2007).
- 111 TVA, Press Release, *TVA Coal Combustion Products Remediation Plan Proposed* (Aug. 20, 2009) available at http://www.tva.gov/news/releases/julsep09/ccprp_other.htm.
- 112 *Id.*, see also, TVA 2009 Annual Report, *supra* note 6 at 13 (Kingston Fossil Plant was built between 1954–1955).
- 113 Kingston OIG Report, *supra* note 1 at Appendix B, page 15.
- 114 See TVA, Press Release, *supra* note 109, see also, Dave Flessner, *TVA Going Dry for Disposal of Fly Ash*, CHATTANOOGA TIMES FREE PRESS (Aug. 10, 2009).
- 115 Kingston OIG Report, *supra* note 1 at Appendix C, 15 (citing W.M. Bivens, Vice President of Power Engineering and Construction, to Morris G. Herndon, Manager of Dam Safety Program, December 29, 1988, Archived TVA files, Tennessee).
- 116 TVA 10-Q, *supra* note 20 at 14.
- 117 U.S. EPA, Office of Solid Waste, *Human Ecological Risk Assessment of Coal Combustion Wastes* (Draft), Appendix B (Aug. 6, 2007).
- 118 See Chart, “Surface Water Discharges—U.S. EPA Toxics Release Inventory” for list of waters near TVA CCW ponds and impoundments that receive discharges from TVA’s CCW ponds and impoundments.
- 119 U.S. EPA, Toxics Release Inventory (2008) (this represents the total on-site surface water release reported by each TVA facility to U.S. EPA in 2008).
- 120 U.S. EPA, Toxics Release Inventory, Form R Reports (2007) (TVA reported these receiving waters as the “Receiving Stream or Water Bodies” for its discharges in the year 2007).
- 121 Kingston OIG Report, *supra* note 1, at i.
- 122 U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), *Toxicological Profile for Arsenic* (Aug. 2007), available at <http://www.atsdr.cdc.gov/tfacts2.pdf>.
- 123 U.S. EPA, Toxics Release Inventory, On-site and Off-site Reported Disposed of or Otherwise Released (in pounds), Top 100 Facilities, for Electric Utilities (2211), for Arsenic and Arsenic Compounds (2008).
- 124 *Id.*
- 125 *Id.*
- 126 U.S. EPA, *Clean Air Markets Data and Maps*, available at <http://camddataandmaps.epa.gov>
- 127 U.S. EPA, Clean Air Markets and Data, Total Annual Emissions reported by all Tennessee Valley Authority facilities (2008).
- 128 U.S. EPA, Sulfur Dioxide, Chief Causes for Concern, available at <http://www.epa.gov/air/urbanair/so2/chf1.html>.
- 129 *Id.*; see also, U.S. EPA, Nitrogen Oxides, Health, available at <http://www.epa.gov/air/nitrogenoxides/health.html>.
- 130 U.S. EPA, Sulfur Dioxide, Chief Causes for Concern, *supra* note 128.
- 131 40 C.F.R. Part 81, Subpart D—Identification of Mandatory Class I Federal Areas Where Visibility is an Important Value (2009).
- 132 40 C.F.R. § 81.401–81.428 (2009).
- 133 See U.S. EPA, Clean Air Markets Data for TVA Fossil Plants (2008) available at <http://camddataandmaps.epa.gov/gdm/>.
- 134 TVA 10-Q, *supra* note 20 at 70 (July 31, 2009) (The lawsuit “could cause TVA to install additional emission control systems such as scrubbers and SCRs on units where they are not currently installed, under construction, or planned to be installed”); see also, *Sierra Club v. TVA*, 592 F.Supp.2d 1357 (N.D. Ala. 2009); see also, Andrew Eder, *TVA Spending \$80M on Alabama Plant Improvements*, KNOXVILLE NEWS SENTINEL (Nov. 1, 2007).
- 135 See Kingston OIG Report, *supra* note 1; see also, OIG Report, *Review of Reportable Environmental Events at TVA Facilities*, No. 2007-019F (Dec. 17, 2007); TVA, OIG Report, *Widows Creek Fossil Plant—Environmental Matters—Air*, No. 23C-8 (Mar. 4, 2008).
- 136 *Id.*
- 137 U.S. EPA, Office of Enforcement and Compliance Assurance, *The 2008 State of Federal Facilities: An Overview of Environmental Compliance at Federal Facilities*, 25 (Aug. 2009).
- 138 U.S. EPA, Environmental Appeals Board, *In re Tennessee Valley Authority*, 9 E.A.D. 357 (2000).
- 139 *Id.*
- 140 TVA, OIG Report, *Review of Reportable Environmental Events at TVA Facilities*, No. 2007-019F (Dec. 17, 2007); TVA, OIG Report,

- Widows Creek Fossil Plant—Environmental Matters—Air*, No. 23C-8 (Mar. 4, 2008). TVA conservatively estimates that the Widows Creek leak alone included 944 tons of SO₂ and NO_x emissions.
- 141 *Id.*
- 142 *Id.*
- 143 Alabama Department of Environmental Management (ADEM), *In the Matter of Tennessee Valley Authority Widows Creek Fossil Plant*, Air Facility ID No. 705-0008, Consent Order No. 08-XXX-CAP (Jan. 10, 2008).
- 144 *Id.*
- 145 TVA Board of Directors Meeting (Aug. 20, 2009).
- 146 TVA Board of Directors Meeting (Aug. 20, 2009) (TVA spends \$17/kilowatt on plant maintenance, however, other neighboring utilities spend more than twice that, such as AEP (\$42/kilowatt); Southern (\$40/kilowatt); and Progress (\$35/kilowatt)).
- 147 TVA, OIG Report, *Review of Reportable Environmental Events at TVA Facilities*, No. 2007-019F (Dec. 17, 2007).
- 148 TVA, OIG Report, *Widows Creek Fossil Plant—Environmental Matters – Air*, No. 23C-8 (Mar. 4, 2008).
- 149 TVA OIG, *Review of TVA'S Financial Performance*, *supra* note 79 at 18.
- 150 Title V operating permits for Colbert, Cumberland, Gallatin, John Sevier, Johnsonville, Kingston, Shawnee and Widows Creek Fossil Plant are expired as of December 1, 2009.
- 151 See Earthjustice and Environmental Integrity Project, Press Release, *Groups Appeal Decision to Allow Unlimited Toxic Metal Discharges from TVA Kingston Plant* (Nov. 13, 2009) available at http://www.environmentalintegrity.org/lawlibrary_09_11_13.php
- 152 Gordon G. Park, Tennessee Valley Authority (TVA) to Joe Holland, Tenn. Dep't Env't and Conservation, *TVA-Johnsonville Fossil Plant-NPDES Permit No. TN 0005444—Application for Renewal* (Aug. 20, 2007).
- 153 See Environmental Integrity Project letter to TDEC (Sept. 24, 2009) (on file with author); see also, Appendix A for a list of water quality exceedances at TVA coal plants, including Johnsonville.
- 154 *Id.*
- 155 33 U.S.C. §§ 1311(a), 1342 (2009).
- 156 Shaila Dewan, *TVA. to Pay \$43 Million on Projects in Spill Area*, N.Y. TIMES (Sept. 14, 2009); Mansfield, Duncan, *TVA agrees to increase rates, borrowing; cut costs*, THE ASSOCIATED PRESS (Aug. 20, 2009) (These estimates do not include litigation costs).
- 157 Kingston OIG Report, *supra* note 1 at 29–35.
- 158 Kingston OIG Report, *supra* note 1 at 6.
- 159 Kingston OIG Report, *supra* note 1 at Appendix C, 14–15, (citing R.G. Donor, Director of Engineering Project, to C.C. Schonhoff, Director of Fossil and Hydro Power, April 3, 1985, Archived TVA files, Tennessee).
- 160 Kingston OIG Report, *supra* note 1 at Appendix C, 15 (citing W.M. Bivens, Vice President of Power Engineering and Construction, to Morris G. Herndon, Manager of Dam Safety Program, December 29, 1988, Archived TVA files, Tennessee).
- 161 Kingston OIG Report, *supra* note 1.
- 162 *Id.* at Appendix C, 15.
- 163 Kingston OIG Report, *supra* note 1 at Appendix C, 16.
- 164 *Id.*
- 165 Kingston OIG Report, *supra* note 1.
- 166 Kingston OIG Report, *supra* note 1 at 31.
- 167 Kingston OIG Report, *supra* note 1.
- 168 *Id.*
- 169 *Id.*
- 170 16 U.S.C. § 831a (2009).
- 171 Erik Schelzig, *Obama Nominates Lawyer, Professor for TVA Board*, ASSOCIATED PRESS (Sept. 10, 2009); Anne Paine, *Bill Sansom may remain on TVA board for another term*, THE TENNESSEAN (Dec. 5, 2009).
- 172 Michael Collins, *Obama's Picks Could Alter TVA Culture*, KNOXVILLE NEWS SENTINEL (Sept. 19, 2009).
- 173 See *Tennessee Valley Authority v. EPA*, 278 F.3d 1184, 1191 (11th Cir. 2002); *Dean v. Herrington*, 668 F. Supp. 646 (E.D. Tenn. 1987); *Cooper v. TVA*, 723 F.2d 1560 (Fed. Cir. 1983) (Finding that TVA has independent litigating authority under the TVA Act and has represented itself in thousands of cases).
- 174 *North Carolina ex rel. Cooper v. TVA*, 515 F.3d 344, 349 (4th Cir. 2008) (citing 79 Cong. Rec. 6563-64 (1946)(statement of Sen. Hill).
- 175 TVA, Kingston OIG Report, *supra* note 1 at 4.
- 176 *Id.* at 3–4.
- 177 Erik Schelzig, *Obama Nominates Lawyer, Professor for TVA Board*, ASSOCIATED PRESS (Sep. 10, 2009); Michael Collins, *Obama's Picks Could Alter TVA Culture*, KNOXVILLE NEWS SENTINEL (Sept. 19, 2009); Anne Paine, *Bill Sansom may remain on TVA board for another term*, THE TENNESSEAN (Dec. 5, 2009).
- 178 TVA, Kingston OIG Report, *supra* note 1.
- 179 TVA, Kingston OIG Report, *supra* note 1 at Appendix C, page 15, (citing W.M. Bivens, Vice President of Power Engineering and Construction, to Morris G. Herndon, Manager of Dam Safety Program, December 29, 1988, Archived TVA files, Tennessee).

- 180 TVA, Press Release, *TVA Coal Combustion Products Remediation Plan Proposed* (Aug. 20, 2009) available at http://www.tva.gov/news/releases/julsep09/ccprp_other.htm (Six of TVA's 11 coal-burning plants use wet fly-ash handling systems, and all 11 use wet bottom-ash systems. In addition TVA operates wet gypsum ponds at several coal-burning plants).
- 181 See Appendix A.
- 182 See Dave Flessner, *TVA May Shutter Aging Coal-Fired Plants*, CHATTANOOGA TIMES FREE PRESS (Aug. 24, 2009); see also, TVA 10-Q, *supra* note 20 at 46 ("On June 4, 2009, the TVA Board approved building a gas-fired combined cycle power plant in northeast Tennessee. If the North Carolina lawsuit appeal is unsuccessful... the new power plant gives TVA the flexibility to operate, retire, or add emissions controls to some or all of the John Sevier units").
- 183 Staff writer, *TVA May Shut Down Coal Fired Power Stations if Regulations are Modified*, ENERGY BUSINESS REVIEW (May 6, 2009).

APPENDIX A. SELECT COAL WASTE DISCHARGES FROM TVA FOSSIL PLANTS¹

TVA Facility	Receiving Water	Date of Permit Application	Date of DMR	Pollutant (Outfall)	Water Quality Criteria (WQC) (µg/L) ⁵		Reported Discharge	
					USEPA Recommended WQC for Aquatic Life	USEPA Recommended WQC for Human Health From Fish Consumption	Long Term Average (µg/L)	Maximum Daily (µg/L) ^{2,3}
Allen (Shelby County, TN)	McKellar Lake	Oct. 2004		Aluminum (001)	Freshwater Acute: 750; Freshwater Chronic: 87		N/A	1,500
Allen	McKellar Lake	Oct. 2004		Arsenic (001)	340 A,D,K	0.14	N/A	43
Allen	McKellar Lake	Oct. 2004		Selenium (001)	Freshwater Chronic: 5		N/A	38
Bull Run (Anderson County, TN)	Clinch River	Sept. 2007		Arsenic (001)	340 A,D,K	0.14	N/A	11
Bull Run	Clinch River	Sept. 2007		Selenium (001)	Freshwater Chronic: 5		8	15
Bull Run	Clinch River	Sept. 2007		Thallium (001)		0.47	N/A	1.4
Colbert (Colbert County, AL)	Cane Creek	April 2004		Aluminum (001)	Freshwater Chronic: 87			400
Colbert	Tennessee River		June 2009	Arsenic (010)	340 A,D,K	0.14	21	22
Colbert	Tennessee River		Dec. 2008	Arsenic (010)	340 A,D,K	0.14	27	27
Colbert	Cane Creek	April 2004		Iron (001)	Freshwater Chronic: 1000			1,200
Cumberland (Stewart County, TN)	Cumberland River	May 2005		Aluminum (001)	Freshwater Chronic: 87		N/A	320
Cumberland	Cumberland River	May 2005		Manganese (001)		100	N/A	520
Cumberland	Cumberland River	May 2005		Arsenic (001)		0.14	N/A	3
Cumberland	Cumberland River	May 2005		Selenium (001)	Freshwater Chronic: 5		N/A	130

TVA Facility	Receiving Water	Date of Permit Application	Date of DMR	Pollutant (Outfall)	Water Quality Criteria (WQC) (µg/L) ⁵		Reported Discharge	
					USEPA Recommended WQC for Aquatic Life	USEPA Recommended WQC for Human Health From Fish Consumption	Long Term Average (µg/L)	Maximum Daily (µg/L) ²³
Cumberland	Cumberland River		Dec. 2008	Selenium (001)	Freshwater Chronic: 5		N/A	98
Gallatin (Sumner County, TN)	Cumberland River	May 2004		Aluminum (001)	Freshwater Acute: 750; Freshwater Chronic: 87		N/A	1,700
Gallatin	Cumberland River	May 2004		Arsenic (001)		0.14	18	34
Gallatin	Cumberland River	May 2004		Selenium (001)	Freshwater Chronic: 5		26	40
Gallatin	Cumberland River		Dec. 2008	Selenium (001)	Freshwater Chronic: 5		N/A	39
John Sevier (Hawkins County, TN)	Holston River	Oct. 2008		Aluminum (001)	Freshwater Acute: 750; Freshwater Chronic: 87		N/A	480
John Sevier	Holston River	Oct. 2008		Arsenic (001)		0.14	10	20
John Sevier	Holston River		Sept. 2008	Arsenic (001)		0.14	N/A	40
Johnsonville (Humphreys County, TN)	Tennessee River	Sept. 2008		Aluminum (001)	Freshwater Acute: 750; Freshwater Chronic: 87		1,400	1,500
Johnsonville	Tennessee River	Sept. 2008		Selenium (001)	Freshwater Chronic: 5		N/A	22
Johnsonville	Tennessee River	Sept. 2008		Arsenic (001)		0.14	44	45
Kingston (Roane County, TN)	Clinch River	Dec. 2002		Aluminum (001)	Freshwater Acute: 750; Freshwater Chronic: 87		N/A	990
Kingston	Clinch River	Dec. 2002		Antimony (001)			N/A	73
Kingston	Clinch River	Dec. 2002		Arsenic (001)		0.14	N/A	90

TVA Facility	Receiving Water	Date of Permit Application	Date of DMR	Pollutant (Outfall)	Water Quality Criteria (WQC) (µg/L) ⁵		Reported Discharge	
					USEPA Recommended WQC for Aquatic Life	USEPA Recommended WQC for Human Health From Fish Consumption	Long Term Average (µg/L)	Maximum Daily (µg/L) ^{2,3}
Kingston	Clinch River	Dec. 2002		Selenium (001)	Freshwater Chronic: 5		N/A	24
Kingston	Clinch River	Dec. 2002		Aluminum (007)	Freshwater Acute: 750; Freshwater Chronic: 87		N/A	1300 ⁴
Kingston	Clinch River	Dec. 2002		Iron (007)	Freshwater Chronic: 1000		N/A	55,000
Kingston	Clinch River	Dec. 2002		Manganese (007)		100	N/A	2,400
Kingston	Clinch River	Dec. 2002		Arsenic (007)		0.14	N/A	31
Paradise (Muhlenberg County, KY)	Jacobs Creek	February 2002		Arsenic (001)		0.14	N/A	23
Paradise	Jacobs Creek	February 2002		Selenium (001)	Freshwater Chronic: 5		N/A	13
Shawnee (McCracken County, KY)	Ohio River	July 2005		Aluminum (002)	Freshwater Acute: 750; Freshwater Chronic: 87		N/A	2,000
Shawnee	Ohio River	July 2005		Iron (002)			N/A	2,100
Widows Creek (Jackson County, AL)	Tennessee River	Apr. 2004		Aluminum (001)	Freshwater Acute: 750; Freshwater Chronic: 87		N/A	1200 ⁶
Widows Creek	Tennessee River	Apr. 2004		Arsenic (001)		0.14	36	55
Widows Creek	Tennessee River	Apr. 2004		Iron (001)	Freshwater Chronic: 1000		650	1,800
Widows Creek	Tennessee River	Apr. 2004		Selenium (001)	Freshwater Chronic: 5		N/A	19
Widows Creek	Tennessee River	Apr. 2004		Aluminum (005)	Freshwater Acute: 750; Freshwater Chronic: 87		N/A	2,600
Widows Creek	Tennessee River	Apr. 2004		Iron (005)	Freshwater Chronic: 1000		N/A	1,300

TVA Facility	Receiving Water	Date of Permit Application	Date of DMR	Pollutant (Outfall)	Water Quality Criteria (WQC) (µg/L) ⁵		Reported Discharge	
					USEPA Recommended WQC for Aquatic Life	USEPA Recommended WQC for Human Health From Fish Consumption	Long Term Average (µg/L)	Maximum Daily (µg/L) ^{2,3}
Widows Creek	Tennessee River	Apr. 2004		Manganese (005)		100	2,200	2,500
Widows Creek	Tennessee River	Apr. 2004		Iron (006)	Freshwater Chronic: 1000		N/A	1,300
Widows Creek	Tennessee River	Apr. 2004		Manganese (006)		100	2,200	4,300
Widows Creek	Widows Creek	Apr. 2004		Arsenic (007)		0.14	N/A	4
Widows Creek	Widows Creek	Apr. 2004		Iron (007)	Freshwater Chronic: 1000		N/A	1,400
Widows Creek	Tennessee River	Apr. 2004		Aluminum (008)	Freshwater Chronic: 87		N/A	480
Widows Creek	Tennessee River	Apr. 2004		Arsenic (008)		0.14	N/A	19
Widows Creek	Tennessee River	Apr. 2004		Manganese (008)		100	N/A	2,300
Widows Creek	Tennessee River	Apr. 2004		Selenium (008)	Freshwater Chronic: 5		N/A	131
Widows Creek	Widows Creek	Apr. 2004		Manganese (013)		100	N/A	1,300
Widows Creek	Widows Creek	Apr. 2004		Aluminum (013)	Freshwater Chronic: 87		N/A	130

NOTES

- 1 All data is from NPDES permit applications submitted to USEPA, or TVA's Discharge Monitoring Reports (DMR).
- 2 USEPA requires levels for arsenic and chromium (VI) to be expressed in terms of dissolved metals. See USEPA, National Recommended Water Quality Criteria, Appendix A—Conversion Factors for Dissolved Metals, <http://www.epa.gov/waterscience/criteria/wqctable/index.html#appendxa>. For arsenic, although the data provided total recoverable instead of total dissolved metals, the conversion factor to dissolved metals is one (1), so numbers represent dissolved levels.
- 3 We have not yet reviewed discharge data for exceedances of hardness-dependant metals, namely cadmium, chromium (III), copper, lead, nickel, silver, or zinc.

- 4 This reading may be more toxic than normal as the pH for this reading was between 5.9 and 6.5 whereas USEPA's limit assumes a pH for aluminum of 6.5 to 9.0. USEPA provides that "aluminum is substantially less toxic at higher pH," so this lower pH may mean the reading is even more toxic. See USEPA, National Recommended Water Quality Criteria, Non-Priority Pollutants, footnote L.
- 5 U.S. EPA water quality criteria standards are meant to protect receiving waters, and do not necessarily apply to the actual discharge of wastewater from outfalls.
- 6 This reading may be less toxic than normal as the pH for this reading was between 7.0 and 9.4 whereas USEPA's limit assumes a pH for aluminum of 6.5 to 9.0. See note 4, *supra*.



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