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This photo from the Department of Environmental Quality's final environmental assessment shows where the excavation would take place at the old Zortman mine.

DEQ approves plan to excavate old Zortman gold mine

By Brett French | Feb 2, 2021—Updated Feb 4, 2021

https://mtstandard.com/outdoors/deq-approves-plan-to-excavate-old-zortman-gold-mine/article_d9142c0e-be2b-5627-94de-539f37b542f0.html

A Bozeman-based company's application for an exploration license to remove 1,000 tons of rock from an inactive gold mine near Zortman has been approved by the Montana Department of Environmental Quality.

Blue Arc LLC, owned by Luke Ployhar, will have to post a bond before work can begin. Even then the excavation won't be done all at once, said Owen Voigt, who is working with Ployhar. Voigt, of Helena, is vice president of RCL Mining

Inc. and CEO of Legacy Mining.

Hauling the rock 900 to 1,000 miles to be crushed and assayed in Nevada is one reason for taking it slow, Voigt said. The company will also wait for mild weather before beginning, he added. A half-mile of new haul road will have to be built to access the site. The total area of disturbance is estimated at 1.39 acres. As proposed, Blue Arc would use an excavator to remove rock from about one-

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DEQ approves plan to excavate old Zortman gold mine

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third of an acre of private land along a cliff face that has already been exposed by previous mining, known as the Ruby Pit Highwall. If the assays are favorable, Ployhar told The Billings Gazette in November that he may consider developing an underground mine at the site.

Blue Arc owns almost 60 mining patents in the south-east corner of the Little Rocky Mountains in Phillips County.

To proceed to a full-scale mine Blue Arc would face additional DEQ scrutiny.

Comments

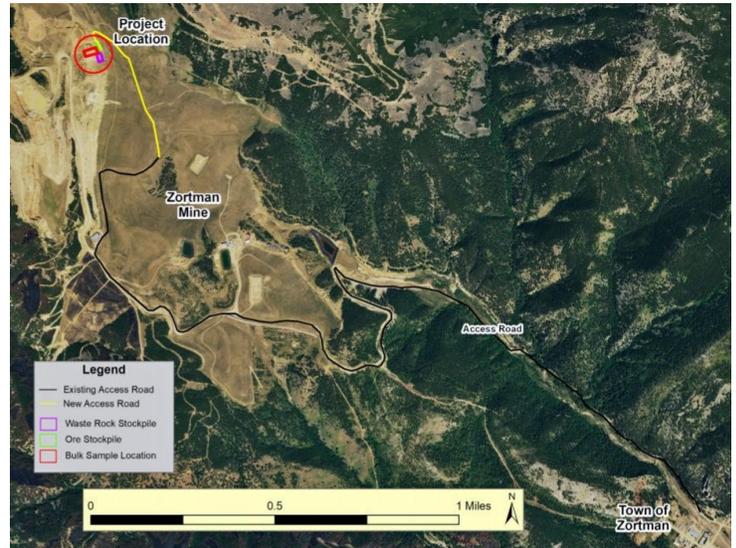
DEQ received 30 comments after publicizing its draft environmental assessment late last year. Four groups calling the document “deficient” were Montana Trout Unlimited, the Montana Environmental Information Center, the Fort Belknap Indian Community and Earthworks.

The groups contended DEQ failed to consult with the tribe during the scoping process. DEQ responded that it didn’t conduct any scoping due to the 90-day time limit to prepare the draft EA. DEQ did seek comment from the tribes after the draft EA was written, the agency noted.

Because of damage from previous mining, the groups said Blue Arc’s proposal “raises significant concerns – particularly for the leadership and membership” of the tribe. DEQ responded that Blue Arc’s proposal is limited in scope and won’t expose known sources of acidic rock that have posed a problem in past mining ventures.

“Exposed highwall above the backfill level is largely oxide material and similar conditions are expected beneath the proposed shallow excavation,” DEQ wrote in its final EA. “Oxide material is rock that has already weathered, meaning that sulfide (i.e. acid producing) minerals have already decomposed and will not produce additional acidic or metal-laden runoff.”

The work will occur near a large liner that covers a previous mine pit. The groups expressed concern that haul trucks might damage the liner allowing water to



The old mine is located northwest of the community of Zortman in the Little Rocky Mountains. DEQ document

seep underneath and spread contamination from the acidic waste in the pit. DEQ contended that only a small part of the liner may be impacted and Blue Arc has agreed to check and fix any damage to the liner.

To read the DEQ documents, log on to <http://deq.mt.gov/Public/ea/hardrock>

Contamination

The Little Rocky Mountains is a poster child for what goes wrong when a mining company declares bankruptcy, leaving the state to deal with an environmental mess that its bond was inadequate to address.

Pegasus Gold Corp. mined near Zortman from 1979 to 1996 using cyanide heap leaching to extract small amounts of gold from large amounts of rock. After the company declared bankruptcy in 1998, the state was left with a \$100 million cleanup bill and water pollution requiring three dams to capture runoff. The water is cleaned in onsite treatment plants.

Heavy metals, nitrates, selenium and cyanide leach from the old mine site. Water pollution in the area, which includes the town of Zortman and the nearby Fort Belknap Reservation, may require treatment for 20 years or more.

In part because of the past mining problems, the Bu-

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DEQ approves plan to excavate old Zortman gold mine

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reau of Land Management has proposed a 20-year withdrawal of mining on its federal lands in the area.

The allure of gold remains strong, however, as the price stays high. In August, gold hit an all-time high of \$2,067.15 an ounce. That has now fallen to around \$1,849.

Local

Zortman resident and business owner Rosalie Wallace said the small community wouldn't mind if Blue Arc resumed mining in the area.

"We thought it would be great if something brought in a few more people into town," she said.

"We might get our bar sold," Wallace added. "We're both 80 years old so it would be nice to do something different while we can."

Despite the damage to groundwater past mining has caused, Wallace said she had no fear that Blue Arc's project would add to the problem.

"We're waiting to see what's going on," she said.

DEQ Releases Final Environmental Assessment for Exploration Project in Phillips County

By Davin, Moira / Monday, February 1, 2021 / Categories: Department of Environmental Quality

<http://deq.mt.gov/Public/PressRelease/deq-releases-final-environmental-assessment-for-exploration-project-in-phillips-county>

The Montana Department of Environmental Quality released a Final Environmental Assessment (EA) today for a proposed exploration project near Zortman, Mont. in Phillips County. The EA is specific to a new exploration project proposed by Blue Arc LLC on private land at the former Zortman Mine.

DEQ received an application for an exploration license from the landowner, under the name Blue Arc LLC, on March 3, 2020, to extract a 1,000-ton bulk sample from a single trench site at an exposed high-wall of the former Zortman Mine. The sample would then be shipped for testing to a facility in Nevada to determine the mineral quality. The entire proposed project would be located on private land and would disturb about 1.4 acres. In addition to creating the bulk sample trench, Blue Arc LLC would use an existing access road and would construct an approximately one-half-mile haul road to access the trench area and other temporary stockpile areas. All new disturbances would be reclaimed, except for the new access road, which would be kept for use by the private landowner.

On Oct. 7, 2020, the United States Bureau of Land Management (BLM) proposed a mineral withdrawal of the public lands in the Zortman-Landusky Mine Reclamation Area to protect the area from new min-

ing claims or sites for an additional 20-year period, subject to valid existing rights. The withdrawal is a separate, unrelated process led by BLM. The proposed project evaluated in DEQ's final EA is on private lands and therefore would not be subject to the BLM proposed mineral withdrawal.

An exploration license is not an operating permit to mine. An exploration license only authorizes activities to be conducted for the purpose of determining the presence and extent of an ore body. An exploration license does not authorize the mining of an ore body.

DEQ prepared a draft EA to analyze potential impacts from the proposed project. The public comment period on the draft EA for this proposed action began Oct. 28, 2020 and ended Nov. 30, 2020. If a proposed project meets the requirements of Montana law (82-4-332, Montana Code Annotated), the applicant is entitled to the exploration license. The applicant must post a reclamation bond prior to any disturbance.

In the Final EA, DEQ discloses the potential impacts on area resources and responds to substantive public comments. To view the Final EA, please visit the DEQ website at: <http://deq.mt.gov/Public/ea/hardrock>



Confluence for Climate Education: Aaniiih Nakoda College Addresses Our Changing Environment

By Liz McClain ♦ February 21, 2021

<https://tribalcollegejournal.org/confluence-for-climate-education-aaniiih-nakoda-college-addresses-our-changing-environment/>

Students at Aaniiih Nakoda College (ANC) are determined to utilize their education to help combat the looming climate change crisis and the effects it will have on their Fort Belknap community. Children at ANC's White Clay Immersion School have built their own weather station and created an Aaniiih language book on climate change for elementary school children. Meanwhile, students in the college's new four-year degree program in Aaniiih Nakoda ecology are taking the *ʔisítáaʔ/peda* (fire) class, comparing burned and unburned areas on the Montana prairie with grasslands restoration and climate change in mind. Other students in environmental science are immersed in studying the buffalo pasture, measuring biomass and carrying capacity as the effects of global temperature rise take hold.

Elsewhere on the Fort Belknap reservation, allied health and environmental science students are collecting mosquitoes during the summer months to test for the West Nile Virus and to predict outbreaks of the disease in their community, while ANC instructor Dan Kinsey is conducting a long-term monitoring study of organisms found in the Milk River, the community's drinking water source, to assess water health. And the new "Grow Our Own" nursing program is collaborating with the college's farm to stress food security, nutrition, and the benefits of community members establishing their own gardens. All these initiatives are like streams that flow into a much larger river—a confluence that will be needed if we are to be proactive and adapt to climate change as Indigenous peoples the world over.

LOOKING TO THE FUTURE

Today, the youth of the world are leading the fight against climate change. One only has to read about



Greta Thunberg, named Time magazine's person of the year in 2019, whose activism has led to climate strikes around the world. At the White Clay Immersion School on the ANC campus, eighth graders Cassius Conway, Marie Hogan, and Svea Hogan have likewise developed a keen interest in climate change. Conducting their own research, they have surveyed community members about the issue and interviewed the Tribal Environmental Program office director, Ina Nez Perce, to find out what plans are in place at the tribal level. The students' interest in climate science spilled over to a desire to measure weather through their own small weather station. Each morning, rain or shine, they could be found taking air temperatures in both Fahrenheit and Celsius from the equipment they had affixed to a light pole in the parking lot. They recorded precipitation from a rain gauge and wind speed and direction with handheld anemometers. They recorded cloud cover and studied the various types of clouds and their properties. Returning to the classroom, the middle schoolers finished their data collection by measuring humidity levels using a sensor in the room. All were thrilled to be invited to read the local weather at ANC's college radio station, KGVA, a PBS affiliate. The station manager, Gerald Stiffarm,

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Confluence for Climate Education: Aaniiih Nakoda College Addresses Our Changing Environment

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interviewed the children and asked them to speak to the local community and all Indian Country about this pressing issue. From concerns about prairie habitat to clean river water, the children's message was broadcast widely.



Middle school students from ANC's White Clay Immersion School report on the weather and discuss climate change at the college's PBS-affiliated radio station, KGVA.

At the White Clay Immersion School, strengthening the Aaniiih language and culture is emphasized each day. Accordingly, the middle school students decided to apply these lessons in putting together a book on weather and climate that younger children at the school can use. With guidance from ANC's library director, Eva English, they translated words into Aaniiih. Words like weather, humidity, precipitation, wind, clouds, lightning, global warming, and climate change were accompanied by pictures to illustrate the phenomena and facilitate learning. These eighth graders have helped to educate their entire Fort Belknap community, as well as the people in the surrounding environs, about climate change. No small feat for these young scholars.

AANIIH NAKODA ECOLOGY

The global rise in temperatures and the myriad inter-related causes for it underscore the need for tribal college curricula to be proactive in anticipating what's ahead. The timing could not have come too soon for ANC to begin offering a new four-year degree program in Aaniiih Nakoda ecology. With global warming upon us, this "Grow Our Own" program engages students in all aspects of climate change as they move through the curriculum. It is geared towards preparing them to become caretakers and stewards of their tribal lands, waters, and natural resources. The program is place-based and employs Indigenous

scientific thought and traditional ecological knowledge. Climate change mitigation requires students to have a thorough understanding of tribal, state, and federal regulations affecting Indian policy as well as knowledge of their ancestral homelands and contemporary sovereignty issues. The role of elders in the program adds a crucial dimension to the pedagogy. The first course now being offered is on *ʔisítáaʔ/peda* (fire), and community elders have engaged the students with stories on all aspects of fire, including its meaning, use, role in ceremony, and the effects of historical fires on the reservation. "If the fire in the sun dance lodge goes out, the ceremony is stopped immediately and the sun dance is over," explains Minerva Allen, an Assiniboine elder. "In the old days, the person or persons chosen to carry the coals to the next camp site had a huge responsibility given to them, and if they failed would be punished or it could even lead to their death."



As part of a longterm monitoring project, an ANC student examines samples from the Milk River for benthic macro invertebrates and periphyton that indicate the river's health.

The scars from the 1936 fire that burned an estimated 70% of the Little Rocky Mountains on the southern end of the Fort Belknap reservation are still visible today. Elders tell how the fire jumped over the mountains from the town of Landusky to Lodgepole, and how the community responded with wagons and wooden barrels of water—first-hand knowledge for

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Targeted Brownfields Assessments at Three Sites 2019-2020

By Ina Nez Perce, Environmental Manager

In this issue, I would like to discuss results of the three Brownfields sites that have undergone Targeted Brownfields Assessments prior to the Covid-19 pandemic. This article is not all inclusive. If anyone wishes to see the complete results, please contact my office; contact information is at the end of the article.

In 2018-2019, the Fort Belknap Indian Community Brownfields Tribal Response Program (TRP) submitted three (3) requests to the U.S. Environmental Protection Agency (EPA) requesting the sites be assessed through the EPA's Targeted Brownfields Assessments (TBAs). The three (3) sites identified for TBAs were the: (1) Old Agency Water Treatment Plant, (2) Old Sacred Heart Catholic Church (aka "Pink Church" or "Highway Church"), and (3) Old Lodge Pole Elementary School.

For clarification, the following defines the terms "Brownfields" and "Targeted Brownfields Assessment." According to EPA, a **Brownfields** is defined as real property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant. The 2002 Brownfields Law further defines the term to include a site that is "contaminated by a controlled substance, contaminated by petroleum or a petroleum product excluded from the definition of 'hazardous substance;' or mine-scarred land." (EPA-560-F-15-192, July 2015)

The EPA's Brownfields Program is designed to empower states, communities and other stakeholders to work together in a timely manner to prevent, assess, safely clean up and sustainably reuse brownfields. EPA provides technical and financial assistance for brownfields activities through an approach based on four main goals, protection of human health and the environment, sustaining reuse, promoting partnerships, and strengthening the marketplace. Brownfields grants and technical assistance through **Targeted Brownfields Assessment (TBAs)**, serve as the foundation of the Brownfields Program and support revitalization efforts by funding environmental assess-

ment, cleanup and job training activities. Thousands of properties have been assessed and cleaned up through the Brownfields Program, clearing the way for their reuse. (EPA-560-F-15-192, July 2015)

Objectives for the Phase II Environmental Site Assessments (ESAs)

- Assess and evaluate the on-site buildings for (e.g., asbestos-containing material [ACM] and lead-based paint [LBP]) at the Sites. For the Sacred Heart Catholic Church, evaluate ACM and LBP in a manner in which removal is a lesser objective than encapsulation for anticipated preservation of the church.
- Assess and evaluate potential lead impacts to surface soils at the Sites.
- Conduct visual inspections of accessible on-site buildings to determine presence/absence of polychlorinated biphenyl (PCB)-containing equipment, mercury-containing equipment, mold, and pigeon guano.
- Conduct visual inspections of drums and/or chemical containers from accessible areas of the water treatment building to identify contents (based on labeling, if present), condition of containers, and any spills or leaks.
- Assess and evaluate soils for contaminants of concern (COCs) related to petroleum aboveground storage tanks (ASTs) at the Old Lodge Pole Elementary School.
- Develop sufficient information to render a reasonable professional opinion whether hazardous substances either are or are not present at the Site with respect to the potential concerns assessed. If present, include concentrations of hazardous substances based on field screening and/or laboratory analysis of samples.
- Gather and provide sufficient data to assist the Targeted Brownfields Assessment (TBA) recipient in making informed decisions with regard to the future use of the property.
- Obtain sufficient data to support conceptual re-

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Targeted Brownfields Assessments at Three Sites 2019-2020

(Continued from page 6)

mediation cost estimating, if necessary.

RESULTS OF TARGETED BROWNFIELDS ASSESSMENTS:



1. OLD AGENCY WATER TREATMENT PLANT

Asbestos Containing Materials (ACM):

- Drywall Compound in Ceiling (500 sq. ft.) – present throughout building
- Drywall Compound in Walls (1,000 sq. ft.) – present throughout building

Polychlorinated Biphenyls (PCB's)

- Potential PCB Ballasts

Guano

- Guano Present in the Old Agency Water Treatment Plant. The Water Treatment Plant had over one foot of guano in areas and was present throughout the building. Guano is considered a Chemical of Concern (COC) in relation to this Site.

Petroleum Hydrocarbons and Other Chemicals

- Drums Observed Inside and Outside the Old Water Treatment Plant

- Diallyl Dimethylammonium Chloride, Interior of Building – 3 Drums
- Corrosive Liquid Coagulant, Interior of Building – 1 Drum
- Unknown Contents Labeled as Mix-Up, Interior of Building – 1 Drum
- Drum Which was Overpacked, Exterior of Building – 1 Drum
- Remaining Containers Were Empty, Interior of Building

Prairie Mountain Utilities (PMU) Director has been notified of the situation with the drums and broken window/open areas where birds are accessing building; PMU was to secure the building, so no further damage is done to the building, and contact EPA/ others to dispose of drums.

The START Contractor made recommendations on remedial actions for ACM, and removing and properly disposing of PCB's ballasts and drums, and remediating the guano.



2. OLD SACRED HEART CATHOLIC CHURCH (aka "Pink Church" "Highway Church")

ACM

- Boiler Jacket in the Basement

Lead Based Paint (Pink)

- Door Frame (50 LF)
- Door Jam (15 LF)
- Window Frames – 12 Windows

Guano

- Observed in the Sacred Heart Church

(Continued on page 8)

Targeted Brownfields Assessments at Three Sites 2019-2020

(Continued from page 7)

3. OLD LODGE POLE ELEMENTARY SCHOOL

Old Lodge Pole Elementary School Shop

ACM

- Interior Transite Panel, (300 sq. ft.).

Lead Based Paint (Interior - gray; Exterior - Light Blue)

- Interior Door and Door Frame - 1 door
- Interior Window Frame, Window Sash, and Window Sill - 18 Windows
- Exterior Awning (20 sq. ft.)
- Exterior Door and Door Frame - 1 Door
- Exterior Wall (1,200 sq. ft.)
- Exterior Window Frame and Window Sill - 18 Windows

Old Lodge Pole Elementary School Residences

ACM

- Drywall Compound in the ceiling tile (50 sq. ft.) - throughout the building
- Drywall Compound in the walls (550 sq. ft.) - throughout the building
- Floor Tile and Mastic (700 sq. ft.) - throughout the building
- Seam Tape in the North Addition (320 sq. ft.)
- Exterior Window Glazing (450 LF)

Lead Based Paint (Interior - Pink; Exterior - Light Blue)

- Interior Door - 1 Door
- Interior Window Frame and Window Sash - 2 Windows
- Exterior Trim (100 LF)
- Exterior Wall (1,000 sq. ft.)
- Exterior Window Frame and Window Sill - 4 Windows

Old Lodge Pole Elementary School Old Section

ACM

- Exterior Caulking (320 LF)
- Interior Ceiling Plaster (90 sq. ft.)
- Fire Door in the Boiler Room
- Floor Tile and/or Mastic throughout the building (5,365 sq. ft.)
- 5-Mudded Fittings in the Boiler Room
- Gym Wall Texture (500 sq. ft.)

Lead Based Paint (Orange)

- Interior Window Frame - 7 Windows

PCB's

- Mercury Thermostat Switches Present in Old Section

Mold

- Mold Present in Old Section

Guano

- Present in Old Section

Old Lodge Pole Elementary School New Section

ACM

- Ceiling Tile (6,600 sq. ft.) - throughout New Section
- Fire Door in the Boiler Room
- Floor Tile and Mastic (4,700 sq. ft.) - throughout New Section

Old Lodge Pole Elementary School Maintenance Garage

PCB's

- Mercury Thermostat Switches Present in Maintenance Garage

(Continued on page 9)



Targeted Brownfields Assessments at Three Sites 2019-2020

(Continued from page 8)

Petroleum Hydrocarbon and Other Chemicals

- Drums of Petroleum Hydrocarbons and Other Chemicals Observed in Maintenance Garage

Above Ground Storage Tanks (ASTs)

- No staining or damage to the ASTs at Lodge Pole Elementary was observed. These ASTs are not considered a COC in relation to the Site.

Note: sq.ft. = Square Feet; LF = Linear Feet

Based on the XRF results, elevated lead concentrations are present in paint on the buildings. Lead Based Paint (LBP) is considered a COC in relation to the Sites.

Lead-in-Soils: Based on the laboratory results, lead concentrations in soils exceed comparison standards at the shop and residence buildings. Lead in soil is considered a COC in relation to these buildings at the Site. No horizontal delineation was able to be performed due to the snow present.

SUMMARY OF RECOMMENDATIONS

Based on the results of the environmental assessment, START recommends the following:

- Based on the ACM identified at the Site and reuse plans, START recommends contracting an accredited asbestos remediation company to assess hazard risk and determine appropriate remedial actions to address ACM at the Site (e.g., abatement, encapsulation, etc.). ACM remediation is recommended prior to any renovation or demolition activities at the Site in order to permanently mitigate exposure risk.
- However, pending final redevelopment/re-use plans for the Site and considering the type and condition of ACM identified, development of an ACM Operations and Maintenance (O&M) Plan to monitor condition of ACM identified at the Site, removal of select ACM, and/or a combination of these remediation methods could be implemented. START recommends contracting an accredited asbestos remediation company to create and implement an O&M Plan to monitor the condition of

ACM identified.

- START recommends contracting an accredited lead remediation company to determine appropriate remedial actions needed once future use plans are determined to address the LBP at the Site during the cleanup phase of redevelopment (e.g., encapsulation, chemical stripping, removal, etc.). Dust control methods should be implemented for the debris. It is recommended that all work be performed by an EPA Lead-Safe certified firm. If construction materials are to be removed, it is recommended that the construction debris disposal facility be contacted to determine if Toxicity Characteristic Leaching Procedure (TCLP) samples will be required.
- START recommends excavating soils in the driplines of the shop and residence buildings and scraping the surrounding soils prior to redevelopment. It is recommended that field screening be performed during the excavation and/or conformation samples be collected.
- The mercury ampules and PCB ballasts should be removed and properly disposed of during renovation activities.
- Mold and guano should be remediated by a certified restoration company.
- Chemical containers should be removed and properly disposed of.
- Additional assessment may be needed for the drain in the Maintenance Garage.

This article is not all inclusive. If anyone wishes to see the entire document, please contact my office at 406-353-8429, send an email to inperce@ftbelknap.org or write a letter to: FBIC Environmental Protection Department, ATTN: Ina Nez Perce, 656 Agency Main Street, Fort Belknap Agency, Harlem, Montana 59526.

Source: "Phase II Environmental Site Assessment for Sacred Heart Catholic Church, Old Agency Water Treatment Plant, and Old Lodge Pole Elementary School, Fort Belknap Reservation, Blaine County, Montana" (February 2020), By Weston Solutions, Inc. (US EPA START Contractors), 1435 Garrison Street, Suite 100, Lakewood, CO 80215.



Zortman/Landusky Mines General Information

By Mitchell Healy, Water Quality Program Coordinator | March 1, 2021

Hello, to all of the Fort Belknap Indian Community. Hope that you all have been healthy and safe during the difficult time that COVID19 has caused, and for all of us to continue to stay positive and work together.

Over the past year, some tribal members have wanted to know what is being done at the Zortman/Landusky mine sites. There is substantive information for these mines that could be shared, but I think the more ideal approach is to provide some general information for your own understanding and awareness.

The Zortman and Landusky mines were open-pit mines operated by Pegasus Gold, Inc. from 1979-1998, when the company filed for bankruptcy in Reno, Nevada. Pegasus Gold, Inc. pioneered the first cyanide heap-leach mines in the Country to extract the gold ore found in the rock formations of the Little Rocky Mountains. The process was applying a cyanide solution to mined rock ore placed on air pads for oxidation, and then the solution would dissolve the gold and any other precious metals out of the rocks. How much gold ore was actually processed? For the amount of land that was destroyed, it wasn't very much at all, comparable to about a small pickup box worth.

Since the closure of the mines in 1998, reclamation efforts were completed at both mine sites. Landusky mine was completed in 2004 and the Zortman mine was completed in 2005. The reclamation efforts consisted of cleanup of waste rock piles, installing liners in open pits and leach pads, backfilling open pits with topsoil, revegetation, and installation of water treatment plants. Despite the reclamation efforts that may visually seem hopeful, there are major environmental issues happening and will continue to happen into perpetuity. For years, tribal members have been highly concerned of potential health risks and the threat to the groundwater sources used for drinking water. There are obvious water quality impacts to the streams flowing right through the heart of highly cultural areas in the Little Rockies that have impacted the traditional ways and uses of the water, the plants, the wildlife, and the resources.

South Big Horn Creek is an example of an impacted stream flowing through cultural areas. The presence of high Iron concentrations in the stream has discolored the stream substrate to an orange, rust color. This is the result of Acid Mine Drainage (AMD) occurring in an upstream and off-reservation drainage called Swift Gulch. Swift Gulch is considered the most impacted drainage and limited measures are being taken to combat the AMD. There is a Water Treatment Plant, sludge ponds, 2 capture systems, and a Sediment Retention Structure. However, the issue is not having the capacity to capture all the water and treating it before discharging back into Swift Gulch. During high-flow events such as spring run-off or heavy precipitation events, a high volume of water bypasses the treatment plant untreated, meaning the fate and transport of heavy metals and water quality impacts further downstream on the Reservation. Prior to 1997, South Big Horn was a pristine stream with a healthy biodiversity of pollution-sensitive aquatic life. By 2004 the water quality declined to a point no sensitive species found. Today, the stream is still the same, only pollution-tolerant species found with no improvement of water quality.

King Creek is another stream of concern and was heavily impacted by mine tailings back in the 90's. Cleanup was done in 2000, however, the naturalness of the stream never returned. The original characterization of the stream was that it was inhabited with beaver and had beaver dams with brook trout. It's apparent that if the water quality of the stream was considered good, the beaver would have returned by now, but there has never been any sign of that. The water chemistry, in addition to some sensitive species present, would indicate that the water quality is improving, but obviously not good enough for beaver to come back. Hypothetically, if beaver did return and construct beaver dams and develop the stream habitat as in past days, potentially brook trout can return, but right now, the re-constructed stream channel is no longer capable of supporting fish.

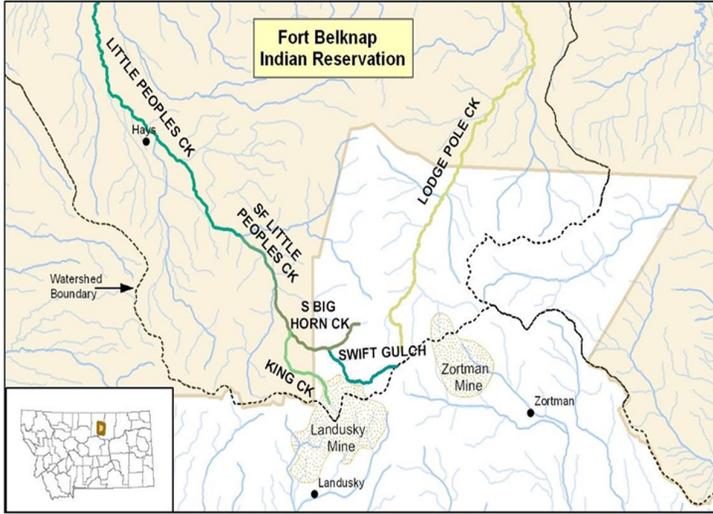
For your perspective, the following image demonstrates the streams in relation to the Zortman and Landusky Mines and the Reservation boundary. As mentioned earlier, Swift Gulch is of high concern due

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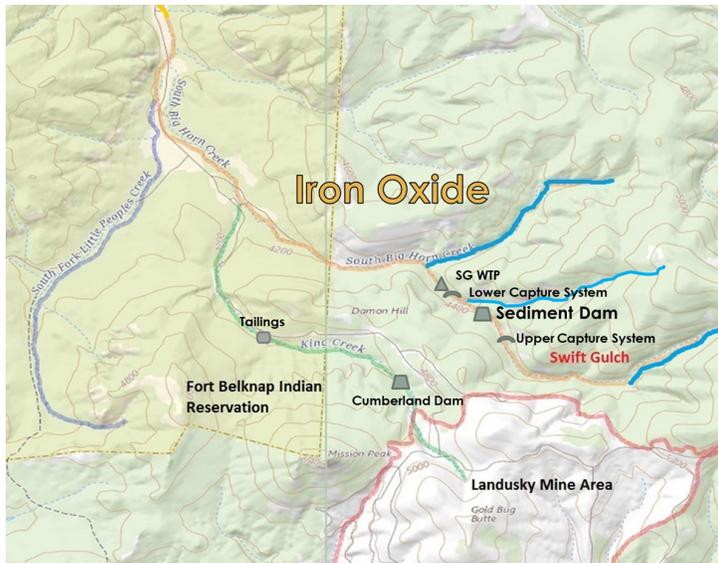
Zortman/Landusky Mines General Information

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to the AMD issues and is the source of water quality impacts to South Big Horn, which is the stream that flows right by the Powwow and Sundance sites.



So, what treatment measures are being done on the mine sites? The following image demonstrates the locations of current treatment measures and the orange colored line represents the Iron staining. Blue represents not impacted, green is recovering, but still needs improvement.



Visually, you can see that Swift Gulch, the most impacted drainage, has several treatment structures to address the Acid Mine Drainage. But, as mentioned earlier, all the water cannot be captured and treated primarily due to the geography of the drainage being too narrow and steep, allowing for limited space. King Creek is a much different situation with different water quality and environmental impacts. The following

powerpoint slides demonstrate what treatment measure are currently in place for Swift Gulch and King Creek.

Off-Reservation (Treatment Measures)

- King Creek Passive Treatment System
- Swift Gulch Sediment Retention Dam
- Swift Gulch Upper & Lower Capture Systems
- Swift Gulch Water Treatment Plant

King Creek – Cumberland Dam

- Passive Treatment System
- Anaerobic Wetland
- Metals Reduction (Selenium): Denitrification (Nitrates)

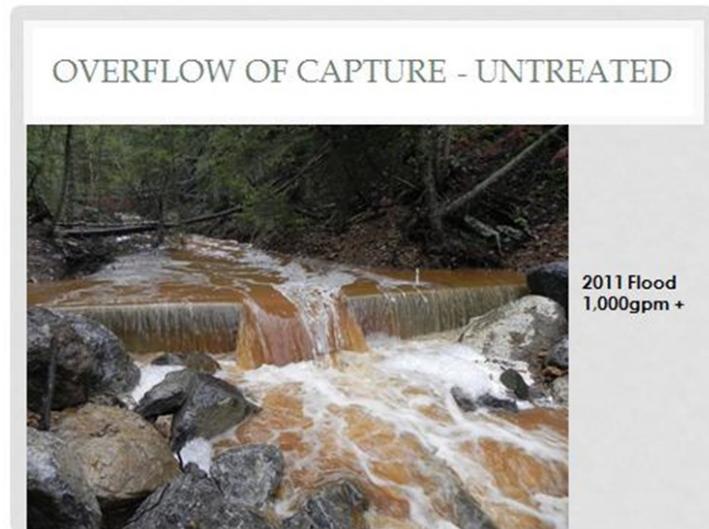
2019 - Sediment Retention Dam

Designed to minimize Iron sediment/oxide transport downstream onto Fort Belknap Reservation.
(THIS IS WHAT IS CAUSING THE ORANGE STAINING)

(Continued on page 12)

Zortman/Landusky Mines General Information

(Continued from page 11)



I hope that these visuals have provided you with an idea of what is being done at the Zortman/Landusky mine sites. The environmental issues are highly concerning for future generations and at this point, the best thing to do is to work with the Agencies and continue trying to develop solutions...we have too.

If you have comments or questions, please contact me at 353-8433 work phone or email: mitchellhealy@yahoo.com. Thanks.

New Climate Change Coordinator

By Dennis Longknife, Climate Change Coordinator



Hello Climate Warriors, most of you know me, my name is Dennis Longknife and I am the tribes New Climate Change Coordinator. Previously I was in Climate Change under BIA Grant funding from (2015-2019). My main task is to educate and inform our tribal community on what Climate

Change is, and how we can work together to offset the many impacts from climate change that affects our daily lives.

From Droughts, Floods, Wildfires, Pathogens, and other extreme weather events, and also protecting

our traditional-cultural ways of life, using Traditional Ecological Knowledge.

I am looking forward to again being part of our tribes Resilient efforts to develop and complete a Climate Change Action Plan, called a Climate Change Adaptation Plan. I had a series of meetings to get the plan developed and now we plan on completing it with our funding, and plans are also underway to secure more climate funding, so our future generations can enjoy our beautiful Native Lands that we have.

I will also be working on a Little Rocky Forest Resilience Project which is to thin 100 acres of forest, to

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New Climate Change Coordinator

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increase native plant growth, offsetting impacts from catastrophic fires, reducing Mountain Pine Beetle Attacks, and increasing cleaner fresher air for the environment. Programs I will be working with on this project are: Fire Management, THPO, Aaniiih Nakoda College, Environmental Protection Department, and the BIA Forestry Program.

During this Covid Period we will not be having group meetings like we did in the past, but we will still need

your input. The Center for Large Landscape Conservation is my Partner on this, and helped secure the funding we are using. Angelina Aller-Gonzales/ Research and Grants Writer, and Rebecca Watters, her new Grant Writing Assistant, and Melly Reulig/ Program Manager, have also assisted in the development of our tribe's, Climate Change Adaptation Plan.

Take care everyone and stay safe!

MT Keystone Pipeline Bill

By Colette Werk, Nonpoint Source Pollution Coordinator | March 3, 2021

On December 10, 2020 a draft request was received as part of our legislative process here in Montana. While requests are taken every day this particular one stuck out. Sponsored by Senator Steve Hinebauch, Republican, the title of the bill was SJ-16: Urge support for Keystone XL pipeline. During the Trump presidency the Keystone XL Pipeline was on its way to being built across Montana and the United States but came to a standstill by lawsuit. The Rosebud Sioux Tribe (Sicangu Lakota Oyate) and the Fort Belknap Indian Community (Aaniiih and Nakoda) filed for violation of the permitting processes that TransCanada dishonored. This is all well known and an ongoing battle that consisted throughout the Trump presidency as they pushed for construction.

Upon election President Biden promised to rescind the Keystone XL Pipeline and made good on that promise January 20, 2021 by Executive Order, revoking the pipeline permit issued by the Trump administration. From the highest authority the Keystone XL Pipeline is not to be pursued but some in Montana disagree. On February 26, 2021 the bill made its way to the Montana Senate Natural Resource Committee and I was in attendance via Zoom. Asked by the Environmental Manager to represent the Fort Belknap Environmental Department opposing the bill, I did so gladly. With COVID-19 there are many changes we

have adapted to and was able to testify from my home over Zoom.

There were many in person support of the bill and no one over Zoom. While there was no one opposed in person support but many on Zoom. I have never testified before any bill in the House or Senate but did spend time in Helena as a Page in high school and see the value of our legislative process. Unfortunately



the bill passed committee with a vote of 9 to 3 and is on its way to the House Natural Resource committee. It was comforting to not be the only one from Fort Belknap that testified against the bill. President Werk and former councilman Alvin "Jim" Kennedy were able to testify over Zoom also. There were a few other Fort Belknap Indian Community members that were on the call but weren't

named to testify for some reason, this is unfortunately the challenges with Zoom. While it is certain that this bill will make it to the floor of the Montana delegation to be passed, I have high hopes it will not go any further than that. Here in Montana we have a legislation that is dominated by Republicans and have been seeing many anti-indigenous bills being promoted but Congress is held by eco-caution Democrats that will hopefully hold true to that. I will be watching the bill closely and urge many community members to do so also.

Senate Confirms Biden's Pick to Lead E.P.A.

By Lisa Friedman | March 10, 2021

<https://www.nytimes.com/2021/03/10/climate/michael-s-regan-epa-biden.html>

Michael S. Regan has said he intends to act aggressively in carrying out the president's agenda of fighting climate change.

WASHINGTON — The Senate on Wednesday confirmed Michael S. Regan, the former top environmental regulator for North Carolina, to lead the Environmental Protection Agency and drive some of the Biden administration's biggest climate and regulatory policies.

As administrator, Mr. Regan, who began his career at the E.P.A. and worked in environmental and renewable energy advocacy before becoming secretary of North Carolina's Department of Environmental Quality, will be tasked to rebuild an agency that lost thousands of employees under the Trump administration. Political appointees under Donald J. Trump spent the past four years unwinding dozens of clean air and water protections, while rolling back all of the Obama administration's major climate rules.

Central to Mr. Regan's mission will be putting forward aggressive new regulations to meet President Biden's pledge of eliminating fossil fuel emissions from the electric power sector by 2035, significantly reducing emissions from automobiles and preparing the United States to emit no net carbon pollution by the middle of the century. Several proposed regulations are already being prepared, administration officials have said.

His nomination was approved by a vote of 66-34, with all Democrats and 16 Republicans voting in favor

"There are few leadership roles in the federal government that have greater responsibility for setting environmental goals and climate policies than the Environmental Protection Agency," said Senator Tom Carper, Democrat of Delaware and chairman of the



Michael S. Regan at his confirmation hearing in February. At 44, he will be one of President Biden's youngest cabinet secretaries. Pool photo by Brandon Bell

Senate Committee on Environment and Public Works. Mr. Regan, he said, "is the person for the job at this critical moment."

Mr. Regan will be the first Black man to serve as E.P.A. administrator. At 44, he will also be one of Mr. Biden's youngest cabinet secretaries and will have to navigate a crowded field of older, more seasoned Washington veterans already installed in key environmental positions — particularly Gina McCarthy, who formerly held Mr. Regan's job and is the head of a new White House climate policy office.

Those potentially overlapping authorities have already provoked criticism from Republicans, some of whom voted against Mr. Regan's confirmation because they said they did not know who is truly in charge of the administration's climate and environment policy.

"I can't support Secretary Regan when Gina McCarthy is the orchestra leader for the Biden administration,"

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Senate Confirms Biden's Pick to Lead E.P.A.

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said Senator Shelley Moore Capito, Republican of West Virginia.

But most of the opposition centered on Democratic policy. Senator Mitch McConnell of Kentucky, the Republican leader, called Mr. Biden's agenda a "left-wing war on American energy."

"Mr. Regan has plenty of experience," Senator McConnell said. "The problem is what he's poised to do with it."

In his testimony before the Senate last month Mr. Regan assured lawmakers that when it comes to E.P.A. policies, "I will be leading and making those decisions, and I will be accepting accountability for those decisions."

Mr. Regan has a reputation as a consensus-builder who works well with lawmakers from both parties. North Carolina's two Republican senators, Thom Tillis and Richard Burr voted to support his nomination. Even Senate Republicans who voted against him had kind words.

"I really liked meeting and getting to know Michael Regan," Senator Capito said. "He is a dedicated public servant and an honest man."

But Mr. Regan said he did intend to act aggressively in carrying out Mr. Biden's agenda of fighting climate change.

Precisely what that will look like within the E.P.A., and particularly in the electricity sector, remains unclear,

but administration officials have already hinted that they intend to create a new regulation to rein in the second largest source of United States emissions.

The Obama administration tried to curb carbon pollution from the electricity sector with a regulation called the Clean Power Plan, which would have pushed utilities to move away from coal and toward cleaner-burning fuels or renewable energy. The Trump administration repealed that and replaced it with a far weaker rule that only required utilities to make efficiency upgrades at individual power plants.

The Clean Power Plan rule met resistance at the Supreme Court, but the Trump version was struck down altogether. That combination, Mr. Regan told lawmakers, gives E.P.A. a "clean slate" to move forward. Several administration officials said they expected the agency to roll out a "Clean Power Plan 2.0" in the coming weeks.

Ms. McCarthy has already been in talks with automakers around new vehicle emissions standards, but the proposed new rule itself will also come from E.P.A.

Another expected focus of Mr. Regan will be environmental policy impact on poor and minority communities. He has called environmental justice an issue "that is near and dear to my heart" and told lawmakers he intended to bring on a special adviser and request additional funding to better address what experts have identified as systemic racism and inequity in environmental decision-making.

AMERICA RECYCLES DAY

By Morris "Davy" Belgard, Environmental Technician | <https://www.epa.gov/americanrecycles/america-recycles-day>

On America Recycles Day, November 15, 2019, the United States Environmental Protection Agency (USEPA), recognized the importance and need for recycling. Americans send 64 tons of waste to landfills during their lifetime. That's 246 million tons of waste each year.

America Recycles Day aims to promote Americans to buy recycled products and recycle more. The demand for recycled materials is currently at 37%. Recycling is

contributing to America's economy and protection of the environment from harmful solid and liquid waste. According to the US EPA more than 680,000 Americans work in the recycling industry and contributes to the U.S. economy \$38 billion in wages, which in turn adds \$5.5 billion in tax revenues.

Ferrous metals, such as iron, provides the largest contribution to three categories, followed by construc-

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America Recycles Day

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tion and demolition activities and finally non-ferrous metals such as aluminum, copper, tin, and lead alloys.



But at the home front, how do I recycle? What are the common recyclables?

The most common solid waste generated each year is paper. This includes merchandise boxes, advertisement mail, fast food containers, gift wraps and bags. Paper contributes about twenty-three percent of consumer waste.

More than 35 million tons of plastics was generated adding twelve percent to consumer waste with about eight percent recycled annually.

Household Hazardous Waste (HHW) are leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients are considered to be HHW. Products such as paints, cleaners, oils, batteries, and pesticides that contain potentially lethal materials that require special care when disposed of. HHW may be dangerous to people or bad for the environment if poured down the drain, dumped on the ground, or thrown out with consumer trash. Suggests combating HHW is to purchase alternative nonhazardous cleaning products now available in shopping centers or homemade ingredients available on *EPA's Hazardous Waste, HHW page website*. These alternative ingredients work, folks! It's not snake oil!!

Five quarts of used oil from one oil change can contaminate one million gallons of fresh water. I cannot stress enough to never, never dump used oil on the ground or down a storm drain. By recycling used oil, it not only helps keep our natural resources safe, but recycling helps reduce American dependence on foreign oil. It takes 42 gallons of crude oil, but only one gallon of used oil, to produce 2.5 quarts of new motor

oil. Many local garages, oil bay shops, and auto supply stores that sell motor oil also may accept oil for recycling, ask first!!

Stray domesticated pets and disease-carrying pests such as mice or mosquitoes may reside in tire piles. Most tire garages are required to accept and recycle your used tires when you have new ones installed. You may be able to return used tires to either a tire retailer or a local recycling facility that accepts tires. Some communities hold collection events for used tires.

Abandoned vehicles pose a threat of releasing pollution from the vehicles, including oil, transmission fluid, coolant, brake fluid, gasoline, and discarded car batteries into the environment.



During Earth Day, April 22, many communities organize recycle drives and drop off sites for discarded tires, E-waste, old house paints for reuse.

A big annual commitment here at Fort Belknap, tribal leaders continued commitment, is to clean our communities and roadways, and at times abandoned vehicle removal, on an annual basis since the early 1980's.

I hope all is safe with your family and acquaintances during these trying times of the pandemic crisis. Continue to follow guidelines offered; wash your hands, wear your mask, and social distance for your safety and please RECYCLE.



Tribal nations are priority science partners of the North Central Climate Adaptation Science Center (NC CASC)

<https://nccasc.colorado.edu/resources/tribal-partners> | Article shared by Dennis Longknife, Climate Change Coordinator

Tribal Nations are unique and distinct partners for the NC CASC since their connection to the environment is often thousands of years old. The NC CASC is committed to working with Tribal partners to create usable, useful, and relevant science to build resilience to anthropogenic climate change. Resources of the NC CASC include:

- Access to climate projections, down scaled modelling, and scenario planning
- Vulnerability assessments, including biological and cultural resource assessments
- Data science and management

The NC CASC recognizes the importance and value of Indigenous Knowledges in addressing environmental challenges. The NC CASC and its funded researchers follow the Guidelines for Considering Indigenous Knowledges in Climate Change Initiatives to ensure data sovereignty and best practices for working with sovereign Tribal Nations.

To better understand, support, and facilitate climate resilience in Tribal communities, the NC CASC partners with the Great Plains Tribal Water Alliance (GPTWA) to host a regional Tribal Resilience Liaison. This position is funded by the Bureau of Indian Affairs (BIA) Tribal Resilience Program which created the position in various regions throughout the U.S. The

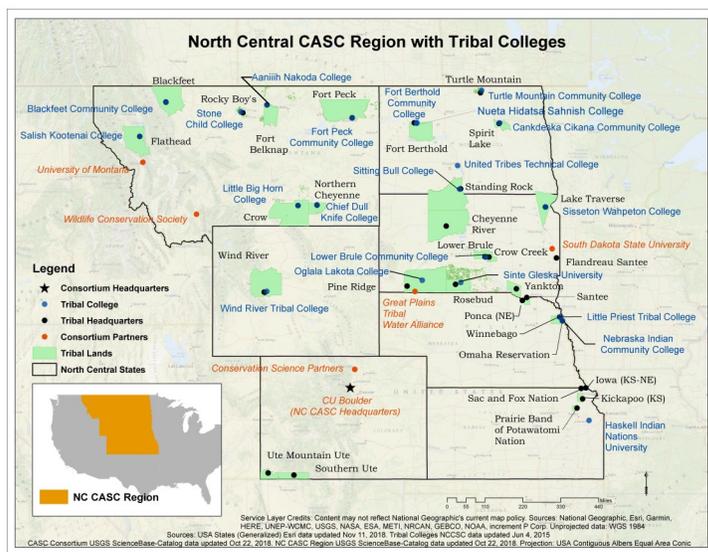
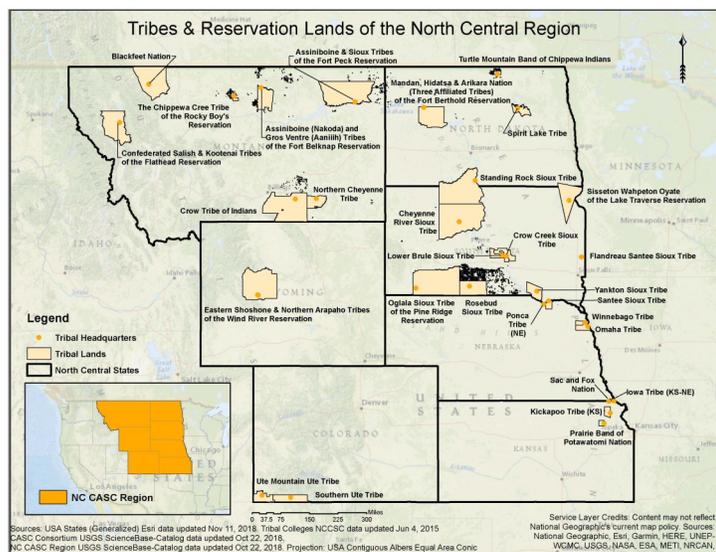
North Central Tribal Resilience Liaison:

- Supports capacity building for addressing climate change impacts on resources and practices of importance to tribal groups,
- Assists Tribal resource managers develop climate vulnerability assessments, adaptation plans, proposals and grant applications, curriculum, relevant research, and implementation projects.

The NC CASC supports and facilitates conferences, convenings, and trainings focused on building Tribal climate resilience with resources to deliver appropriate scientific content. Recent events include the 2019 Tribal Climate Camp hosted by the Affiliated Tribes of Northwest Indians (ATNI), the Native American Fish and Wildlife Society (NAFWS) Meeting 2019, and the Lower Missouri River Tribal Climate Adaptation Workshops (2019-2021).

***Stefan Tangen** serves as the North Central Tribal Resilience Liaison, with the goal of understanding Tribal needs, connecting Tribes to science resources, and fostering dialogue among Tribal partners for adapting to anthropogenic climate change. Ensuring that Tribal Nations have the scientific information and expertise they need is a high priority of the North Central Climate Adaptation Science Center (NC CASC).*

****Dennis Longknife** represents our region and the Fort Belknap Indian Community on the Joint Science Advisory Committee, for the North Central Climate Adaptation Science Center.*



Ramblings of a Pandemic CO... Mask On, Mask Off

Kermit Snow Jr., BTRP Compliance Officer



Wahey Nee tine. Hello my relatives. Star date 2021, it's been a year and time has moved slow and not too much has changed. We have approached the idea of reopening, but are still wary of what's out there. We have chosen a new leader with better ideas on how to approach what we have been dealing with. There is a better outlook on where we are going and how we are going to attack our problems here and around the globe. I have finally been able to go out and see what is happening on our Reservation, yes, I am going outside. It was great to see someone cleaning up our Transfer Sites in the three communities, we just have to find a way to keep them clean. We will have to educate the communities on how and why they need to stay clean. We also need to report anyone who is starting them on fire. They don't realize they are hurting the community and not helping,

thinking that burning will solve the overflow of trash in bins. We don't know what people are dumping in the bins, what chemicals or other hazardous material is going into the bins. When they burn the trash in the bins, the smoke carries all the hazardous chemicals in the air to the surrounding communities. This behavior can hurt community members suffering from breathing/respiratory issues, can also start fires, and ruin the bins that hold trash. It is also good to resume Transfer Site inspections to try and keep them in compliance. We are still not traveling as much, we are still discouraged to travel to places in the state with high covid statuses (hotspots). We have seen what happens to people who have been cooped up too long and finally do travel, like the ones who went to the Nation's Capital and put everyone in danger, but that's another story. In the early part of the year, I got to travel to the three local communities to broadcast games, but even that halted for a little while when covid reared its ugly head. With covid all around us and schools limiting fans, radio was the next best thing to being there, fans wanted to hear their kids playing. So, I then traveled on down to the BIA/Tribal Yard, where the BIA was conducting an inspection of their shop yard, before turning it over to the Tribe. I participated in the BIA Spill Prevention, Control, and Countermeasure (SPCC) walkthrough inspection of the shops and yard to see what needs to be corrected and updated on the SPCC Plan. I also resumed my UST Walkthrough inspections at Kwik Stop. A funny thing happened recently, on the way to my monthly inspection, a wild windstorm the night before wrecked havoc on the Kwik Stop

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Ramblings of a Pandemic CO...Mask On, Mask Off

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canopy and fuel dispenser's. It was already all over Facebook before I got up that morning. Apparently, around 1:30 am, the wind came gusting through Fort Belknap on its way through and decided to blow down the canopy and tear up three of the dispenser's. It tore one completely off its stand and the other two were knocked over. It was good to see that the shear valves did their job and no fuel leaked out onto the property. They will be getting new dispenser's.

My real big travel, since this debacle concerning covid happened, was traveling to broadcast both the District and Divisional basketball tournaments. In the District 2B Boy's & Girls, both teams came out with 3rd Place trophies and the right to move on to the Northern B Divisionals. We decided to cover the boys tourney in Cut Bank. We started out the same way as District and lost our first game. We came back like Champions and won our next three games, with a whopping of our rival Malta to claim the 3rd Place Trophy and to hope for a challenge game for the right to go to State, but alas it was not meant to be. It was still a great year for our teams and will see what awaits us in the future. One of the great things of travel is not only seeing friends again, but family also. My niece let me stay with her in Browning during Divisionals and I got to see my MSU-Northern/Blackfeet family again. It was great visiting and talking about our college days and possibly setting up some type of get together to have fun and see what we have all been up to. We keep up on social media, but that's not the same, we need that real life interaction, to be able to feel/touch and see each other to know it's real. Soon my friends, soon, but the job here at home was waiting for my return, with investigating possible illegal burning, conference calls, numerous zoom/Microsoft teams meetings, staff meetings, different types of webinars, writing reports, reviewing safety plans, inspections, getting ready for Phase I Reopening Plans, and hoping to see co-workers at the office again. I can't wait for a full office, when that happens, a feed is called for, lol. Ahhhh to be back to some type of normalcy, not normal, as we need better than what we had before. We need the joy of being around people again, without fear of disease or sickness. I want to have fun again and joke around with friends & family, travel to see family and friends who live afar. When that happens, I know we are getting close, a sense of healing. Until next time my friends. Aho.



SHOUT OUT TO FORT BELKNAP COMMUNITY: CONGRATULATIONS!

“Níihaaníísiíh?ch?wónín?w: Grow Our Own”
“Íųgícağabi: Growing Our Own”



‘Grow Our Own’ Nursing Education Program Update

by Brigit Hemmer RN, MSN and Alicia Werk, RN, BSN



East Quadrant: Community Dream

Dr. Carole Falcon Chandler Aaniih Nakoda College, former President, laid the foundation for this dream ‘to have her own people take care of her’ that kick-started this venture.

It was in that not-so-distant past (December 3, 2014) a community meeting was held at the Aaniih Nakoda College, Cultural Center. The purpose was to discuss establishing a ‘Grow Our Own’ nursing program here on the Fort Belknap reservation, to be housed at the college. It was well-attended by a cross section of the entire community, those off the reservation and by the Executive Director of the Board of Nursing at the time, Dr. Cynthia Gustafson. To open a nursing education program in Montana, the college had to undergo a lengthy approval process from the MT Board of Nursing. This was the first and most important approval for without that approval, graduates would not be licensed practice nursing. Only the Board of Nursing in Montana would be able to award approval if we completed a series of detailed steps, with documentation, to be presented in Helena in front of the entire board. Much discussion transpired during the meeting and many voices were heard. The important decision made at the meeting was to pursue a registered nurse (RN) program as opposed to a licensed practical nurse (LPN) program, with the community calling for a survey of the important elements and design of a program they envisioned. This survey was developed by Eva English, ANC’s librarian, and, within a couple of hours of putting it on ANC’s web page, 67 community members, on and off the reservation, had responded, and many more were to come (for a total of 141 official responses)! The community knew what they wanted with 89% wanting a cultural emphasis

(explaining what they meant in detail, for example emphasis on ‘Life Ways’, language, cultural safety for the local people here) and what should to included within the curriculum (hands-on in the Simulation lab, local clinical placements in Hi-Line health care facilities including, Hospitals and clinics), and with 94% affirming that the program would positively impact the health of the community. Finally, community members knew the kind of students they wanted to become nurses that would serve them; they were to be respectful, caring, understanding, compassionate, with state-of-the-art knowledge yet giving culturally safe care. So why was the need so great here on the Fort Belknap reservation for this ‘Grow Our Own’ nursing education program?



South Quadrant: Community Need

Everyone who lives on the Fort Belknap reservation or surrounding environs knows about the historic, and contemporary health inequalities: access to care, quality of care, transit to referrals, and few housing opportunities, that are on full display each and every day. The need for positive change was so chronic that only “a miracle of sorts” could ever uplift the health of the community. But the “winds of change” started to blow knowing the heartfelt desire for a nursing program even though it would take time to develop. We started by digging deep into existing health information for Montana and found that all 7 reservations inherited the same history of health disparity. Each year, starting in 2010, the Robert Wood Johnson Foundation ranks each county in each state in the same way:

- for Montana, counties are ranked according to their summary measures of HEALTH OUT-

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'Grow Our Own' Nursing Education Program Update

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COMES and HEALTH FACTORS;

- currently there are 48 counties listed, and 6 without ranking due to little data;
- the ranks are 1-12, (the best), 13-24 (next), 25-36 (not so good), 37-48 (the worst);
- reservations in Montana always have the worst health outcomes and health factors;
- for 2020, Blaine County ranks 45th in both health outcomes (length and quality of life) and health factors (health behaviors, clinical care, social and economic factors, water quality, housing and transit) out of 48.

This list is proof of long decades of neglect even before record keeping data shined a light on these health disparities.



West Quadrant: Community Development of Nursing Program by Aaniiih Nakoda College

It took two years to develop Aaniiih Nakoda College's Nursing Program, but with the community backing us 100%, it got underway. There were three hoops or phases of approval the nursing program had to meet from the MT Board of Nursing in order to have a 'Grow Our Own' nursing program approval for the graduates. We had to show intent, demonstrate we had the resources (i.e. facilities and clinical placements), and complete a self-study documenting the nursing program compliance with all rules and regulations put forth by the MT Board of Nursing.

PHASE I: (NOTICE OF INTENT)

Phase I of approval for the nursing program included the following:

- A Feasibility Study was conducted (2015) to meet the requirements of the Board of Nursing. (24.159.625 Establishment of a New Nursing Education Program):
- Two Tribal Resolutions were passed; (No.28-2015 Nursing Education Program) and Tribal Resolution (No.29-2015 ANA SEEDS Grant to apply for funding).
- An ANC Board legal motion approved by the board on March 23, 2015 that supported the establishment of the ANC Nursing Education

Program.

- Aaniiih Nakoda College had to be noted to be fully accredited through the Northwest Commission on Colleges and Universities.

PHASE II: (APPLICATION FOR INITIAL APPROVAL FOR STUDENTS)

After the approval of the Phase I document for the 'Grow Our Own' program (granted on April 16, 2015 by the MT Board of Nursing and a letter sent by the Executive Director, Dr. Cynthia Gustafson on April 20th to Dr. Carole Falcon Chandler, former President of ANC), we developed a lengthy document for initial approval for admission of students into the 'Grow Our Own' program. This document included the name of the director, qualified faculty, all aspects of the curriculum, clinical sites, and other documents that support an approved nursing education program. Prior to approval of the Phase II document, an on-site program inspection visit was done by the MT Board of Nursing to verify the information we had provided in the report. This approval was granted with full approval of the Board of Nursing on April 13, 2016. The approval allowed the nursing program to admit students and for them to apply and sign up to take the NCLEX-RN examination, after graduating from Aaniiih Nakoda College.

PHASE III: (FULL APPROVAL OF THE PROGRAM)

This was a detailed self-study report ensuring the 'GROW OUR OWN' nursing education program was in compliance with the MT Board of Nursing Administrative Rules of Montana for Nursing Education. A visit to Aaniiih Nakoda College would transpire after the first class of students graduated from the program. The MT Board of Nursing had authority to grant FULL APPROVAL, CONDITIONAL APPROVAL, and OR DENY APPROVAL under their rules and regulations. The MT Board of Nursing gave FULL APPROVAL for the Aaniiih Nakoda College, 'Grow our Own' nursing education program. This is a fully approved status would allow students to sign up and take the NCLEX-RN examination once they have graduated. This examination is a first step toward licensure as a RN in Montana or any other state.

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'Grow Our Own' Nursing Education Program Update

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NURSING PROGRAM ACCREDITATION VERSUS NURSING PROGRAM APPROVAL

As detailed in this document, the 'Grow Our Own' Nursing Program had to first obtain approval from the MT Board of Nursing to even be established as a program. Now that this process is complete, the 'Grow Our Own' program can go for a separate national nursing education accreditation process. This is a separate process with some different standards that need to be met for a positive outcome. It is also a very time-consuming and expensive process for Aaniiih Nakoda College. Gaining national accreditation for the nursing program will provide a seal of quality for the program and will help nursing graduates as they apply to continuing education programs such as their Bachelor Science in Nursing (BSN) or on to graduate nursing degrees. National accreditation will also help in securing outside funding sources.



North Quadrant: Community Outcomes and Update

It is important that the Fort Belknap Community knows the journey in how the dream, need, participation and vision have now led to establishment of a fully approved 'Grow Our Own' nursing education program-the shout out is for the Fort Belknap Community -CONGRATULATIONS! Here is a list of some of the accomplishments:

- Over 30 students were enrolled in the ASN Nursing Education program. The data below reflects those who have completed all the course work and who have earned licensure or certification.
- Thirteen graduates from the 'Grow Our Own' nursing program. Eleven who are currently employed as nurses and one more in the health care field. All are employed in Montana, most of whom are along the Hi-Line.
 - A local community member who was graduate of another Tribal college here in Montana, was supported and mentored by faculty at Aaniiih Nakoda College to prepare and pass the NCLEX exam and is employed on the reservation
- Of those twelve graduate licensed nursing students (several have pursued various positions):

- 3 employed (or pending employment) at Indian Health Services in Fort Belknap Agency
- 8 have been or are currently employed at Northern Montana Healthcare and Northern Montana Care Center as registered nurses
- 2 employed in medical/surgical care
- 1 employed in a nearby intensive care unit
- 2 employed in maternal/child care
- 3 employed in long-term care/skilled nursing care
- 1 employed in travel nursing for a period of time
- 1 employed in hospice
- 1 employed in case management/patient care coordination
- 1 employed in corrections
- All but 3 of the above listed positions are along the Hi-Line
- Of the 13 graduate nursing students:
 - At least 2 are enrolled in an RN-BSN program and at least 4 more are interested in pursuing their BSN and graduate degrees (as of Spring 2020).
 - At least one has a bachelor's degree prior to nursing school that is allowing advanced opportunities in the nursing field.
- There are currently 12 students in the 2nd semester of the nursing program. They will graduate in Spring, 2022
 - At least 4 students in this cohort have expressed interest in taking classes that will work toward earning their BSN while they are completing their ASN.

There were students who took Aaniiih Nakoda College's Certified Nurse Aide (CNA) course and were able to test and obtain their CNA certification after completing the course. Data from those students indicate:

- 94 participants enrolled and 56 completed the CNA certification course or challenged the CNA exam with assistance from Aaniiih Nakoda College faculty:
 - 41 CNAs have been employed, many in the

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‘Grow Our Own’ Nursing Education Program Update

(Continued from page 22)

- health care field,
- 7 took the course while enrolled in high school and completed before or after the time around their graduation,
- We currently have 12 students enrolled in our CNA course,
- To accommodate student needs, faculty limitations and Covid-19 restrictions, much of the CNA course was moved to asynchronous online modules along with lab preparation,
- Students and faculty meet in the lab upon completion of those modules to learn and practice skills prior to testing,
- If safe accommodation can be made prior

to and during Covid-19 restrictions, CNA students spend a day with CNAs in a long-term care facility to reinforce skills learned in the course.

Of total enrollees in the nursing or CNA education programs, 78% of the participants who earned a credential found employment and up to 10% were still in school and not seeking employment, resulting in an overall success rate of completion at 88%.

We are grateful to the community members, all the faculty and staff of Aaniiih Nakoda College and the many health care professionals that comprise the community of people it takes to ‘Grow Our Own’ nurses here in the Fort Belknap Reservation community.

FEEDING WILDLIFE HAS NEGATIVE CONSEQUENCES FOR ANIMALS AND HUMANS

<https://fwp.mt.gov/homepage/news/2021/feb/0226-feeding-wildlife>

Article shared by Cody Shambo, FBEPD GIS Technician | Originally Published Feb 26, 2021 11:08 AM



HELENA – With the extreme cold and snow much of Montana experienced recently, it’s easy to take pity on wildlife and put out some food.

“Feeding wildlife is often undertaken with good intentions,” said Montana Fish, Wildlife & Parks Game Management Bureau Chief Brian Wakeling. “Despite those good intentions, providing artificial food for wildlife can have a number of negative consequences for wildlife and humans.”

Artificial feeding can alter natural movements, migrations and concentrations of wildlife, Wakeling ex-

plained. Due to the availability of artificial foods, wildlife may alter migration timing, which may place them at greater risk of mortality when seasonal changes become more extreme.

Artificial feeding also can create unnatural concentrations of wildlife, which may subsequently create greater opportunity for disease transmission and draw in predators, such as mountain lions.

If the artificial food is near human habitation, concentrations of wildlife may result in undesirable effects on vegetation or landscapes and create conflicts among neighboring landowners.

These changes also may present challenges for domestic animals, especially small pets.

“In short, artificial feeding may create far more challenges for the wildlife we feed or among neighbors who may have different interests in wildlife,” Wakeling said.

And, even with the best intentions, feeding wildlife is illegal.



It's Noxious Weed Day! COME CLEAN. LEAVE CLEAN.

From: MISC Newsletter <MISC@announcements.mt.gov> | Article shared by Dennis Longknife, Climate Change Coordinator



NISAW NATIONAL INVASIVE SPECIES AWARENESS WEEK

National Invasive Species Awareness Week (NISAW) is an annual international event to raise awareness about invasive species, the threat that they pose, and actions we can each take to prevent and slow their spread.



Noxious weeds are invasive plants not native to North America. Many of them, like spotted knapweed and leafy spurge occur in large infestations across the state. Noxious weed infestations decrease agricultural production and reduce forage for wildlife, increase erosion along streams and rivers, and decrease recreational activities. Noxious weeds can spread by many different ways; the main way they move around is through human travel. Weed seeds and plant parts can become stuck in the mud in vehicle or equipment tires, shoelaces and on clothing, backpacks, and hiking gear, or in the fur or hair of animal companions.

The Montana Noxious Weed Education Campaign (MNWEC) was formed in 1996 to educate the public about noxious weeds and to reduce their spread. The mission of the MNWEC is to, “educate the people of Montana about the economic and environmental impacts of noxious weeds, while encouraging public participation in ecologically based integrat-

ed weed management.” Everyone can do their part to help stop the spread of noxious weeds by always cleaning your gear both before and after you recreate. Come clean, leave clean and do your part to help stop noxious weeds in your tracks.



COME CLEAN LEAVE CLEAN

Click button to learn more about
COME CLEAN LEAVE CLEAN.



WEED ID



A digital field guide available through the [Montana Weed Control Association](#) is designed to help you identify Montana’s 35 state listed noxious weeds and regulated plants. Each plant review includes photos and characteristics.

To report a suspected infestation of noxious weeds, contact your local county weed district, tribal area office or the [Montana Department of Agriculture](#).



Montana Invasive Species Committee (MISC) and partners urge all Montanans to share this information widely and take these simple measures to be informed, attentive, and accountable for preventing the spread of terrestrial and aquatic invasive species.

1. **WATCH FOR NOXIOUS WEEDS.** If you spot some,

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COME CLEAN. LEAVE CLEAN.

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notify your county weed coordinator <https://www.mtweed.org/weeds/weed-districts/> or report to EDDMapS West. eddmaps.org/west/

- USE CERTIFIED WEED FREE.** Make sure to use weed-free forage, hay and mulch. mt.gov/Noxious-Weed-Seed-Free-Forage
- PLANT ONLY NON-INVASIVE PLANTS.** Keep your garden free of known invasive plants. Many invasive species introductions come from the ornamental trade. mtnativeplants.org/
- CLEAN YOUR GEAR.** Always wash and dry your boots, bikes, waders, boats, trailers, and off-road vehicles between uses. playcleango.org/
- CLEAN.DRAIN.DRY.** Aquatic invasive species are often inadvertently spread by boats. Clean. Drain. Dry. every time you use your boat. <http://cleandrindry.mt.gov/>
- DON'T LET IT LOOSE.** Dispose of unwanted pets, aquarium plants and water, and live bait the proper way, and not into waterways. Be a responsible pet owner. dontletitloose.com/state/montana/
- DON'T MOVE FIREWOOD.** Buy it where you burn it or gather it on-site. Firewood can harbor pests and disease, and Montana depends on its healthy forests. dontmovefirewood.org
- SQUEAL ON PIGS.** If you see a feral swine, or signs of their damage such as excessive rooting or digging, report it immediately by calling 406-444-2976. <https://invasivespecies.mt.gov/montana-invasive-species/squeal-on-pigs>

CONTACTS:

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*Dennis Longknife is the Fort Belknap Indian Community's tribal representative on the Montana Invasive Species Committee (MISC), (406) 353-8348

Fort Belknap Environmental Protection Department Monthly Calendars

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 Tribal Holiday New Year's Day	2
PP1 3	4 Timesheets due Regular Council Meeting	5 UST Inspection Deadline for Comments - BLM's 20-Year Zortman-Landusky Mine Withdrawal	6 FBEPD Staff Meeting 10am via Zoom	7 Finance Committee Meeting	8 PAY DAY	9 Tribal Offices Closed in Memory of Cavanaugh Hawley (8 Hrs Adm Lx)
PP2 10	11 Regular Council Meeting	12	13 Brownfield webinar Tribal Offices closed 8-5pm due to inclement weather.	14 Finance Committee Meeting	15 Timesheets due	16
PP2 17	18 General Services Committee Mtg	19 Public Safety Committee Meeting	20 Happy Birthday Ina Nez Perce! (FBEPD Program Manager)	21 Strategic Planning (tentative) RTOC meeting 9am	22 PAY DAY	23
PP3 24	25 Tribal Holiday Martin Luther King, Jr. Day	26 Land Committee Meeting	27 Human Services Comm Meeting	28 Brownfield webinar	29	30
PP3 31	31 Executive Committee Meeting	31 Planning Committee Meeting	31 Director's Meeting	31 Natural Resources Committee Meeting		
Due to the Coronavirus (Covid-19), most FBEPD staff are still self isolating and working from home until further notice.						

Sun	Mon	Tue	Wed	Thu	Fri	Sat
PP4 7	8 Water Quality Practicing Biochemical Remediation Green Meeting Regular Council Meeting	9 Tentative BIA SPCC Walkthrough THMP Large Group Call/Mtg	10 Water Quality Tribal Commission Informational Webinar for the CWA Section 105 Tribal Guidance Revision	11 FBEPD Staff Meeting via Zoom (Time TBA) Finance Committee Meeting	12 PAY DAY	13 Early Timesheets due
PP4 14	15 Tribal Holiday President's Day	16 General Services Committee Mtg	17 Public Safety Committee Meeting	18 RTOC Conference Call - 9 am	19 PAY DAY	20
PP5 21	22 Kwik Stop closed due to building damage caused by high winds	23 Brownfields THMP - Hazard in Focus: Flooding	24 Brownfields: EPA's DDT findings on PFAS Destruction Technologies web	25 RTOC Conference Call - 9 am	26 Early Timesheets due	27
PP5 28	28 Executive Committee Meeting	28 Director's Meeting	28 Planning Committee Meeting	28 Natural Resources Committee Meeting		
Due to the Coronavirus (Covid-19), most FBEPD staff are still self isolating and working from home until further notice.						

Sun	Mon	Tue	Wed	Thu	Fri	Sat
PP6 7	8 Regular Council Meeting	9 Brownfields/TRP THMP Large Group Mtg Call DNRC and AMEM sponsored March Virtual Event and Training	10 Water Quality Managing Harmful Algal Blooms in Tribal Waters Webinar Series	11 Finance Committee Meeting	12 PAY DAY	13
PP6 14	15 Timesheets due	16 General Services Committee Mtg	17 Public Safety Committee Meeting	18 Water Quality Managing Harmful Algal Blooms in Tribal Waters Webinar Series	19 PAY DAY	20 Happy 1st Day of Spring!
PP7 21	22 Land Committee Meeting	23 Human Services Comm Meeting	24 St. Patrick's Day	25 Natural Resources Committee Meeting	26	27
PP7 28	29 Timesheets due	30 Brownfields/TRP Transfer Site Inspections	31 Director's Meeting			
Due to the Coronavirus (Covid-19), most FBEPD staff are still working from home until further notice. Fort Belknap Phase 1 began March 1st., curfew 10pm.						



Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships

JOSEPH R. BIDEN JR. • January 26, 2021 • PRESIDENTIAL ACTIONS

<https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/26/memorandum-on-tribal-consultation-and-strengthening-nation-to-nation-relationships/>

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES SUBJECT: Tribal Consultation and Strengthening Nation-to-Nation Relationships

American Indian and Alaska Native Tribal Nations are sovereign governments recognized under the Constitution of the United States, treaties, statutes, Executive Orders, and court decisions. It is a priority of my Administration to make respect for Tribal sovereignty and self-governance, commitment to fulfilling Federal trust and treaty responsibilities to Tribal Nations, and regular, meaningful, and robust consultation with Tribal Nations cornerstones of Federal Indian policy. The United States has made solemn promises to Tribal Nations for more than two centuries. Honoring those commitments is particularly vital now, as our Nation faces crises related to health, the economy, racial justice, and climate change — all of which disproportionately harm Native Americans. History demonstrates that we best serve Native American people when Tribal governments are empowered to lead their communities, and when Federal officials speak with and listen to Tribal leaders in formulating Federal policy that affects Tribal Nations.

To this end, Executive Order 13175 of November 6, 2000 (Consultation and Coordination With Indian Tribal Governments), charges all executive departments and agencies with engaging in regular, meaningful, and robust consultation with Tribal officials in the development of Federal policies that have Tribal implications. Tribal consultation under this order strengthens the Nation-to-Nation relationship between the United States and Tribal Nations. The Presidential Memorandum of November 5, 2009 (Tribal Consultation), requires each agency to prepare and periodically update a detailed plan of action to implement the policies and directives of Executive Order 13175. This memorandum reaffirms the policy announced in that memorandum.

Section 1. Consultation. My Administration is committed to honoring Tribal sovereignty and including Tribal voices in policy deliberation that affects Tribal communities. The Federal Government has much to learn from Tribal Nations and strong communication is fundamental to a constructive relationship. Accordingly, I hereby direct as follows:

- (a) The head of each agency shall submit to the Director of the Office of Management and Budget (OMB), within 90 days of the date of this memorandum, a detailed plan of actions the agency will take to implement the policies and directives of Executive Order 13175. The plan shall be developed after consultation by the agency with Tribal Nations and Tribal officials as defined in Executive Order 13175.
- (b) Each agency's plan and subsequent reports shall designate an appropriate agency official to coordinate implementation of the plan and preparation of progress reports required by this memorandum. These officials shall submit reports to the Assistant to the President for Domestic Policy (APDP) and the Director of OMB, who will review agency plans and subsequent reports for consistency with the policies and directives of Executive Order 13175.
- (c) The head of each agency shall submit to the Director of OMB, within 270 days of the date of this memorandum, and annually thereafter, a progress report on the status of each action included in the agency's plan, together with any proposed updates to its plan.

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Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships

(Continued from page 26)

(d) The Director of OMB, in coordination with the APDP, shall submit to the President, within 1 year from the date of this memorandum, a report on the implementation of Executive Order 13175 across the executive branch based on the review of agency plans and progress reports. Recommendations for improving the plans and making the Tribal consultation process more effective, if any, should be included in this report.

Section 2. Definitions. The terms “Tribal officials,” “policies that have Tribal implications,” and “agency” as used in this memorandum are as defined in Executive Order 13175.

Section 3. General Provisions.

(a) Nothing in this memorandum shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This memorandum shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

Section 4. Publication. The Director of OMB is authorized and directed to publish this memorandum in the Federal Register.



Native American Water Rights

Article shared & revised by Jeremy Walker, FBEPD Environmental Specialist | Originally published December 18, 2019

<https://waterkeeper.org/news/native-american-water-rights/>

The third in a four-part series on water law and allocation in the Colorado River Basin.

Read part 1, Prior Appropriation and Water in the West. <https://waterkeeper.org/news/prior-appropriation-and-water-in-the-west/>

Read part 2, “The Law of the River.” <https://waterkeeper.org/news/the-law-of-the-river/>

The Winters Doctrine

In Parts I and II of this series, we learned about Prior Appropriation and the “Law of the River,” or the body of statutes, compacts, agreements, regulations, and an international treaty that collectively delineate how the waters of the Colorado River Basin are allocated and managed. So how do Native American tribes and individuals fit into this puzzle?

We’ll start in 1908. The Fort Belknap Indian Reservation along the Milk River in Montana was established in 1888, as a tribal homelands. Soon after, non-native Euro-Americans begin moving upstream of the Reservation and using large amounts of water, and building diversion structures. Before long, water was-

n’t making it to the Reservation as it used to, of course hindering the tribes already severely diminished homelands. This injustice of first being relegated to a small tract of land, to then have water taken, led to the seminal court case, *Winters v. United States*.

Land without water in the arid West is inhospitable. Water rights were generally not addressed explicitly when reservations were being created, so the Court confirmed via *Winters* that water is implicitly included with reservation land. Furthermore, the courts assumed Native Americans would develop an agricultural society, similar to the Western narrative of Manifest Destiny, which inexplicably requires water.

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Native American Water Rights

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Therefore, the Winters case set an important precedent for how water is allocated to Tribes across the American West. Most broadly, the case declared the date a Reservation was established as the priority date under the Prior Appropriation system. For example, the Fort Belknap Reservation was established in 1888, which is earlier than almost all Euro-Americans began using water beneficially. This means, Tribal members on the Reservation have very senior water rights to the Milk River from 1888.

Arizona v. California

Winters declared that water was indeed included as part of the land within reservations, and how it fell within the appropriative system; however, it failed to address water quantification, and what the quantified water could be used for. In 1963, Arizona v. California began to address these aspects.

The reader may recall Arizona v. California from Part II of this series, a long court battle between the two states. The case explicitly quantified five individual tribes water rights, and also laid-out two fundamental conclusions that determine tribal water right quantification.

First, the “Practically Irrigable Acreage,” or, PIA, standard was established to help quantify how much water each reservation would receive. The standard assumes that any with a potential to grow crops if it was irrigated (e.g., not on a steep mountain or in a developed area), counted towards the quantified water. The five reservations who explicitly had their rights quantified, reserved about a million acre-feet of water for about 135,000 irrigable acres.

Especially on large reservations, such as the Navajo Reservation, the PIA standard can lead to a hefty sum of water. While not in the Colorado River Basin, a recent example is the Wind River Reservation in

Wyoming, who recently had over 500,000 acre-feet of water rights quantified. To put that amount in perspective, the state of Nevada is only allocated 300,000 acre-feet a year from the Colorado River!

Recall the necessity of having a “beneficial use” in order to obtain a water right. The amount quantified is tied to the primary purpose of the reservation – which is often to “serve as a homeland,” and may sometimes explicitly address fishing or agriculture. In other words, if agriculture is a primary purpose of the reservation, more water will likely be allocated via the PIA standard.

This brings us to a second major interpretation of Arizona v. California. Even though the quantification of water rights is based on use, tribes have, with only a few exceptions, been able to use their quantified water as they see fit. For example, tribes may decide to leave water in a river for fishing rather than divert it to additional agriculture, and that is permissible by precedent.

Another unanswered legal question however, is the right for tribes to sell their quantified water, in particular undeveloped water, to non-tribal members for compensation. Any novice water

policy wonk in the Colorado River Basin should pay attention to this, as it is only a matter of time before it becomes a necessary conversation.

How much water are tribes actually using?

Less-than-diligent is the kindest way to describe the urgency in which the federal government has addressed tribal water rights. Only five tribes have quantified water rights, and another 14 have undergone settlements to have water quantified. Side note – negotiated settlements are often more attractive than litigation for tribes, even though they generally include less “wet” water. This is because they are most often less expensive, take less time, and some-

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Native American Water Rights

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times involve money to actually develop water.

In December 2018, the Bureau of Reclamation and the Ten Tribes Partnership came out with the Colorado River Basin Ten Tribes Partnership Tribal Water Study. It states that collectively all 29 federally recognized tribes in the Colorado River Basin have rights to 2.8 million-acre-feet each year. This is a massive amount of water – the same amount as the state of Arizona. As these rights continue to be quantified, it will come out of each state's water allocation – leading to a tricky situation for water managers on an already over-allocated system.

One conclusion reached from the study is: “none of the Partnership Tribes currently has the basic infrastructure or legal and administrative flexibility to fully use or realize the full economic value of its reserved

water rights,” despite 50 years of time since *Arizona v. California*. Many tribes also face water insecurities, despite having some of the most theoretically senior rights in the basin.

Most fundamentally, this highlights how little support tribes receive from the federal government and the states. The first massive irony that comes to mind, is the state of Utah pushing for the Lake Powell Pipeline to bring water to St. George, a predominantly affluent white community, whose current water consumption rates are among the highest in the country. States should instead be working with tribes to quantify and best utilize their water rights.

More Articles and interesting water related issues can be found at <https://waterkeeper.org/news/native-american-water-rights/>

Confluence for Climate Education: Aaniiih Nakoda College Addresses Our Changing Environment

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the students. As the community gathered to stop the fire from reaching the sun dance grounds, the wind changed direction and the grounds were no longer in the fire's path.

A recent fire in the short grass prairie ecosystem a few miles from the ANC campus also became a learning experience for the students. With the guidance of Lee Blackcrow, the tribal fuel management officer, they set up a long-term monitoring site to compare the unburned vegetation with that which had succumbed to fire. Through time they will record the restoration of the burned zone. Students used one-meter quadrants in both areas, collected the biomass, took humidity readings using a field probe, and collected soil samples for analyses. Subsequent students in the class will continue this project. The regeneration of prairie ecosystems after a fire has been studied very little and the effects that climate change has on restoration of the grasslands around Fort Belknap are unknown. Having read and studied the Fort Belknap Wildland Fire Management Plan, students have become active participants in monitoring fire on the reservation and are involved in the ongoing discussion concerning all aspects of it. We know the fire season is extended, and fires are hotter and more destructive. This knowledge helps prepare care-

takers to be able to step up for future generations.

OUT OF AFRICA

What effects will the climate crisis have on the land-mass of the Fort Belknap reservation? How will plants and animals adapt? Are there similar environments elsewhere that are being monitored for the effects of increased temperature changes? The environmental science students at ANC have long had research experiences in both the laboratory and field components of their courses. Many now have international experience after being able to conduct research in the arid lands of Namibia in southwest Africa. Understanding this far away country is relevant to studying the buffalo pastures of Montana and the effects of climate change on large ungulates. Studies have shown changes in their diet and size, which demonstrates changes in the very ecosystem in which they live. The short grass prairie is at ANC's doorstep and the buffalo pastures just a couple of miles from campus.

Dan Kinsey, chair of ANC's Environmental Science Department, has led students in conducting buffalo pasture research here on the reservation while carry-

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Confluence for Climate Education: Aaniiih Nakoda College Addresses Our Changing Environment

(Continued from page 29)

ing out similar work at various study sites in Namibia. As an arid country, Namibia has been proactive in climate change research to mitigate global temperature rises in an already stressed environment. How have the grasslands there been affected? How have the large ungulates adapted to the increased rise in temperature? With the help of a five-year NSF grant, students and faculty compare these two environments, one just beginning to be affected by increased temperatures and the other already adapted to a hotter environment.

The management of both has a lot to do with carrying capacity, which is determined through field work. ANC students are using similar methods and techniques to make their comparisons. Quadrants one meter square are placed on the ground and all vegetation is clipped away, put in paper bags, and taken to a field laboratory where wet and dry measurements are made. This biomass data is used to calculate the carrying capacity for the area and the stocking rate for animals. Such data can then be used in management plans.

As the students travel throughout Namibia, they meet with many Indigenous peoples, becoming immersed in their languages and cultures. They also meet with various scientists and government officials, including the minister of environment, Teofilus Nghitila, who has helped Namibia become a world leader in implementing wildlife programs adapted to climate change. Through this experience, ANC students become stewards of tribal lands, preparing them to help implement practices and programs that will mitigate climate change.

WATER IS LIFE

If the climate crisis can have disparate effects on the landmass of the reservation, what might such changes, especially the increased rise in temperatures, have on water resources? How can we monitor such changes in planning for the future? As we all know, “water is life” and as such needs to be safeguarded. Students are serious about this responsibility as the Milk River is the northern most boundary of the Fort Belknap reservation. The Winters Doctrine of 1908 established the rights of the Fort Belknap Indian tribes to an allotted amount of this water and a guarantee of its quality. Here, the effects of increased

temperatures due to climate change can have deleterious effects on this invaluable resource. The headwaters of the Milk River are miles away, high up in the “backbone of the world,” but the glaciers have greatly decreased in size or disappeared altogether.



A central feature of ANC's environmental science program is investigating how climate change is affecting buffalo pastures and large ungulates.

ANC students have been monitoring the 23 miles of river as it passes reservation lands, collecting samples of the benthic macro invertebrates and periphyton. The organisms collected are brought back to the laboratory and sorted and identified, after which the data is analyzed. Split samples are then sent to Rhithron Associates, Inc., a private environmental laboratory in Missoula, Montana, where they are tested for quality control and further analysis. The resulting matrices collected from these organisms indicate the health of the river as it passes through the reservation. ANC students have been carrying out this long-term monitoring project for over a decade and the information gathered is a harbinger for climate change events. Increased water temperature will affect life in the river; some organisms will adapt and survive while others will die. Those that can tolerate a warmer temperature might be the disease-causing ones, like coliform bacteria. Results from continued monitoring of this linear oasis will help to guide tribal health decisions on the safety of community drinking water.

At the southern end of the reservation, home to the Little Rocky Mountains, a different ongoing mitigation crisis looms and has turned into a reservation-wide problem—heavy metal contamination. The emphasis on water has been a long-standing concern for the tribes and community, so much so that ANC established the Nic? Mni (Water) Center to monitor heavy

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Confluence for Climate Education: Aaniiih Nakoda College Addresses Our Changing Environment

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metals coming from a defunct cyanide gold mine adjacent to the reservation's southern border. Summer students collect samples from these impacted streams as they flow onto the reservation.

Through diligent field and laboratory work, ANC students are seeking to discover other threats to the Fort Belknap community's fresh water source. Water temperature increases brought about by climate change have expanded the ranges for some insects. Normally the anopheles mosquito, which can carry the malaria parasite, stays in hotter, moister climates. Montana's colder climate with snowy winters precludes finding it in abundance in these environs. But global temperature increases could expand the region where these disease-carrying insect vectors are found.

Another, more immediate concern is West Nile Virus, also carried by mosquitoes. Through a long-term research project, ANC's environmental science and allied health students track and test mosquitoes. In the laboratory, they have identified *Culex tarsalis*, a bird-feeding mosquito that is the vector for the disease. They process samples employing a polymerase chain reaction that amplifies the virus and then test to see if it is positive. Split samples are sent to a laboratory in Helena, Montana, for quality control and then to the CDC for global release, as West Nile Virus is a reportable disease that can cause human death. By necessity, this is a long-term program due to the potential public health threat to the Fort Belknap community. ANC students' efforts in trapping and testing mosquitoes enable close monitoring and the implementation of community alerts and safeguards. How global warming will affect this insect-borne disease is not known, but the continued surveillance will go a long way in determining how we respond.

GROWING OUR OWN

Climate change is multifaceted and interconnections abound. Traditional ecological knowledge has a deep impact on how well we respond to the current climate crisis. Holistically, Aaniiih Nakoda College monitors natural resources on the reservation and consults with elders to help guide the institution. Manny Morales, ANC's Tribal College Extension Program director and manager of the college's demonstration farm, recognizes the climate change challenge and seeks

to help move the community towards becoming more food secure and self-sufficient. The Fort Belknap community lives in a food desert and chances are healthy fruits and vegetables will become harder to obtain if increased drought and scarce water inhibit crop growth. In being proactive, Morales is educating the locals to become gardeners themselves by providing the tools to get them started. He has added bees to the community garden for better pollination of his crops and for creating a source of honey.



Another major threat to the Fort Belknap community's water is cyanide tailings from a now defunct gold mine. Here, ANC students collect samples for testing at the college's Nic? Mni (Water) Center.

Moreover, the newly developed "Grow Our Own" nursing program, headed up by Brigit Hemmer and Alicia Werk, has received a USDA Tribal College Extension Program Special Emphasis grant to improve community awareness of nutrition, healthy eating, and growing their own food. Such guidance will be located on webpages, the college's KGVA radio station, newly developed apps, and local newspapers. These efforts will go a long way to prepare for an uncertain future of probable food scarcity. *** Aaniiih Nakoda College students are being prepared for the uncertain future that is climate change. They are contributing to sustainable programs that can help mitigate disruptive events on tribal lands which can affect the environment, water, and human health. Beginning with our youth at the White Clay Immersion School who have taken it upon themselves to educate the community on the many facets of climate change, to students actively engaged in research that contributes to the protection of our natural resources, this threat will be met by adaptation—just as Indigenous peoples have been doing for thousands of years.

Liz McClain, PhD, is a biologist who has taught at Aaniiih Nakoda College for over 25 years.

Fort Belknap Indian Community
ENVIRONMENTAL PROTECTION DEPARTMENT

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Climate Change: Little Rockies Forest Resilience Project

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