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One family evacuated

Study of radioactive homes 'lost' for 8 years

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Just after Christmas, an alarmed worker from the Atlas Minerals uranium mill in Moab, Utah, contacted his county commissioners. With radiation measuring equipment borrowed from the mill, he had found elevated radioactivity levels in his home.

About the same time, hundreds of miles away near a mill in the Black Hills of South Dakota, a family of five was told to move out of its home because of radioactivity.

And it seems to be only the beginning. About 20 other towns in the West may have similar problems. More families may have to be relocated. And the federal study that first pinpointed the problem has been all but ignored for eight years.

The problem is radioactive uranium tailings, spread by the wind or used as construction fill. Years ago the fine, sandy tailings were considered valuable building material — they compacted easily and were readily available from unguarded piles near mills. Mill workers sometimes took tailings to use for their new homes or remodeling projects.

The Colorado Department of Health brought national attention to the practice more than 15 years ago when it discovered dangerous levels of radiation in Grand Junction, Colo. More than 300,000 tons of tailings were missing from the inactive mill near there. Later a researcher for the

"We conducted the study and made it available to the AEC. There was nothing more we could do. It's like beating a dead horse."

department found three times the normal rate of mongolism in newborn children in the area. While department officials say the health studies were "inconclusive," they have remained concerned, and in 1978 they convinced Congress to help remedy off-site tailings problems near inactive mills.

Despite the warning of Grand Junction and despite a 1971-72 survey that revealed the problems recently rediscovered in Moab, the Nuclear Regulatory Commission has done nothing about cleaning up or even checking radiation levels in homes near active uranium mills.

"I'm embarrassed as hell to admit that none of the environmental impact statements prepared on active mills have turned up the (1971-72) survey," says Ross Scarano, head of the NRC uranium recovery licensing branch. "Now I realize we better find out what in the world is going on."

Scarano only found out about the scope of the 1971-72 survey a few weeks ago, after he was contacted by the Utah Department of Health. The department had

found a copy of the Utah portion in its files while investigating the Moab complaint.

Scarano discovered that in 1971-72 the Environmental Protection Agency hired Lucius Pitkin, Inc., an Atomic Energy Commission contractor, to take a mobile gamma ray scanner through towns near active and inactive uranium mills throughout the West. In 106 communities, the survey detected 6,485 spots of elevated radiation that might indicate either tailings deposited by the wind or used in construction projects.

The study was never released to the public, and only a few copies were distributed to state and federal agencies. While federal officials have been investigating inactive mills' tailings, the portion of the survey pertaining to about 20 towns near active mills was forgotten in agency files. Only one state — Colorado — apparently followed up on it, according to EPA.

CANCER, GENETIC DAMAGE

It is too early to say whether the oversight has caused serious health problems.

According to Larry Anderson of the Utah Department of Health, as a result of the mill worker's query, a state study team is now looking at several homes and businesses in Moab and other towns mentioned in the Lucius Pitkin study. Samples have shown high enough radiation levels to justify further tests, but Anderson doesn't know enough yet to say whether there are health hazards.

EPA asked the Neil Brafford family to leave its home in Edgemont, S.D., after monitoring equipment showed radiation levels of from 0.66 to 0.79 "working" levels, which is about 39 times EPA's proposed standard for residences and more than twice the standard for miners, who generally only breathe contaminated air for eight hours a day. (A working level was the amount of radiation to which a miner could be exposed in previous years. Now the limit in mines is .33 working levels.)

To the Braffords' advantage is the fact that they bought the house just two years ago. If the Braffords lived in the house all their lives they would have a 50 percent risk of cancer in their lifetimes, according to John Giedt of EPA's regional radiation office in Denver. The normal lifetime risk is three percent. Radiation also increases the risk of genetic damage, although it's unknown how much.

While Jay Silhanek of EPA's national radiation office says EPA's estimates of cancer risk are frequently challenged by critics, he says the levels of radiation in the Brafford home are "frankly a little scary."

Brafford says state and federal officials helped him find an apartment and gave him money to make the move, but he is somewhat mystified by his situation. He now knows that federal officials have been aware for eight years that some houses in Edgemont were built on radioactive uranium tailings. No one told Brafford or other Edgemont home buyers, nor have any of the tailings been cleaned up.

"It doesn't seem right," says Brafford. After learning about his family's situation, some other residents of Edgemont have asked him how they can get their own homes checked out.

Thirteen of the elevated radiation spots detected in Edgemont in the 1972 survey must be investigated further before the federal and state agencies determine whether any other families must be relocated.

In some ways residents of Edgemont are lucky. Due to a bureaucratic fluke, studies have proceeded in their community while towns near active mills in Utah, Wyoming

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In the News



ATOP THE HIGH COUNTRY 8

HCN's new mascot was once mistaken for a polar bear by explorer Captain James Cook. This elusive and sure-footed animal keeps to the high country, evading attempts by man to study its behavior.

TEMPEST IN A TEAPOT 11

Teapot Dome has lived in the history books rather than the headlines for the last 50 years, as a footnote to government corruption in the 1920s. Now it's in the news again: Oil from Teapot is selling for over \$40 a barrel. That's a windfall for the U.S. taxpayer; but private producers, whose prices are kept down by federal controls, are smarting.

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THE MAN WHO SAVED YELLOWSTONE 6

George Bird Grinnell first came West as a greenhorn Ivy League undergraduate on a summer field trip, but he went on to devote his life to the preservation of wild country and animals. As editor of *Forest and Stream* and an adviser to presidents, he lobbied to close Yellowstone to commercial hide-hunters and encouraged the expansion of the national park and forest systems.

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Opinion



Trail of neglect leads to feds, and lawsuits may follow

In the next few weeks, federal and state officials will be scrambling to get the sluggish wheels of the bureaucracy rolling to produce money and equipment to clean up problems they could have taken care of eight years ago.

If they don't act now, communities with high levels of radioactivity should protest and demonstrate their concern for their residents' health and safety. Residents of Edgemont, S.D., where one family has already been evacuated because of radioactivity in its home, have so far expressed more concern about their property values and the image of their town.

They should be more farsighted. This issue could be very serious, and they must wake up to that reality.

Federal officials may soon have a good idea of how serious the situation is. While difficult, the lack of money for cleanups and the scarcity of monitoring equipment will seem simple if a really difficult issue raises its head — liability for cancer.

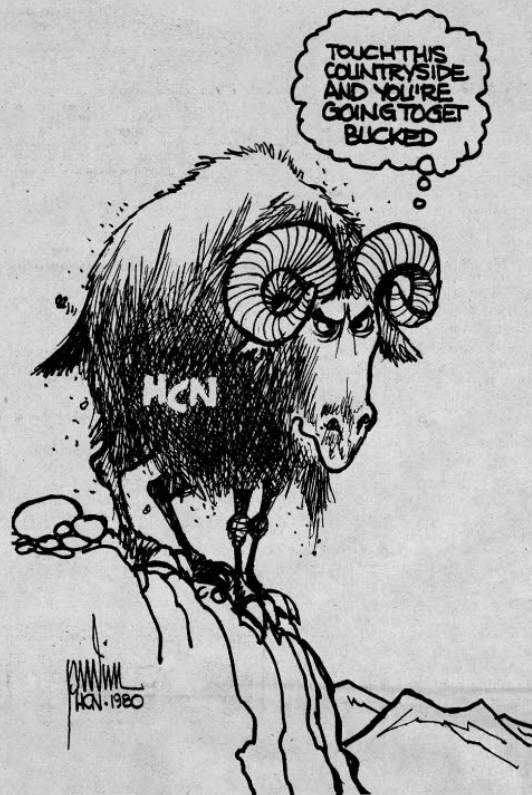
The Environmental Protection Agency says it has sufficient research in its hands to show a direct correlation between radiation exposure and cancer. The residents of one house in Grand Junction, Colo., where radiation levels of one working level were recorded, would, theoretically at least, have a 100 percent chance of getting cancer if they had lived in the house continuously for 70 years.

Armed with such statistics and with the Lucius Pitkin study showing his or her home was identified eight years ago as having high radiation levels, a cancer victim — or his survivors — would have as good a case as uranium miners or the people exposed to radiation from nuclear testing. The miner and the fallout cancer victims have already filed suits against the government.

It seems likely that the government in these homeowner suits would be the defendant. The uranium mill operators were given little if any guidance in disposing of the dangerous tailings.

And when they are considering such cases, the courts aren't likely to pay much attention to the excuses the government officials are now making about lack of communication or jurisdictional conflicts. The blame will be placed squarely on the federal government's shoulders, as it should be.

— MJA



"I was thinking of that thing with the curly horns." — Will Murphy

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Dear Friends,

People who cut their hair or grow a beard usually go into hiding for a while. They think everybody is looking at them funny, and they often regret the change, at least for the first embarrassed blush. With this issue, HCN has changed its face — and we naturally wonder, with no little trepidation, how our friends will react.

The front page flag that has disappeared this issue featured a mountain horizon, the Teton Range, viewed from Idaho side instead of the famous Jackson Hole side. It has been the symbol of **High Country News** since August 1975 and was adapted from an earlier, sketchier design. Each element of the old flag contained an important piece of information, but as a whole we felt it was cluttered and dark and competed with the good quality photos we were coming up with for the front page.

Agreeing that we needed a new design was only the initial step in the lengthy but entertaining process that resulted in the new flag making its debut this issue. We stuck with our old type-style for the words "High Country News," to preserve some vestige of our familiar face. But what was to be the symbol of HCN, what would we choose

to represent us graphically on the front page?

The controversy brought out quirks in the level-headed staff of HCN. We considered various animals. A golden eagle, to stand for fierceness and keen vision? Pretty common. A wolf or a grizzly bear? Both of them have bad associations for some people and might close their minds against us. A moose by Yellowstone Lake? Though we know better, moose have a sort of plodding and dim-witted appearance, not so good as a symbol for a newspaper.

Then the mountain goat idea began circulating. People liked the goat for many reasons: its curious and wise expression, the remote places it inhabits, a symbol of wildness and independence. Geoff said that he had seen some up in the Mission Mountains, a nanny and kid crossing a snowfield just below McDonald Peak. He said they "picked

their way delicately, clearly wanting to keep away from us; but there was no desperate scramble the way a domestic sheep, or even a bighorn, would flee." He likes the goat "for nothing more than its self-possession. But there are other characteristics that make it a fitting flag-bearer — vigilant, circumspect, not panicky. Also shy, drawn to high places, somewhat solitary."

As it turned out, each staff member had his/her own mental impression of a mountain goat, and getting them to articulate their ideas required an elaborate memo exchange. Hannah drew a draft goat, then assembled a sheaf of goat photographs and asked everyone to vote for the ones they thought had true "goat essence."

Jazmyn replied that she thought Hannah's draft goat was "a little too wistful," but found it "appealing with its goatee." Marjane chose two photos that showed the goat's eyes clearly: "mystical and knowing." Will, when confronted by the photos, was baffled.

"Was I thinking of a ram? Not a goat? All animals look alike. I was thinking of that thing with the curly horns. These animals (the alleged goats) look too innocent to me. Although they adequately connote our ability to get stuck in positions no one else could get into, they don't connote the stubbornness



DOES FAIRLIE EAT SYNFOODS?

Jan. 25, 1980 — High Country News-3

Dear High Country News,

Here, belatedly, is my answer to Henry Fairlie's attack on conservationists in *The New Republic* (see HCN, 11-16-79). Your reply brushed lightly by the points I made, which I think even conservationists sometimes forget.

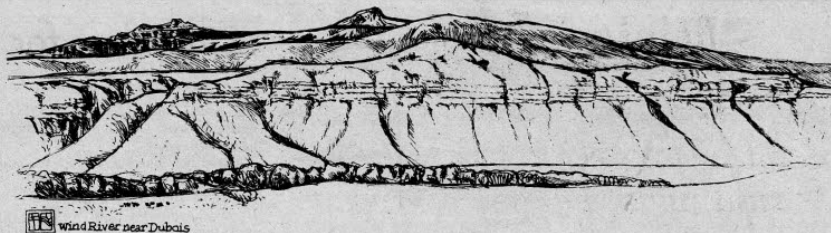
I am impelled to attempt a reply to "Conservation-The False Issue" because the complete misunderstanding evident in the essay probably is widespread among office-holders and bureaucrats, as well as among liberal writers. While the major environmental lobbying groups are best known for mainly recreational interests, they are aware that the issues of pollution and conservation of wilderness have a much wider significance.

Fairlie's dichotomy between the natural and man-made environments is the real fallacy that dominates his essay. The future of humans on the earth depends on the ability of today's decision-makers and voters to realize that none of us has food, shelter, transportation, or technological miracles without the resources that are provided by the natural environment. Humans develop the mineable resources and cultivate the land, but when the resources are gone and the land exhausted, where will we turn?

The accelerating state of resource depletion directly affects those who appear to be most insulated from the natural environment because it is the base cause of the current singular economic situation.

The threatened resources include soil and wilderness, clean air and water, as well as oil and metals. Soil supports Fairlie's eating habit, unless he subsists on synfood.

Much of our food, especially seafood, is harvested from the natural food chain. Destruction of seemingly irrelevant wilderness (such as mangrove swamps) can break the chain and disturb a food source (such as Gulf Shrimp). The raw materials for developing new strains of grain and



modern "wonder" drugs also come from the natural environment.

How much of this destruction can be tolerated without irreversibly damaging the environment is unknown. Neither do we know which of the apparently useless "minor" species will prove crucial to the survival of life on this planet. When we know the effects, it will be too late, for natural processes adjust more slowly than the pace of human history.

Humans are sitting on a man-made limb of the tree (the natural environment) that supports all life on this earth, dedicatedly sawing it, and us, off the face of the planet. The real issue is the survival of the human species.

Janet N. Pike
Palo Alto, Calif.



ACCUSATION ABSURD

Dear editor,

I have no illusions that this letter will settle the ongoing controversy over predator control, but your readers deserve to know a few items which Mr. Laird Noh of the National Wool Growers Association left out in his recent letter (HCN, 12-28-79).

Mr. Noh asserted that Secretary of Interior Cecil Andrus dropped a balanced predator policy in favor of an "extreme, virtually absurd" proposal by a member of the Council on Environmental Quality. Does anyone really believe that the powerful former governor of a very conservative Western state would bow to one person on the CEQ? That notion is absurd, and betrays the shallowness of Mr. Noh's conspiracy theory.

Disbelievers should consult the immense stack of documents that were the basis for the decision; they'll find that Sec. Andrus' decision was completely in line with the weight of the public record. Indeed, the record is so strong that many observers believed that Sec. Andrus had little other choice.

Three documents form the backbone of the record. First was a report entitled "Predator Damage in the West," which pointed out that better supervision and better care of livestock could reduce predator losses. Next was an audit of the Animal Damage Control Division that revealed substantial program mismanage-

ment, irresponsible fiscal policies and wasteful spending.

But it was the third document, the Department of Interior's own environmental impact statement, that exposed the real nature of the national predator control program. The document was inaccurate, incomplete, failed to recognize or support presidential policy, misled the reader, contained faulty arithmetic, and completely omitted any discussion of the environmental impacts of removing predators from the ecosystem. This EIS was hailed by many as Interior's worst ever.

The actual substance of the predator policy is perhaps not as important as the philosophy behind it. The public has long insisted that the thrust of predator management should be on protecting livestock rather than killing predators. The expressed desire has been for nonlethal controls and away from toxicants and other non-selective techniques.

Sec. Andrus' decision may soon bring predator control out of the dark ages. In the long run, this decision will benefit the livestock industry by shifting the focus of debate away from the unsolvable and towards decisions that will benefit all segments of the public.

Hank Fischer, Montana representative
Defenders of Wildlife
Missoula, Mont.

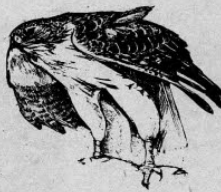
OLMSTED INSTEAD

To the editor:

Regarding your back page poem (12-28-79, p. 16), you should know that it's Freddy Law Olmsted, not Olmstead.

But spelling is not all that important. I still like High Country Noose.

Joseph L. Sax
Ann Arbor, Mich.



GRAZING POLICY

Dear editor,

After reading your article on grazing in wilderness areas from the November 30 issue of *High Country News*, I felt I should respond to clarify our policy on grazing in the Bridger Wilderness.

Managing range livestock in harmony

with other uses is difficult even under the best of conditions. The heavy recreation use we are experiencing in the Bridger Wilderness makes the job even more complex.

We are not closing out all grazing in the Bridger Wilderness. In fact, we are working to continue as much grazing as possible. In an effort to minimize conflicts between recreationists and livestock grazing, we have initiated use restrictions on both user groups. For example, we direct visitors to camp at locations away from major sheep grazing areas. At the same time, we instruct the ranchers to avoid grazing some of the concentration areas for people.

In the future, as visitor use increases, I am sure that we will have to place more restrictions on use of the wilderness by both livestock and recreationists.

I am encouraged to see that the Wilderness Society and the livestock organizations are working together toward the common goal of good wilderness management. This cooperative spirit will go a long way toward solving conflicts.

Reid Jackson
Forest Supervisor
Bridger-Teton National Forest
Jackson, Wyo.

Ed. note: Reid Jackson enclosed a letter from his office to district rangers dated April 25, 1978, which outlined his office's grazing policies for the Bridger Wilderness.

An excerpt follows:

"Because of the overlapping range and recreation use patterns described, the requirements necessary to coordinate sheep grazing with Wilderness recreation have become very restrictive in many areas. These requirements complicate the management of the domestic sheep to the point that it appears this activity is no longer economical or practical.

"At the same time some sheep allotments in other parts of the Forest outside of the Wilderness have become unobligated as a result of extended non-use, economics, and various other reasons. Most of these allotments are not suitable for cattle use, but could continue to be grazed by sheep provided the animals are properly managed and the range is not overstocked.

"In view of this situation it will be the policy of the Bridger-Teton N.F. to give full consideration to the possible relocation of domestic sheep from Wilderness allotments to outside areas whenever it appears possible to do so. In those instances where untenable conflicts with Wilderness values have developed and the permittee has no desire to continue his sheep operation in another area the sheep use will be discontinued and no further applications for the permit will be considered..."



and bullheaded attitudes of our editors and general staff."

Geoff came up with a compromise designed to satisfy Will, and an alternative if it didn't. "If the goat were stepping up onto a craggy prominence it would give the sense of action and aggressiveness that these goats don't usually convey. Otherwise, we could have Will climbing up out of his bathtub with a look of imperturbable sloth on his mug."

Hannah tried to incorporate some of the mountain goat qualities that people had mentioned and produced the goat you see on page one; he seemed to embody the things we want to be known for. We hope the change pleases you.

the Staff



ACTIVE MILL SITES in 1976. Buildings in many of the towns near these sites have elevated radiation levels, but they have been ignored in cleanup efforts.

Study lost for 8 years...

(continued from page 1)

ing, South Dakota, New Mexico, Idaho, Arizona, Texas, Oregon and Washington have been ignored.

Asked how likely it is that the other communities near active mills will have problems similar to Edgemont's, Don Hendricks, director of EPA's Las Vegas radiation laboratory, said, "I would be surprised if the others did not have comparable levels." Another EPA official said, "Many of these people would be safer in uranium mines, where at least the radiation levels are controlled."

Edgemont is unique because the Tennessee Valley Authority purchased the shut-down mill in 1974 and, anxious to start it up again, prodded federal agencies to expedite radiation studies. Although NRC never allowed TVA to start up the mill (it was too contaminated and too close to residences), TVA held an active license when the Uranium Mill Tailings Radiation Control Act was passed in 1978. Consequently, it was not eligible for the federal funds authorized by the act for cleaning up inactive mills (see boxed story).

LACK OF CONCERN

Asked how the 1971-72 Pitkin survey's active mill data could have been ignored for eight years, both Environmental Protection Agency and Nuclear Regulatory Commission officials blame the Atomic Energy Commission's lack of concern for the dangers of tailings. (The AEC was split into the Energy Research and Development Administration and the

NRC in 1974 and ERDA later became the Department of Energy.)

"At that time, no one at AEC thought it was a problem," Scarano says. However, he acknowledges that EPA realized it was a problem, or the agency would not have conducted the survey.

AEC's cavalier attitude toward tailings use was pointed out in hearings concerning the Grand Junction situation before a congressional committee in 1971.

H. Peter Metzger, chairman of a Colorado Health Department radiological health committee, testified that as early as 1963 the AEC was aware that tailings were being used for construction purposes. When the manager of a mill in Durango, Colo., asked AEC for advice concerning such use, the AEC told him only that tailings were not subject to the AEC licensing requirements, according to Metzger.

Scarano says that it wasn't until about three years ago that NRC began prohibiting removal of tailings from mill sites.

While the agency is now aware of the danger of such practices, it didn't have a copy of the 1971-72 study until this week. "It must have fallen through the cracks" when the AEC split into the NRC and ERDA, one official said.

Scarano now has a list of the towns and is getting a copy made of the whole study. Silhanek of EPA says he may have the only complete copy left in the country. Other officials said part or all of their copies had disappeared, lent perhaps to private contractors or to other agencies.

Several studies that have been released to the public mention the Pitkin survey,

Cleanup of inactive mill tailings to start soon

The Department of Energy has designated eight inactive uranium mill sites as its highest priorities for cleanup. Of the 25 sites to be dealt with eventually, these pose the greatest health risk because of the amount of tailings they contain and their proximity to population centers.

Congress provided money for the cleanup in the Uranium Mill Tailings Radiation Control Act of 1978. Since the mills produced yellowcake primarily for the federal government's defense program, Congress agreed to pay 90 percent of the costs for both on-site and off-site tailings. States will pay the other 10 percent. The government will foot the whole bill for four sites on the Navajo Reservation.

While the money has been appropriated, the actual cleanup awaits completion of more studies and standards.

Congress has allowed DOE seven years to complete the project.

Utah and Colorado congressmen's concern about inactive mill sites in their states led to a decision in 1974 to conduct a comprehensive study of all inactive tailings piles. Study teams including representatives of the Atomic Energy Commission, the Environmental Protection Agency and the state involved started the study in 1974.

In 1975 the Energy Research and Development Administration hired a con-

sulting firm, Ford, Bacon & Davis Utah Inc. of Salt Lake City, to assess on-site and off-site contamination of water, air and land and their possible health impacts. For its off-site work, the firm re-

lied on a 1971-72 study conducted for the EPA by Lucius Pitkin.

Most of the ERDA studies were completed in 1977, but cleanup funds were not appropriated until 1978. After the

tailings bill was passed, three sites were added to the list — two in North Dakota and one in Wyoming — and less detailed studies have been conducted at those sites.

The bill said the cleanup could not begin until EPA had adopted radiation exposure standards, which are due late this year.

Before the project can begin, DOE must hire an architect-engineer to develop plans, a technical support contractor and an environmental consulting firm to prepare environmental impact statements on each of the high priority sites. Less detailed environmental reports will be prepared for the other sites, according to Mark Mathews of DOE's cleanup headquarters in Albuquerque, N.M. The agency must also sign cooperative agreements with the states.

High priority sites: Durango, Grand Junction, Gunnison and Rifle in Colorado; Shiprock, N.M.; Canonsburg, Pa.; Salt Lake City, Utah; and Riverton, Wyo.

Medium priority sites: Tuba City, Ariz.; Naturita, Colo.; Ambrosia Lake, N.M.; Lakeview, Ore.; Falls City, Texas; and Mexican Hat, Utah.

Low priority sites: Monument Valley, Ariz.; Maybell and Slick Rock, Colo.; Lowman, Idaho; Belfield and Bowman, N.D.; Green River, Utah; and Baggs and Converse County, Wyo.

Photo by Jack McLellan
VITRO CORP.'S tailings in Salt Lake City will be among the first cleaned up. A total of 1.7 million tons of tailings were left within city limits. Pictured are steps to the old mill.



including engineering studies conducted at inactive mills for ERDA and DOE and a 1977 EPA report on the radiological quality of the environment.

However, EPA did not mention the study when it reviewed any of the environmental impact statements NRC prepared on active mills.

Giedt of EPA says the environmental statements' format did not provide for consideration of such off-site impacts. "We conducted the study and made it available to the AEC in 1972, and they chose to do nothing about it. There was little more we could do. It's like beating a dead horse," he says.

HIGH TIME

"It's high time NRC got concerned," Giedt adds. He says NRC wouldn't even send a representative to a meeting with

thorized by the NRC to regulate nuclear-related facilities within their boundaries. All of the Western uranium-producing states except Wyoming and South Dakota are agreement states.

Other states included in the survey apparently were not as concerned as Colorado, and non-agreement states also lacked money, staff or standards to respond.

Rediscovery of the study does not assure immediate action. Working on cleaning up the inactive sites isn't expected to begin until late this year, almost 10 years after the Pitkin study revealed those off-site tailings problems.

For the towns near the active mills, the emphasis now is on finding enough monitoring equipment to pinpoint the

trouble spots and to find the money for the cleanup.

"I'm embarrassed as hell to admit that none of the environmental impact statements prepared on active mills have turned up the (1971-72) survey."
— NRC

EPA, TVA and South Dakota officials held last summer to discuss off-site tailings problems in Edgemont.

Scarano says, however, that he didn't send anyone because TVA was trying to get further studies while NRC wanted to proceed with the cleanup as quickly as possible.

Jurisdictional and funding problems have always plagued regulation of radiation. A study published in January 1978 by the General Accounting Office, the investigative arm of Congress, said that funding and staffing for EPA's Office of Radiation Programs had dropped steadily from 1971 through 1978.

The GAO report said EPA was inadequately monitoring radiation because it was given "unclear authority" and because of jurisdictional challenges, limited cooperation with other agencies and research groups, and the low priority given to radiation protection.

Giedt says staffing and funding for the radiation program have improved since the report, and the tailings control act greatly clarified tailings regulation by giving NRC authority.

However, state jurisdictional questions have also apparently blocked action on the survey. EPA says it can conduct studies only when it is specifically requested to do so by a governor, and remedial action is definitely not its mission.

When the Pitkin survey was completed, only Colorado asked for help on followup studies. With joint state and EPA funding, Colorado has been investigating off-site radiation problems at most of the towns near active and inactive mills included in the study, according to Al Hazle, director of the state radiation program in the department of health.

Because of elevated radiation levels in many homes, tailings will have to be removed, but Hazle says that so far, levels have not been high enough to justify relocating families. In one company town, several bunkhouses had to be destroyed.

Hazle explains that ever since the state discovered the problems in Grand Junction, it has been concerned about tailings and willing to spend state funds to deal with such problems. Also, since it is an "agreement" state, it has a department set up to deal with radiation issues. Agreement states are those that have been au-

thorized by the NRC to regulate nuclear-related facilities within their boundaries. All of the Western uranium-producing states except Wyoming and South Dakota are agreement states.

Money will also be a big hurdle. Scarano thinks he can find enough to cover monitoring. But NRC attorneys think it would be difficult to force mill operators to pay for cleaning up off-site tailings. NRC probably would have to show that mill operators had been required years ago to maintain full control over the tailings and that the AEC had recognized tailings as a hazard, the attorneys told Scarano.

If industry can't be held responsible, legislation will be needed to get federal funds for the cleanup, Scarano says. Sen. George McGovern (D-S.D.), who became concerned because of the Edgemont situation, is now trying to find money, possibly through the Department of Energy's authorization bill.

The off-site tailings cleanup in Grand Junction is averaging \$14,300 for each

The portion of the study indicating danger zones in 20 towns near active mills was forgotten in agency files.

home and \$63,700 for commercial properties, according to Hazle of the Colorado Department of Health.

In the meantime, Giedt suggest (facetiously) that the NRC should license people's homes where elevated radiation levels are found since the mill tailings act says the NRC should license uranium material wherever there is concern for the public's health and safety.

The homeowners may not be too excited about paying for a license, having themselves monitored like miners or having their homes checked periodically by the Mine Safety and Health Administration, he admits. However, licensing would require the NRC to supervise the residents' safety more closely that it has in the past, Giedt says ironically.

Research for this article was paid for in part by the HCN Research Fund.

Communities that may have 'hot spots'

The Lucius Pitkin survey in 1971-72 found spots with elevated radiation readings in the following towns near active or inactive uranium mills. Not all the high readings were caused by tailings — some may be from concrete blocks made of naturally-radioactive gravel, chunks of ore collected by weekend prospectors, or store windows displaying radium-faced clocks, according to Don Hendricks of the Environmental Protection Agency laboratory in Las Vegas. The number of tailings-related hot spots is listed after the name of each state:

Colorado (6,191 spots) — Cameo, Canon City, Clifford, Colbran, Craig, DeBeque, Delta, Dove Creek, Durango, Fruita, Gateway, Glade Park, Grand Valley, Gunnison, Leadville, Loma, Mack, Mesa, Mesa Lakes, Molina, Naturita, Nucla, Palisade, Plateau City, Rifle, Salida, Slick Rock, Uravan, and Whitewater.

Utah (168 spots) — Blanding, Bluff, Cisco, Crescent Junction, Green River, Magna, Mexican Hat, Moab, Monticello, Salt Lake City, and Thompson.

South Dakota (47 spots) — Edgemont, Hot Springs and Provo.

Wyoming (41 spots) — Hudson, Jeffrey City, Lander, Riverton, and Shirley Basin.

New Mexico (21 spots) — Bluewater, Camero, Grants, Milan and Shiprock.

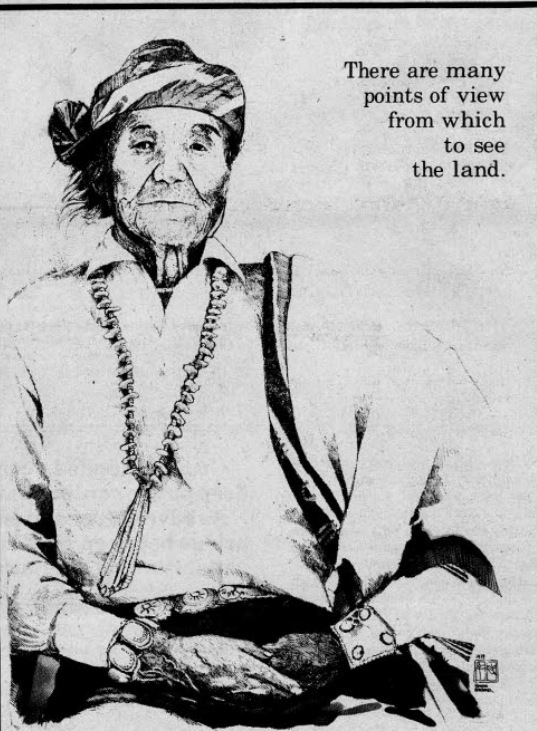
Idaho (10 spots) — Idaho City, Lowman and Salmon.

Arizona (seven spots) — Cameron, Cutter and Tuba City.

Texas (six spots) — Campbellton, Coughran, Fall City, Fashing, Floresville, George West, Karnes City, Kennedy, Panna Maria, Pawnee, Pleasanton, Poth, Three Rivers, Tilden and Whitsett.

Oregon (one spot) — Lakeview, New Pine Creek.

Washington (two spots) — Creston, Ford, Reardon, Springdale.



There are many points of view from which to see the land.

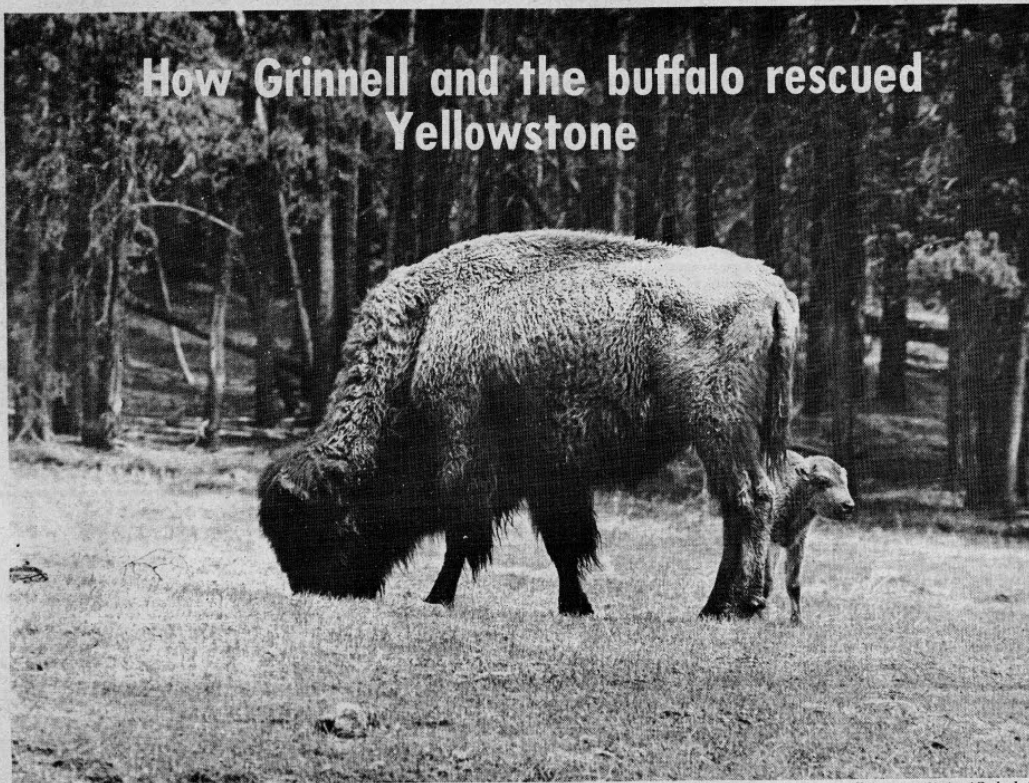
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How Grinnell and the buffalo rescued Yellowstone



Yellowstone National Park photo

THE BUFFALO. Grinnell pegged the future of Yellowstone Park to this enduring American symbol. One result of his campaigning was the landmark park legislation passed by Congress in 1894.

©1980 by Peter Wild

Soldiers gazing over the ramparts of Fort McPherson beheld a strange sight out on the Nebraska flats. Coming toward them at the head of a dusty plume was not a military supply train nor a band of ram-bunctious Sioux but wagons loaded with students from Yale University.

Led by paleontologist Othniel C. Marsh, the little party would spend the summer of 1870 hunting fossils for Yale's Peabody Museum. Marsh was on the verge of discovering substantial evidence of Darwin's theory of evolution in the West's ancient sea beds. The students, however, looked to the summer ahead as a lark, an extended recess in the wild West.

They were in for some jolts. As they rode out into the little-known expanses of Montana and Wyoming, they had to endure 110-degree heat, thirst and bad bacon. Miffed at the invasion, the Indians set the prairie on fire; the Yale men lit back fires. When at night the warriors crept in to howl like wolves from the nearby hills, the undergraduates responded with school songs.

Eleven of the 12 students returned East to finish at Yale and pursue prosperous careers. But after nearly two years in his father's New York brokerage firm, George Bird Grinnell still couldn't get the excitement of the West out of his system. In 1872

Grinnell needed a concrete symbol to generate deep public sentiment. He found it in the buffalo. As adventurer and editor, Grinnell served as a bridge between East and West, between preservationists and utilitarians.

he went back, this time to hunt buffalo with the friendly Pawnee tribe. Nearly every summer for the next 40 years Grinnell would return to gather scientific specimens and savor the colorful frontier life.

Luckily, work at the Peabody Museum kept him from accepting General George Armstrong Custer's invitation to join the expedition that ended with Sioux war cries on the Little Bighorn. Grinnell, who complained during the early forays that he wasn't able to catch a renegade in his rifle sights, saw the West in changing perspectives as he matured. In later years he lived with the now languishing tribes as a friend and a brother. He was one of the few influential whites of the time to fight for the welfare of native Americans. In addition, such books as *Blackfoot Lodge Tales* (1892), *The Cheyenne Indians* (1923) and *The Fighting Cheyennes* (1915) es-

tablished him as an authority on Western Indian lore.

Those accomplishments and his own self-effacing personality unfortunately obscured a broader contribution. President Theodore Roosevelt heralded his own natural resource programs in razzle-dazzle terms that left the public and many historians believing that conservation — not unlike Athena leaping from the head of Zeus — had sprung full-grown from his administration. The analogy would be closer to the truth if George Bird Grinnell were substituted for the fathering Greek god.

In 1875 Grinnell joined Captain William Ludlow's expedition into Yellowstone National Park. The nation's sole park remained only partly explored; Ludlow's job was to survey the area and give Congress an account of the "wonders" it had somewhat casually decreed an inviolate domain

three years earlier. Despite its remoteness, the park was infested with commercial buffalo hide hunters, Ludlow and Grinnell found. The hunters were skimming off nature's abundance with their repeating rifles, each year leaving tens of thousands of buffalo carcasses rotting in the sun.

As the naturalist of the expedition, Grinnell used his portion of Ludlow's report "to call attention to the terrible destruction. It is certain that the large game will ere long be exterminated." With these words, the first official protest to buffalo slaughter found in government documents, 26-year-old Grinnell began his career as a conservationist.

It was not coincidence that the young Easterner echoed the concerns of the artist John James Audubon, who decades before had wrung his hands over similar scenes of slaughter. In order to escape crowded New York City, in 1857 Grinnell's prosperous father moved his family to "Audubon Park," the estate on the banks of the Hudson River that the ornithologist had left to his heirs. There, in what was still a wooded part of Manhattan, Grinnell grew up almost as part of the Audubon family. With other local children, Grinnell attended a little school conducted by Audubon's widow in her bedroom. To Grinnell, she was "Grandma." Her influence ran so deep that when he later started the first Audubon Society, "he named it as much for her



as for her husband," states Grinnell scholar John F. Reiger in *The Passing of the Great West*.

The boy climbed into the loft of the Audubons' barn, where he found stacks of red-bound ornithological biographies. There he sat reading about the naturalist's explorations up the Missouri and Yellowstone Rivers. He read of "the terrible destruction of life, as it were for nothing,....as the tongues only were brought in, and the flesh of these fine animals was left to rot on the spots where they fell." Grinnell would retrace Audubon's footsteps in the West, but his reaction to what he saw would be more than a bitter but ignored lament.

This might not have come about had it not been for the diagnosis of a neurologist. Exhausted from his labors at the Peabody Museum, in 1880 the young scientist complained to a doctor of persistent headaches and insomnia. As Grinnell reports in his unpublished *Memoirs*, the specialist concluded "that I must either change my work or be prepared to move into a lunatic asylum or the grave." Fortunately, an opportunity to his liking appeared close at hand. For some time Grinnell had contributed articles on hunting and natural history to *Forest and Stream*, one of the early periodicals devoted to outdoor sports. When its stockholders forced founder and editor Charles Hallock to resign because of his drinking bouts, 31-year-old Grinnell took over the post.

He proved to be an outstanding manager. With his Ph.D. in paleontology from Yale, he brought an unsurpassed scientific background to the newspaper. More importantly, his refined Eastern qualities were balanced by rough-and-tumble experiences on the frontier. In the thick of conservation battles, no Western exploiter could point to the editor of *Forest and Stream* as an effete city dweller who didn't understand the problems of the West. To top it off, Grinnell's innate business sense soon had the publication making, as he put it, "plenty of money."

The new editor continued the policy of foresighted Hallock, using *Forest and Stream* as a rallying point for disgruntled sportsmen. Reminding readers of the well-managed reserves in European countries that produced game on a sustained-yield basis, the newspaper lobbied for law enforcement and innovative reforms. Specifically, Grinnell proposed a system of game wardens, state-regulated bag limits and conservation programs financed through hunting fees. The paleontologist campaigned through front-page editorials in *Forest and Stream* and pamphlets distributed free-of-charge to congressmen and ordinary citizens alike. In doing so he drew the nation's major magazines, and with them the public, into the early struggles for wildlife preservation that culminated in massive game-law reforms passed early in the next century.

At the same time Grinnell recognized that game laws, no matter how effective, were useless if wildlife had no place to live. During one of the nation's most heady periods of industrialization, Grinnell set out to preserve great tracts of wild land. The result was the emergence of the national park system and the concept it embodies today.

At the time, America had only one national park — Yellowstone. It owed its existence not to its wilderness of peaks and forests but to geological happenstance. The geysers and bubbling mud fields had provided sufficient drama to attract, if only briefly, the attention of Congress. Nearly 2,000 miles away from Eastern population centers, rarely visited except by eager hide hunters, it existed in the minds of those who thought about it as a kind of national sideshow.

Tourists, what few there were, hampered away at the creamy geyserite and hauled it off in their wagons for curios. One superintendent staked mining claims within the park, then spent much of his time back in Washington lobbying for development. Even the most inexperienced hunter would be successful, advertised the Yellowstone Valley Hunting Club in Eastern newspapers. The outfitters not only furnished arms and ammunition, but guaranteed trophies for their greenhorn clientele. Meanwhile, the price of buffalo heads soared to \$500 apiece during the final years of exploitation. Once in a while, the U.S. Cavalry might pounce on a lawbreaker, but often the case was laughed out of an unconcerned court.

Sitting in the New York office of *Forest and Stream*, Grinnell knew and loved Yellowstone. Its boundaries were already established; the problem was that few people cared about what was taking place within them. Grinnell understood this and used his increasingly popular *Forest and Stream* as a public forum. Through its pages he fostered a shift in national attitudes that formed the broad basis for future conservation gains. Up until then the history of America largely had been one of a Westward-moving free-for-all — each man, whether railroad magnate or penniless homesteader, wrestling from the land what he could. In contrast, Grinnell suggested that some land should be held inviolate for the benefit of all. The idea began to take hold as the public realized that the prevailing laissez-faire system

was designed to reward the shenanigans of a few aggressive entrepreneurs at the expense of the commonweal.

Once Grinnell established the link between public land and public welfare, his campaign made headway. Still, it was a somewhat vague notion. Grinnell needed a concrete symbol to generate deep public sentiment. He found it in the buffalo.

By the late 19th century the country already was regretting the passage of the frontier — its freedom and vastness typified by the once countless herds of shaggy beasts. In little more than a generation the buffalo population had plummeted from an estimated 60 million to a few hundred frightened and ruthlessly pursued creatures. In "The Last of the Buffalo," one of the most moving yet accurate accounts of the animal's demise, Grinnell cautioned that Yellowstone harbored the last wild herd. He had pegged the future of the park to an enduring American symbol.

The arrest of a habitual poacher clinched his case. In March 1894 a soldier and the chief scout at the park, Felix Burgess, cut the trail of Edgar Howell. They followed it through the snow to six severed buffalo heads. Shots rang out nearby, and peering over a hill the two men spied Howell flaying five fresh kills. Armed only with a revolver, the scout crept over the snow toward Howell, known for his fiery temper, and arrested him on the spot.

Very probably this little drama would have gone unnoticed in the East — had it not been that Emerson Hough, a reporter for *Forest and Stream*, was visiting the park. Hough telegraphed the story to New York, and it appeared that same month with all the vivid details.

Public reaction was enormous. Hundreds of thousands of Easterners signed petitions, catching Congress off balance. For years it had turned aside legislation sponsored by Grinnell's friends to protect Yellowstone. Shamed by the mass outcry, the same body now scrambled to pass the "Act to Protect the Birds and Animals in Yellowstone National Park." The act, passed in 1894, closed gaping loopholes in existing statutes and for the first time spelled out preservation in detailed legal terms.

Yellowstone's new jail perhaps best symbolized the change that took place. Federal marshals now hauled in anyone

found in possession of geyserite, timber or dead animals. Judgment came swiftly. The lawbreakers appeared before a resident federal commissioner, not appointed by local politicians, but from Washington. The park's jail stood as a firm reminder of the new protective attitude, backed by stiff fines and sentences of up to two years.

Drawing on his own Western experiences and perceptions of the country's needs, Grinnell established a precedent for all future national parks. Building on the concerns of George Catlin, Audubon and Thoreau, he shaped the philosophy of the National Park Service, created in 1916.

The prolonged public debate generated by *Forest and Stream* over Yellowstone also called attention to the future of other resources. For years Grinnell argued for sound lumbering practices in New York's Adirondack Park, a reserve the size of Connecticut established in 1885. The newspaper also directed the mass awareness created by the Yellowstone issue toward the rapidly coalescing movement for a national forest system.

In 1891, President Benjamin Harrison created the Yellowstone National Park Timberland Reserve — the country's first national forest — from lands adjacent to Yellowstone Park. Grinnell's urgings helped determine the choice. And in the marriage of park and forest lay the future of conservation. While some activists — either as park or forest advocates — hurled brickbats at one another, Grinnell had the flexibility to see the necessity of a dual approach — preservation of some lands and scientific management on others. It was a concept that Grinnell passed on to Teddy Roosevelt and that, through him, guided the nation towards its present twofold conservation program.

While the name of forester Gifford Pinchot dominates the outstanding record of the Roosevelt presidency, actually the credit for much of it belongs to Grinnell. He established a warm friendship with T.R. beginning in 1885, some 15 years before the future president met the aggressive Pinchot. Grinnell recognized Roosevelt as a man of growing political influence. The two hobnobbed in the editorial offices of *Forest and Stream*, recalling their ranching days in the West. Grinnell encouraged T.R.'s submissions to the newspaper and fed his enormous ego, while channeling his bounding views of man and nature into gentler perspectives.

When T.R. favored a railroad through Yellowstone Park, the editor bided his time, slowly and patiently working his conversion. When Roosevelt gathered fellow patricians into the Boone and Crockett Club, Grinnell took over the reins of the trophy-hunting organization, steering it and its exclusive founders into his own battles. Quite naturally, as governor of New York, Roosevelt turned to Grinnell as his closest advisor in resource management. In short by the time Teddy became president, he, thanks to Grinnell, was ready for Pinchot.

As adventurer and editor, Grinnell served as a bridge between East and West, between preservationists and utilitarians, between the aspirations of the privileged and the ordinary citizen. Born in the year of the California Gold Rush, he went West with a different vision of riches, one that sustained him throughout his long life. Plagued in later years by a debilitating heart condition, Grinnell outlived his closest friends, the Indian chiefs and Army scouts of the frontier. He died at the age of 88, lonely and nearly forgotten.



Photo courtesy of the Smithsonian Institution
GEORGE BIRD GRINNELL: He quietly primed Teddy Roosevelt for conservation reforms.

8-High Country News — Jan. 25, 1980

Mountain goats displayed a wide range of responses to human contact, usually not antagonistic. The position of the goats' tails is a good barometer — a totally erect tail indicates fear; a tail held in normal position, no fear; a tightly tucked tail, aggression.



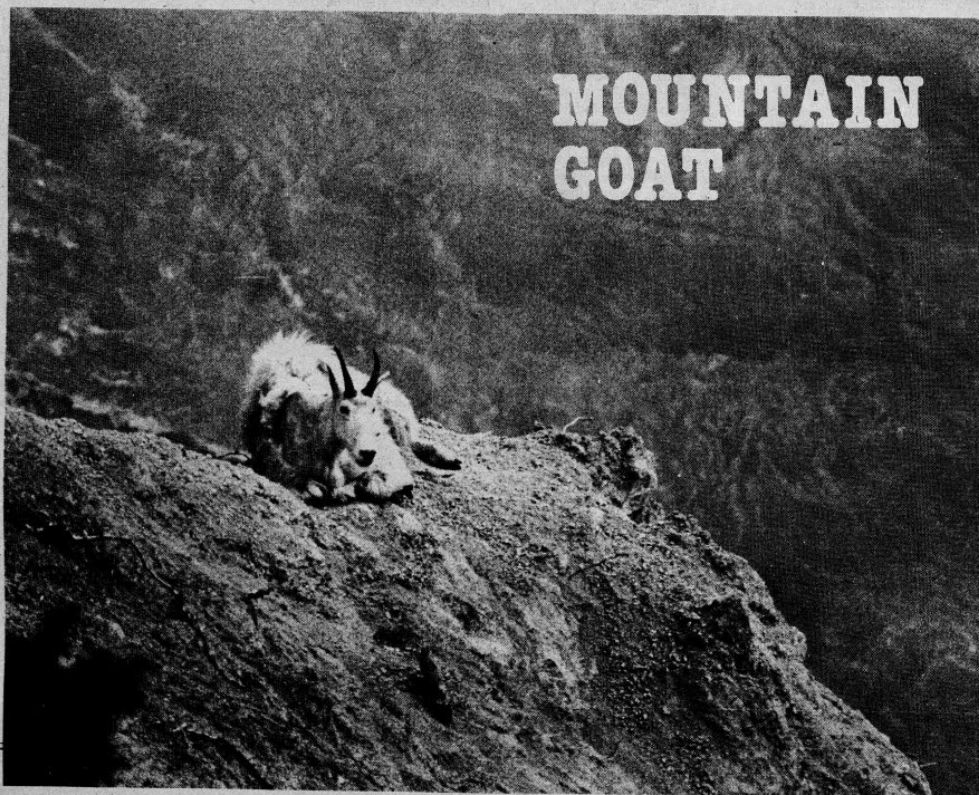
by Maureen Dempsey

While traveling through British Columbia and Alaska in 1778, Captain James Cook marveled at the soft white fur the natives had spun into yarn and made into warm garments. When questioned about the source of this material, the people pointed to white animals clinging to the rocky ledges above. Ahhh...polar bears, wrote Cook in his journal.

And polar bears they were until naturalist Alexander Henry came along to

correctly identify them. "The white goat is larger than the grey sheep, thickly covered with long, pure white wool and has short, black, nearly erect horns," he wrote. "These animals seldom leave the mountaintops. Winter and summer they prefer the highest regions."

Avalanche country. Where snow can camouflage or kill. In spite of skid-proof pads on back hooves that provide grip and traction for the agile goats, many are found at the bottom of slides. These carcasses have enabled scientists to study the



MOUNTAIN GOAT

physiology of the goats; but until recently, little was known about their behavior. Mountain goats can rarely be approached from below. Any movement from this direction causes them to climb to higher, more inaccessible places.

Misinformation has shrouded the creatures for the past two centuries. Classified as goat antelopes, they possess traits of both namesakes. Often they are confused with bighorn sheep. Their cousins have exotic, Dr. Seuss-like names: the chamois of the Alps, seows, gorals and the takins of Asia.

Both billy and nanny goats have horns and look alike, but a closer inspection shows that the billy is generally larger with wider horns. The black, spike-like horns are not shed but continue to grow throughout the life of the goat. These sharp horns can inflict deadly puncture wounds, and flesh wounds are not uncommon in a herd, for mountain goats are aggressive. Billies have been known to challenge kids or other billies on narrow cliff ledges.

On occasion, mountain goats have exhibited aggressive behavior towards humans. But in a study done by Ursula Banser of the University of Montana in 1976, mountain goats displayed a wide range of responses to human contact, usually not antagonistic. The position of the goats' tails is a good barometer — a totally erect tail indicates fear; a tail held in normal position, no fear; a tightly tucked tail, aggression.

How a goat feels about you may depend on how much you perspire while hiking. Mountain goats are attracted to salt, and biologists using salt licks as lures have been able to study them at close range. In areas where there are no natural licks, goats have approached people within several meters, at times licking perspiration from hikers' arms and legs. Urine spots in campsites also attract goats.

Most of this kind of contact takes place in areas where the mountain goat is protected. In places where it is hunted, goats are wary of man.

The actual population of mountain goats is unknown, making management difficult. Their normal range is in northwestern North America, from southwestern Alaska and the Yukon south through British Columbia and western Alberta into Washington, Oregon, Idaho and Montana. They have been successfully introduced in South Dakota, Colorado and Utah.

Some people argue that there are too many goats in some areas and that hunting strengthens a herd. Others argue that goat hunting should be stopped in some areas and reduced in others to compensate for the increase of human intrusions into goats' habitats. Most of this is due to new mining and logging roads that have opened up areas to vehicle travel.



**PHOTOS
BY
DAVID
SPEAR**

10-High Country News — Jan. 25, 1980

by Geoffrey O'Gara

TEAPOT DOME, Wyo. — The rolling brown hills of this 9,500-acre federal petroleum reserve are dotted with familiar rocking-horse rigs pumping light green crude oil — crude that will be sold by the federal government next month for over \$40 a barrel.

Not far away, beyond the fence that encloses Teapot Dome, the Amoco Production Co. operates similar rigs in the Salt Creek oil fields. But there is a difference: Amoco will get only about \$6.50 a barrel for most of the oil it pumps, because of federal price controls.

Some government officials praise the arrangement, calling it a boon to the taxpayers. The returns from Teapot Dome and another oil reserve in California are much higher per barrel than what the U.S. taxpayer earns from regular federal oil leases.

But in the private sector, some call it a scandal that the federal government has entered an area usually reserved for private enterprise: the oil business. There are questions, too, about the wisdom of the government's exempting itself from price constraints and selling Teapot Dome oil at a price higher than that charged by members of the Organization of Petroleum Exporting Countries, the international oil cartel.

But the current furor over the high price of oil from the Wyoming reserve is something of a tempest in a teapot.

First, it involves very little oil — enough, said one Energy Department official, to "supply the entire needs of the United States...for 23 seconds a day."

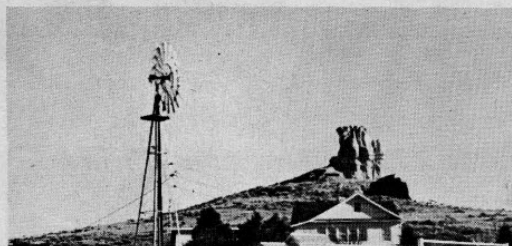
Second, the taxpayers are making a tremendous profit on this oil, which should please everyone but an Amoco stockholder.

And third, the sale of Teapot Dome oil in 1980 does not portend the federal government "getting into the oil trade," as energy industry officials sometimes fear. DOE spokesman Fred Appel said the government "gets into business very reluctantly" and, in this case, only because of a special set of historical circumstances.

A SPECIAL CASE

The very name "Teapot Dome" is a lure to scandal prospectors, who are likely to remember vaguely a bribery scam during the administration of President Warren Harding in the 1920s. They may not recall

Teapot Dome earns big as private drillers steam



TEAPOT DOME got its name from Teapot Rock, a prominent formation southwest of the petroleum reserve. The teapot "spout", once on the right side of the rock as pictured above, was broken off in a wind storm in 1966.

whether Teapot is in California or Wyoming, since a California oil field was also involved.

But in Wyoming it is, amid gentle hills and odd, bare rock formations. One such rock is shaped like a teapot, giving the area its name.

The situation at Teapot Dome is as unusual as the rock formation. The oil field operates under its own special law, passed in 1904, which set aside a few select oil fields as Naval Petroleum Reserves. At the time, the Navy was switching its fleet from coal to oil, and the nation was embarking on a love affair with oil that would continue for 75 years.

Teapot Dome was selected as one of three oil reserves by President Woodrow Wilson in 1915. A frenzy of private oil prospecting was under way on public lands, and geologists were predicting that the nation would soon find itself in short supply. They were wrong, but Teapot Dome has been a special case ever since.

Harry Sinclair would smile if he were alive to see the current price of Teapot Dome oil. Back in the 1920s, he made a pile of money off a federal lease there.

Sinclair got the profitable lease without competitive bidding, and then Interior Secretary Albert Fall got some fine cattle

for his New Mexico ranch, and, historians say, a satchel of money.

When the scandal broke, "Teapot Dome" became a catchword for government corruption. The Wyoming fields were shut down and remained virtually out of commission until 1976, though some oil was pumped to keep adjacent private operations from siphoning off federal oil.

In 1976 Congress, in search of ways to cut back on oil imports, modified the petroleum reserve law to encourage DOE to develop and market the reserves.

In competitive bidding this year, a California oil refinery offered to pay \$7.52 a barrel over the posted "stripper price" of oil in February. The price of stripper oil, which is not restricted by federal price controls, is about \$36 a barrel. If that price holds or rises the refiner will pay at least \$43 a barrel for the Teapot Dome oil.

That sort of burns the reserve's next door neighbor, Amoco.

OIL AT 25 CENTS A BARREL

Amoco has been operating in the adjacent Salt Creek oil field about as long as rigs have been operating at Teapot Dome, according to production chief Jack Cutter in Casper, Wyo.

Prices of the Amoco oil fluctuated from as low as 25 cents a barrel in the 1920s to

about \$3.95 a barrel in the early 1970s. Then came the OPEC price hikes, and price controls were slapped on domestic oil by President Richard Nixon. Amoco produces about 14,000 barrels a day at Salt Creek and has been flushing older wells with water since 1955. "There's still a lot more oil to pull out," says Cutter, but he contends the marginal profitability of the wells at regulated prices discourages production.

Kenneth E. Goltz, a geologist with the Department of Energy in Casper, says Teapot Dome produces about 4,000 barrels of oil a day, with potential recoverable reserves of 28 million barrels. He calls it "a very small field."

It is also a very profitable one. In fiscal year 1980 the government will spend about \$16 million, mostly to a private drilling firm, on operations and development. The oil will earn the government about \$60 million. That's a profit of \$44 million, though some of it must be discounted against past development costs.

"At Teapot Dome, the people receive the total profit," says Goltz, "whereas on (federal) leases you get a one-eighth royalty, which comes out to a lot less."

When it leases "old" oil, such as Amoco produces at Salt Creek, the U.S. Treasury gets about 66 cents a barrel. It appears that this year the Treasury will collect about \$25 profit on each barrel produced across the fence — although that figure must be qualified because of expenses in past years to develop the field.

Amoco officials such as Cutter say it is like "rubbing salt in the wound" to watch bids for Teapot oil run so high.

Nor does President Carter's move to gradually decontrol domestic oil prices make private producers feel much better. Cutter says the windfall profits tax now before Congress will take away whatever higher revenues they get.

Industry and government officials say the most important implication of the Teapot oil sale has to do with future oil prices. Small independent refiners, who can't afford to purchase the huge amounts of oil sold on long-term contracts by OPEC countries, seem willing to pay almost any price to keep their refineries operating. When refiners bid over \$40 for crude oil, some officials see it as a signal that international oil prices still have room to rise, and probably will.

And when they do, Teapot Dome oil prices can be expected to rise with them.



OIL RIGS on the Teapot Dome petroleum reserve are run by a private drilling firm for the U.S. Department of Energy, which is selling the oil to a California oil refiner for over \$40 a barrel this year.

Hot Line



Across the nation and around the world

RECORD DRILLING PACE. Drilling in the Rocky Mountains for oil was pursued at a record pace in 1979, according to Petroleum Information of Denver. Records set only last year in drilling and rotary rig employment were broken. Rig employment was 8.8 percent higher than 1978, and 28.8 million feet were drilled — up 1.1 percent from the year before. In the mountain states, 1,492 oil wells and 1,708 new gas wells were drilled.

BURNING COAL UNDERGROUND. The U.S. Department of Energy is offering to pay half the cost of developing a commercial-size underground coal gasifi-

cation project. The five-year DOE program is designed to hurry development of "in situ" coal gasification, in which coal is burned underground to produce a low- or medium-Btu gas for fuel or chemical "feedstock." DOE expects to select a firm for the project by next May.

CONSOL CONSOLIDATED. The Bituminous Coal Operators Association, hurt earlier this year when one of its biggest members, Consolidation Coal Co., decided to go it alone, is apparently on the verge of welcoming Consol back to the fold. The BCOA acts as negotiating agent for the coal industry on labor contracts with the United Mine Workers, and Consol officials were dissatisfied with the drawn-out 1978 contract talks and 110-day strike. Consol, the nation's second biggest coal producer and a subsidiary of Conoco Inc., would be represented on the 1981 union negotiating team, along with U.S. Steel Corp. and Peabody Coal Co., two other large and previously dissatisfied BCOA members, ac-

Jan. 25, 1980 — High Country News-11

NCAT says:

'Poor people's energy plan' is faster, cheaper than Carter's

by Ken Western

BUTTE, Mont. — A "poor people's energy plan" calling for a national transition to renewable energy technologies has been proposed by the National Center for Appropriate Technology here.

In presenting its five-point plan, NCAT claims that the equivalent of 1.7 million barrels of petroleum a day could be saved through programs to make low-income persons more energy self-reliant. That's as much energy as would be produced by President Carter's 10-year, \$88 billion synthetic fuels development program, but the cost is less, NCAT officials say.

Under the NCAT plan, energy savings would be realized through: a massive "weatherization" program, instal-

immediately, unlike untested synfuels technology, NCAT officials say. Major aspects of the proposal include:

— A short-term program of "crisis-intervention" payments to help low-income persons pay their energy bills. This would be phased out as conservation and solar technologies were implemented and began meeting the needs of the poor.

The proposal recommends raising Carter's low-income energy assistance program from \$1.3 billion to \$3.2 billion, saying: "Without emergency assistance in cold-climate areas, low-income people who cannot pay their fuel bills will quite literally freeze."

— A massive program to improve the energy efficiency of 16 million low-income homes — one-fifth of the nation's housing stock — over the next five years. Charging that the present "weatherization" program is too limited, the report calls for reducing the energy consumption of each residency by 50 percent or more. The report recommends spending an average of \$1,500 per home, for a total estimated cost of \$24 billion.

— A "solarization" program to follow the weatherization effort. Total estimated cost: \$10 billion.

— Programs for recycling old cars to give them a longer life and greater fuel efficiency. Under the plan, 2 million to 3 million vehicles a year would be serviced to increase their fuel efficiency by at least 20 percent. The plan also proposes major development programs for gasohol and pure-alcohol motor fuels. Total estimated cost: \$20 to \$30 billion.

— Three major programs are proposed to supplement food supplies — solar-reliant greenhouses, community gardens and cooperative food marketing systems. The estimated cost of the greenhouses is \$75 million a year for 10 years. The costs for the other two projects are described as "low."

"This plan should be viewed not just as an answer to serious energy problems faced by poor people, but also as an example of what really can be done with conservation and renewable energy supplies in the society at large," NCAT said in the 33-page proposal. "The time for this inevitable transition is now, while it can be rationally planned and while fossil fuels are still available to bridge the transition."

The complete text of the proposal, "Energy and the Poor: An Imperative for Action," can be obtained by writing to John McBride, Deputy Director for Policy and Technology, NCAT, P.O. Box 3838, Butte, Mont. 59701.

Ken Western is a freelance writer based in Bozeman, Mont.



From the Source



The Rockies and Great Plains

NORTHWEST ENERGY WAR. The question of what to do about looming energy shortages in the Northwest has set off a struggle that stretches from Washington state to Washington, D.C. The cheap hydroelectric power that Bonneville Power Administration, a federal utility, has for years provided the region from Western Montana to the West Coast is fully utilized; BPA's plans for nuclear power plants are way behind schedule; and a bill before Congress that would ease BPA's expansion is bogged down in the House. States are setting up agencies designed to give them a legal right to cheaper Bonneville electricity, and environmentalists are calling for conservation and alternative energy projects rather than increased Bonneville authority to build nuclear and coal-fired power plants. Said a Seattle lawyer to the *Wall Street Journal*: "If we don't get the bill there'll be litigation everywhere, with everyone taking a shot at grabbing the last shreds of cheap power before it goes to someone else."

CHURCH ROCK RAMIFICATIONS.

As a result of congressional hearings concerning the United Nuclear uranium tailings dam rupture at Church Rock, N.M., Rep. Morris Udall (D-Ariz.) is questioning the Nuclear Regulatory Commission's agreement state program. Agreement states are states that have fulfilled NRC requirements for regulating nuclear materials within their boundaries. All uranium-producing states in the West except South Dakota and Wyoming are agreement states. Udall, who is chairman of the House committee that oversees NRC, said he is particularly suspicious of New Mexico's licensing efforts, according to *Nuclear Fuel*, a McGraw Hill publication. A witness at the Church Rock hear-

ing in October said New Mexico has allowed uranium mills to continue operating without getting new licenses after their previous state authorization has expired.

THE OLD SHELL GAME. The Shell Oil Co. of Houston, Tex., recently settled its differences with the Crow Tribe of Montana — but not for long. An old Shell lease to strip mine 30,000 acres on the Crow reservation has been the subject of litigation by the Crows for years. The Crow Coal Authority agreed this month to take \$12 million upfront and a 12.5 percent royalty. Shell would begin with a mine in the southeast corner of the reservation, not far from the Wyoming border. That seemed to be that. But a week later the Crow Tribal Council voted to oust the tribe's Coal Authority and back away from the Shell agreement, at least for the moment. Informed of the latest reversal, Shell spokesman Jack Pyle told the *Billings Gazette*: "Oh, no. Here we go again."

SON OF SLURRY. Despite Gov. Ed Herschler's cancellation last year of a coal slurry pipeline originating in Wyoming, proponents of the slurry will try again in the Legislature this year. A group of Sheridan citizens whose water rights would be used by the slurry are campaigning now for public support. Their new plan does not specify that Texas Eastern Corp., a beneficiary of last year's legislation, would be involved. The new plan provides three options for building water reservoirs and pipeline terminals and would channel a large share of profits on state water sales back to Sheridan County.

GOLD, SILVER, BLACK COAL AND RED TAPE. The Director of Colorado's Division of Mines says federal regulation kayoed the coal industry in his state 10 years ago, and may do the same to silver and gold mines trying to reopen during the present boom in precious metal prices. Norm Blake says the federal Coal Mine Health and Safety Act of 1969 initiated the decline of coal production in his state, dropping the number of mines from 80 to 27 in three years. Blake says the list of permits and variances now required for mining is six pages long. A lawyer and mining engineer told the *Denver Post* that a small mine today could be defined as one having "fewer than three attorneys."

lation of solar space and water heating systems, improved gas mileage in older cars and increased self-sufficiency in growing and obtaining food.

Established in 1976, NCAT is funded by the U.S. Community Services Administration to develop and apply small-scale, low-cost technologies that alleviate energy and related economic problems of the poor.

The NCAT plan is intended both to attack the "devastating" energy problems of the poor and to demonstrate the potential of renewable energy and conservation. It could be put into practice

cording to the *Wall Street Journal*. The drive to reunify the coal industry may have been sparked in part by the UMW's threat last month to conduct selective strikes against companies that do not accept the 1981 BCOA contract.

WESTINGHOUSE SETTLES. Westinghouse Electric Corp. has settled out of court with 15 of 17 utilities to whom it failed to deliver promised uranium over the last five years. In one of the biggest suits of its kind, the utilities charged that Westinghouse broke contracts to deliver millions of pounds of uranium after prices rose sharply in 1975. As a consolidated trial proceeds in Richmond, Va., Westinghouse lawyers have whittled away at their opponents, making settlements that still will cost the company hundreds of millions of dollars and future uranium deliveries at substantial discounts. Westinghouse, in turn, has brought suit against the alleged uranium cartel that caused the 1975 price jumps.

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Bulletin Board



LOONEY LIMERICKS by Zane E. Cology

HCN says the NRC's failing
To keep tabs on uranium tailings
But the Feds have no fears,
"Hell, it's only eight years!
The report just got slowed in the mailing!"

URANIUM MINING WORKSHOP

On Feb. 2 the Colorado Public Interest Research Group and the League of Women Voters of Weld County will sponsor a Solution Uranium Mining Workshop in Room 243, University Center, University of Northern Colorado, Greeley, Colo. For further information call (303) 351-4504.

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Up Against the Wall Street Journal, a handbook of the Wall Street Action-Manhattan Project is aimed at exposing the role corporations and the financial community play in controlling people's lives. To order, send \$1 for single copies (25 cents each for 10 or more) to Wall Street Action, Box 271, New Vernon, N.J. 07976.

CLEAN AIR

A public hearing on Wyoming's air quality regulations will be held Feb. 20 at 10 a.m., in the Aley Fine Arts Building, Durhan Hall, Casper College, Casper, Wyo. The State Environmental Quality Council will hold the hearing concerning two amendments proposed by the Wyoming Outdoor Council to strengthen the state's clean air plan.

NORTHWEST ENERGY CONFER- ENCE

The Natural Resources Defense Council will hold a regional conference at Portland State University March 21-23. The topic is the Pacific Northwest's energy future, and it is hoped the conference will help to gen-

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erate a broad understanding of and support for conservation and renewable resource programs. The conference will be attended by a wide range of organizations concerned with regional energy issues from Montana, Wyoming, Idaho, Oregon and Washington. For further information contact Lawrie Mott or Ralph Cavanagh at (415) 421-6561 or write NRDC, 25 Kearny St., San Francisco, Calif. 94108.

FEDERAL COAL IN UTAH

The regional coal team for southwestern Utah will meet Feb. 5-7 at 8:30 a.m. in the Bureau of Land Management's Utah State Office, Room 1408, University Club Building, 136 East South Temple, Salt Lake City, Utah. The topic is potential coal lease tracts in the Utah portion of the Uinta-Southwestern Utah Federal Coal Production Region. Public attendance and comment at the meeting is welcome.

HOUSE DOCTORS

All Through the House, a McGraw Hill workbook, is designed to make homeowners into "house doctors" who can diagnose and cure their home's thermal problems. The result will be significant savings, according to the book's authors, Denis Lamoureux and Thomas Blandy. For more information contact the New York State Solar Action Council, 196 Morton Ave., Albany, N.Y. 12202, (518) 472-9772.

NATURE'S BUILDING CODES

A special publication, *Nature's Building Codes — Geology and Construction in Colorado*, is now available from the Colorado Geological Survey, 1313 Sherman Street, Denver, Colo. 80203 for \$2 a copy. Quantity discounts are also available. For additional information call (303) 839-2611.

WAKE UP AMERICA

A primer on energy, published six times a year, *Reveille* seeks to inform the layman about alternative energy activities and their consequences for the 80s and beyond. For a subscription send \$15 for one year (six issues) to the Alternate Energy Institute, P.O. Box 3100, Estes Park, Colo. 80517.

APPROPRIATE TECHNOLOGY GRANTS

The U.S. Department of Energy (Region VIII) will award grants of up to \$50,000 to individuals and organizations with innovative energy ideas in the mountain and plains states (Colorado, Utah, Wyoming, Montana, North and South Dakota). Applications must be received by April 2, and winners will be announced by September 1980. To get application forms and other information, write the Western Governors' Policy Office, Suite 2300, 3333 Quebec St., Denver, Colo. 80207 or call, toll-free. From outside of Colorado, call (800) 525-1943. From Colorado, call (800) 332-1106.

CLASSIFIEDS

WANTED. Freelance writers or photographers to cover North Dakota natural resource news. Pay is two to four cents a word or \$4 per photo. One-sided diatribes unacceptable. Contact Marjane Ambler, High Country News, Box K, Lander, Wyo. 82520.

WANTED. The Western Organization of Resource Councils seeks a regional organizer to coordinate Resource Council efforts on energy conservation and development issues in Wyoming, Montana, North Dakota, and Colorado. Westerners, experienced organizers, and/or persons familiar with energy issues in the Northern Great Plains preferred. Position open immediately. Send resumes or requests for further information to WORC, c/o PRBRC, 48 N. Main, Sheridan, WY 82801; 307-672-5809.

JOB OPENING. Northern Plains Resource Council is hiring for a two year special project. Writing and research skills, background and practical experience in organizing; familiarity with energy issues. Send resume, writing sample and references to: Patrick Sweeney, Northern Plains Resource Council, 41 Stapleton Building, Billings, MT, 59101, (406) 248-1154. Apply before Feb. 15. (May hire sooner.)

WANTED: person to edit lively, weekly, rural newspaper in agri-timber country near Hells Canyon NRA. Salary nominal, but other amenities superb. Send qualifications and questions to POB 646, Halfway, OR 97834.

CUMQUAT — saw your ad only after the wedding. Second class mail! She has eyes like capers, and her hands shake when I mention malted milk. We wore burgundy chifon, and danced the locomotion until the barge ran aground. At least there is this ice in all the kilns, a life like any other, and Ling-ling. Feed the tapir. BLACKIE.

FICTION and FACT from ETSI'S ALMANAC

FICTION: Use of water from the Madison Formation for the ETSI coal slurry pipeline will eventually deplete the aquifer.

FACT: Mother Nature provides for the continual replenishment of the Madison through runoff from snow and rain in the Big Horn Mountains and Black Hills. ETSI's use will eventually make room for more recharge by precipitation that otherwise would run off unused to the Gulf of Mexico.

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Western Roundup



PG&E News Bureau photo

NO GEOTHERMAL DEVELOPMENT will occur on Forest Service land on the Idaho-Montana border until the agency is sure it won't harm Old Faithful and other thermal features in Yellowstone National Park, according to a recent environmental impact statement. The photo above shows the Geysers Power Plant north of San Francisco.

Montana-Idaho

To guard geysers, no leasing

The Forest Service has released an environmental impact statement recommending no leasing on a geothermal area adjacent to Yellowstone Park until it is proven the development will have no effect on thermal activity inside the park. The statement covers the Island Park Geothermal Area, 488,000 acres which lie west of the park on the Montana-Idaho border.

The report will have no effect on state-owned land around the park. Some 108,000 acres of state land within 75 miles of Old Faithful geyser have already been leased.

John Beland, coordinator of the statement, which was issued jointly by the Tar-

ghee National Forest and the Bureau of Land Management, said the document reflected public concern about the leasing. One hundred pages of the 280-page report are devoted to letters from citizens.

The report recommends leasing in the Island Park area as soon as the secretaries of agriculture and interior are satisfied there will be no effects on Yellowstone's thermal activity.

The Park Service and many members of the public have expressed concern about leasing in the Island Park area because of the possible geologic link between it and the geysers in Yellowstone.

Wyoming

No permit for nordic ski area

Citing conflicts with the Jackson Hole Ski Corp., the Forest Service has denied a permit for a cross-country ski area north of Teton Village near Jackson, Wyo. Bruce Simon, who has given guided ski tours and cross-country instruction on the 80 acres in question for the last seven years, blames the Forest Service's denial on the ski corporation's fear of competition.

Hoback District Ranger Garth Baxter listed parking, water and sewage as conflicts between the downhill area and the proposed cross-country area. It would have an added impact on Teton Village, which is

already overcrowded, according to Baxter. However, Simon maintains that "80 to 90 percent of the users would already be staying at the village," making additional impact very minimal. People arrive in Jackson with both downhill skis and nordic skis, he says, and Teton Village has no facility for ski touring.

Baxter says the ski corporation is willing to provide such an area when the demand justifies it, but Simon says there is enough interest now. He plans to appeal the issue to a higher level.

Nebraska

State won't fight dirty Denver winds

Nebraska Attorney General Paul Douglas has confirmed reports that his office will not pursue a lawsuit against Colorado's allegedly drifting air pollution. The Nebraska Department of Environmental Control has advised him that "there is not enough evidence" to warrant such an action.

In a **Rocky Mountain News** story, Harry Spohn of the National Weather Service was quoted as saying that smog from Denver may be traveling as far west as North Platte, Neb., 250 miles away. After reading about the story in **High Country News**, Robert Warrick of the Nebraska Chapter of the Sierra Club asked the state's attorney general "to seriously consider filing a lawsuit against the state of Colorado for failure to comply with

the clean act standards as set down by the federal government."

"We would also seriously consider joining such a suit on Nebraska's side," he wrote.

Denver has been listed as the second most smog-ridden city in the nation. Twenty-seven Colorado Legislators filed suit early in December challenging the federal government's attempt to force the state to enact an emission inspection law by using sanctions.

Warrick argued that "the Denver area is becoming more polluted every year, and their unwillingness to control such pollution should be of major concern to people of Nebraska who don't want to breathe Denver's dirty air."

In his response to Warrick's letter, Douglas acknowledged that the "remedy of citizen suits does exist."

Montana

City considers ban on nuclear shipments

Two accidents within several days involving trucks carrying radioactive waste have alerted citizens of Missoula, Mont., to the hazards of transporting such materials. The city council has scheduled public hearings this month to consider passing an ordinance forbidding transport of radioactive wastes through the city. The wastes come from the Three Mile Island plant in Pennsylvania and are en route to dump sites in Hanford, Wash. As many as eight trucks a day carrying hazardous material pass through Missoula on Interstate 90.

While portions of the interstate are within the city's jurisdiction, there is some question whether Missoula could force the trucks to find another route because interstate commerce would be affected.

Bill Boggs of the Missoula City Council said if such an ordinance is passed, violators would be jailed. They are trying to avoid, however, passing an ordinance on a purely emotional basis. "We're considering data," Boggs said. "We expect to exempt all materials that don't prove significantly dangerous."

Dan Kemmis, an attorney for the anti-nuclear group called Headwaters Alliance, said, "I think the accidents obviously point out the need to be at least concerned about transportation of hazardous materials. No matter how careful you are with these substances, you send them out on the highway, and there are going to be risks."

Idaho

Gold fever hits the River of No Return

Skyrocketing gold prices — upwards of \$600 an ounce — are putting pressure on the Salmon River, Idaho's "River of No Return." Hundreds of recreational gold-seekers, many of whom have failed to obtain state mineral permits, have crowded the Salmon's banks.

At a hearing Jan. 10 in the town of Salmon, the Idaho Department of Lands considered the lease application of four men who wish to set up a small dredge operation on the river. The applicants proposed using a portable eight-inch suction dredge, which they said would cause very little noise pollution or siltation. Where the gold occurs, the river bottom is "cemented, impacted material," they said. In addition, they said the operation would be of economic benefit to the community.

However, a show of hands of the 42 members of the public present at the hearing showed 41 to be opposed to issuing the lease. Commercial river runners expressed fears that the operation would destroy the wilderness quality of the river. Others felt that the application should be tabled until the River of No Return Wilderness Bill is voted on in Congress. Many expressed concern over the fishery, which is one of the finest for anadromous fish in the country and is estimated to be worth \$6.7

million per year. Siltation of the stream could cause suffocation of salmon eggs in their larval stage. Another fear expressed by residents of the area was that granting of one lease would lead to a rush of new applications.

Guided by the hearing testimony, the State Land Board will rule on this and other lease applications.



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State of Wyoming Public Notice

PURPOSE OF PUBLIC NOTICE

THE PURPOSE OF THIS PUBLIC NOTICE IS TO STATE THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMIT UNDER THE FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 (WPCAA), P.L. 92-500 AND THE WYOMING ENVIRONMENTAL QUALITY ACT (35-11-101 et. seq., WYOMING STATUTES 1957, CUMULATIVE SUPPLEMENT 1973).

IT IS THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMITS TO (2) TWO OIL TREATMENT FACILITIES; TO MODIFY (1) ONE INDUSTRIAL DISCHARGE PERMIT AND (13) THIRTEEN MUNICIPAL DISCHARGE PERMITS; AND TO RENEW (35) THIRTY-FIVE OIL TREATMENT DISCHARGE PERMITS WITHIN THE STATE OF WYOMING.

APPLICANT INFORMATION

(1) APPLICANT NAME: BUTTES RESOURCES
MAILING ADDRESS: P.O. BOX 336
OSAGE, WYOMING 82723
FACILITY LOCATION: HACKATHORN, SE $\frac{1}{4}$, SECTION 12,
T46N, R63W, WESTON COUNTY, WYOMING
PERMIT NUMBER: Wy-0028401
FACILITY LOCATION: ACKERMAN-WARE, SE $\frac{1}{4}$, SECTION 7,
T46N, R63W, WESTON COUNTY, WYOMING

PERMIT NUMBER: Wy-0028410
Facilities are typical oil treaters located in Weston County, Wyoming. The produced water is separated from the petroleum product through the use of heater treaters and skim ponds. The discharges are to Poison Creek (Class IV stream) and Beaver Creek (Class II stream) via unnamed drainages.

The discharges must meet Wyoming's Produced Water Criteria effective immediately. Chapter VII of the Wyoming Water Quality Rules and Regulations infers that as long as the Produced Water Criteria is met, the water is suitable for beneficial use. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate these discharges and, if necessary, will modify the permits if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for the permits is December 31, 1981.

(2) PERMIT NAME: KERR-MCGEE COAL CORPORATION
MAILING ADDRESS: CALLER BOX 3013
GILLETTE, WYOMING 82716
FACILITY LOCATION: JACOBS RANCH MINE, CAMPBELL COUNTY,
WYOMING
PERMIT NUMBER: Wy-0023531

Kerr-McGee Coal Corporation operates an open pit coal mine, named the Jacobs Ranch Mine, in Campbell County, Wyoming. A discharge permit for this facility was originally issued in March of 1975. The Company has now requested that the location of discharge point 002 be moved from the SE $\frac{1}{4}$, SW $\frac{1}{4}$ of Section 15, T43N, R70W to the SW $\frac{1}{4}$, SE $\frac{1}{4}$ of Section 15, T43N, R70W.

The proposed permit modification simply changes the 002 discharge location as requested. The permit still requires compliance from all discharge points with standards considered to be "best practicable" for the coal mining industry. The permit also requires the control of runoff from disturbed areas.

Regular self-monitoring is required for all parameters, with the submission of results quarterly.

Due to pending regulations relating to the development of toxic substance limitations for the coal mining industry, the proposed expiration date is December 31, 1980.

(3) PERMIT NAME: TOWN OF DEAVER, WYOMING
MAILING ADDRESS: P.O. BOX 207
DEAVER, WYOMING 82421
FACILITY LOCATION: TOWN OF DEAVER WASTEWATER
TREATMENT FACILITIES
PERMIT NUMBER: Wy-0021580

(4) PERMIT NAME: TOWN OF OSAGE, WYOMING
MAILING ADDRESS: P.O. BOX 28
OSAGE, WYOMING 82723
FACILITY LOCATION: TOWN OF OSAGE WASTEWATER
TREATMENT FACILITIES
PERMIT NUMBER: Wy-0021067

(5) PERMIT NAME: CITY OF NEWCASTLE, WYOMING
MAILING ADDRESS: P.O. BOX 447
NEWCASTLE, WYOMING 82701
FACILITY LOCATION: CITY OF NEWCASTLE WASTE-
WATER TREATMENT FACILITIES
PERMIT NUMBER: Wy-0020681

(6) PERMIT NAME: TOWN OF PAVILLION, WYOMING
MAILING ADDRESS: P.O. BOX 15
PAVILLION, WYOMING 82523
FACILITY LOCATION: TOWN OF PAVILLION WASTE-
WATER TREATMENT FACILITIES
PERMIT NUMBER: Wy-0020222

The wastewater treatment facilities serving the Towns of Deaver, Osage, Newcastle and Pavillion, Wyoming consist of single cell non-aerated lagoons which discharge to Class IV waters of the State (Deaver discharges to the Sage Creek drainage, Osage discharges to the Beaver Creek drainage, Newcastle discharges to Little Oil Creek via an unnamed drainage and Pavillion discharges to the Pavillion Irrigation Drain).

The existing permits for these facilities require only that the existing facilities be operated at maximum efficiency, however, the Towns have now been offered Federal construction grant funds, which means the wastewater treatment facilities must now be upgraded to meet Federal effluent standards and Wyoming's in-stream water quality standards. The proposed permits include limitations on BOD₅, total suspended solids, fecal coliform bacteria, pH and total residual chlorine. A schedule of compliance to meet these limitations must be submitted by each of the Towns by May 1, 1980. Upon receipt and approval, the schedule of compliance will become an enforceable part of each of the permits.

Due to the fact that the receiving waters are Class IV streams, there is no need to set limitations for ammonia. For the same reason, there is no need to set BOD₅ limitations which are more stringent than national secondary

treatment standards. A strict year-round limitation on fecal coliform bacteria (200-100 ml) and the liberal limitation on total residual chlorine (2.0 mg-1) are based on the Water Quality Standards for Class IV waters.

The proposed permits contain a section which requires the Towns to begin planning for expansion of the wastewater treatment facilities once 80 percent of the design flow is reached.

Self-monitoring requirements in the proposed permits require the monitoring of all limited parameters on a routine basis, with reporting of results quarterly. The proposed permits are scheduled to expire on December 31, 1984.

The Towns have been exempted from meeting Federal effluent requirements by July 1, 1977, since, in accordance with Federal requirements, each Town specifically requested an extension due to the previous unavailability of Federal construction grant funds. In addition, the Towns have requested and received less stringent effluent limitations for the parameter total suspended solids as authorized by Federal regulations for stabilization pond systems with a design flow of less than 2.0 MGD.

(7) PERMIT NAME: BOARD OF PUBLIC UTILITIES,
CHEYENNE, WYOMING

MAILING ADDRESS: P.O. BOX 1469
CHEYENNE, WYOMING 82001

FACILITY LOCATION: CROW CREEK WASTEWATER
TREATMENT PLANT

PERMIT NUMBER: Wy-0022381

FACILITY LOCATION: DRY CREEK WASTEWATER
TREATMENT PLANT

PERMIT NUMBER: Wy-0022934

The City of Cheyenne, Wyoming is served by two wastewater treatment plants. The Crow Creek plant is a refurbished trickling filter facility and the Dry Creek plant is a modern activated sludge facility. Both plants provide excellent secondary treatment and both discharge to Crow Creek (Class IV stream).

The existing permits were renewed recently in accordance with the official Class IV stream classification. Since the renewal, the City of Cheyenne has requested the following minor changes in total residual chlorine levels to meet the required fecal coliform standards: 1) That the Dry Creek plant total residual chlorine be raised to 1.0 mg-1; and, 2) That the Crow Creek plant total residual chlorine be raised to 1.5 mg-1.

The different ranges are due to differing plant treatment processes.

All other requirements of the existing permits, specifically the requirement to meet national secondary treatment standards immediately and the requirement to self-monitor on a regular basis and report results monthly, remain the same.

The proposed permits are scheduled to expire on December 31, 1984.

(8) PERMIT NAME: ARAPAHOE TRIBAL COUNCIL

MAILING ADDRESS: ARAPAHOE, WYOMING 82510

FACILITY LOCATION: GREAT PLAINS HALL AND
ARAPAHOE SUBDIVISION

PERMIT NUMBER: Wy-0025267

(9) PERMIT NAME: TOWN OF BASIN, WYOMING

MAILING ADDRESS: P.O. BOX 599
BASIN, WYOMING 82410

FACILITY LOCATION: TOWN OF BASIN WASTEWATER
TREATMENT FACILITIES

PERMIT NUMBER: Wy-0020028

(10) PERMIT NAME: TOWN OF ENCAMPMENT, WYOMING

MAILING ADDRESS: P.O. BOX 5
ENCAMPMENT, WYOMING 82325

FACILITY LOCATION: TOWN OF ENCAMPMENT WASTE-
WATER TREATMENT FACILITIES

PERMIT NUMBER: Wy-0020591

(11) PERMIT NAME: SOUTH BIG HORN COUNTY HOSPITAL

MAILING ADDRESS: P.O. BOX 152
GREYBULL, WYOMING 82426

FACILITY LOCATION: WASTEWATER TREATMENT FACILITIES
SERVING THE HOSPITAL

PERMIT NUMBER: Wy-0022951

(12) PERMIT NAME: TOWN OF HANNA, WYOMING

MAILING ADDRESS: P.O. BOX 8
HANNA, WYOMING 82327

FACILITY LOCATION: TOWN OF HANNA WASTEWATER
TREATMENT FACILITIES

PERMIT NUMBER: Wy-0020745

(13) PERMIT NAME: TOWN OF SARATOGA, WYOMING

MAILING ADDRESS: P.O. BOX 486
SARATOGA, WYOMING 82331

FACILITY LOCATION: TOWN OF SARATOGA WASTEWATER
TREATMENT FACILITIES

PERMIT NUMBER: Wy-0021491

(14) PERMIT NAME: TOWN OF SHOSHONI, WYOMING

MAILING ADDRESS: P.O. BOX 267
SHOSHONI, WYOMING 82649

FACILITY LOCATION: TOWN OF SHOSHONI WASTEWATER
TREATMENT FACILITIES

PERMIT NUMBER: Wy-0021890

The wastewater treatment facilities serving the Great Plains Hall and Arapahoe Subdivision, the Town of Basin, the Town of Encampment and the South Big Horn County Hospital consist of single cell non-aerated

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lagoons. The Town of Basin lagoon discharges to the Big Horn River, a Class II stream. The other lagoons discharge to Class IV streams; an unnamed irrigation ditch in the Popo Agie River drainage, Badger Creek, and an unnamed slough which is a tributary of the Big Horn River, respectively.

The Town of Hanna facility consists of two separate systems. The "old" facilities (discharge point 001) consist of a 2 cell lagoon in which the first is aerated. The "new" facilities are located further west of the Town and consist of 2 non-aerated stabilization ponds with a total of approximately 20 surface acres. Both facilities discharge to Big Ditch (Ditch Creek), which is a Class IV stream.

The wastewater treatment facilities serving the Town of Saratoga consist of a 2 cell stabilization pond in which the first cell is aerated. The second cell discharges to an unnamed drainage (Class IV water) which flows approximately two miles before entering the North Platte River.

The wastewater facilities for the Town of Shoshoni consist of four small non-aerated stabilization ponds which are operated in series. The ponds discharge to Poison Creek (Class IV stream).

The existing permits for these facilities require only that the existing facilities be operated at maximum efficiency, however, the Council, Towns and Hospital have now been offered Federal construction grant funds, which means the wastewater treatment facilities must now be upgraded to meet Federal effluent standards and Wyoming's in-stream water quality standards. The proposed permits include limitations on BOD5, total suspended solids, fecal coliform bacteria, pH and total residual chlorine. A schedule of compliance to meet these limitations must be submitted by May 1, 1980. Upon receipt and approval, the schedule of compliance will become an enforceable part of the permits.

Self-monitoring requirements in the proposed permits require the monitoring of all limited parameters on a routine basis, with reporting of all results quarterly, except for the Town of Saratoga, which must report monthly. The proposed permits are scheduled to expire December 31, 1984.

(15) PERMIT NAME: EXXON COMPANY, U.S.A.
MAILING ADDRESS: 2000 CLASSEN CENTER EAST
OKLAHOMA CITY, OKLAHOMA 73106

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 10, NE
¼, SECTION 18, T37N, R89W,
FREMONT COUNTY, WYOMING

PERMIT NUMBER: Wy-0002062

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 9, NE
¼, SECTION 9, T37N, R89W,
FREMONT COUNTY, WYOMING

PERMIT NUMBER: Wy-0002071

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 5, NE
¼, SECTION 16, T37N, R89W,
FREMONT COUNTY, WYOMING

PERMIT NUMBER: Wy-0002089

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 1, NE
¼, SECTION 21, T37N, R89W,
FREMONT COUNTY, WYOMING

PERMIT NUMBER: Wy-0002101

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 8,
SECTION 20, T37N, R89W,
FREMONT COUNTY, WYOMING

PERMIT NUMBER: Wy-0025526

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 19,
SECTION 15, T37N, R89W,
FREMONT COUNTY, WYOMING

PERMIT NUMBER: Wy-0025534

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 6,
SECTION 17, T37N, R89W,
FREMONT COUNTY, WYOMING

PERMIT NUMBER: Wy-0025542

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 3, NE
¼, SECTION 21, T37N, R89W,
NATRONA COUNTY, WYOMING

PERMIT NUMBER: Wy-0027227

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 7, NE
¼, SECTION 15, T37N, R89W,
NATRONA COUNTY, WYOMING

PERMIT NUMBER: Wy-0027235

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 16, NE
¼, SECTION 23, T37N, R89W,
NATRONA COUNTY, WYOMING

PERMIT NUMBER: Wy-0027243

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 17, NE
¼, SECTION 10, T37N, R89W,
NATRONA COUNTY, WYOMING

PERMIT NUMBER: Wy-0027251

FACILITY LOCATION: FRENCHIE DRAW WELL NO. 15, NE
¼, SECTION 7, T37N, R89W,
FREMONT COUNTY, WYOMING

PERMIT NUMBER: Wy-0027456

(16) PERMIT NAME: HUSKY OIL COMPANY OF DELAWARE

MAILING ADDRESS: P.O. BOX 380
CODY, WYOMING 82414

FACILITY LOCATION: FEDERAL TANK BATTERY,
SECTION 7, T33N, R101W,
PARK COUNTY, WYOMING

PERMIT NUMBER: Wy-0000400

FACILITY LOCATION: SHOSHONE STATE TANK BATTERY,
SW¼, SECTION 16, T33N,
R101W, PARK COUNTY, WYOMING

PERMIT NUMBER: Wy-0025241

(17) PERMIT NAME: PROVIDENT RESOURCES

MAILING ADDRESS: 821 — 17th STREET, SUITE 821
DENVER, COLORADO 80202

FACILITY LOCATION: BEALL NO. 23-26, TANK BATTERY
NO. 1, SW¼, SECTION 26, T57N,
R97W, BIG HORN COUNTY, WYOMING

PERMIT NUMBER: Wy-0001082

FACILITY LOCATION: SNELL LEASE, SW¼,
SECTION 26, T57N, R97W,
BIG HORN COUNTY, WYOMING

PERMIT NUMBER: Wy-0024597

(18) PERMIT NAME: TERRA RESOURCES, INC.

MAILING ADDRESS: P.O. BOX 2500
CASPER, WYOMING 82601

FACILITY LOCATION: FERGUSON RANCH FIELD,
SECTION 23, T50N, R102W,
PARK COUNTY, WYOMING

PERMIT NUMBER: Wy-0001490

Facilities are typical oil treaters located in Big Horn, Fremont, Natrona and Park Counties, Wyoming. The produced water is separated from the petroleum product through the use of heater treaters and skim ponds. The discharges are all to Class IV streams of the State.

The discharges must meet Wyoming's Produced Water Criteria effective immediately. Chapter VII of the Wyoming Water Quality Rules and Regulations infers that as long as the Produced Water Criteria is met, the water is suitable for beneficial use. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate these discharges and, if necessary, will modify the permits if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for all the permits is December 31, 1985.

(19) PERMIT NAME: C.E. BREHM DRILLING COMPANY

MAILING ADDRESS: P.O. BOX 4088
CASPER, WYOMING 82601

FACILITY LOCATION: C.E. BREHM NO. 1 ANDERSON, NW,
NW¼, SECTION 34, T57N, R97W,
BIG HORN COUNTY, WYOMING

PERMIT NUMBER: Wy-0001295

FACILITY LOCATION: C.E. BREHM NO. 2, BERRYMAN, NW,
SE¼, SECTION 19, T57N, R97W,
BIG HORN COUNTY, WYOMING

PERMIT NUMBER: Wy-0001317

FACILITY LOCATION: C.E. BREHM NO. 1 DILLON, SW, SW
¼, SECTION 18, T67N, R97W,
BIG HORN COUNTY, WYOMING

PERMIT NUMBER: Wy-0001325

FACILITY LOCATION: C.E. BREHM NO. 1 GAHLEY-HUDGENS,
SW, NW¼, SECTION 34, T57N,
R97W, BIG HORN COUNTY, WYOMING

PERMIT NUMBER: Wy-0001341

FACILITY LOCATION: C.E. BREHM NO. 1 WEBB-ANDERSON,
NE, NW¼, SECTION 34, T57N,
R97W, BIG HORN COUNTY, WYOMING

PERMIT NUMBER: Wy-0001350

FACILITY LOCATION: C.E. BREHM NO. 1 WILCOX, NE,
NE¼, SECTION 30, T57N,
R97W, BIG HORN COUNTY, WYOMING

PERMIT NUMBER: Wy-0001368

(20) PERMIT NAME: FARMER'S UNION CENTRAL
EXCHANGE, INC.

MAILING ADDRESS: P.O. BOX 126
LAUREL, MONTANA 59044

FACILITY LOCATION: NORTH GARLAND FIELD, TEN-
SLEEP BATTERY EMERGENCY
DRAIN, SE¼, NE¼, T56N,
R98W, PARK COUNTY, WYOMING

PERMIT NUMBER: Wy-0024261

FACILITY LOCATION: NORTH GARLAND FIELD, CLOVERLY-MORRISON BATTERY,
SE¼, SECTION 11, T56N, R98W,
PARK COUNTY, WYOMING

PERMIT NUMBER: Wy-0024279

FACILITY LOCATION: NORTH GARLAND FIELD, TEN-
SLEEP SKIMMING POND B, NE
¼, SECTION 14, T56N, R98W,
PARK COUNTY, WYOMING

16-High Country News — Jan. 25, 1980

Trackings

followups on previous stories

Wilderness Society staff

(see HCN 7-27-79 for original story)

Last year the Wilderness Society closed the doors of its Colorado, Utah and Wyoming offices. Next to go will be the Society's Southwest, California, Idaho, Nevada and Oregon offices and its Bureau of Land Management wilderness program in Washington, D.C., according to Rita Molyneux, a spokeswoman for the Society.

The upheaval leaves only one Wilderness Society representative in the West — Bill Cunningham of Helena, Mont.

The group's membership revenues have dropped, but that's only part of the reason for the closures, Molyneux says. The Society is using a financial crunch to accomplish a change in direction.

"The 1980s are going to be absolutely critical," she says. "We are going to have to be very strong and sophisticated."

The Society's field representatives have concentrated in the past on rallying popu-

lar support for wilderness battles, but now they must also have refined political, legal and scientific skills, she says. "Having 100 letters come in is great. But it is becoming more limited in effectiveness," she says.

By next July, the Society hopes to have field representatives in Seattle, San Francisco and Denver. Offices in Chicago, Boston or New York, and Atlanta will follow when funding becomes available. The Society's old offices tended to be in smaller places, such as Bernalillo, N.M., Cheyenne, Wyo., Boise, Idaho, and Davis, Calif., although Portland, Denver and Salt Lake City were also included.

The Society's new representatives will be "highly qualified and better funded" than their predecessors, Molyneux says.

Idaho representative Steve Payne, who will be leaving his post in April, doubts that the group will be able to open its new field offices as soon as expected. He also says the new offices are likely to be different. "Grassroots organizing was the forte of the old field staff," he says. "That will be the greatest loss to the West."

Also missing, due to the layoff of Debbie Sease in the Washington, D.C., office, will be the Society's Bureau of Land Management wilderness program. Sease, who says that 1980 may be the single most important year for the program, is looking for

funding from other conservation groups to continue her work.

Molyneux says that the Society recognizes the importance of the BLM program and is looking for funds. But in the meantime "we're going to have to go through a period of austerity." For the time being the Society will concentrate on national forest and national park issues, she says.

She has similar regrets about closing field offices in the West — even temporarily. "We know that's where the action is," she says.

Field representatives soon to be leaving the Society are: Dave Foreman of New Mexico, Jim Eaton of California, Steve Payne of Idaho, Roger Scholl of Nevada and Joe Walicki of Oregon.

Northern Tier Pipeline

(see HCN 9-21-79 for original story)

As expected, President Jimmy Carter gave his stamp of approval this month to the Northern Tier Pipeline. The pipeline would carry Alaskan and foreign oil from Port Angeles, Wash., across Idaho, Montana and North Dakota to refineries in the Midwest.

The Northern Tier Pipeline Company now has a year to raise \$1.23 billion in private funds to build the project. It must also overcome opposition in Washington state, where environmentalists fear the possibility of oil spills in Puget Sound. In Montana, where the pipeline would run through previously undisturbed mountains and near several seismic faults, the city council of Missoula recently passed a resolution asking Carter to reject the pipeline.



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(continued from page 15)

PERMIT NUMBER:	Wy-0024287
(21) PERMIT NAME:	HAROLD B. HOLDEN
MAILING ADDRESS:	P.O. BOX 1743 BILLINGS, MONTANA 59103
FACILITY LOCATION:	HOLDEN RICHARDS WELL NO. 1, NW¼, SECTION 19, T57N, R97W, BIG HORN COUNTY, WYOMING
PERMIT NUMBER:	Wy-0000485
(22) PERMIT NAME:	WILLIAM C. KIRKWOOD OIL AND GAS
MAILING ADDRESS:	33 SOUTH CENTER STREET CASPER, WYOMING 82601
FACILITY LOCATION:	DUBOIS FIELD, SECTION 11, T42N, R107W, FREMONT COUNTY, WYOMING
PERMIT NUMBER:	Wy-0000795
FACILITY LOCATION:	COWLEY FIELD, DALTON LEASE, NW ¼, NEW, SECTION 34, T57N, R97W, BIG HORN COUNTY, WYOMING
PERMIT NUMBER:	Wy-0001228
FACILITY LOCATION:	HUDGINS NO. 1 WELL, NW¼, SECTION 34, T57N, R97W, BIG HORN COUNTY, WYOMING
PERMIT NUMBER:	Wy-0024627
FACILITY LOCATION:	GOVERNMENT STRICKER NO. 1 WELL, SW¼, SECTION 19, T57N, R97W, BIG HORN COUNTY, WYOMING
PERMIT NUMBER:	Wy-0024635
(23) PERMIT NAME:	MARATHON OIL COMPANY
MAILING ADDRESS:	P.O. BOX 120 CASPER, WYOMING 82601
FACILITY LOCATION:	EASTON DAVIS BATTERY, SECTION 28, T56N, R97W, BIG HORN COUNTY, WYOMING
PERMIT NUMBER:	Wy-0001767

FACILITY LOCATION:	GARLAND FIELD, K.C. NO. 52 BATTERY, SE¼, SECTION 19, T56N, R97W, BIG HORN COUNTY, WYOMING
PERMIT NUMBER:	Wy-0025640
(24) PERMIT NAME:	TERRA RESOURCES, INC.
MAILING ADDRESS:	P.O. BOX 2506 CASPER, WYOMING 82601
FACILITY LOCATION:	HUNT FIELD, SW¼, SW¼, SECTION 2, T50N, R102W, PARK COUNTY, WYOMING
PERMIT NUMBER:	Wy-0001520
FACILITY LOCATION:	HOMESTEAD FIELD DISPOSAL, NW¼, SECTION 35, T57N, R97W, BIG HORN COUNTY, WYOMING
PERMIT NUMBER:	Wy-0003140

Facilities are typical oil treaters located in Big Horn, Fremont and Park Counties, Wyoming. The produced water is separated from the petroleum product through the use of heater treaters and skim ponds. The discharges are to Class II streams, with the exception of the two Marathon Oil permits which discharge to Arnoldus Lake, a Class III water system.

The discharges must meet Wyoming's Produced Water Criteria effective immediately. Chapter VII of the Wyoming Water Quality Rules and Regulations infers that as long as the Produced Water Criteria is met, the water is suitable for beneficial use. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate these discharges and, if necessary, will modify the permits if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for all the permits is December 31, 1983.

STATE-EPA TENTATIVE DETERMINATIONS

Tentative determinations have been made by the State of Wyoming in cooperation with the EPA staff relative to effluent limitations and conditions to be imposed on the permits. These limitations and conditions will assure that State water quality standards and applicable provisions of the FWPCA will be protected.

PUBLIC COMMENTS

Public comments are invited any time prior to February 25, 1980. Comments may be directed to the Wyoming Department of Environmental Quality, Water Quality Division, Permits Section, Hathaway Building, Cheyenne, Wyoming 82002, or the U.S. Environmental Protection Agency, Region VIII, Enforcement Division, Permits Administration and Compliance Branch, 1860 Lincoln Street, Denver, Colorado 80236. All comments received prior to February 25, 1980 will be considered in the formulation of final determinations to be imposed on the permit.

ADDITIONAL INFORMATION

Additional information may be obtained upon request by calling the State of Wyoming, (307) 777-7781, or EPA, (303) 327-3874, or by writing to the aforementioned addresses.

The complete applications, draft permits and related documents are available for review and reproduction at the aforementioned addresses. Public Notice No. Wy-80-001