**Mining Copper: Rosemont Mine Dilemma**

**Assignment: Persuasive Essay**

**Important Dates:**

**Sources due date: April 12, 2019**

**Rough draft check: April 30, 2019**

**Final draft due date: May 6, 2019**

**Background:** Hudbay Minerals has spent the last 11 years trying to justify/opening their Rosemont Copper Mine near the Sant Rita Mountains. There has been much debated-- long and short term, environmental impact, economic boost, employment, and reclamation proposals. The Arizona Daily Star has reported in their March 30, 2019 front page the owners announced their $122 million investment in mine prep work and job openings. They propose a $1.92 billion construction project that will last about 20 years. Hudbay estimates 3000 construction jobs and 500 full-time jobs when fully operational.

Environmentalists and members of the local community have blocked the operation fearing concerns over land reclamation, water contamination, destruction of habitats to several endangered species of animals and plants, air pollution, ground pollution, and water potability. While Arizona has been home to other mining companies such as ASARCO and the now defunct Phelps-Dodge, Hudbay Minerals, a Canadian company, is new ([www.hudbayminerals.com](http://www.hudbayminerals.com)).

“The ultimate objective of reclamation is ecosystem restoration, including restoration of any natural vegetation, hydrology, and wildlife habitats affected by surface disturbances from construction and operating activities.” ([www.blm.gov](http://www.blm.gov)) While this quote pertains primarily to oil and gas, the Bureau of Land Management (BLM) does work closely with communities and private entities on reclamation projects, which includes mines. The ASARCO mine on Pima Mine Road is one of the premier mining companies that has a positive relationship with the community and BLM, especially in regards to reclamation. ([www.asarco.com](http://www.asarco.com)). According to its website, Hudbay has worked closely with the surrounding communities of Rosemont Mine to ensure safety to the environment.

**Connections:** Review and re-examine your experience with the Cookie Mining Project. Did you make a profit? If yes, do you think the profit was worth your time and effort? If no, do you think you could have done something differently so that you could have made a reasonable profit? How hard was it to mine your chocolate chips/chunks? Do you think the “land” made a difference? Do you think, had you not been required to consider reclamation of the land, you would have been able to retrieve more ore? Why do you think reclamation of the land is important? Consider your answers on to the questions posed here and on the back of the Cookie Mining Worksheet you submitted.

Review and re-examine your notes on environmental factors that affect an ecosystem. What are some limiting factors of the environment that will severely impact an ecosystem. Can you explain how the construction of the mine is like urban sprawl with respect to the habitats of plants and animals.

**The Essay:** Taking everything into consideration, your assignment is to write a persuasive essay regarding the opening of this mine, do you think it should open, or do you think Hudbay Minerals should find another venue for their project? Use the rubric below as a guide for your essay.

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|  | Investigation/Observation | Perspectives | History and Innovation | Conventions |
| HP | Effectively applied appropriate tools and technologies to gather and demonstrated higher level analyzation of data; Framed or used questions; Clearly presented data; Evidence of understanding displayed through practice, observable characteristics, and properties of objects, organisms, and/or materials used. | Initiated active problem-solving scenarios; Implement solutions devised for programs and maintain orderly schedules and practices. | Effectively applied research and demonstrated complete understanding of scientific contributions made by human endeavor, past and present; Clearly presented connections made between investigation activities and real- world situation. | At least three or more relevant sources were used and properly cited as evidence for persuasion. Little to no grammatical errors, and proper paragraph formatting was applied to the essay. |
| P | Accurately and proficiently used all appropriate tools and technologies to gather and analyze data; Employed refined and complex reasoning, demonstrated understanding of cause and effect; Provided clear, effective explanation detailing how task was carried out; Precisely and appropriately used scientific terminology; Revised prior misconceptions when appropriate. | Identify a need or problem and develop a solution for that need or problem; Demonstrated effort in organizing a plan for a solution. | Accurately demonstrated evidence of understanding of scientific contributions made by human endeavor; Provided clear explanation of scientific contributions made by humans/cultures. | No more than three relevant sources were used and properly cited as evidence for persuasion. Less than 25% grammatical errors, or incorrect paragraph formatting was applied to the essay. |
| PP | Attempted to use appropriate scientific tools or technologies to gather data; Provided minimal evidence of strategies, and provided inadequate explanations and understanding of observations made or materials/information collected. | Demonstrated some effort in identifying a need or problem; no solution was offered or attempted. | Attempted to provide evidence of valid research and contributions made by humans/cultures; Unclear interpretation of research by others; Some inaccurate information or false information was researched. | The only cited research was provided by the teacher, or other evidence was not properly cited. More than 50% grammatical errors or improper paragraph formatting. |
| MP | Did not use appropriate scientific tools or technologies to gather data; No evidence of strategy or procedure; No explanation, or the explanation could not be understood; No conclusion stated; No evidence of understanding observable characteristics and properties of objects, organisms, and or materials used. Little to no attempt was made to complete assignment | Little to no attempt to identify a need or problem; therefore, no solution was identified. Little to no attempt made to understand how science plays a role in problem solving socially and environmentally. Little to no attempt made to complete assignment. | Little to no attempt was made to gain any appreciation for scientific contributions made by humans/cultures. Little to no connections between investigation activity and conclusion stated; Little to no attempt was made to complete assignment | Little to no attempt was made to find more evidence to support claims. Little to no attempt was made to complete assignment. |

This essay combines both lessons on mineral mining and ecosystems. Because of its importance, this essay will contribute to the majority of your grade for the semester.