



RCE
SASKATCHEWAN

REGIONAL CENTRE
OF EXPERTISE
ON EDUCATION
FOR SUSTAINABLE
DEVELOPMENT

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ON EDUCATION FOR
SUSTAINABLE DEVELOPMENT

ACKNOWLEDGED BY



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June 6, 2016

Honourable Herb Cox
Minister of Environment
Room 38, Legislative Building
2405 Legislative Drive
Regina, SK, Canada, S4S 0B3
env.minister@gov.sk.ca

Dear Minister Cox:

RE: Environmental Impact Study: Yancoal Southey Project - 2016

The United Nations University Regional Centre of Expertise on Education for Sustainable Development in Saskatchewan (UNU RCE-Saskatchewan) is part of a United Nations University initiative to support the *Decade on Education for Sustainable Development* (DESD; 2005-2014) and the *Global Action Programme on ESD* of UNESCO (2015 to present). As a UNU initiative, it also seeks to support the UN's sustainable development agenda including the recently approved UN *Sustainable Development Goals* (SDGs) that will guide global development until 2030. Canada has committed to all of these initiatives as a formal signatory to the DESD, as a member of UNESCO (since 1946), and as one of 193 countries formally committing to the SDGs in September, 2015. UNU RCE-Saskatchewan seeks to transform education for sustainability in our region and focuses on research into formal, non-formal and informal learning methods and practices to build capacity of Saskatchewan communities towards the goal of a sustainable future. RCE Saskatchewan provides a local to global research platform linked to an international network of over 146 UNU acknowledged RCEs worldwide¹.

The UNU RCE Saskatchewan has nine main thematic areas in education for sustainable development (ESD) that have been identified as priorities for our bioregion:

1. Climate Change
2. Health and healthy lifestyles
3. Farming and Local Food Production, Consumption, and Waste Minimization
4. Reconnecting to Natural Prairie Ecosystems
5. Adapting and Bridging Cultures for Sustainability
6. Sustainable Infrastructure including Water and Energy

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See <http://www.rce-network.org/portal/rces-worldwide>

7. Building Sustainable Communities
8. Pre-K to grade 12 Education for Sustainable Development, and
9. Youth

In addition, since its formation in 2007, RCE Saskatchewan has placed specific emphasis on its cross-cutting theme of *sustaining rural communities*² with a particular focus on a *sustainable livelihoods approach* (SLA) in these communities.³ The RCE's focus on education is broadly understood to include not only formal education, but also public education including through public consultation and public policy processes.

As you are aware Mr. Minister, Yancoal Canada Resources Company Limited (Yancoal) is engaged in the evaluation and development of the Yancoal Southey Project located 60 Kilometres north of Regina. On April 13, 2016, a Yancoal Environmental Impact Study (EIS) was made publicly available with the Government of Saskatchewan providing communities until June 6, 2016, with the opportunity to review and be asked to respond to the *Department of Environment-Environmental Protection and Audit-Yancoal EIS*. Due to the educational mandates of the UNU RCE initiative and RCE Saskatchewan (as outlined above), the proposed project occurring within the RCE Saskatchewan region, the substantial sustainability impacts of such a project, and in response to the invitation of the Ministry of Environment, RCE Saskatchewan is putting forward this submission to the Department's request.

The UNU RCE Saskatchewan was an observer at recent public consultations held by Yancoal Canada and community meetings throughout the region and determined from (1) those discussions, (2) the collected concerns of various constituent groups, and, (3) the review of the EIS document itself that:

1. A project of such magnitude warranted a far more complex EIS. It was brought to the attention of the UNU RCE Saskatchewan that there was growing community and regional concern regarding the incompleteness of the Yancoal EIS, which did not take into detailed consideration the impact the Yancoal Southey project would have on the upper and lower Qu'Appelle watershed and therefore, the aforementioned UNU RCE thematic area of "sustainable infrastructure including water and energy". An appropriate level of scrutiny and public participation would follow the stricter Federal Government standards, which this project would have been subject to prior to 2012 (Please refer to Appendix A.1).
2. The philosophical stance of the project and its understanding of what constitutes appropriate development is outdated in light of: (a) substantive scholarly literature on sustainable development (including a duty to consider a wide range of options and opportunity costs when considering wise resource use [such as water in this case] along with the precautionary principle) and the Canadian Government's commitments to sustainable development (noted above); (b) the current era of rapid climate change with substantive impacts on the Canadian prairies along with recent Canadian commitments made at the Paris Climate Change Conference (UNFCCC COP 21) in November 2015 to address these issues; (c) potential degradation of existing agricultural livelihoods and the natural environment (including potential harm to species at risk in the area); and (d) a failure to meet several existing potash industry standards in Saskatchewan and comparable project costing nor to make any explicit legal commitments to market thereby failing to promote healthy producer prices and maximization of Saskatchewan's resource royalties (Please refer to Appendix A.2); and that,

² See *Proposal to Establish a Regional Centre of Expertise on Education for Sustainable Development in Saskatchewan, Canada*, p. 14. Available at: www.saskrce.ca/files/RCE_Saskatchewan_Documents/IntroDocs/SK_RCE_Proposal_Final_Oct_15_2006.pdf

³ According to Robert Chambers and Gordon Conway, "[a] livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base"; cited in Ian Scoones, *Sustainable Livelihoods and Rural Development* (Rugby, U.K.: Practical Action Publishing, 2015), p. 6.

3. The project as articulated in the Yancoal Southey EIS did not include inclusive research examining how the construction of the mine and its continued operation might affect the social and cultural aspects of the communities including the potential loss of social capital and other cultural assets. (Please refer to Appendix A.3)

It is the understanding of the UNU RCE Saskatchewan that many constituent groups have recommended that the Government of Saskatchewan commission a comprehensive independent Yancoal Southey Project environmental impact study that would be in accordance with Section 14(1) of the *Saskatchewan Environmental Assessment Act*. RCE Saskatchewan strongly agrees with this recommendation. It was further suggested that a decision on whether the project should proceed needed to be reserved until such a study was completed and overall concerns raised are suitably addressed by Yancoal Canada. RCE Saskatchewan also endorses this recommendation.

As the UNU RCE Saskatchewan is directly affiliated with the University of Saskatchewan, the University of Regina, Saskatchewan Polytechnic, and Higher Education institutions throughout the world affiliated to other RCEs it is positioned well to direct and/or assist in a future independent comprehensive study of the Yancoal Southey project that draws on this scholarly input, if such a decision is made to do so. RCE Saskatchewan would also be able to draw upon the expertise of its community partners in this regard.

We will continue to monitor the assessment process of the Environmental Impact Study – Yancoal Southey Project and share this submission with our RCE partners and members. We are cc'ing Minister Ralph Goodale as a federal minister from Saskatchewan and Minister Catherine McKenna, Minister of the Environment and Climate Change, in light of our reference to the Federal Government's international commitments in the area of sustainable development (cited at the start of this letter) that might have a bearing in relation to this project and/or potential future legislation/policy development by the Government of Canada.

We look forward to engaging with the Ministry of Environment to assist wherever possible in the future.

Sincerely,



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Cc:

The Honourable Brad Wall, Premier of the Province of Saskatchewan
The Honourable Don McMorris, Deputy Premier of the Province of Saskatchewan
The Honourable Bill Boyd, Minister of the Economy, Minister of Energy and Resources
The Honourable Catherine McKenna, Minister of Environment and Climate Change
The Honourable Ralph Edward Goodale, Minister of Public Safety

Appendix A

Section 1: The Federal government revisions of Canadian protection laws⁴

In 2012, under pressure from industry, the Government of Canada replaced the Canadian Environmental Assessment Act (CEAA) with the less stringent CEAA 2012 that seriously reduced the capacity to conduct thorough environmental impact assessments necessary to avoid potentially disastrous effects on environment, communities and the long-term economy. The new law (enacted in Omnibus C38) lowered the standards so that more proposals could avoid a lengthy Federal EIS. As this was part of omnibus legislation the revisions to the Act did not receive the typical parliamentary and parliamentary committee oversight that these substantial legislative changes warranted nor the resulting opportunity for public scrutiny and input. Projects that did not require federal EA reviews were offloaded to provincial government departments that did not have to follow any clear national guidelines. These actions effectively limited the types of impacts that are considered in assessment, restricting the public's moral, if not legal, right to voice their opinion and participate in EA processes⁵.

At a time when Canada should be stringently protecting the environment to ensure long-term sustainability that would provide economic growth, resilient ecological systems, and healthy communities, this downgrading of our environmental protection laws has seriously eroded public trust, led to increased conflict between citizens groups, industry, and government, and has led to lawsuits and public protests.⁶ The downgrade in environmental protection also continues to assume that there is a necessary trade-off between environmental protection and economic growth, something that over 30 years of scholarly research and government policy in the area of sustainable development clearly refutes.

Because the application to proceed with the Yancoal Southey project was submitted after the Canadian Environmental Assessment Act (CEAA) change, the proposal was not subject to scrutiny under Federal examination. If application had been made prior to 2012, the Yancoal Southey project would have been subject to a more stringent Federal review that a project of this magnitude clearly warrants. A more stringent review also seems warranted in light of the past record of Yancoal in relation to environmental issues related to its activities in other jurisdictions, especially in China (see Selected References to Pollution Releases by Yancoal Operations in China (below)).

Section 2: Development must focus on sustainability, not on merely damage control

RCE Saskatchewan believes that sustainability must be at the centre of future development during the coming era of increasingly unpredictable climatic and environmental variations. Instead of conducting environmental assessments based on the idea of trying to reduce destructive elements, the RCE puts forward the view now adopted by many jurisdictions around the world that sustainability assessments of development are preferable.

⁴ Johnston, A., 2015. Canada's Track Record on Environmental Laws 2011-2015 Retrieved 2016 May 27
[https://d3n8a8pro7vnm.cloudfront.net/envirolawsmatter/pages/281/attachments/original/1444781049/WCEL_EnviroLaw_report_med1pg_fnl2_\(sm all\).pdf?1444781049](https://d3n8a8pro7vnm.cloudfront.net/envirolawsmatter/pages/281/attachments/original/1444781049/WCEL_EnviroLaw_report_med1pg_fnl2_(sm all).pdf?1444781049)

⁵ See <http://wcel.org/resources/environmental-law-alert/working-towards-next-generation-environmental-assessment-law-canad#>

⁶ See [p://wcel.org/resources/environmental-law-alert/working-towards-next-generation-environmental-assessment-law-canad#](http://wcel.org/resources/environmental-law-alert/working-towards-next-generation-environmental-assessment-law-canad#); http://business.financialpost.com/news/energy/environmental-assessments-mandated-by-ottawa-may-delay-natural-resource-projects?_lsa=d28d-647f;

A sustainability assessment examines the ways in which projects can make a positive contribution to both ecological systems and to communities simultaneously. Researchers around the world are placing increasing attention on this far more proactive approach⁷. Until such time that sustainability assessment becomes the accepted standard, it behooves the RCE to nevertheless adopt these principles when considering the environmental impacts of industrial projects. Ultimately sustainable development reflects a long-term commitment to the well-being of citizens, a goal that is implicit in democratically accountable systems of government.

In assessing appropriate and optimal forms of development, the proposal and its assessment fail to review the opportunity costs for the resources that would be employed in the proposed development. This would involve, for example, examining the potential value of the proposed water used in the mine's development and comparing it with other livelihood uses for the water, in the current year and into the future. Such analysis would also compare the distribution of the benefits involved (i.e. are the economic and other benefits primarily captured by Saskatchewan residents and in a way that creates greater equitable distributions of wealth and resource access among citizens?). In the case of the proposed project, the annual freshwater use approximates the annual use of the city of Regina. This water is an increasingly valuable resource, especially with decline of glacial melt in Alberta that ultimately flows into Saskatchewan and other impacts of climate change creating weather variability and drying. Other livelihood uses for this water need to be comparatively assessed to ensure a "best use" of the water involved for Saskatchewan citizens. What is the economic and non-economic value of this water for sustaining existing livelihoods and developing new livelihoods? This needs to include the value of this water for agricultural irrigation (with data readily available from Alberta and other jurisdictions) as well as requirements to sustain the drinking water needs of cities and towns drawing upon Buffalo Pound. Both of these uses require freshwater. The value of this water needs to be assessed particularly in future years where there are pronounced periods of drought.

In addition, the Government of Saskatchewan needs to take a precautionary approach in relation to the water licenses it offers to this and other potash mines and intensive industrial users of water. Given what is known of climate impacts on the prairies due to climate change along with many unknowns, it, on the surface, seems unreasonable to offer guaranteed supplies to intensive water use by large industries potentially against the interests of individual citizens and the water needs of small, medium, and large sized communities (such as the city of Regina). These industries should be required to manage environmental risks associated with water shortage analogous to the risks managed by farmers and ranchers who have to internalize these costs.

Without having gathered substantive qualitative data from residents who currently own the lands on and near where the mine is operating, it is unclear that adequate data has been gathered of potential species at risk in the area. Informal discussions with local residents suggested potential species at risk very close to the proposed mine site.

Lastly, because this is the first and only solution potash mine ever developed by Yancoal, it is important that the Government of Saskatchewan pay particular attention to whether the company is employing standards equal to existing potash mines in the province along with appropriate planning and costing of its operations comparable to other mines. Because this is the company's first such mine, it is arguable that the Government of Saskatchewan would expect higher standards with increased monitoring now and into the future. A cursory comparison of the Yancoal proposal with other existing potash mines suggested lower, rather than higher standards. The Government ought to ensure that appropriate project costing guarantees are in place to meet these higher standards. Finally, because Yancoal is a state enterprise with potential interests diverging from resource firms traditionally aimed at profit maximization (and possibly reflected in its decision not to join

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Gibson, R.B., 2006. Sustainability assessment: basic components of a practical approach. Impact Assessment and Project Appraisal 24.

Canpotex), special arrangements may also be needed to ensure the Province of Saskatchewan receives its appropriate share of resource royalties comparable to other existing firms (vs. a loss of revenue due, for example, to transfer pricing).

Section 3: Incomplete research methodology in the EIS that ignores socio-cultural impacts and sustainable lifestyles and livelihoods within communities.

According to the Environmental Assessment Act of Saskatchewan, all projects that may have significant environmental implications must be approved by the Minister of the Environment. Significant implications include,

- Causing widespread public concern because of potential environmental changes

- Having a significant impact on the environment or necessitate a further development which is likely to have a significant impact on the environment⁸.

Embedded in these definitions is the notion that local knowledge and experience along with criteria of evaluation of a proposed development informed by local needs and aspirations are important in judging a project's overall merits. In this project, the Havelock farmers living on the proposed site of the mine should be considered as primary stakeholders as they are most likely to be affected by the development.

Two months of research on the socio-cultural implications of the mine proposal has led to the emergence of several key issues that must be addressed to ensure the sustainability of people living on the site of the proposed mine.

1. EIA inadequate consideration of socio-cultural conditions

The Yancoals Southey EIA did not adequately address the ways in which social and cultural dimensions of rural life may be altered by the mine.

While the Yancoals Southey EIA includes the "Annex V: Cultural Environment Baseline Report", this document provides static summaries of quantifiable facts on regional geography, history, and archaeology. The final section of the report ostensibly examines the socio-economic environment, but owing to rudimentary methodology, reliance on secondary data sources⁹, and sparse use of face-to-face interviews, the report provides only a limited description of historic cultural practices and current conditions. The report fails to weave an ethnographic baseline narrative that articulates the experience of "being a farmer" in a vibrant community and how the mine's alteration of the physical landscape and social interconnection will affect numerous communities and agricultural livelihoods.

2. Breakdown of social trust

Ethnographic interviews and study group sessions with Havelock residents demonstrates clearly that the company has not built sufficient social trust and lacks the confidence of many in the Havelock community. Considering that Yancoals requires ownership of or access to land currently owned by Havelock area farmers, the company's failure to engage these primary stakeholders is cause for concern and demonstrates a failure to engage in best practice for mining companies.

Interviews with local residents show that the strategies that Yancoals employed for community engagement had

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Government of Saskatchewan, Environmental Assessment Branch. "Environmental Assessment in Saskatchewan," June 2014. <http://www.environment.gov.sk.ca/EnvironmentalAssessmentProcessGuidelines>

⁹

See page 43 of "Environmental Assessment in Saskatchewan" cited above.

the effect of building tension between proponents and opponents of the mine. Without sufficiently consulting the Havelock farmers, and prior to receiving environmental approval to move forward, Yancoal began promoting the economic benefits of the mine to local business associations to raise support. The premature move led to conflict between business community supporters and the Havelock farmers who were seen as being "anti-progress" and set the stage for animosity and division between proponents and opponents of the project. To act in this way prior to receiving environmental approval also places inappropriate pressure on the Ministry of Environment to approve such a project despite its potential environmental inadequacies when objective criteria of assessment are applied.

The company's lack of early and ongoing engagement with Havelock farmers – the people most directly affected by the proposed mine—has eroded social capital networks that maintained healthy linkages between rural communities.

The high levels of community discord and breakdown of social cohesion are indicative of the lack of public participation in discussion. A much greater degree of public participation and oversight would have been available under the previous federal Environmental Assessment Act for this type of project and this public participation has not seemingly yet been incorporated into provincial legislation (though presumably it will be forthcoming given what has occurred in this and likely future cases). Divided and angry communities that pit town against farmers, divide family members, and thereby erode the social capital networks necessary for healthy linkages among rural communities are clearly not in accordance with the UNU RCE's goal to promoting healthy social conditions needed for sustainable communities.

The introduction of strife in the community has wearied Havelock residents who care deeply about their land and livelihood and are concerned that it may be damaged by the mine proposal. Social science widely recognizes the role of local knowledge in understanding the complexity of human-nature relations that exist in every community. Local knowledge was not adequately consulted.

Field investigations by RCE social scientists show that Havelock area residents are displeased with the methods by which Yancoal began its interactions with the community. Yancoal responded defensively to many of the questions presented by the Havelock community and evaded many questions by replying that the answers would be made clear during the next step of the developmental process. The company's approach has not constructed a social license or trust with Havelock stakeholders. Quite to the contrary, it has imbued the community with a feeling that the long-term sustainability of Havelock's natural environment and its heritage as a multi-generational farming community are being sidelined to the goal of private corporate profit.

3. Failure to understand lifestyle and culture are not commodities

Because much of what comprises human society is based in culture--the knowledge and values shared by a society--that is qualitative in nature and thus is difficult to measure, social and cultural aspects of a community are easily overlooked in the construction of commercial projects.

Interviews and focus group sessions revealed a recurring theme in much of the Havelock community discourse on the proposed mine. By noting their connection to the land, the love of quiet farmyards, and a "deep rooted" appreciation for rural life, each of them has declared a "love of place" and how people's experience and interaction with the land is often described as being an experience that "can't be bought" or is "priceless". Clearly these farm families, some of whom are 4th and 5th generation farmers have a deep emotional and historical connection with the land. The sense of affinity that connects people with land is embodied in the word that First Nations Cree people use to describe themselves, "Nehiyaw" which means "of the land" or "from the land". This reflects their very close connection with land, people, and culture. Affinity to the landscape is discussed in a broad range of literature within cultural geography and anthropology in literature based on the concept of "topophilia", a term made famous by the Chinese geographer Yi Futuan (段義孚) in 1974. Yi

Futuan's concept is closely related to the excellent work done by Tsunesaburo Makiguchi of Japan in the 1930s and 1940s on Jinsei chirigaku (人生地理学). His work focused on the significance and meaning that people discover in and confer on nature.

This affinity or love of land is created by a process that develops over time and effort; it's similar to the Chinese word "gongfu 功夫" - the achievement of skill and ability over time". This love of land is the connection between humans and the land that is built through decades of working and living on the land, appreciating its aesthetic beauty, and understanding the community, and the socio-cultural values that bond the community to the land. (There are countless documents that refer to human-land affinity.¹⁰

Most farmers do have a very strong sense of connection to the land. They love their land, farms and lifestyle. A disruption to rural people's sense of "topophilia" (connection to the land) can lead to a wide range of complex social issues:

- A loss of connection with land. When land is seen only as a commodity from which money can be extracted, it will almost certainly face serious degradation.

- Arguments among neighbors, for example, about access to water resources or about support for and against the Yancoal development.

- Eroded community cohesion

4. Past Environmental/Social Record: Illegal Surveillance and Hacking. Media reports suggests that closer scrutiny is needed regarding Yancoal's sense of social and environmental responsibility (see below). Past behavior of environmental stewardship and corporate responsibility to environmental protection would go far to increase confidence in Yancoal's operation of its first and only solution potash mine. A short sampling of Chinese media articles reveals that Yancoal has regularly broken environmental protection laws to avoid end-of-site mine remediation of sinkholes, and has released toxic air and water at many of its operations in cities across China¹¹

In Australia, Yancoal has engaged in the illegal surveillance of employees using hidden cameras and has engaged the services of professional computer security firms to hack into the email accounts of employees.¹² Yancoal's use of illegal surveillance in Australia is part of a larger pattern of industrial espionage to collect data on mining that has been traced back to the Chinese government.¹³ This activity is not consistent with appropriate and standard mining practice for firms operating in Saskatchewan nor the legal and ethical expectations for firms operating in this jurisdiction. It is unclear that the Government of Saskatchewan has investigated these details of past practice as part of this approval process nor how they would be monitored and curtailed in the event the proposal were approved.

¹⁰ This paper draws on scholarly work on "Binodngan Ancestral Domains," 2011 p.338).

¹¹ See notes on p. x

¹² Cole, Latimer. "Chinese Hack Australian Miners' Emails | Australian Mining." Australian Mining, 2011. <https://australianmining.com.au/news/chinese-hack-australian-miners-emails/>; Kirkwood, Ian. "Claims Firm Spied on Mine Staff." The Sydney Morning Herald, July 27, 2010. <http://www.smh.com.au/nsw/claims-firm-spied-on-mine-staff-20100726-10st1.html>

¹³ See the following references: Berkow, Jameson. "Chinese Hackers Went after Aborted Potash Deal." Financial Post, November 30, 2011. <http://business.financialpost.com/fp-tech-desk/chinese-hackers-went-after-aborted-potash-deal-report>
Birtles, Bill. "Mining Executives Wary When Doing Business with China due to Increasing Cyber Security Risk." Text. ABC News, June 30, 2015. <http://www.abc.net.au/news/2015-06-30/australian-miners-increasingly-targeted-by-hackers-report-warns/6584172>
Riley, Michael A., and Sophia Pearson. "China-Based Hackers Target Law Firms to Get Secret Deal Data." Bloomberg.com, January 31, 2012. <http://www.bloomberg.com/news/articles/2012-01-31/china-based-hackers-target-law-firms>
Warren, Jeremy. "Hackers Attacked Saskatchewan Government Computers during Potash Bid." The Star Phoenix, January 12, 2011. <http://www.thestarphoenix.com/business/Hackers+attacked+Saskatchewan+government+computers+during+Potash/5803576/story.html>

Based on these 4 considerations, RCE Saskatchewan strongly recommends a comprehensive socio-cultural impact study relying on quantitative and qualitative methodologies be undertaken to attain a comprehensive understanding of the social and cultural lives of farmers, and the ways by which the proposed industrial site may affect their agricultural livelihood that is so closely engaged with land and nature. In addition, such a study will also identify important environmental dimensions related to the proposed project that is likely only available through local people with a close connection to the land in question. A more in-depth consultative process would also help to gather this data and further avenues for information gathering prior to the project's approval.

Selected References to Pollution Releases by Yancoal Operations in China

Place: Yulin city, Shaanxi province, China.

Problem: Illegal release of wastewater polluting 100,000 square metres of land.

Place details: (Chinese: 榆林; pinyin: Yúlín) is a prefecture-level city in the Shanbei region of Shaanxi province, China, bordering Inner Mongolia to the north, Shanxi to the east, and Ningxia to the west. It has an administrative area of 43,578 km² (16,826 sq mi) and a population of 3,380,000. (Source: [Wikipedia](#))

Citation:

Xinhua News, 2015. 污染十万平米沙漠 兗矿“建设全国环保示范单位”或成空话. 100,000 square meters of polluted desert: Is Yancoal Mining “building the national environmental protection model” or just idle talk? [WWW Document]. 新华网. URL http://news.xinhuanet.com/2015-04/23/c_127723248.htm (accessed 6.5.16). Chinese language.

Place: Jining city, Shandong province, China

Problem: Illegal release of wastewater into Stone Buddha River

Place Details: Jiningcity (simplified Chinese: 济宁; traditional Chinese: 濟寧; pinyin: Jǐnín) is a prefecture-level city in southwestern Shandong province. Its population was 8,081,905 according to the 2010 census (Source: [Wikipedia](#))

Citation:

Jining News Network, 2013. 济宁市兗矿国际焦化、石佛河流断面超标污染 - 新闻 - 济宁新闻网. Jining Yancoal International Coking- Stone Buddha River sections exceeded pollution limits. [WWW Document]. Jining News Network. URL <http://www.jnnews.tv/news/2013-08/05/cms362861article.shtml> (accessed 6.5.16). Chinese language

Place: Zoucheng city, Shandong province, China

Problem: Illegal release of atmospheric pollutants.

Place details: Zoucheng city is a county-level city in Shandong province. Zoucheng city has a population of 1,116,692 according to the 2010 census (Source: [Wikipedia](#))

Citation:

Shandong Network Broadcast Network, n.d. 邹城：兗矿国宏化工超标排放污染物 被罚56万元。Zoucheng City: Yancoal's Glorious Nation Chemical discharged excessive air pollutants and fined 560,000 yuan. [WWW Document]. iQilu Net. Shandong Network Broadcast Network 山东网络广播电视台. URL <http://zoucheng.iqilu.com/zouchengyw/2015/0624/2458381.shtml> (accessed 6.5.16).

Place: Jining city, Shandong province, China

Problem: Yancoal is a major employer in Jining city. Many of the mines, dating back to the 1960s, have subsided leading to the creation of huge sink holes and flooded land that every year leave destroys thousands of homes. Approximately 100,000 residents have had to move because of subsidence and loss of land.

Place details: : Jiningcity (simplified Chinese: 济宁; traditional Chinese: 濟寧; pinyin: Jǐnín) is a prefecture-level city in southwestern Shandong province. Its population was 8,081,905 according to the 2010 census (Source: [Wikipedia](#))

Citation:

Meng, Meng. “Living a Nightmare in China’s City of Sinkholes.” CNN News, July 25, 2013. <http://edition.cnn.com/2013/07/24/world/asia/china-sinkhole-problem/>