



Rez Recycler

The Dirty Secret Behind Our Power Source

-Shaina White

We all know electricity is a major component of our lives. It shines light during the darkest nights, preserves our food, and of course, charges our cell phones. What we don't know, or ignore, is the truth behind the production of electricity.

Our reservation is surrounded by 20 coal-fired power plants within a 150 mile radius (Fig. 1). Jeffrey Energy Center (JEC), the largest plant in Kansas, sits a mere 8 miles west of the reservation boundary. A massive unit like JEC uses 3,447,000 lbs of coal hourly. That's 18,117,746,000 lbs a year!

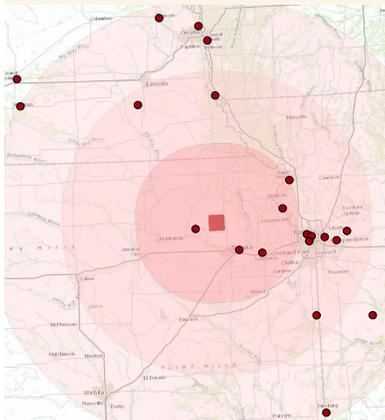


Figure 1

When coal goes through the combustion process in a coal-fired power plant it emits several types of air pollutants, and mercury is one of them. Once mercury is released from the power plant it either settles onto the ground or it enters the atmosphere. Then when

it snows or rains mercury is deposited in our ponds and lakes through snowflakes or rain droplets and runoff from rainfall. As soon as mercury enters the water bodies it unintentionally becomes part of an aquatic animal's diet and in our area it's the Largemouth Bass. (Fig. 2).

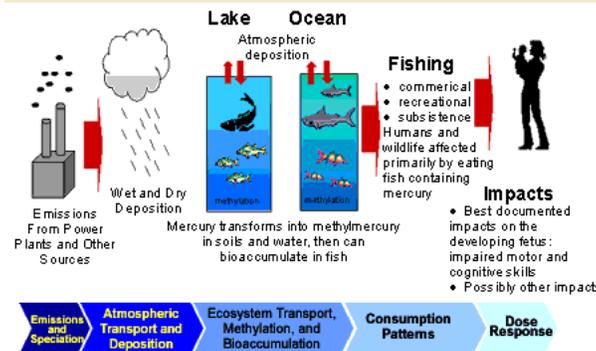


Figure 2

Fish consumption is the leading factor of mercury poisoning. When we eat fish we consume a form of mercury called **methylmercury** (a toxic compound of mercury that accumulates in living organisms and is rapidly and easily absorbed into our body when consumed—Merriam-Webster, 2013). This substance goes through **bioaccumulation** (progressive increase in the amount of a substance in an organism or part of an organism which occurs because the rate of intake exceeds the organism's ability to remove the substance from the body—International Union of Pure and Applied Chemistry, 1993) and when it reaches the top of the food chain such as us, the concentration of mercury is extremely high when ingested. Just 1/70th of a teaspoon of mercury deposited on a 25-acre lake can make the fish unsafe to eat (Union of Concerned Scientists, 2012) and JEC emits 524 lbs of mercury annually!

Figure 3 shows the health effects methylmercury can have in children and adults. We may not be a coastal community that relies heavily on marine animals for our dietary needs, but a local study showed that mer-

cury levels are five times more than what is safe for human consumption. This all leads back to the coal-fired power plants that surround our reservation. Although it seems like the bad news keeps going, there is surprisingly some good news.

EFFECTS OF METHYLMERCURY EXPOSURE

IN A FETUS OR YOUNG CHILD*

- Decrease in I.Q.
- Delays in walking and talking
- Lack of Coordination
- Blindness
- Seizures

IN ADULTS

- Personality changes
- Tremors
- Changes in vision
- Deafness
- Loss of muscle coordination and sensation
- Memory loss
- Intellectual impairment
- Death (extreme cases)

Figure 3

Within the next ten years the majority of coal-fired power plants in the country will be retiring and replaced by natural gas power plants. Also, in 2012 the Environmental Protection Agency (EPA) announced the Mercury and Air Toxic Standards (MATS), the first federal rule regulating toxic air pollutants.

For more information visit:
<http://www.epa.gov/hg/index.html>
<http://www.epa.gov/mats>



OPEN WELLS/CISTERNS -V. Potts

PBPN Planning & Environmental Protection Department is requesting Reservation residents that may be interested in closing an open well or cistern to contact us. We are in the inventory process and need public input. If you have a well or cistern that needs to be closed, contact Verna at 785-966-2946.

Recycling & Trash Services

We all know that recycling has become an important issue in our daily lives. When we reduce, reuse, and recycle we are:

- Reducing the amount of waste sent to landfills and incinerators
- Conserving natural resources such as timber, water, and minerals
- Preventing pollution caused by reducing the need to collect new raw materials
- Saving energy
- Reducing greenhouse gas emissions that contribute to global climate change
- Helping to sustain the environment for future generations
- Helping to create new well-paying jobs in the recycling and manufacturing industries in the United States

Therefore, we would like to extend our thanks to all those who participate in our local recycling program. However, there are some people who still get a little overexcited about recycling and throw items in the recycling bin that we DO NOT accept. These items include:

- * Waxed paper/cardboard
- * Glass
- * Styrofoam
- * Plastic wrap
- * Aluminum foil
- * Food waste
- * Plastics NOT labeled with a number 1-5

REMINDER:

- ⇒ All trash needs to be securely contained in trash bins or it will not be picked up.
- ⇒ If you have more trash than the bin can contain you must pre-pay an additional fee to have these picked up.
- ⇒ All recyclables must be bagged except cardboard.

Reducing Non-Point Source Pollution

By Heidi Mehl

Non-point source pollution is a major problem on the Reservation and throughout the Midwest, affecting drinking water, aquatic populations, wildlife, and recreational opportunities. Water pollution is generally described as either point source or non-point source

pollution. Point source pollution comes directly from a single pipe or other discharge outlet into a body of water (for example, discharge from a sewage treatment plant or industrial plant). This type of pollution is easy to identify, quantify, and regulate. Conversely, non-point source pollution comes from many diffuse sources, such as runoff from agricultural land. This type of pollution is much harder to quantify and regulate. There are no enforceable regulations on many common non-point source pollutants, such as nutrients from fertilizers.

Although there are few enforceable regulations, it is in everybody's best interest to address this issue and do their part to reduce non-point source pollution. According to the EPA's National Water Quality Inventory: Report to Congress, organic enrichment (nutrients from fertilizers, manure and other sources) is one of the top 3 impairments of assessed water bodies. This was also specifically identified as a problem on the Reservation in the 2006 USGS report "Water Quality on the Prairie Band Potawatomi Reservation, Northeastern Kansas, June 1996 through August 2006" (Schmidt, Mehl, & Pope; available online at <http://pubs.usgs.gov/sir/2007/5201/>). Organic enrichment leads directly to algae blooms, which can be toxic to swimmers and pets. Algae blooms also deplete water of dissolved oxygen, potentially leading to large fish kills. When the algae bloom occurs in a drinking water source (such as the Kansas River), it can cause a musty soil smell in people's tap water. While the tap water is still safe for consumption, most people find musty-smelling tap water undesirable. Whether you have farmland, rangeland, or a small yard, there are ways you can help reduce non-point source pollution.

Management and conservation agencies promote the use of best management practices (BMPs) to reduce non-point source pollution. These practices not only reduce non-point source pollution, they confer advantages to the landowner such as erosion reduction/prevention, soil conservation, and nutrient retention. There are numerous BMP strategies that can be used in any combination, depending on the size, slope, and soil composition of the field. These include terraces, grassed waterways, contour farming, no-till farming, nutrient management plans, subsurface fertilizer application, water retention structures, wetland creation, and riparian vegetative buffers. The goal in implementing these strategies is to slow overland runoff, allow filtration of pollutants, and increase infiltration of water into the soil before it reaches a stream or river.

While each of these strategies carries a specific benefit, one of the best things landowners can do for overall stream health is to establish or retain a riparian vegetative buffer. This is an area of native vegetation (trees, grasses) on either side of a stream, creating a buffer between a crop or pasture field and the stream. The benefits of a healthy riparian buffer are many. The vegetation helps slow overland flow, allowing it to infiltrate into the soil. This soil moisture feeds the stream, providing water for stream flow for a longer period after a rain event. The grasses and trees in riparian buffers also help remove nutrients, sediment, pathogens, and other non-point source pollutants before the water reaches the stream. Tree roots hold the stream bank in place, reducing the loss of land to stream erosion. Additionally, trees shade the stream, lowering water temperatures and providing a better habitat for fish. The general recommendation for riparian buffer width is at least 2x the width of the stream. However, even a smaller riparian buffer will confer some benefits.

Another popular conservation practice that landowners may consider is the enrollment of marginal land into the Conservation Reserve Program (CRP). Administered by the Farm Service Agency (FSA), CRP has been very successful in re-establishing valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat. Land enrolled in CRP is removed from agricultural production and planted with native species that will improve environmental health and quality. In exchange for this service, the FSA pays landowners a yearly rent payment. Contracts are generally 10-15 years in length. The current sign-up period for CRP will continue through September 30, 2013.

Many incentives exist to apply BMPs to agricultural and rangeland, including cost-share programs that may cover 70-100% of the cost of the land improvements. For more information, please contact the Prairie Band Potawatomi Office of Planning and Environmental Protection, or one of the agencies listed below:

Middle Kansas WRAPS

John Bond
Lower & Middle Kansas River WRAPS coordinator
2157 10th Road
Clay Center, KS 67432
jbond@kaws.org
Phone: 785-560-4846

Jackson County Natural Resource Conservation Service (NRCS)

Bruce Yonke
District Conservationist, NRCS
307 Montana Ave
Holton, KS 66436
(785) 364-4638

FSA Service Center Office (for enrollment in CRP)

Jackson County Farm Service Agency
307 Montana Ave
Holton, KS 66436-1127
(785) 364-3329
(785) 364-4891 Fax



15th Annual
EARTH DAY
 Prairie Band Potawatomi Nation
 April 2013



The 15th Annual PBPN Earth Day Celebration was held on April 21st and with it came 250 participants, 8 tribal departments, and 20 donators. The day was crisp, clear, cool and perfect for the annual gathering. Adults and children participated in walks, zombie runs, bike rides, and games. Food vendors kept us energized, informational booths gave tidbits on giving back to the environment, and the Tribal Victim Services Program transformed individuals into film-worthy zombies. MC, Jason Hale, provided us with his resounding voice and witty jokes. WIBW also joined in on the fun and interviewed fellow tribal employees as well as community members. All in all Earth Day on the reservation was a success and we hope you can join us next year for our 16th annual celebration!



PBPN Earth Day Results

3-Mile Predictor's Walk

OVERALL MALE

Nue Tinajero

OVERALL FEMALE

Megan and Emily Catron

0-10 Male

1. KJ Miller Jr. (4:30)
2. Trystan Murata (5:47)
3. Treyson Murata (7:40)

0-10 Female

1. Ava Thompson (8:12)
2. Ajsu Islamore (9:24)
3. Giselle Oliveira (27:13)

11-17 Male

1. Nue Tinajero (:05)
2. Trent Blalock (3:12)
3. Wahp LeClere (4:01)

11-17 Female

1. Gabby Vigil (1:23)
2. Shobwas Hubbard (1:54)
3. Andree Mitchell (1:55)

18-39 Male

1. Cody Nozhackum (3:39)
2. Jason Davis (3:58)
3. Joe Mitchell (6:05)

18-39 Female

1. Megan & Emily Catron TIE (:28)
2. Sabrina Criqui (:58)
3. Oshpuk Hubbard (1:38)

40+ Male

1. James Masquat (:50)
2. David Criqui (:52)
3. Don Don LeClere (1:40)

40+ Female

1. Michelle Wabaunsee (3:24)
2. Rencie Eteeyan (3:36)
3. Carol Dewitt (3:51)

3-Mile Bike Ride

OVERALL MALE

Tarin Blalock

OVERALL FEMALE

Mae Joslin

0-10 Male

1. KJ Miller (21:09)
2. Ruben Tinajero (29:17)

0-10 Female

1. Mae Joslin (15:44)
2. Gish Hale (22:55)

11-17 Male

1. Tarin Blalock (13:13)
2. Pak Hale (27:51)

11-17 Female

1. Violet Mesa (25:15)

18-39 Male

1. Cody Nozhackum (17:54)

18-39 Female

1. Joy Matchie (27:59)

Zombie Run

Youth Male

1. Daniel Scholfield (4:25)
2. Nue Tiscareno (4:46)
3. Komesh Spoonhunter (5:10)

Youth Female

1. Mae Joslin (4:08)
2. Halina Williamson (4:17)
3. Kiikto Thomas (4:23)

Teen-Adult Male

1. Sognosh Serna Blakemore (3:53)
2. Kenny Aitkens (4:08)
3. Phlyte Wishteyah (4:16)

Teen-Adult Female

1. Tamo Thomas (4:51)
2. Gabby Vigil (4:54)
3. Tootie Aitkens (5:13)





THE GLACIER PETROLEUM OIL SPILL OF 1997

-V. Potts

“In the spring/early summer of 1997, there was an oil spill as a result of a failure of a check valve at an oil pumping rig at approximately 214th and E Road that went unobserved for as long as a day. When the check valve failed at the tank, it overflowed and traveled a half of a mile and spilled into Big Soldier Creek and on downstream. It is estimated that hundreds to thousands of gallons of Kansas Sweet Crude oil spilled.” E. Wendt- PBPN Environmental Inventory. Glacier Petroleum and the land owner did not compensate for recovery efforts provided by PBPN, Jackson County and US EPA R7 employees. The Holton Recorder’s Vol. 146, Issue 23 dated March 20, 2013 made the public aware that seismic testing for oil will be conducted in Soldier. Our public water supply comes from surface & ground waters. When our waters are tainted with contaminants, this does affect you and your loved ones.

Please be aware that oil exploration and production is among us. What can you do if you are aware of any type of spill? Immediately contact the National Response Center at 1-800-424-8802 or EPA-R7 contact is Scott D. Hayes, Branch Chief, phone 913-551-7670, e-mail hayes.scott@epa.gov.

“The primary function of the **National Response Center** is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. The NRC also takes Terrorist/Suspicious Activity Reports and Maritime Security Breach Reports.”-U.S.EPA

Environmental Outreach at Boys + Girls Club

Boys & Girls Club Scientists learn about pH & water quality -V. Potts

The kids had an exciting day of fun and hands on experiment, learning about pH & how it is used to understand water quality. They first were given a short presentation about the basics of pH. The term pH is taken from the French, meaning "the power of hydrogen". Then we examined the water molecule and what it consist of. Water is composed of 2 hydrogen atoms and 1 oxygen atom. The pH scale was then covered. This scale is used to measure how acidic or basic a solution or substance is. And why is pH important? pH influences the structure and function of many living organism's enzymes, including us. Pure water is neutral with a pH of 7.0. The pH of human blood is 7.4; if this fluctuates by ± 0.2 it can pose serious health issues in humans. The kids then learned about fish and what range on the pH scale they can tolerate. For instance, adult fish cannot survive in water that has a pH that is less than 4 on the scale. So, if we were to sample stream water and see that we are getting a pH of 3, then this is an indication that something is causing the water to become acidic. Of course, no harmful solutions were used in this experiment. The kids took pH strips and dipped them into 3 "unknowns". The pH strips will then turn a certain color based upon how acidic, neutral or basic the "unknown" solution was. Once this was done, the Boys & Girls Club Scientists then entered their data and came to their own conclusion as to what each unknown was. The B+G Club Scientists were then reminded to stay in school, study and do their math every night.



Students acquire the basics of air quality -Shaina White



"Raise your hand if you know what air pollution is?" was the first question I asked the kids. I received answers ranging from "smoke" to "dust" to even, ahem, "fart." After sharing our imaginative ideas we moved on to learning the four sources of air pollution, the six criteria pollutants, and the negative effects it has on human health, animals, and the environment. Once we got our air quality basics down we moved on to the activity. And since the unpredictable weather that day forbid us from venturing outdoors, we decided to test the indoor air quality of the Boys & Girls Club. The kids were given a piece of paper marked with a 1 square inch box, one Q-tip, a dab of petroleum jelly and a magnify glass. With these supplies the students smeared the petroleum jelly within the marked box, then placed it somewhere in the room they thought would collect the most particles. After settling for about 15 minutes the students then retrieved their pieces of paper and looked through their magnify glasses to see if they mustered up anything. The majority collected about 5 particles or less with the occasional students collecting 50 plus particles from dropping their paper face down onto the floor. At the end of the day the students took home the message that good air quality is important and of course, the indoor air of the Boys and Girls Club is stellar and passed with flying colors.

Youth Summer Workers



Phlyte Wishteyah (left)- "It's fun, there is always something to do"

Nom-ki-wash Potts - "It's fun to go dumpster diving"

- * Country Greenhouse
- * Holton Farm & Home
- * Skinner's Nursery
- * Jackson's Nursery
- * Calderwood's
- * Mayetta Outlet
- * Holton NAPA Auto
- * Koger's Variety
- * Holton Sonic
- * Holton O'Reilly Auto Parts
- * Expression Flower & Gifts

The Prairie Band Potawatomi Nation's Department of Planning & Environment would like to express their gratitude to businesses that contributed to the 15th Annual Earth Day Celebration that was held at the Prairie People's Park. Earth Day participants were very happy with all the donated items. With the support of local merchants, this year's Earth Day Celebration was a success once again! A big "Thank You" goes out to the following:

- * Darnell's Antiques
- * Potawatomi Pentecostal Church
- * Holton Taco Bell
- * We-Ta-Se American Legion Post 410
- * Prairie Band Casino & Resort
- * Mercer Funeral Home
- * Holton Tire
- * Holton Casey's General Store
- * Latane Donlin

PBPN Division of Planning & Environmental Protection

PBPN Division of Planning & Environmental Protection
15434 K Road
Mayetta, KS 66509

Phone: 785-966-2946

Fax: 785-966-2947

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preserve nature*

JACKSON COUNTY TRANSFER STATION:

Located on 166th and N Road is the Jackson County Landfill. Here's another option for Jackson county residents who may be looking for a place to dispose of household waste, tires, appliances (non-freon only), residential, commercial, demolitions, trees and brush for a very reasonable disposal charge. Small tires (car/compact truck) are accepted for a rate of \$2/tire. And disposal charge for non-freon appliances is only \$1. For a full listing of rates you can contact Jackson Co. Environmental Services Office at (785) 364-3459 or contact Dan Robinson, Solid Waste Manager at (785) 364-0219. Hours & days of operation are Thursday-Saturday, 8 AM - 4 PM.

Oil and Gas Exploration in Indian Country

Hydraulic fracturing or "fracking" is the newest and recently popularized method of drilling for oil and gas. Hydraulic fracturing has become popular due to its relative cost-effectiveness and extraction success. It involves vertical and/or horizontal drilling techniques designed to produce fractures in the underground shale, coalbed or sandstone formations. Once fractured, water, sand and chemical additives are then pumped at high pressure to induce and hold open the fractured formation. The fractured formations then release natural gas. The chemical-laced wastewater is left as a by-product and must be stored, treated or often is the case, injected into a well designated for long-term storage or disposal.

The chemical by-product that is left behind is a key issue of contention. Landowners, environmental stakeholders, Tribal entities, and concerned citizens have raised concerns and attempted to document the damaging effects of careless fracking practices. Those opposed to fracking claim the chemicals dangerously pollute ground and surface water. The chemicals are not required to be disclosed as they are protected by "trade-secret". The U.S. Environmental Protection Agency is currently conducting a study to better understand the science of fracking so that they can develop appropriate measures to safeguard both the health of the public and the environment.

Oil and gas exploration in Indian Country is a complex and controversial topic. For many of the large and often isolated land-based Tribes lacking strong economic engines, oil and gas is the answer. However the 'answer' can come at the cost of natural resource detriment. Tribes across the country are facing tough decisions as they are continually approached by drilling companies. The Blackfeet Tribe in Montana has been engaged in oil exploration and development on its lands near Glacier National Park for nearly a decade. The Southern Ute Indian Tribe of Utah is currently in the process of leasing 12,000 acres of Tribal mineral rights to energy development companies for oil and gas exploratory wells. The recent and highly-publicized oil boom in North Dakota occurred along the Bakken shale formation on the Ft Berthold Indian Reservation.

While oil and gas companies have courted Tribes with large land holdings and limited economic opportunity, the issue isn't just "Tribal". Any land owner has the potential to be courted and coerced. Fracking is still a relatively "new" method with many undiscovered pros and cons to be carefully considered.

Information obtained from:

<http://missoulain.com/news/local/anschutz-exploration-to-halt-oil-gas-drilling-on-blackfeet-reservation/article>

<http://www2.epa.gov/hydraulicfracturing>

<http://www.durangoherald.com/article/20130605/NEWS01/130609710/0/>