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I would like to address as many parts of the Crow Butte resources December 2017 environmental assessment as possible. Given what I feel to be an inadequate amount of time to dissect a document as complex as the Crow Butte resource December 2017 environmental assessment as well as any related supporting documentation, I feel strongly there is a great need for further data collection and analysis and water quality monitoring reports in relation to the cumulative water impacts and environmental issues that have been skimmed over in the December 2017 CBR environmental assessment. I feel as though the reports and corresponding citations included in the environmental assessment are grossly outdated and incomplete. Possibly the most concerning is Cameco resources also known as Crow Butte resources history of in situ leach mining at the Highland Ranch in Wyoming. According to the website [wiseuranium.org](http://wiseuranium.org) in situ leach mining decommissioning projects USA, the nuclear regulatory commission and Cameco Inc. a.k.a. Crow Butte resources. Cameco has left an undesirable legacy of water and soil contamination at their Highland in situ leach mine. On March 10, 2008 the Wyoming Department of Environmental Quality issues Cameco Inc. a violation notice for failure to conduct concurrent reclamation and follow permits. On June 26, 2009 Cameco submits restoration reports for ground water quality monitoring for approval to the NRC. NRC staff identifies pumping at several perimeter wells. a.) wellfield C was in production for 10 years. Cameco's plan states 1 to 3 years production time. NRC Note: "extending production time has become routine practice and is non-compliance." b.) well field C has been in restoration for 10 years. 2007 annual report states well field ground water quality at similar MCL as the end of mining phase. The permit states stabilization and restoration will take five years. c.) wellfield E has removed 100% of uranium and slowed to the maintenance levels delaying rate of completion. They are in noncompliance of the permit. Wellfield A was in production from January 1988 until July 1991 restoration was from July 1991 to October 1998.

On May 22, 2013 Cameco applies for relaxed ground water standards and alternate concentration levels. As of today uranium concentrations in the water remain highly elevated. This raises questions about how good Crow Butte resources housekeeping really is. Crow Butte resources has described in detail in their 2017 EA a restoration plan that is one in the same as the Highland Ranch Wyoming

restoration plan that did NOT work. Due to the sparsity of water quality information available in Dawes and Sioux counties. (whereas the rest of the state has plenty of data.) I am concerned about the long-term cumulative effects of groundwater contamination beyond the foreseeable future. Based on the fact that Crow Butte Resources owns the only class three wells in the state of Nebraska in the amount of 5100 Wells as of October 1, 2016 as well as two out of three permits issued in Nebraska for class one injection wells. I believe the scope of the Marsland expansion environmental assessment to be too small for all the above mentioned reasons. The Marsland expansion area environmental assessment only addresses the small 4622 acres of the expansion. It does not take into account the cumulative long-term impacts of the entire CBR uranium operation. According to the environmental assessment environmental justice section "environmental Justice analysis was not necessary as the population data from Dawes County Nebraska suggests a mainly white population." However under section 5.3 cumulative water impacts the NRC describes evaluating a 50 mile radius around the MEA which includes 3 major watersheds; The Hat Creek the Niobrara River and the white river. NRC goes on to say these three watersheds could potentially be impacted by past present and reasonably foreseeable future actions.(P.177, Marsland Expansion, 2017 EA) The Pineridge Indian reservation and other surrounding communities were not included in the assessment because they do not lie within Dawes County Nebraska which contradicts the 50 mile study area set up by the NRC as per the EA. Also the Pine Ridge Reservation has the largest population and the longest living population in the area in the 50 mile radius. The city of Chadron Nebraska also within the 50 mile radius and the second largest population closest to the MEA also was not included in the environmental assessment. Current water monitoring data for Pine Ridge, Chadron, Dawes, and Sioux counties although sparse at best suggests elevated levels of uranium. One report suggests private wells in the Chadron area need testing for the presence of elevated levels of uranium. According to the University of Nebraska the Bruel aquifer likely has a recharge station on the Pineridge I do not see any current university of Nebraska studies mentioned in the MEA which is odd considering the conservation and survey division of the University of Nebraska Lincoln IS the agency designated by state to investigate and interpret the geology, hydrology, and soils, and GIS modeling systems in the state of Nebraska. The city of Denver draws a portion of their water from the Bruel aquifer for domestic use. I do not see this mentioned

under cumulative water impacts in the MEA 2017 EA. According to the MEA EA states it would take 1,000 years for migration of contaminants to contaminate surrounding aquifers. Data from current legacy mines / UMTRA sites suggests these contaminated aquifers will not be clean within the foreseeable future let alone within the 100 year maximum time limit allowed by law for natural flushing of contaminants of concern. As of today there are several examples of contaminant plumes migrating and affecting surrounding communities in the vicinity of legacy mines. According to the Nebraska state groundwater monitoring report 2016, pages 7 through 12 cumulative impact to ground and surface water for the state of Nebraska: 4,441 monitoring wells were measured statewide. 73% of those wells saw a decline in water levels 53% of the wells tested saw a decline in water levels greater than 1 foot. The statewide average was a 1.8 foot decline. Box Butte County just below Sioux County had the largest decline. There is no available data for Sioux or Dawes county. What is the long term affects the MEA plus the existing license crow butte areas would have on surrounding populations. How much water all together is being pumped by CBR? On October 31, 2007 a finding of no significant impact to amend the current license at the CPP main plant and increase the water flow from 4000 gallons per minute to a maximum increase by October 2006 of 9000 gallons per minute. for an appropriate cumulative impact study all permits and licenses areas should be taking in to consideration. According to the Nebraska Department of environmental quality The stream biological monitoring program 2015 several areas in and around Dawes county are under advisory for contamination(fish are in danger?unsafe to consume) and fish kill zones further evaluation is needed.Enrolled tribal members of the Pineridge have inherit hunting and fishing rights in Dawes county which is also noted in the EA if there are high levels of contamination in surface streams and rivers in Dawes county that affects the people of Pineridge. They share those same rivers such as the white river. Degration of the white river also economically affects tribal surface waters in an adverse way. The Oglala Sioux tribe does not have the funding or the staff to migigate agricultural or mining chemicals out of their waters. I do not see this mentioned anywhere in the environmental assessment for the MEA. There needs to be further evaluation and a distinction between mine related contamination and agricultural related contamination in the Dawes and Sioux County areas that could affect surrounding areas in the long term. I do not see any long-term cumulative impact studies even though the crow butte mining operation

has been in the Nebraska area since the 1980s. The MEA EA states. 5.2 page 176 cumulative impact on soil the MEA is located in a region where the geology is relatively undisturbed by industrial activity is contamination of the soil has not been an issue in the region because most of the area is rangeland and cropland any current level of soil contamination would likely be from agricultural chemicals, pesticides, and herbicides although that has not been quantified the NRC staff does not expect conditions to be any different by the proposed action. The people want to see long-term cumulative impact studies and successful surface and ground water restoration before more expansion permits are granted. The surrounding communities have a right to be informed and be a part of all aspects of the permitting and restoration processes. I find it disturbing and missed leading that Crow Butte resources produces 2,000,000 pounds of tri-uranium oxide per year under their current license the Mars land expansion area would add an additional 553,000 pounds of tri-uranium oxide or yellow cake per year. How can the manufacturing of 2 1/2 million pounds of uranium from a mine that's been in production since the 1980s have no significant impact on human health and the environment? CBR excursions of lixiviant at ISR facilities can contaminate adjacent aquifers with radioactive waste and trace elements mobilized by the uranium recovery process. Basal Chadron aquifer overlying Brule aquifer, Arikaree aquifer. Page 30 MEA environmental assessment December 2017. How would the public know if there was an excursion at an ISR facility if they are not testing for petrochemicals found in lubricants? what about benzene, toluene, and xylene? There is no mention of arsenic testing there are large information gaps of contaminants of concern. I do not see any studies being conducted on the long term effects of radon 226 to human health and that environment in this environmental assessment. we the people want accurate inclusive long term causes effect studies and we need them now. Their are extremely high cancer rates on the Pineridge Indian reservation yet no long-term health studies have been conducted. cancer clusters have been detected in the vicinity of abandoned uranium mines close to reservations. Current and ongoing health studies on the wind river Indian reservation in Wyoming and the Navajo nation in New Mexico link uranium mining and contamination in their water soil and air to high cancer rates and cancer clusters current studies are being conducted in Wyoming on cancer clusters where high levels of radon 226 are present in the environment from mining tailings piles.

According to the Nebraska heritage center and Nebraska fish and wildlife current terrestrial studies suggest an abundance of Buffalo Berry shrubs chokecherry shrubs willows and cottonwood trees. Again these are all traditional plants actively being used by the people of Pineridge. The environmental assessments response to impeding on culturally significant plants in Dawes County is "these plants cover a large area of the state of Nebraska." I don't think that statement is being inclusive of a sovereign nations inherent hunting, fishing, gathering rights. The entire state of Nebraskas terrestrial plant population is not relevant. It goes far beyond the scope of the environmental assessment. And the 1990 plant study provided in the environmental assessment by CBR is grossly outdated. I find I do not have enough time to address endangered animal species populations that live within Dawes County or the current MEA.

The stated need for this project is energy independence. However when you take a look at export notices you find that croaky resources process is there 2,2,000 pounds of yellow cake then shipped it to Cameco resources in Canada then it is sent off to countries such as Japan the Netherlands and France for further processing. The NRC also states it has no financial ties to Crow Butte resources. If our government or the nuclear regulatory commission has no interest in this uranium mining operation how is that creating energy independence for America. CBR exports nearly all of their yellowcake to other countries for that specific countries own domestic nuclear power needs. How does this project benefit the people of region went only 12 jobs will be created. How does this project benefit the people of the region when CBR acknowledges farmers and ranchers water levels in their private wells are expected to drop significantly and they will be paying significantly more for their own water use needs. The Oglala Sioux tribe of the Pineridge Indian reservation one of the poorest nations within the borders of the United States stands to gain nothing economically beneficial to their people they only stand to lose more of their inherent rights by this proposed action. I also see in the environmental assessment Supporting documents that I research on my own. Crow Butte resources generously donated to the Crawford fire department. Crow Butte resources also bought the Crawford nursing home all new furniture. Crow Butte resources has also admittedly paved rural roads so as to keep radioactive dust down. roads for rancher

CBR barely mentions the permit to dispose of 60 cubic tons of byproduct uranium Waze at the white mesa mail in Blanding Utah better known as the

controversial bears ears. I believe the people of the Navajo nation, the Ute nation and the community of Blanding Utah would like to be more clearly informed on what and how much of what is being dumped on their land. For all these reasons I ask for a no action decision on the Marsland expansion area.

NOTE: sorry for the inconsistency in text and abbreviations this was done on a smart phone. For the sake of clarification MBA is Mars land expansion area EA is environmental assessment CBR is crow butte resources