

COAL ASH: COLORADO’S TOXIC TRASH EXPOSED

There are **13 coal-fired power plants** across Colorado that supply over 60% of the state’s energy. Although Colorado is considered a leader in renewable energy – like wind and solar – burning coal continues to dominate the energy market. Coal combustion residuals, more commonly known as coal ash, are the waste produced by burning coal. This waste contains carcinogenic and neurotoxic heavy metals **arsenic, boron, cadmium, chromium, lead, selenium, and thallium.**¹ Despite its toxicity and threat to human health and wildlife, coal ash has never been federally regulated. In June 2010, Environmental Protection Agency (EPA) proposed a rule to address coal ash disposal. However, as of early 2013, no rule has been finalized. Without minimum federal standards to manage this toxic waste, coal ash will continue to be poison our water, air, and land as it has in at least 37 states, including Colorado.²

TABLE 1: Power Plants in Colorado

Plant ³	Operator	County	Ponds	On-site Landfill*
Rawhide Power Station	Platte River Power Authority	Larimer	2 ponds	1 landfill
Valmont Station	Xcel Energy	Boulder	2 ponds	1 landfill
Cherokee Station	Xcel Energy	Adams	3 ponds	No
Arapahoe Station	Xcel Energy	Denver	0 ponds	No
Comanche Station	Xcel Energy	Pueblo	1 ponds	1 landfill
Pawnee Station	Xcel Energy	Morgan	3 ponds	1 landfill
Hayden Station	Xcel Energy	Routt	0 ponds	1 landfill
Martin Drake	City of Colorado Springs	El Paso	4 ponds	No
Ray D. Nixon	City of Colorado Springs	El Paso	1 ponds	1 landfill
Craig Power Station	Tri-State G&T Assn Inc.	Moffat	0 ponds	No
Nucla Power Station	Tri-State G&T Assn Inc.	Montrose	0 ponds	1 landfill
W N Clark	Black Hills/ Colorado Elec. Utility Co.	Fremont	N/A	N/A
Lamar Plant	City of Lamar	Prowers	N/A	N/A

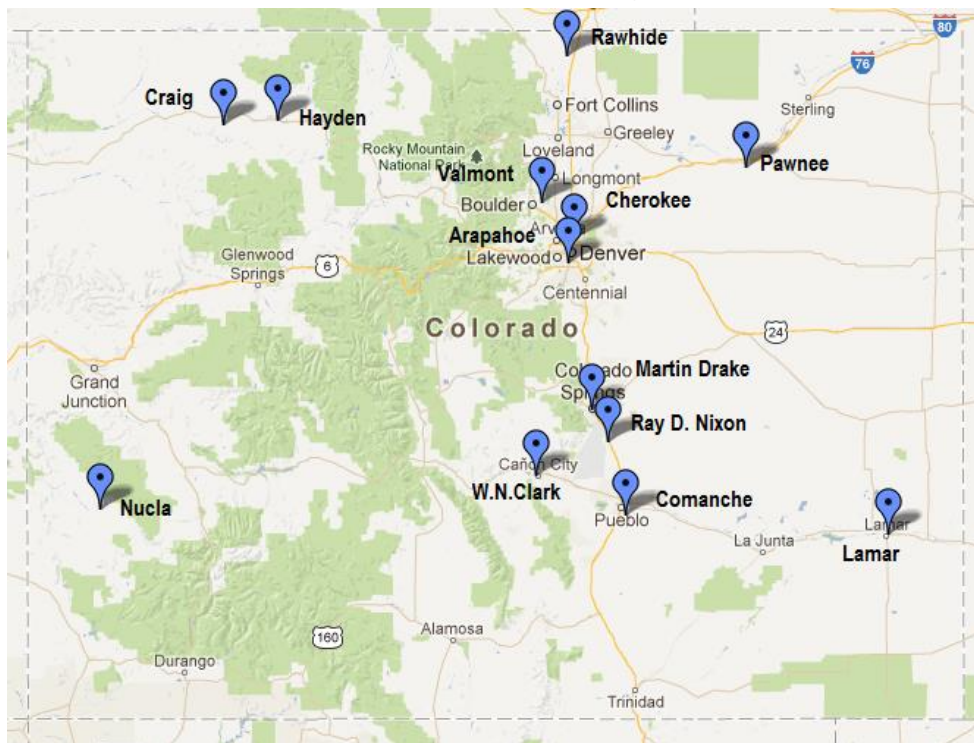
*Active Landfill

Number of Coal Ash Ponds: 16 ponds at 7 plants
Number of Coal Ash Landfills: 7 landfills

STORAGE AND DISPOSAL

The majority of Colorado’s coal ash is eventually disposed of in landfills but it can also be stored in temporary ash ponds, backfilled in abandoned mines, or sold for “beneficial” use.

Colorado has 16 coal ash ponds located on-site at seven power plants.⁴ These temporary coal ash ponds are filled with bottom ash slurry where excess water is drained or left to evaporate. This excess water is discharged directly into surface waters under a permit through the Clean Water Act’s National Pollution Discharge Elimination Systems (NPDES) program.⁵ **Colorado has five unlined ash ponds; three at Cherokee and two at Valmont.** Threats to groundwater and surface water from these



ash ponds are unknown because Colorado has no minimum groundwater monitoring standards for surface impoundments.

In 2011 over 60% of Colorado coal ash was disposed of in the seven on-site landfills.⁶ **All seven landfills**

lack adequate liners or leachate collection systems.⁷ Some have a compacted clay liner, but none are lined with synthetic or composite materials. State regulations are inadequate and lack specific regulatory language to address coal ash disposal, which leave Colorado’s susceptible to contaminated groundwater and surface water.

Coal ash is also sold for “beneficial” use, for use in concrete, gypsum wallboard, or used as structural fill material for construction projects. **30% of Colorado’s coal ash was sold for “beneficial” use in 2011.**⁸ Not all “beneficial” uses are considered safe. When coal ash is used for structural fill it is considered “unencapsulated”, and heavy metals found in coal ash are able to leak directly into soil and surrounding groundwater and surface water.⁹

COMMON PATHWAYS FOR CONTAMINATION

The two primary pathways for contamination in Colorado are from heavy metals leaching into groundwater and surface water from both landfills and ash ponds, as well as the direct discharges from ash ponds directly into surface water.

Groundwater monitoring reports indicate that Comanche, Craig, Rawhide, Valmont, and Ray Nixon plants have contaminated groundwater with coal ash at levels that exceed EPA's Maximum Contaminant Levels (MCL) or Colorado groundwater standards. EPA



has identified both the Comanche and Craig plants as contaminated sites because they found elevated levels of heavy metals, including arsenic, boron, cadmium, chloride, nickel, manganese, sulfates, and selenium in groundwater.¹⁰

Xcel's Comanche, Cherokee, and Valmont plants have wastewater discharge permits that allow polluted water from ash ponds to be dumped directly into surface water. The St. Charles River (Comanche) and South Platte River (Cherokee) and Boulder Creek (Valmont) are considered impaired waters because of elevated levels of heavy metals like selenium, copper, and cadmium.¹¹

ESTIMATED AMOUNTS

EPA estimates that 140 billion tons of coal ash is generated nationally each year. Coal ash is the second

largest waste stream in the United States, second only to municipal solid waste. In Colorado, the 13 coal-fired power plants produce nearly 1.7 million tons each year.¹²

Additionally, there is no landfill or pond data for the Lamar or W. N. Clark power plants. While there is no data on coal ash production, annual electric generator data indicates that the Lamar Plant and W. N. Clark Plant burned 155,351 and 88,700 tons of coal respectively in 2011.¹³

TABLE 2: Estimated Amounts of Coal Ash Generated in 2011

Plant	Operator	County	2011 ¹⁴ Tons/Yr
Rawhide Power Station	Platte River Power Authority	Larimer	76,700
Valmont Station	Xcel Energy	Boulder	79,800
Cherokee Station	Xcel Energy	Adams	304,200
Arapahoe Station	Xcel Energy	Denver	23,800
Comanche Station	Xcel Energy	Pueblo	305,600
Pawnee Station	Xcel Energy	Morgan	62,100
Hayden Station	Xcel Energy	Routt	128,100
Martin Drake	City of Colorado Springs	El Paso	73,900
Ray D. Nixon	City of Colorado Springs	El Paso	74,100
Craig Power Station	Tri-State G&T Assn Inc.	Moffat	352,800
Nucla Power Station	Tri-State G&T Assn Inc.	Montrose	157,800
W N Clark	Black Hills/Colorado Elec. Utility Co.	Fremont	N/A
Lamar	City of Lamar	Prowers	N/A
TOTAL			1,638,900

For more information: Contact: Clean Water Action -- 303.405.6755 -- cocwa@cleanwater.org

- 1 U.S. Congressional Research Service. "Managing Coal Combustion Waste (CCW): Issues with Disposal and Use". 7-5700, January 12, 2010. Luther, L.
- 2 Earthjustice. In Harm's Way: Coal Ash-Contaminated Sites. <http://earthjustice.org/features/campaigns/in-harm-s-way-coal-ash-contaminated-sites>. Updated December 2012. U.S. Environmental Protection Agency. March, 2012.
- 3 Environmental Integrity Project. Data pursuant to Freedom of Information Act Request to U.S. EPA. "re: Questionnaire results for Steam Electric Power Generating Effluent Guidelines." June, 2012.
- 4 Ibid.
- 5 National Pollutant Discharge Elimination System (NPDES), U.S. Environmental Protection Agency. <http://cfpub.epa.gov/npdes/index.cfm>
- 6 U.S. DOE's Energy Information Administration, Form EIA-923, Electric Power Data. 2011.
- 7 CDPHE, Hazardous Materials and Waste Management Division. Regulations Pertaining to Solid Waste Sites and Facilities. 6 CCR 1007-2, Part 1. (Amended May, 2012).
- 8 U.S. DOE's Energy Information Administration, Form EIA-923, Electric Power Data. 2011.
- 9 U.S. EPA. 2010. Hazardous and Solid Waste Management Systems; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule, 75 Fed. Reg. 35128. Section 35. June 21, 2010.
- 10 Environmental Integrity Project. Data pursuant to Freedom of Information Act Request to U.S. Environmental Protection Agency. "re: Questionnaire results for Steam Electric 2009 Part F Section 5. April 2012
- 11 U.S. EPA. Watershed Assessment, Tracking & Environmental Results: 2010 Colorado Report. http://ofmpub.epa.gov/waters10/attains_state.control?p_state=CO
- 12 U.S. DOE's Energy Information Administration, Form EIA-923, Electric Power Data. 2011.
- 13 Environmental Integrity Project. Data pursuant to Freedom of Information Act Request to U.S. EPA. "re: Questionnaire results for Steam Electric Power Generating Effluent Guidelines." June, 2012.
- 14 U.S. DOE's Energy Information Administration, Form EIA-923, Electric Power Data. 2011.