

Environmental Holism: A Sacred Trust with the Earth

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Acknowledgements

I remember as a child standing in my parents' garden in 1984 pulling carrots as a low-flying crop sprayer buzzed overhead and dropped spray upon our garden. I did not make much of it then, but I am sure the mosquito spraying that spring altered our garden. That child represents the beginning of my urge to be aware of the environment I live in.

As I wrote this thesis I was ever aware of the bond my family and I have to Montana. We came here six generations ago to farm and work the land in eastern Montana and now I find myself working to protect a gem of this state: the Blackfoot Valley. My family is what created who I am today. They have given me the ability to be where I am -- thank you.

I also want to extend a warm thank you to the Carroll Community. My professors have led me into worlds of thought I never knew existed and have challenged me to expand my mind. Dr. Mark Smillie taught me to think as a philosopher and to be aware of my work in this world as an integration of spirit, ethics, and service. Dr. John Hart has been a friend, a hiking partner, a late night star gazer with me, and a role model. The wisdom and being of Prof. Murphy Fox is a constant source of encouragement -- thank you Murph. I also want to give a special thank you to Sr. Annette Moran for her kind words of support and her prayers. She is an inspiration for my life.

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Chapter 1

INTRODUCTION

These people (Salish) now informed me that the road which they showed me at no great distance from our camp would lead us up the east branch of the Clark's [sic] River and a river they called Cokahlarishkit [Blackfoot] or the river of the road to the buffalo.

-Meriwether Lewis July 3, 1806

I headed up the Landers Fork at the same spot on July 23, 1996. The place Lewis describes as "the right hand side through handsome plain bottoms to the foot of the ridge." That same ridge is the site of the proposed Seven Up Pete gold mine. It was marked then, and it is marked today with a series of rock cairns that were there long before Lewis.¹

The Blackfoot River has been called "the most endangered river in America" by American Rivers, a national conservation group. When Meriwether Lewis walked this river he saw a waterway emanating a rich dark green hue -- a river of life. Now a proposed gold mine threatens this pristine river.

As mining companies, land owners, recreationalists, environmental groups, the Earth and its animals, and those who love the river, call into question the state of the Blackfoot watershed, who or what should have the ultimate voice in the future of these "handsome plain bottoms" is uncertain. Grappling with ideological conflict, the aforementioned assemblage of interest groups are working to analyze the questions and answers regarding the river in hopes of reaching a decision about the area's suitability for mining. Looking at responses to the mine proposal by environmentalists, the State of Montana, and McDonald Gold, I have found two primary methods used to examine the

¹Richard Manning, "Watershed," in Annick Smith, ed., *Headwaters: Montana Writers On Water & Wilderness* (Hellgate Writers, Inc.: Missoula, Montana, 1996), 69.

effect of the mine on the Blackfoot Valley, viz., an economic review and a land impact assessment. But these are not sufficient to assess such a proposal. Any thorough discussion about the environmental implications of such a project, must include, in addition to the economic review, considerations of environmental ethics, animal rights, quality of life (sometimes grouped in the economic assessment), intrinsic value, and spirituality. When looking at the justification for a mine in any area these collateral progeny must never be forgotten -- they are part of the human connection to the Earth.

Since the environment has been chalked up as something to measure in terms of economics in the last five generations, the Earth's traditional location in peoples' lives as a focal point has been lost. It is time for the spiritual and the ethical impacts of disrupting the Earth to be considered as fully as the economic impacts. Looking at mining with these in mind asks humanity to consider its inherent relationship to the land. We can no longer be passive observers who weigh only the economic implications of alterations to the Earth. With the inclusion of spirituality and ethics in the discussion, human considerations become essential elements in the valuation of the environment. They are inherently necessary because of human connections with the Earth. Corporations, though, do not share this mindset.

Human values, animal values, and the presence of Spirit in the Earth are not part of corporate thinking. Wendell Berry warns us to be wary of corporate ways of thinking because companies who "come into rural places in order to improve them by 'creating jobs'. . . are interested in 'job creation' only so long as the jobs can be done more cheaply by humans than by machines. They are not interested in the good health -- economic or

natural or human -- of any place on this Earth."² Corporate thinking sees the "bottom line" as job creation -- not the environment. Corporate thinking exploits and cuts away anything or anyone that gets in the way of corporate "profit." The "bottom line" is mightier than love of the Earth. What I mean by this is that a human love for the land is disregarded as nonsense and "profit" is seen as the greatest final end. Not only is the McDonald Gold Project exhibiting these human value slicing tendencies, but it is masking its desire to create a profit at any cost to the Blackfoot Valley and the Lincoln community.

A spiritual connection to the Earth and her creatures may be our only hope to survive the imminent danger in the Blackfoot Valley. Economic valuations are failing and now it is time to approach this environmental crisis from a new angle. There is hope for the Valley and for Montana if we can see the land and humanity as an integrated whole -- entwined in an ethical and spiritual relationship. If we fail to establish this mindset, we will watch the destruction of the Valley, the loss of animals, the death of birds in a cyanide lake, and the scarring of the Earth. The Blackfoot Valley and the Blackfoot River are pristine places and McDonald Gold cannot guarantee that they will return these areas of Montana to their original shape and form after the mine closes. They ignore the sacredness of the Earth and downplay the connection Montanans have to this place. Their consciousness must change so that they too can feel a sacred connection to the land.

²Wendell Berry, *Another Turn of the Crank* (Washington D.C.: Counterpoint 1995), 11-12.

Montana's crisis mirrors a crisis of the human spirit. Montana stands to be scarred forever. In not recognizing the spiritual and ethical concerns generated by this project, environmentalists, Montanans, and McDonald Gold tacitly deny the presence of a mightier force in the world than themselves. Thus, human dominance over the Earth and her creatures is not questioned or even considered. As this happens the "human" connection to the Earth's sacredness is lost -- generating a crisis of the human spirit. When we fail to recognize ourselves as necessarily connected to the environment around us we immediately provide the opportunity for human domination of the Natural World. We defile the relationship of ourselves to the Earth.

Arguing against environmental degradation solely on the basis of economics, however, is not enough. The picture is wider and the depth deeper than that. The Earth is our mother and we are her children. Our Native American ancestors recognized this and indigenous peoples of the world still do. In 1977 the Iroquois addressed the UN Conference on Indigenous Peoples. The following excerpt is from their statement, *A basic Call to Consciousness, the Hau de no sau nee [Iroquois] Address to the Western World*.

In the beginning we were told that the human beings who walk about on the Earth have been provided with all the things necessary for life. We were instructed to carry a love for one another, and to show a great respect for all the beings of this Earth. We were shown that our life exists with the tree life, that our well-being depends on the well-being of the Vegetable Life, that we are close relatives of the four-legged beings.

The original instructions direct that we who walk about on Earth are to express a great respect, an affection and a gratitude toward all the spirits which create and support Life. . . . When people cease to respect and express gratitude for these many things, then all life will be destroyed, and human life on this planet will come to an end.

. . . . To this day the territories we still hold are filled with trees, animals, and the other gifts from the Creation. In these places we still receive our nourishment from our Mother earth. . .

The Indo-European people who have colonized our lands have shown very little respect for the things that create and support Life. We believe that these people ceased their respect for the world a long time ago. Many thousands of years ago, all the people of the world believed in the same Way of Life, that of harmony with the Universe. All lived according to the Natural Ways.

Today the [human] species of Man is facing a question of [its] very survival. . . The way of life known as Western Civilization is on a death path on which their own culture has no viable answers. When faced with the reality of their own destructiveness, they can only go forward into areas of more efficient destruction.

The air is foul, the waters poisoned, the trees dying, the animals are disappearing. We think even the systems of weather are changing. Our ancient teaching warned us that if Man interfered with the Natural laws, these things would come to be. When the last of the Natural Way of Life is gone, all hope for human survival will be gone with it. And our way of Life is fast disappearing, a victim of the destructive processes.

The technologies and social systems which destroyed the animal and the plant life are destroying the Native people. . . . We know there are many people in the world who can quickly grasp the intent of our message. But our experience has taught us that there are few who are willing to seek out a method for moving toward any real change.

The majority of the world does not find its roots in Western culture or tradition. The majority of the world finds its roots in the Natural World, and it is the Natural World, and the traditions of the Natural World, which must prevail.

We must all consciously and continuously challenge every model, every program, and every process that the West tries to force upon us. . . . The people who are living on this planet need to break with the narrow concept of human liberation, and begin to see liberation as something that needs to be extended to the whole of the Natural World. What is needed is the liberation of all things that support Life--the air, the waters, the trees--all the things which support the sacred web of Life.

. . . . The traditional Native people hold the key to the reversal of the processes in Western Civilization, which hold the promise of unimaginable future suffering and destruction. Spiritualism is the highest form of political consciousness.

As beings connected to all other life forms on this Earth it is essential that we understand where we have come from and where we need to head to solve the current environmental crisis not only in the Blackfoot Valley, but also in the world. The McDonald Gold project provides an interesting case study of current corporate environmental disregard -- especially because Canyon Resources Corporation's environmental protection proposals are not sufficient to adequately deal with the impending danger of the McDonald Gold mine to the Blackfoot watershed. This paper begins with a brief exposition of the physical characteristics of the proposed mine: how it will effect the surface of the valley, what it will look like, and the actual physical attributes of the mine itself. Following this it discusses economics: not the traditional rhetoric of corporate ethics, but, the need for an environmental economic assessment in this project. After the economic exposition, the paper turns to the concept of stewardship, its historical origins in the Judeo-Christian world, and its development in the thought of Wendell Berry and Aldo Leopold. Next it discusses sustainability and technology and how these two ideas are represented globally and in the McDonald Gold Project. Finally, the paper concludes with a call for us to move beyond all of these things and recognize ourselves as members of a sacred trust with the land -- a lost concept in the western tradition, but still ever alive in the native peoples of the North American continent. This is the ultimate position I ask corporations, environmental organizations, and individuals to assume if we are to protect our world.

Chapter 2

THE PHYSICAL IMPACTS

This chapter examines the physical implications of the McDonald Gold Project which is also known as the Seven-Up Pete Joint Venture (SPJV). It describes the effects of the proposed mine on the Blackfoot valley, Blackfoot River, people, Lincoln, and the animals of the valley. To show the effects of the mine on these five areas, a brief exposition of the physical characteristics of the mine itself are given followed by the mine's impact on each area.

The proposed McDonald Meadows Gold Project is slated to be one of the largest cyanide heap-leach mines in the United States, located on the same ground Meriwether Lewis walked one hundred ninety-one years ago.³ This project is being conducted by Canyon Resources Corporation, whose company plans "to bring appropriate properties to the development and mining stage; to obtain a cash flow from operating mines; and to continue to enhance its [Canyon Resource Corporation's] property asset position through aggressive mineral exploration activities."⁴ The McDonald Gold Project is therefore a part of their overall corporate ideology.

The Blackfoot River, which runs through this ground, drains about 2,300 square miles of Lewis & Clark, Powell, and Missoula Counties, flowing approximately 133 miles near Missoula.⁵ Along much of the river's run, State Highway 200 parallels it.

³Montana Environmental Information Center, *"Mine Facts"* (Helena, MT: MEIC, 1997).

⁴Canyon Resources Corporation, *1985 Annual Report* (Denver CO: Canyon Resources Corporation, 1985).

⁵ECONorthwest, *Economic Consequences of the McDonald Gold Mine* (Eugene, OR: ECONorthwest, 1997), 31.

This highway connects the cities of Missoula and Great Falls and would be relocated if the mine proposal were approved. The proposed land for the mine has five main land owners: 44 percent National Forest, 24 percent private ownership (including the Sieben Ranch which is partly owned by Max Baucus), 20 percent Plum Creek Timber Company, 7 percent State of Montana, and 5 percent Bureau of Land Management.⁶

Canyon Resources will begin by blasting and removing 980 million tons of rock, "enough to fill 130,000 one-hundred-car freight trains," from these "handsome plains."⁷ Over the life span of the mine this equals 175,000 tons per day. Not only will an entire mountain be removed, but an area of 8 square miles (5,100 acres), an area of immense beauty, will be affected. The open pit would measure over 3,000 feet across, a mile long, and 12,000 feet deep -- approximately two-thirds the size of the Berkeley Pit. In order to create such a massive pit, miners will use excessive amounts of explosives -- 405 million pounds of ammonium nitrate and 3.2 million gallons of diesel.⁸ The pit will be situated only 800 yards from the Blackfoot River. The waste rock taken from the pit will be deposited in piles that will cover 900 acres, each 300-600 foot high pile holding about 500 million tons of rock. These piles will sit among the wildflowers unlined -- potentially destroying the vegetation of the valley. Any water seeping through the piles will flow directly through the meadows and into the river.

⁶Ibid., 31

⁷Montana Environmental Information Center, "*Mine Facts*" (Helena, MT: MEIC, 1997).

⁸Mark Downey, "For Lincoln, mine pits growth vs. environment" *Great Falls Tribune*, 30 July 1995, 3.

Canyon's operation plan calls for mine production to last 25 years. For 12-15 years of this time the mine will operate 24 hours a day, 7 days a week, blasting, pumping, and extracting. During three of the years of operation, 2.5 million gallons of water, enough to flush 420,000 toilets, will flow directly into the Blackfoot River so that the pit can be drained. After this initial period of pumping, notes Chief Mine Engineer Rick Lambet, the pumping could be reduced to 144,000 gallons daily.⁹ In addition, cutoff wells to keep the Blackfoot and Landers Fork aquifers from recharging the pit will be dug. Each of them will pump 8.6 million gallons of water a day and recirculate it into the alluvium. But, even more water must be pumped: five million gallons of drinking-water-quality water must be pumped into the alluvium. An aquifer below the buttes on which the mine is located must be drained so that water won't leak into the pit. Daily, this translates into 15.8 million gallons of groundwater extraction -- whereas Great Falls only uses about 12.6 million gallons a day.¹⁰

Not only is the state of water a concern for Canyon Resources, but also the environmental hazards associated with a heap leach mining process. The Cyanide heap leach pads for this mine will cover 880 acres or 342 city blocks and be 300 feet tall. The rocks, once removed from the pit, must be taken to one of two leach sites to have the gold extracted. Once the rock is on site, it is sprayed with cyanide solution. Mine officials claim that the solution they use breaks down quickly in the environment and causes no

⁹Ibid., 5

¹⁰Ibid., 5

harm. In contrast, environmentalists claim that because cyanide "is highly toxic and can persist in groundwater indefinitely,"¹¹ an extreme risk to have in the area. The two mammoth leach pads would have plastic liners about 60 millimeters in thickness.¹² This 1/4" liner is designed to protect the area underneath the leach pad from the 9.4 million pounds of sodium cyanide that will annually be used in processing. The cyanide spray will have a concentration of between 53 and 265 parts per million. Canyon Resources designed the pads to gently slope downward so that cumulative water pressure will not increase the risk of leaking in the liner. In the past, liners at other mines have typically leaked a gallon of cyanide for each acre of pad. The solution from the leaching process is then collected and processed to recover the dissolved gold. Out of this process comes a mixture of gold, silver, and small quantities of other metal impurities, called dore bullion. The bullion is produced on-site and shipped to an off-site refinery for final processing.¹³

The Valley: The Blackfoot Valley will ever remain visually impaired by this mine. Mining will literally move a whole mountain -- permanently altering the ecological balance of the valley itself. Whenever an ecosystem is altered the entire ecosystem changes. The effects are cyclical -- one changed element throws off the whole cycle. It would be like pulling a spoke from a wheel. The same happens with an ecosystem. Its natural rhythms become impaired when one part is damaged. Portions of

¹¹Ibid., 5

¹² Montana Environmental Information Center, "*Mine Facts*" (Helena, MT: MEIC, 1997).

¹³ECONorthwest, *Economic Consequences of the McDonald Gold Mine*, 31.

the valley will simply become unusable.

The water in the pit will be highly toxic. Waste rock piles will decimate acres of land and remain unusable mountains of crushed rock dripping cyanide. Animals that drink from these acidic waters will die -- a repeat of the destructive nature of the Berkeley Pit's water which led to the death of over four hundred snow geese in 1996. Deer will no longer be able to dine on the luscious grasses and browse where the heap leach piles stand. The whole valley will feel the effects of this mine.

The River: The Blackfoot river also is in imminent danger from the mine. The river is primarily threatened by the mine's cyanide holding pond which will contain 100 million gallons of cyanide solution, cover 70 acres, and be one quarter of a mile from the river's riparian zone.¹⁴ As cyanide leaches from this pond, it will run directly into the Blackfoot -- contaminating the river at the dumping site. But cyanide is not the only risk to the river: increased sedimentation, heavy metal contamination, and oxygen depletion also threaten it. When sediment levels in the river increase, oxygen supplies to fish eggs on the river bed are depleted. This sedimentation can create a "barrier that prevents newly hatched fish from emerging."¹⁵ Heavy metals are also a concern. When discharged into the river, heavy metals will settle at the bottom of the Blackfoot. Zinc, iron, and manganese are all planned to be discharged into an 8 mile mixing zone along the river so that this heavy metal laden water can be diluted with river water. The effect of this

¹⁴Montana Environmental Information Center, "*Mine Facts*."

¹⁵Montana Environmental Information Center, "*McDonald Meadows Gold Project: Fisheries*."

"mixed" water is "the contaminat[ion of] aquatic insects which live and feed [in the river] . . . [and] the insects, in turn, contaminate the fish that depend on them for food."¹⁶

All of these changes and alterations will disturb a river that has been aptly described as "precious" by researchers at the Water Quality Bureau of the Montana Department of Health and Environmental Sciences:

The Blackfoot River is a jewel among western Montana streams and a resource precious to thousands of Montanans and non-residents alike. The Blackfoot is a Class I Trout stream in the Montana state fisheries rating system because of its high status in categories of fish production, fish habitat, fish species present, esthetics and public access. It receives some of the heaviest recreational usage in the state and sustains more floating pressure than any river in west central Montana. The Blackfoot drainage is classified B-1 in the Montana water quality standards, which indicates that its high quality waters are capable of supporting all beneficial water uses, including drinking water supplies, swimming and recreation, and growth and propagation of trout¹⁷

The McDonald Gold Project will destroy the integrity of this river with 400 foot waste rock piles, cyanide leaching pads, and a pit. The Department of Environmental quality realizes the delicate state of the river. The Blackfoot Legacy has discussed the preciousness of the river. Environmentalists continue to speak out on the delicate river. Yet, McDonald Gold remains aloof to these comments and environmental critiques for the sake of profit.

The People of the Valley: But the river is even more than these environmental

¹⁶Ibid., 15.

¹⁷ECONorthwest, *Economic Consequences of the McDonald Gold Project*, 31.

comments about drinking water and fish. This river is important to people emotionally, physically, and spiritually. It is a resting place for peoples' memories and dreams:

The Australian aborigines traced songlines around their country, journeys with special songs for powerful places. If I were to trace a songline around Montana, it would begin at the Blackfoot. My voice would start low as I sang about trout and rocks and pools shaded by lodgepole, then deepen to a keen as I told of drownings and chunks of ice sweeping houses west and the afternoon I saw trouble and floated away. But when I come to the day something shimmered up from the surface of the water and into my heart, I would fill myself with breath and sing a song high and clear and green as water.

-Carolyn Patterson, *Songlines of Montana*

I have to confess that I have a vested interest in the Blackfoot River: I deposited my late wife's ashes into it. I didn't give a thought to the possibility that I might be contaminating the river. She had always loved the beauty of that river and I only thought that ... well, I won't go into what I thought. I promise not to do it again.

-Jon R. Jackson, *The Blackfoot Virus*

Lincoln: Ultimately, all of these concerns are channelled into a discussion about the effects the mine will have on Lincoln, a town of 1,500 people. Residents are concerned about their liveli-hoods, which for all the outdoor guides and outfitters are based upon the health of the river. Deer dying of cyanide poisoning and a river that people cannot use will not be good for business. Thus, this mine seriously threatens to undermine the economic structure of Lincoln (the economic conditions the mine will bring about on the people of Lincoln will be discussed in greater detail in chapter three). All of the business owners, ranchers, and private home owners may lose their wells (a possibility that is highly likely with the draining of the aquifer, though no one actually

knows for sure). The people of Lincoln can only wait and see. At this point in the discussion, scientists, geologists, and residents can only speculate about the future of their valley and their livelihoods.

Animals: Even the animals of the Blackfoot Valley stand to lose. The primary focus in studies centering around the animal populations of the valley has been the impact on the fish, as the mine is located at the confluence of the Blackfoot River and the Landers Fork of the Blackfoot. This river was used for more than 36,000 fishing days in 1995.¹⁸ Cutthroat and Bull trout, both listed as "Class A" trout species, inhabit the waters of the Blackfoot. A species that is designated "Class A" by the United State Fish Wildlife and Parks is considered to have limited numbers or limited habitats. This is the case with these two species. The bull trout is also being considered as a possible candidate for endangered species designation. The governor's task force on bull trout found that Copper Creek and the Landers Fork are "core areas for bull trout recovery, and recommended that these areas be provided with the most stringent protection."¹⁹ Cyanide contamination of the river would eliminate insects on the upper Blackfoot and result in the rapid deterioration of trout species in the river. Increased water flows in the river because of pumping will also disrupt trout habitat. With increased sediment disruption, in a river with naturally occurring sediment problems, higher water temperatures and

¹⁸Montana Environmental Information Center, "*Fisheries*."

¹⁹*Ibid.*, 15.

erosion could destroy essential spawning areas of trout.²⁰ Also "elevated nitrate levels often cause large mats of algae to grow, depleting the oxygen supply, interfering with spawning and choking out fish."²¹

Any effects the mine will have on other animals is simply speculation. The Berkeley Pit in Butte, Montana provides a good example of a toxic lake created by mining that has been responsible for the demise of thousands of animals. The potential for the McDonald Gold lake to be as acidic and deadly after mining is extremely high.

As is apparent, the physical implications of this mine on the Blackfoot Valley and River are tremendous. The mine will disrupt the valley, river, people, Lincoln, and animals. But, there is an even further implication of the mine -- the economic disruption. The next chapter will take up the economic side of the discussion and show how McDonald Gold also fails to protect economic interests of the Blackfoot watershed.

²⁰Ibid., 15.

²¹Ibid., 15.

Chapter 3

THE ECONOMIC IMPACTS

Chapter two makes apparent McDonald Gold's plans to carry out massive amounts of earth-moving activities with little or no consideration for the impacts of the mine on the people, animals, valley, river, or Lincoln. Based on their actions thus far, it is reasonable to conclude that care for the land is only minimally necessary to them -- this same idea carries over into their economic assessment of the proposed mine -- that they are global in perspective, but local in destruction. Canyon Resources is a member of a global economy that Wendell Berry summarizes well:

In their dealings with the countryside and its people, the promoters of the so-called global economy are following a set of principles that can be stated as follows. They believe that a farm or a forest is or ought to be the same as a factory; that care is only minimally necessary in the use of the land; that affection is not necessary at all; that for all practical purposes a machine is as good as a human; that the industrial standards of production, efficiency, and profitability are the only standards that are necessary; that the topsoil is lifeless and inert; that soil biology is safely replaceable by soil chemistry; that the nature of the ecology of any given place is irrelevant to the use of it; that there is no human value in human community of neighborhood; and that technological innovation will produce only benign results.²²

McDonald Gold has made an economic analysis, but it embodies the ideas that Wendell Berry expresses. However, these types of calculations are not enough. There are certain environmental standards that are, I argue, essential to any economic assessment process; McDonald Gold does not meet these standards.

The "bottom line" of a company looking at a potential area that will provide economic growth is self-interest -- looking for what always benefits the company no

²²Wendell Berry, *Another Turn of the Crank*, 13.

matter what the implications. In the introduction to the McDonald Gold Economic Survey, the following economic issues are mentioned:

- 1) government officials recognize that economic growth is needed to fund government
- 2) there will be increased tax revenues for federal, state, and local governments
- 3) the mine would become the largest employer in Lewis and Clark county
- 4) earnings at the mine for each worker would average about \$34,715, well above the private sector average wage of \$22,443
- 5) the mine will make royalty payments to Montana Tech of the University of Montana totaling about \$60 million²³

These revenues appear to help others beyond the corporation, but they actually come back to benefit the company. Increased government funding makes it easier for the company to solve problems with government and it makes the company a respected and needed funder of government programs. Pegasus Gold Corporation has a very similar governmental relationship with Jefferson County. When the company went bankrupt, the county found itself in a position of not having a large enough tax base to fund necessary programs. The company uses these five points of economic interest as bargaining chips in order to entice the Lincoln community with what appears as a viable economic impact.

Currently, the economy of the Blackfoot valley is considered strong and growing. Employment in the region has steadily increased "in spite of the declining importance of

²³David K. Johnson & Ellen Feaver, *McDonald Gold Project Seven-Up Pete Joint Venture: Description of Economic Impact* (Helena, MT: Anderson Zurmuehlen & CO., 1997).

agriculture, timber, and mining industries."²⁴ The mine plans to employ 390 people at its peak years. However, "the potential positive employment impacts of the mine are minimal."²⁵ Even though the mine is slated to be the third largest employer in Lewis & Clark county, employees will not be able to reach the mine easily. Most new employees at the mine will come from Lewis & Clark County. They will be bused from Helena to Lincoln daily over the sometimes treacherous Fletcher Pass highway. Finally, funding Montana Tech will also pay off for the company because they will be able to have access to Montana Tech graduates and students to help them with research and mining operations. Their report concludes:

The economic impact of the McDonald Gold Project will be significant to the Lincoln area, Lewis & Clark County and the State of Montana. The jobs provided will contribute an estimated \$13 million annual payroll during the 12 year operation of the mine. Job opportunities will span a broad spectrum, varying from laborers to office workers to engineers. Taxes and royalty payments during the same period are estimated to be \$117 million, excluding tax payments by employees.²⁶

This paragraph is a fine illustration of the economic report's attitude toward the environment as something not to be measured, talked about, or included in an economic report. According to their report, economic implications which should be considered are only taxes, revenues, and profits.

The image of the dollar is more important than the image of the land to

²⁴Wendell Berry, *Another Turn of the Crank*, 14.

²⁵Ibid., 21.

²⁶David K. Johnson & Ellen Feaver, *McDonald Gold Project Seven-Up Pete Joint Venture: Description of Economic Impact*, 19.

McDonald Gold and this is easily visible in their economic report because environmental valuations are never mentioned.²⁷ When big business comes into the area with no previous ties to that land, establishes residence on main street, and begins to support the local economy through donations and taxes, the environment is forgotten; this is the case in Lincoln. By funneling money to local organizations and presenting itself as a "booster" for the local economy, the company slides into a created positive image. People in areas where the economy is not exceedingly strong are willing to accept the company because it promises jobs. However, questions arise of "How many jobs will be created for locals?" and for "How long?" Will this company truly be a long term supporter of the community economy? If and when the company pulls out of an area what will be left? Where will these people go who no longer have jobs? Is there going to be a long term effect from the company's presence? If so, how do you balance this in the overall appraisal of a proposal?

Essentially, residents of the Lincoln community must be careful not to be dazzled by the company's proposed promises. Caution must be taken when looking at the economic implications of project of this magnitude. As Wendell Berry warns, there is a tendency for a company to lure people into a project with proposed technological innovation and false attempts at showing value for a community. McDonald Gold is doing this in Lincoln and Helena. They set up shop on main street attempt to look like the "good guy" in this project. The state becomes an adversary for the mining company

²⁷Ibid., 1-19.

to work against. Environmentalists are the enemy. And the river is the target, the final commodity left undervalued in the debate. Environmental economics must factor the river into any valuation in order for the river to receive full representation. The point in all of this discussion is to be extremely cautious, move slowly, and include any and all environmental problems which arise in an economic assessment.

An environmental economist seeks to weigh environmental values in an economic analysis. The environmental economist differs from an environmental ethicist on this very point: while the ethicist looks for possible rights or intrinsic values of individual wildlife, ecosystems, and plants, the economist looks for their monetary value, a cost-benefit analysis which takes into consideration the monetary value of an ecosystem. Using, "willingness-to-pay" surveys the environmental economist can elicit "valuations of the natural environment,"²⁸ the total amount a person is willing to spend on a given tract of land, to maintain its beauty, its animals, its ecology. Thus, an environmental economist appeals to a broad sector of people, producing an environmental "bottom line" where values are understood in terms of money.

In order to find the "bottom line," the economist looks at a person's economic standing and notes that when economic standing rises, the person's idea of personal utility -- those things providing personal satisfaction -- also rise. With more money, economic men and women are able to get more of the things they want. A person's maximum willingness-to-pay is measured on the change in income of the economic person; your

²⁸Steven Edwards, "In Defense of Environmental Economics," *Environmental Ethics* 9, no. 1 (Spring 1987): 73-85.

willingness-to-pay won't exceed your total income. The maximum willingness-to-pay represents the change in income that holds personal utility constant. In other words the maximum willingness-to-pay does not change a given individual's economic status -- it merely represents the highest amount she is willing to spend to achieve a particular quality, e.g., clean water, an unchanged hillside, or wildlife. An animal's, plant's, or ecosystem's economic value, then, would be based entirely on their ability to yield personal utility, whether it be an environmental resource, a marked commodity, or sympathy for future generations.²⁹

When environmental economists measure the values people place on the natural resources of the area and how this value will be affected by a substantial change, in the case of the Blackfoot Valley, the effect of the mine. Four values play important roles in this assessment:

- 1) consumptive use values such as hunting whereby "economic man" derives personal satisfaction from harvesting natural resources
- 2) nonconsumptive use values such as wildlife photography and nature walks whereby personal satisfaction is derived from using, but not consuming, wildlife and wilderness
- 3) indirect use values where, for example, wildlife and the outdoors are enjoyed indirectly through television and literature
- 4) nonuse values whereby personal satisfaction is derived from preserving wildlife or the environment, but where "use" is not involved.³⁰

Once considered in an economic analysis of a given area, environmental

²⁹Ibid., 4.

³⁰Ibid., 14.

economists can factor values in as a part of the "bottom line."³¹ In the Blackfoot Valley these four different areas of use values are shared by many residents and users of the area. People from all over Montana and the continent come to this area to fish and hunt. The users of the area place consumptive values on it. For these people it is important that they come and derive personal satisfaction. There are also nonconsumptive users in the valley who come here to hike and photograph the area. Meriwether Lewis was a nonconsumptive and consumptive user of the valley. He placed a consumptive value on the valley when he hunted and fished here and a nonconsumptive value on it when he vividly described the natural terrain in his journals. There are also indirect users of the valley. Recently the Hellgate writers published *Watershed*, a book for outdoor enthusiasts about the Blackfoot Valley. There are also nonuse valuers of the valley. The Blackfoot Coalition, Montana Environmental Information Center, and the Clark Fork Coalition all derive satisfaction from saving a piece of Montana's environment.

In the report *Economic Consequences of the McDonald Gold Mine* prepared for the Blackfoot Legacy by ECONorthwest, an economic analysis of the valley was given that included these four use values. ECONorthwest determined that quality of life and quality of the natural environment play a role in the economic growth of this region. Therefore, actions that improve or strengthen the quality of life and the quality of the natural environment enhance economic growth and actions that degrade the quality of life

³¹Ibid., 14.

and the quality of the natural environment have the opposite effect.³² Because of the large number of river users, any adverse changes to the river could have a serious impact on the region's economy. The values people place on the river would be diminished by harmful effects. Few people want to stand in contaminated water, let alone eat fish from it.

During the last six years in which they have spent \$45 million exploring the possibility of a mine in McDonald Meadows, McDonald Gold has not included the overall social and ethical impacts of the mine in their economic analyses. They have not given an economic value to the loss of camping areas, fishing holes, natural springs, bull trout, or wetlands -- yet determining such values are possible, as an environmental economists attest.

SPJV has failed to even carry out the very minimum of environmental assessment -- an environmental economics report. This action reveals a laxness in their regard for the Blackfoot Valley and River. Their economic analysis, because it does not include an environmental economics assessment, has failed. And they have indirectly shown that they do not consider the environment to be of prime importance to them -- despite their propaganda stating otherwise. However, even if McDonald Gold had given us an environmental economics statement covering the "four use value" criterion and meeting the "willingness to pay" standard, they still would have failed at being a "good" tender of the land. Chapter Four reveals the characteristics of a proper steward of the land, a tender

³²ECONorthwest, *Economic Consequences of the McDonald Gold Project*, 21.

of the Earth's resources.

Chapter 4

STEWARDSHIP

The "key-log" which must be moved to release the evolutionary process for an ethic is simply this: quit thinking about decent land-use as solely an economic problem. Examine each question in terms of what is ethically and aesthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.

-Aldo Leopold, *A Sand County Almanac*

A truly holistic approach to the question of what is right for the Blackfoot Valley includes, as Leopold suggested, economics, ethics, esthetics, and stewardship. Having examined the economic point of view it is now necessary to move into areas in environmentalism left untouched by common arguments in support of the environment. These include such things as stewardship, sustainability, and a connection to the sacredness of the Earth. This Chapter four deals with stewardship, particularly Wendell Berry's idea of stewardship. Sustainability and the sacred follows in subsequent chapters.

In stewardship and the environment there are three primary ways of establishing an ethical relationship with the land:

- 1) humans have a duty to be stewards of God's creation
- 2) humans are members in a biocentric community that requires consciousness of the cyclic nature of ecosystems
- 3) the land has intrinsic value.

These three ideas form the base for creating a stewardship approach to the land. The first, humans have a duty to be stewards of God's creation, applies only if you believe in God and can relate your experiences of the land to a spiritual Being. This point is especially important when discussing stewardship because the concept of stewardship began in

biblical times -- understanding the "religious" argument is historically significant.

Stewardship of the earth means that "we must both work with the Earth and let the Earth live undisturbed."³³ There must be a careful balance between overwork and too much rest. When working with the Earth care must be taken to meet needs, not wants. Stewardship allows use of the Earth for fulfillment of personal needs, but not wants. In other words, those activities carried out on the Earth must be essential to survival -- they must meet essential needs or those needs sustaining life. A legitimate need, for example, might be a book. As humans we need to expand our knowledge base -- we desire this. When a book is created responsibly -- with recycled paper and biodegradable ink -- the impact of it on the environment is minimal, but the benefit to humanity is large. We are expanding our knowledge. An illegitimate need is one that is frivolous and not necessary to our development as "humans." An example of this type of need would be gold. Gold is not necessary for our survival as a people. Gold is mostly used for jewelry. This jewelry could just as easily be made out of stone or wood -- a resource that is renewable. Gold extraction is extremely harmful to our world. Thus, the difference between a "need" and a "want" can be determined by asking ourselves if it is a commodity necessary for the development of the human person. It must also fall within the bounds of stewardship so that it is renewable.

The United States Catholic Conference has defined stewardship as "[implying that] we must both care for creation according to standards that are not of our own

³³John Hart, *The Spirit of the Earth* (Ramsey, N.J.: Paulist Press 1984), 69.

making and at the same time be resourceful in finding ways to make the earth flourish."³⁴

We sustain ourselves in sustaining the Earth. There is a natural cycle that must be respected and followed and a steward maintains this cycle and also nurtures it. They do nothing to injure the balance of the Earth; which is also the balance of their lives. A steward recognizes that everything on the Earth is in a symbiotic relationship with them and the creatures around them.

However, stewardship of the land is a hard concept for many to accept as it implies that we have control over the Earth because we determine the proper and improper uses of the Earth. But, stewardship actually calls us to be responsible for our actions on the Earth in terms of the objective situation in an ecosystem. We do this by maintaining the balance of life -- living in the balance, never separated from it. Good stewards would not want to harm the Earth; if they did, they would in turn repair it. As a people and a society, becoming stewards, insures survival by taking care of the Earth. We meet basic needs and constantly question if wants are in fact needed for survival. Stewards never try to maintain excesses nor obtain more excesses in their lives. They live a life of simplicity.

Humans do have a duty to be stewards of God's creation. The relationship established between people and God provides a basis for them to create an ethical, spiritual, and steward relationship to the land. In the book of Genesis God entrusts the whole of creation to man and woman as stewards of the Earth. The man and the woman

³⁴United States Catholic Conference, "*Renewing The Earth*" (Washington, D.C.: Office for Publishing and Promotion Services, 1992), 6.

are called to exercise a dominion over the Earth which is founded in love and wisdom. They are not the dominators! They are people entwined in God's plan for creation. "When man turns his back on the Creator's plan, he provokes a disorder which has inevitable repercussions on the rest of the created order. If man is not at peace with God, then earth itself cannot be at peace: 'therefore the land mourns and all who dwell in it languish, and also the beasts of the field and the birds of the air and even the fish of the sea are taken away' (Hos 4:3)."³⁵ Stewardship does not grant us permission to misuse the land. We must see ourselves as stewards in the whole of this creation and as stewards we exercise a dominion over the earth which requires careful attention to the needs of the land. God entrusts the whole of creation to us, we are God's caretakers on Earth. We are God's custodians and gardeners. Dominion over the Earth must be conscious understanding of natural systems and our intentional but careful interventions into those systems.

Dominion over the Earth is not equatable with domination of the Earth. In dominion of the Earth we are called to care for it with respectfulness and attentiveness, responsible for the care of the Earth. Humans have the ability to determine their future on the Earth. This has a direct and long lasting effect on the future of the Earth. "If our dominion over the Earth is rightly understood as our exercise of responsible control, on God's behalf, of the land entrusted to our care, we will work with the Earth as part of the

³⁵John Paul II, *The Ecological Crisis: A Common Responsibility* (Washington, D.C.: Office for Publishing and Promotion Services United States Catholic Conference, 1989), 2.

Earth."³⁶

Hildegard of Bingen remarks that the "the high, the low, all of creation, God gives to humankind to use. If this privilege is misused, God's Justice permits creation to punish humanity,"³⁷ i.e., for us as stewards of creation to allow undue harm to come to the land is wrong. We are privileged to be allowed as members of this Earth and must not lose our sense and our senses of who we are and how we relate to God's kingdom on Earth. The ecological crisis of today, therefore, does reveal a moral crisis for those who aspire to the idea of stewardship.³⁸ Faced with identifying with the land in a way not commonly thought of -- we must view the land as being in harmony with us. The rhythms of the Earth are directly affected by us and we by them.

Pope John Paul II asks us to look at our mission on Earth as stewards and identify the moral obligation to the land that lies in our existence on it. He notes that we must not "interfere in one area of the ecosystem without paying due attention both to the consequences of such interference in other areas and to the well-being of future generations."³⁹ A good steward of the land searches for *holism*. How is what I am doing now going to affect the area around it one hundred years from now or even a day after the affect begins? This type of questioning does not give us the right to harm or destroy a

³⁶John Hart, *The Spirit of the Earth*, 59.

³⁷Hildegard of Bingen, *Scivias*, trans. Mother Columbia Hart and Jane Bishop (New York: Paulist Press, 1990).

³⁸John Paul II, *The Ecological Crisis: A Common Responsibility*.

³⁹*Ibid.*, 2.

piece of the Earth for a particular amount of time and then repair it; rather, it means always noting where interference in the Earth's rhythms cause problems -- being conscious of actions, whether they be in mining, farming, ranching, or any other activity that is dependent upon the survival of the Earth. When we are completely conscious of our actions, it allows us to give back to the Earth -- we are able to be nurturing the very things which we use.

Landownership requires a consciousness about the rhythms of the piece of land one owns and its relationship to the whole biotic community. If you want the land to produce and multiply you must treat it well -- there must be a symbiotic relationship between you and it. Wendell Berry reminds, "the farm is not to be the measure of the service; the service is to be the measure of the farm."⁴⁰ You must live and work in relation to your land and the land around you. The whole of creation works together for existence on this earth. Harming one portion of the Earth and allowing that damage to spill over into other areas is not stewardship. Therefore, as a landowner in the valley, SPJV has a responsibility to insure what they do will not infringe on the other land owners of the valley. A good steward of the land and member of a community would not only use and work with the resources available on the land, but also insure that what they were doing did not have long lasting effects. They would want to leave the land they used in the same or better condition than when they found it. If you take from the Earth, then, according to a stewardship approach to land ethics, you must give back to the Earth.

⁴⁰Wendell Berry, "*The Unsettling of America*," (New York, NY: Avon Books, 1977), 152.

The "earth is a common heritage, the fruits of which are for the benefit of all. God [has] destined the earth and all it contains for the use of every individual and all peoples"⁴¹ not a select few. SPJV is a select few because they share little interest in the actual survival of the valley. In their proposal for this mine they discuss reclaiming the harmed area, but they don't give specifics. They claim that the pit will not be toxic. They even think that people will be able to swim in its waters. Yet, the actuality of the situation is unknown and to argue that the pit will be clean is unreasonable. They create false justifications for their actions. If the price of gold drops and Canyon is forced to go out of business or leave the state, the residents of the Blackfoot Valley are left with a huge hole in the Earth to repair and monumentous waste rock piles to clean up.

A steward of the land must be a conservationist looking for "a state of harmony between men and land."⁴² A conservationist preserves what we have from destruction, decay or waste. The steward or conservationist should only take what is useful to them -- providing them with necessary provisions. The harmony one creates with the land is as a taker and replenisher.

This concept has traditionally been hard for a mining company to grasp. They often feel no moral responsibility to the land. They take what they want and leave. Many attempt to reclaim the land, but it is never returned to its original state. It is forever changed and altered by misguided mining practices. Of course this does not mean that

⁴¹John Paul II, *The Ecological Crisis: A Common Responsibility*, 3.

⁴²Aldo Leopold, *A Sand County Almanac*, (New York, NY: Bantam Books, 1966), 243.

we should never mine nor does it condemn mining in general; stewardship simply asks mining to be done responsibly -- with an eye turned towards holism with the land. Small mining operations like small farms may be extremely conscious of their affects on the land because they recognize that the land gives them sustenance. But large corporations like McDonald Gold do not feel a responsibility to the land. The glimmer of profit outweighs the sparkling of a stream.

Canyon Resources has illustrated their lack of connection to the Earth in their Kendall mine near Hilger, Montana. They are leaching toxic chemicals into the small tributaries of the Missouri which flow out of the Judith Mountains everyday.⁴³ Canyon has not met water quality standards at the Kendall mine since it closed. All suffer because of this large corporation. The same thing is likely to happen in the Lincoln area when McDonald Gold pulls out as they do not have a good track record with the environment.

With an idea of God in everything then a moral relationship can be established with the land. You would not harm God so why would you harm God in the created? And the same is true even if you do not have a belief that God is in everything. A small mining operation may not see God in everything, but they could still recognize that the Earth is theirs to care for -- if for no other reason than that it gives them their livelihood. They must maintain the cycle of nature in order to continue to survive at a particular mine site. It is important when establishing an environmental ethic that we realize it is

⁴³Montana Environmental Information Center, "Current News on the McDonald Gold Project" (Helena, MT: MEIC 1998).

appropriate that we treat "other creatures and the natural world not just as means to human fulfillment, but also as God's creatures, possessing an independent value, worthy of our respect and care."⁴⁴ When creatures are viewed as having independent individual worth and are viewed with the knowledge that respecting creatures leads to fulfillment in God's creation, then we become faithful stewards, living responsibly within the context of God's created plan. We give and take and establish a moral relationship with all created things.

If God has given the fruits of the Earth to sustain the entire human family, then as stewards we have a responsibility to propagate this bounty. The limited resources we have are sustenance for the whole world. They do not belong to a few, but to the whole human family. This same idea can be applied to the Blackfoot Watershed. Private landowners, then, should not be the sole determiners of how their land is to be used especially if what they do has an adverse affect on the whole ecosystem of the valley. When SPJV decides to mine their land holdings, this decision has repercussions all along the valley. In processing the gold, a large amount of water is going to be dumped into the Blackfoot. As water levels change and the chemical makeup of the river is altered, farmers downstream are going to feel a direct impact. The ends SPJV looks for will affect the means by which farmers in the area grow crops and graze livestock. This gold mine will make the valley irreparable.

SPJV in not trying to be a good steward in the Blackfoot Valley. The river so

⁴⁴United States Catholic Conference, "*Renewing The Earth*," 7.

many people love and find "spiritual comfort in" is listed as "endangered."⁴⁵ When the mining is completed and the company leaves, the citizens of Montana will have a huge water-filled toxic pit to look at. The right to a safe environment will have been abrogated. The mining company will not look after this land for generations to come.

Canyon Resources will benefit from large economic gains from this project. At the termination of the project their handi-work will revert back to the state and they will leave. Once gone, they are removed from any responsibility to the land or its inhabitants, while the residents of the valley are left with a scarred Earth. Stewardship makes sense if a company truly feels concern for the towns-people it affect. In a small community like Lincoln neighbors are concerned for one another's well being. You see this solidarity on Main Street when people stop to help another. You see it on the farm at harvesting and berthing times -- when someone's cow or crop is in danger there is always a neighbor to call on for help.

Wendell Berry presents a view of the farm that could also be applied to a mine:

The health of a farm is as apparent to the eye as the health of a person. To look at a farm in full health gives the same complex pleasure as looking at a fully healthy person or animal. It will give the same impression of abounding life. What grows on it will be thriving. It will seem to belong where it is; the form of it will be a considerate response to the nature of its place; it will not have the look of an abstract idea of a farm imposed upon an area somewhere or other. It will look cared for -- groomed, so to speak -- like a healthy person or animal; it will look lived in by people who care where they live. It will show no gullies or galls or other signs of erosion. The waterways and field edges and areas around buildings will be grassed, something that

⁴⁵"Black Foot Legacy", Video.

becomes more necessary the steeper the ground is.⁴⁶

A mine site should also be a place where life can be abundant and flourish. It should look clean and be a place where people can gather. Good mines will not look imposed on an area. They would show no fractures or cuts in the Earth.

Of course this may not be realistic until the mine is gone from an area, but the mining company has an ethical responsibility to make the land usable. The state of Montana should not be obligated to clean up after and care for the area once the mining company leaves. When they wreak the destruction, they should be responsible to their fellow citizens of the valley for cleaning the site. They are a small land holder in the valley -- the most precious commodity. In realizing the wonder and glory of the land, the company can come to respect the land and nourish it while at the same time using its resources.

McDonald Gold is willing to spend \$45 million in scoping for the project, but has not been willing to spend money to do environmental assessments that include ideas of stewardship, sustainability, and environmental economics. The McDonald Gold Project has tried to appear as a responsible member of the community by supporting the Helena Symphony, youth baseball leagues, computers to schools, and establishing a store front on Main Street in Lincoln, but they do not appear willing to support the land.

In proceeding with a project of this nature, all caution must be taken to fully understand the intentions of the company. An ethical relationship with the whole biotic

⁴⁶Wendell Berry, *The Unsettling of America*, 181.

community of the Blackfoot Valley is essential if they are going to explore a resource. Removing the resource can be justified if it is done in a responsible manner -- a manner which considers the health and welfare of the entire ecosystem. As soon as the objectives stray from maintaining the community, the project loses integrity. A common phrase to describe misguided land use is "raping the land." This is what happens when careful attention is not paid to establishing an ethical relationship with the entire community around you. What you do in one area of the ecosystem has a direct effect on another part of the ecosystem. Pouring cyanide into the river may lead to the death of fish. The death of fish leads to the reduction of fisher-people using the river, and a loss of tourist dollars results. Thus, in the end the Lincoln community suffers.

It is apparent that McDonald Gold has failed to do even the bare minimum of environmental assessment. They have not engaged in environmental economic analyses and thus are not trying to be stewards of the Earth. This project is not hopeful from any environmental perspectives. Yet, there is another approach to this problem that SPJV could strive for -- being sustainable. Sustainability and how it relates to current technological innovations is the topic of chapter five.

Chapter 5

TECHNOLOGY AND SUSTAINABILITY

Bridged and forgot, the river/ in unwearying descent/ carries down the soil/ of ravaged uplands, waste/ and acid from the strip mines,/ poisons of our false/ prosperity. What mind/ regains of clarity/ mourns, the current a slow/ cortege of everything/ that we have given up,/ the materials of Creation/ wrecked, the strewn substance/ of our trust and dignity./ But on still afternoons/ of summer, the water's face/ recovers clouds, the shapes/ of leaves. Maple, willow, sycamore stand light/ and easy in their weight,/ their branching forms formed/ on the water, and yellow/ warbler, swallow, oriole/ stroke their deft flight/ through the river's serene reflection/ of the sky, as though, corrupted,/ it shows the incorrupt./ Is this memory or promise?/ And what is grief beside it?/ What is anger beside it?/ It is unfinished. It will not/ be finished. And a man's life/ will be, although his work/ will not, nor his desire/ for clarity. Beside/ this dark passage of water/ I make my work, lifework/ of many lives that has/ no end, for it takes circles/ of years, of birth and death/ for pattern, eternal form/ visible in mystery./ It takes for pattern the heavenly and earthly song of which/ it is a part, which holds it/ from despair: The joined voices/ of all things, all muteness/ vocal in their harmony./ For that, though none can hear/ or sing it all, though I/ must by nature fail,/ My work has turned away/ the priced infinity/ of mechanical desire./ This work that many loves/ inspire teaches the mind/ resemblance to the earth/ in seasonal fashioning,/ departures and returns/ of song. The hands strive/ against their gravity/ for envisioned lights and forms,/ fallings of harmony;/ they strive, fail at their season's/ end. The seasonless river/ lays hand and handiwork/ upon the world, obedient/ to a greater Mind, whole/ past holding or beholding,/ in whose flexing signature/ all the dooms assemble/ and become the lives of things.

Wendell Berry, *The River Bridged and Forgot*

In chapter four I presented stewardship as a one way to establish a moral relationship with the Earth; chapter five considers another way -- sustainability. The one drawback to the stewardship approach is that it depends upon the presupposition of God. Sustainability without "God" offers us an alternative to a God-based environmental morality. Sustainability establishes a moral relationship with the Earth based upon our use of it -- how we value the Earth and its commodities. This chapter deals with two definitions of sustainability: an anthropocentric definition and an ecocentric or deep ecology definition. The ecocentric definition is the best definition of sustainability because it includes human beings as integral to the survival of nature. This chapter shows how the two definitions differ and presents the ecocentric definition as the best definition of sustainability. In order to accurately show the primary characteristics of each of these definitions I have used technology as the problem with which each must deal with. The term "technology" is used to imply all mechanized development from toothbrushes to atom splitters.

What is technological materialism--technological lust-- doing to our world? Can we meliorate our need for more technology with nature's needs? Berry sees our mechanical desires overtaking Creation -- our destructive tendencies have actually become mirrored on the waters where the images of birds and trees are reflected -- for instance, the Blackfoot River. Our work in this world, Berry tells us, must be more than acidic streams, moved mountains, arsenic laden birds, and cyanide slimmed fish. It needs

to harmonize, not overtake, the cycles of nature. Work which is contrary to natural forces assembles the "dooms" and "become[s] the lives of things." If natural systems are to be maintained then technologies that sustain and complement, not overcome, natural systems must become the established technologies. The time has come for "sustainability" to manifest itself in the consciousness of every technology user and every person that may be used by technology. In order to do this we must have a working definition of sustainability.

Struggling to define sustainability has been a persistent problem of philosophers, ecologists, theologians, and scientists alike.⁴⁷ Because the pursuit towards a sustainable future is increasingly more needed, it is important to discuss the relationship between technology and the evolving definition of sustainability. The intent of a working definition of sustainability is to place humans in a position of responsibility for their technologies -- to expose the lack of moral and social regard for Earth's resources and living beings, and ultimately to demonstrate Canyon Resources' lack of respect for the Blackfoot Valley.

The main problem in discerning an acceptable definition for sustainability is the lack of clarity about what is to be sustained as well as what are appropriate levels of such sustainability. Should sustainability focus only on human needs, just wildlife, only agricultural products, or simply the natural world as it is without human beings in it? In

⁴⁷J. Baird Callicott, *Earth's Insights: A Multicultural Survey of Ecological Ethics from the Mediterranean Basin to the Australian Outback* (Berkeley: University of California Press, 1994).

addition, there are problems of determining how much of a certain factor should be sustained. Even if we decide what should be sustained and what should be measured there are "more fundamental disputes over legitimate methodologies for setting sustainability levels in general, along with basic methodological issues over what would count as acceptable standards of proof that sustainability has been achieved."⁴⁸

The Brundtland Report, published by the United Nations, defines sustainability as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."⁴⁹ This position is clearly anthropocentric in scope; elements of biotic holism and animal rights are ignored. However, the World Commission on Environment and Development produced this definition of sustainability in the Brundtland Report in hopes of creating a practical definition, "one that would lead to changes in access to resources and in the distribution of costs and benefits."⁵⁰ They desired a "working" definition -- one that was amicable to *most* people. It was to be economic in mindset and practical in outlook. The commission wanted to link sustainable development with the inclusion of future generations in any valuation of

⁴⁸Stanley R. Carpenter, "When are Technologies Sustainable?," *Society for Philosophy and Technology* 1, nos.1-2 (1996) [ejournal]; available from http://vega.lib.vt.edu/ejournals/SPT/v1_n1n2/carpenter.html; Internet; accessed 5 November 1997, 1.

⁴⁹United Nations World Commission on Environment and Development, *Our common Future* (New York: Oxford University Press, 1987), most commonly referred to as the Brundtland Report, 43.

⁵⁰Cesar Cuello Nieto and Paul T. Durbin, "Sustainable Development and Philosophies of Technology," *Society for Philosophy and Technology*, 1, nos.1-2 (Fall 1995) [ejournals]; available from http://vega.lib.mt.edu/ejournals/SPT/v1_n1n2/nieto.html; Internet; accessed 5 November 1997, 1.

economically minded sustainable development. The definition seeks to achieve the visionary excellence mandated by many Native American traditions -- looking ahead seven generations -- but falls short because the report fails to specify how many generations to look ahead to.

However, the report did make one major stride: it sought the inclusion of the world's poor in determining any economic valuation of our future sustainability. Even deciding if the poor are something that should be sustained is difficult for corporations to do. The U.N. commission went so far as to say that including the poor in sustainable development measures was of "overriding importance."⁵¹ Since the report was released in 1987, African nations are still being pillaged by American gold miners who follow no environmental regulations, including Canyon Resources which has gold explorations in Ethiopia.⁵² In addition, Canyon is moving into Brazil where it will export raw materials to be refined and manufactured in the U.S., despite the immense need of this country for economic stimulation at home. The poor are as important a consideration in sustainability as is the Earth and its animals. Montana must be cautious that large corporations consider the needs of the poor in any assessment they make of the area they are moving into to. One of the questions needed is how Canyon will help the poor of our state? They cannot answer this saying they will provide jobs for people. However, there is no indication that these jobs will even be given to the poor.

⁵¹World Commission, *Our common Future*, 43.

⁵²Canyon Resources Corporation, "1996 Annual Report," (Denver, CO: Canyon Resources Corporation 1996), 22.

Looking into the future and including the poor when we consider sustainability is of utmost importance. But figuring out how to measure such inclusion is difficult. Moreover, how do we establish common standards of measurement among all peoples and nations of the world? The report failed to place tools which could measure such factors into the hands of the technology producers, the government, and the technology users alike. The ideas presented in the report are important, but the effects are minimal. The "technocrats" who do not support environmental holism, stewardship, or sustainability continue to violate the poor and the poorer nations' environments.

A similar view to that of the U.N. commission is that of the philosophers Bojo, Maler, and Unemo. They demand that "all options [be] preserved, which would allow the preservation of all kinds of resources."⁵³ In this view the potential exists for no new resources to be developed or explored. Thus, gas, oil, or gold found in exploration could receive the status of that which should be left in its entirety for future generations. Of course this does not mean these resources will never be removed; it simply maintains the integrity of the whole by reserving the right for resource development for future humans. Yet, these writers do not see this idea to its full potential where resource preservation is ultimate -- future humans' needs are ignored. Instead, they develop an operational definition of sustainability that allows for alterations: "If physical or human capital can be sustained for an environmental resource, then the environmental resource can be exploited in such a way that it is severely reduced if, and only if, the investments in the

⁵³Cesar Cuello Nieto and Paul T. Durbin, "Sustainable Development and Philosophies of Technology," 2.

stock of human and physical capital are such that the total resource base is not reduced."⁵⁴ There is to be a balance maintained between desired human needs and resource development. The net capital extraction and reserve quantity must be equal. Exactly how they wish to achieve this delicate balance is left a mystery.

There are evident problems of valuation in a definition such as this. The determination of a particular commodity value in regards to the total resource base would be extremely difficult if not impossible to discover. Valuation measurements must consider many factors, including such things as ethics, religion, and ecology.⁵⁵ But, how do you measure this? This is precisely the problem this definition faces.

Another, and radically different position on sustainability is presented by Robert Gottfried -- a deep ecologist. He agrees with the Brundtland Report that sustainability is the ability of an economy to maintain human well-being over many generations, but he adds that we must extend "individual concepts of fairness to equity between generations."⁵⁶ In other words, we must feel a moral obligation to the generations of humans which will follow us. He says that an organicist (holistic) approach to ethics avoids many of these valuation difficulties. Such an ethic emphasizes safeguarding large-scale ecological processes and stresses that people not seek only an anthropocentric ecology, but also an ecology based upon a concern for the larger society and world as a

⁵⁴Ibid., 2.

⁵⁵Stanley R. Carpenter, "When are Technologies Sustainable?" 2.

⁵⁶Robert R. Gottfried, *Economics, Ecology, and the Roots of Western Faith: Perspectives From The Garden* (Lanham, MD: Rowman & Littlefield 1995), 6.

whole -- including animals, plants, and resources. This position offers an alternative to the valuation of particular commodities in accordance with an unknown standard of a non-biosphere centered sustainability. The deep-ecology idea incorporates the whole world -- a holistic moral relationship that is very similar to stewardship.

The desire to sustain the integrity of the world and of ourselves becomes a moral relationship in this position. Human beings are ethically attached to the Earth, as our life giver is a recognizable possessor of inherent value. All living things are seen as being of equal status to us -- at least ecologically. Being entwined in an ethical relationship with the Earth creates an obligation to maintain the systems which sustain you. If we wish to take out a chunk of the Blackfoot Valley to produce gold bullion, then we must measure the impact this will have on the global ecosystem-system -- in order for the world to be sustainable we must look at all the facets of the decision. There must be a holism of all of the Earth's systems: human, animal, plant, natural resource, and spiritual. One of these cannot be greater in value than the other. All of the Earth's systems must be considered equally sustainable.

Holistic sustainability, then, does not demand ceasing technological production nor the use of technology. Holistic sustainability only desires us to be sure of how we are using technology, to take responsibility for our actions and in so doing, preserve the Earth for future generations. Technological holistic sustainability should incorporate many facets of technology into the discussion: "political, social, economic, biological, perceptual, informational, epistemological, spiritual; its effects upon children, upon

nature and upon power and upon health."⁵⁷ A totality of effects constitutes a "holistic" viewpoint. Minus these considerations technology becomes destructive. If some aspect of holistic consideration is left out and forgotten, the entire holistic balance suffers. The forgotten piece of the whole will be subjected to unnoticed domination by those using the technologies which exploit it.

Sustainability in nature "implies maintaining the integrity of nature's processes, cycles, and rhythms."⁵⁸ Do we maintain Earth's rhythms and cycles through the view of deep ecology (ecocentric) or the Brudtland Report (anthropocentric)? Philosophers such as Holmes Rolston have argued that obligations to future generations do not explain why human beings should be obligated to preserve wild ecosystems, and that humans provide insufficient motivation of will to do so.⁵⁹ John Passmore has defended anthropocentric approaches arguing that the notion of intrinsic value as distinct from value to humans is conceptually incoherent, and that preservation is itself a kind of human use whose value should be weighed against other uses.⁶⁰ Some on the side of anthropocentrism argue that once anthropomorphic sustainability has become sufficiently enlightened and extended into the future, it can support a conception of functional integrity as readily as the

⁵⁷Jerry Mander, *In the Absence of the Sacred: The Failure of Technology & The Survival of the Indian Nations*, (San Francisco: Sierra Club Books 1991), 39.

⁵⁸Cesar Cuello Nieto and Paul T, Burbin, "Sustainable Development and Philosophies of Technology," 5.

⁵⁹Holmes Rolston, "Environmental Ethics: Values in and Duties to the Natural World," in *Ecology, Economics, Ethics: The Broken Circle*, ed. F.H. Bormann and S.R. Kellert (New Haven, CT: Yale University Press 1991), 73-97

⁶⁰John Passmore, *Man's Responsibility to Nature* (New York: Scribner's 1974).

ecocentric alternative. They believe that new technological advances can save us from the destruction and harm of the old technological damage. This may be true in some cases, but often new technologies develop in response to a problem which occurred in nature, for example: mining. When a company goes in to clean up the mined area, they not only use advanced technologies to solve the problems they created, but they also become users of technological production. They are continuing the cycle of production. Even if the factory where the new technology was produced has reasonable environmental protection standards, they are still creating waste. It is a cycle spiraling outward towards an infinity of new commodities -- needing a new "fix" to solve the problem caused by, what was at one time thought to be, the proper "fix." The Berkeley Pit is a prime example of this cycle. Those who reclaimed the Pit built a golf course over parts of the old mine, but while they were building the golf course, they had to use trucks which burned gasoline and bulldozers to move the earth. And now they have to waste water to keep the green belts, resulting in the continuation of a cycle of use. Granted the golf course looks better than the tailings, but it is still using nature's commodities to cover up our avoidable mistakes.

At the same time the anthropomorphic technologic cycle is going on, the ecocentric purporters call the view "short sighted and biased."⁶¹ They believe continuing human intervention will only lead to a further distorting of proper ideas of sustainability. Human centered sustainability loses sight of the fact that we are surrounded by

⁶¹Jerry Mander, *In the Absence of the Sacred: The Failure of Technology & The Survival of the Indian Nations*, 381.

technology, surrounded by a world of gadgets and gadgets that we cannot escape.

The information that nature once offered sustainable societies and technologies is now absent. With each generation of technology, and with each stage of technological expansion, human beings have fewer alternatives and become more deeply immersed within a "technological consciousness." It's hard seeing out, since we live constantly inside an environment of human invention, reacting solely to tools we created. The web of interaction among the machines and the humans becomes more complex and more invisible, while the total effect is ever more powerful and present. We become increasingly enclosed and less aware of that fact. Our environment is so much a product of our invention that it becomes a single worldwide machine. This machine, because it is what we know and depend upon, then searches for answers about how to solve the very problems that it created. A completely technologized world has the potential to become disconnected from any concept of sustainability and the world becomes a thing to be used in sustaining mechanical production.

The horrible vision Berry paints for us of an Earth "bridged and forgot" is coming true in the anthropocentric definition of sustainability. The world faces a technological crisis and people still turn their backs -- attempting to solve a technological problem with more technology. Will the cycle stop? When will we begin to admire, value, and respect the holistic farm and the holistic Earth? Perhaps the industrial human vision has become cynical and we do not see a way out of the cycle. Berry says creation is wrecked. The only visible hope to get us out of the technological cycle is the ecocentric definition of sustainability because it includes the anthropocentric definition within it. Humans are not

separated out of the word "natural," they are an integral part to the functional integrity of the whole. The anthropocentric sustainability purporters have gone awry in their ideas about sustainability by placing the human outside of nature. A holistic attempt at sustainability makes the human integral. Viewing humans as outside of nature is ridiculous because everything that nature does has an affect on us, whether it be the weather, earthquakes, tornados or any other natural activity. We are absolutely essential to the survival of nature as much as nature is absolutely necessary for our survival. Thus, holistic sustainability is an idea that gives humans a reason to protect the environment -- maintaining the species -- and views humans as one of many things existing in the natural world with inherent value. A holistic approach to sustainability values the Earth for its sake -- not solely humans sake.

Chapter 6

AWAKENING THE SACRED

Stewardship, sustainability, biotic communities, the Sacred, Mother Earth: lost in the corporate whirlwind these are not terms corporations know. But the essence of all of these things was once in North America and is, to a much lesser extent, still here. The underlying spirit of all these things lives and manifests itself within the ancient tribes of this continent --the Native Americans. They had stewardship, sustainability, a sense of biotic community, and they also had the Sacred. They understood their lives were held entirely within the delicate balance of the Earth's cycles. They also knew that they were essential to the survival of the cycle and because of this, they respected, worshiped, cherished, and tended the Earth.

Stewardship is similar to an understanding of the Sacred; it calls us to be nurturers of the Earth and to hold a covenant with it. But the Sacred moves us towards an even deeper connection to the Earth. In a Sacred idea of the Earth we are integral parts of the Earth's cycles. We are intimately connected to it on spiritual, physical, and mental levels. There are no boundaries between the relationship of a person and the Earth -- the relationship is essential and intrinsic. It is a deep co-dependence and respect for all living things. In the stewardship concept this same relationship does not exist. Humans, even when viewing themselves as part of a biotic community, are not seen as essential to the continuation of the Earth's cycles.

As with stewardship, holistic sustainability also fails to truly embody all of creation in its understanding of the environment. Sustainability leaves creation "outside"

of the decision-making process because the Earth is not asked to speak for itself, instead it is valued by humans and this provides the reason to protect it.

In traditional concepts of the Sacred there are three main points:

- 1) a belief in or knowledge of unseen powers, of what some people call The Great Mystery,
- 2) knowledge that all things in the universe are dependent on each other,
- 3) personal worship reinforcing the bond between the individual, the community, and the great powers.⁶²

Worship is a personal commitment to the sources of life. In this type of world view there are innate dependencies of humans on all things, and all of these things on humanity.

But, no one thing is greater or better than any other one thing. Everything is balanced.

All the sources on the Earth that can speak and be learned from are included in a sacred understanding of the Earth. As these traditional concepts of the sacred become integrated into a worldview, the person becomes more connected to the land and the creatures around them. They hear and understand their message and how they relate to it:

In the culturally constructed world of the Waswanipi, the animals, the winds and many other phenomena are thought of as being "like persons," in that they act intelligently and have wills and idiosyncrasies, and understand and are understood by people. Causality in the Waswanipi world is not mechanical or biological, it is personal. . . Waswanipi hunters say that they only catch an animal when the animal is given to them. They say that in winter it is the spirits, especially the north wind, and the animals' spirits themselves which *give* animals to the hunters and their families so that they will have what they need to live and survive. . . The body of the animal a hunter receives nourishes him, but the soul returns to be reborn again, so that when men and animals are in balance, the animals are killed but not diminished, and both men and

⁶²Beck, Peggy and Walters, Anna, *The Sacred: Ways of Knowledge, Sources of Life* (Tsaile, AZ: Navajo Community College Press, 1992), 6.

animals survive. . . In return for the gifts, the hunter has obligations to the animals and the spirits to act respectfully towards the bodies and souls of the animals. . . It is expected that men will kill animals swiftly, and avoid causing them undue suffering . . not to kill more than he is given, not to kill animals for fun or self-aggrandizement.⁶³

The same ideas that the Waswanipi have about the taking of animals, must also influence our attitudes about mining, hunting, and all of our interactions with the natural world. When the Earth speaks to you and says that you may take from it, then you may. In return, we who have taken have obligations to the Earth and the animals to give back to them. A sacred trust ensures that our world is based on give and take, with one never more prominent than the other. Exploitation of any creature or part of the Earth is a violation of the trust between us and the Earth. It is expected, as the Waswanipi describe, that you not take more than you are given, nor take for "self-aggrandizement."

The beloved Earth is not a commodity to be traded, divided, or treated like a dollar. It is something to cherish and love. Without the Blackfoot Valley, western Montana, and the Northern Rockies would be vacant -- absent. A piece of Her would be destroyed and missing. She has been already scarred for a life time with large scale mining and the after-shocks of this destruction still reverberate in living ears. The cycle of destruction needs to stop.

This cycle ignores the Earth as being Sacred. The tree people, human people, rock people, bird people, fish people, and animal people of the universe are Sacred. Everything in the world has a place in relationship to all other things. The system must

⁶³Jerry Mander, *In the Absence of the Sacred: The Failure of Technology & the Survival of the Indian Nations*, 59.

be consciously watched over and tended. Maintaining the sacred entails placing yourself in the midst of the Sacred. In a Sacred view of creation the position of the human is essential, but not dominant. We are as necessary to the work of creation as the plants and animals. Destroying anyone of these in needless haste destroys the delicate balance of the Earth, not in the sense of terminating an entire species, but in the sense of destroying part of the Sacred web. When a thing is killed in a manner contrary to the holistic system, it harms the cycle. The same happens with mining. When mining is done in a way that is unnecessary and harms the Earth, it violates the Sacred.

McDonald Gold stands to commit the injustice of scarring our Earth forever. They ignore the calls to stop the project despite the delicate nature of the Blackfoot River. This river is home to the nearly endangered cut-throat trout, rainbow trout, and small brown trout. Birds nest all along its riparian zones. Deer feed on the grasses grown along the banks and eagles and other birds feed on the fish living in the river. Humans come to fish and enjoy the river. They hunt big game that have sipped from the waters of the river and they take raft trips along the river. All of this may be lost if the McDonald Gold Project is approved by the State Land Board.

When corporations are consumed in profit thinking and profit taking they ignore the well-being of the community, worker, public health, peace, and environment. Their interest is solely in bolstering their company because they think that they must always be growing and expanding. Corporations claim that they move into areas for altruistic reasons--to raise the living standard--but they are really doing it to increase their overall worth. Canyon Resources has no interest in the Lincoln community itself. Canyon

Resources wants the gold.

Because Canyon seeks profit, they ignore calls for environmental economic assessments, stewardship, sustainability, and the sacred. Clearly, their intent is wrong. Gold mining itself can be justified, but not solely for profit and extravagance. There must be a purpose for removing the gold which will enhance the balance of the world. Simply taking the gold for profit is not acceptable under any of the ideas presented. There must be a justification that fits with the cycles of the Earth. Canyon has not provided us with such a justification.

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