

Lakeview 11-26-87

Contract awarded for mill tailings clean-up

A federal contract has been awarded for the clean-up of uranium mill tailings in several Western states, but it is unclear whether Lakeview's site is actually included.

Second-district Congressman Denny Smith announced recently that a contract for \$50 million has been awarded by the U.S. Department of Energy to Jacobs Engineering, Pasadena, California, to dispose of low-level radioactive mill tailings from uranium mines like those in Lakeview.

The Lakeview site is one of 24 uranium mine locations in seven states involved in the federal clean-up project. The clean-up is expected to begin in

February, but according to a time-line established earlier, Lakeview's would not be touched until at least 1983.

Discussions in the past have indicated that federal money would pay for 90 percent of the clean-up, with the state picking up 10 percent of the cost. Don Goddard of the Oregon Department of Energy said the \$50 million sounded too low to accomplish the project, as it is estimated the Lakeview site, one of the smallest, would cost about \$6 million.

"This contract should ensure that the Lakeview site will be brought into compliance with federal health standards," Rep. Smith said.

It is not known whether the \$50 million has actually been appropriated.

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Alkali Lake disposal site

Lake Co. Examiner 11-5-81

Update: some satisfied, some no

Reaction to a two-year update report about the Alkali Lake hazardous waste disposal site ranged from expressed satisfaction to marked dissatisfaction Wednesday, October 8, at a public meeting in Lakeview. The meeting was sponsored by the Oregon Department of Environmental Quality.

DEQ supervised the controlled burial of about 23,000 55-gallon drums of pesticide waste and manufacturing residues in November and December 1976. The drums had been stockpiled on the site between 1969 and 1971 for disposal by a private contractor who never was able to carry out the plan. Through court action seeking proper management of the site, the state obtained ownership and contracted for burial on-site in shallow trenches.

The Alkali Lake basin is suitable for waste disposal due to the high altitude, desert environment, unusable shallow water table, low precipitation and remoteness from populated areas said DEQ. The area is almost lacking in vegetation except for sagebrush and greasewood. A fence around the area keeps out animals.

The meeting last week focused on the 11 areas of concern and recommenda-

tions from local residents and on the "super-fund" created by the federal government to help communities clear up such sites once they have been abandoned by the person or firm responsible for the dumping.

Richard P. Reiter, supervisor of DEQ's Solid Waste Division, Hazardous Waste Section, acknowledged in reply to a question that at a meeting two years ago, he'd had concerns about cattle feeding in that area but when he saw the results of tests made, he was no longer so concerned.

He referred to tests made on two rabbits shot at the site. Some 12 unsuccessful hours were spent trying to shoot a coyote for testing.

During tests on the rabbits' livers, they were unable to detect any residue at .2 parts per million (ppm), the limit of the equipment's ability to detect contamination. "My opinion is that .2 ppm or less is insignificant." So testing cattle livers was not considered so vital.

Bob Weir, a local rancher whose cattle graze BLM pastures in that area, said he had seen no adverse effect in his cattle and saw no reason to make the cattle liver test.

Further animal tests will be made,

Reiter said, to monitor effects.

It was recommended at the earlier meeting that the impact of the site on native vegetation be evaluated. This was done and laboratory analysis indicated a 2,4-D concentration less than the detection limit of .2 ppm.

To a recommendation that there be continuous and reliable operation of the meteorological station at the Alkali Lake highway maintenance station, he said a check earlier this month with the National Weather Service indicated that the data is now complete and up-to-date. Now they may be able to make some predictions about future effects of weather on the site.

More monitoring of potable groundwater supplies in the area was sought at the last meeting. Reiter said the department probably could expand the number of times the site is monitored but first would have to get legislative approval and funding. In the meantime, the federal Environmental Protection Agency has given a two-year grant to the Oregon Graduate Center (which has no affiliation with any state university) to do additional monitoring.

Recommendation: DEQ should have a contingency plan for remedial action

in case monitoring shows a threat to public health or the environment. semi-annual monitoring program in effect, the department's contingency plan as it is an early warning device detecting significant changes, he said.

When asked if DEQ then had no plan for remedial action, just monitoring, Reiter said yes, since additional funding would be required by the legislature.

Sally Bourgeois of the Radiation Protection Council (REC) asked if there were any techniques for remediation. Reiter replied that a consultant engineer two years ago had suggested plowing the waste into the surface. bacterial action could break it down more quickly.

Chris Platt, also of REC, charged "It seems to me you're waiting until poison gets into ur groundwater before doing anything..."

"From everything we know," Reiter, "it won't get into the water supply." He explained that the waste seemed to be a discharge area where the water, rather than moving downward, actually showed an upward movement. This would tend to keep the contaminants from reaching the aquifer. (Continued on Page 2)

DEQ Alkali Lake Actions Discussed

By ISABELLE BARRY
H&N Correspondent

LAKEVIEW — Actions taken by the Department of Environmental Quality during the past year at Alkali Lake were discussed at a recent public meeting in Lakeview.

A 10-acre site on the south side of the Alkali Lake Basin had about 23,000 55-gallon drums of pesticide waste and manufacturing residues buried in late 1976. The drums were stockpiled between 1969 and 1971 for disposal by a private contractor.

Rich Reiter, supervisor of the hazardous waste program, Portland, conducted the meeting.

It was learned that in response to a recommendation that tissue from animals feeding at the lake be examined Clay Curtis, Alkali Lake highway maintenance station, shot two rabbits and submitted them for analysis. The concentration of 2,4-D in the liver, the organ where toxics concentrate, was less than 0.2 parts per million. Reiter said no samples were obtained from cattle.

Bob Weir, who runs cattle in the area, may provide tissue samples.

In evaluating the area's native vegetation, it was reported sagebrush samples were taken near the lake site and near Hutton Springs. Reports indicated 2,4-D concentrations less than the 0.2 ppm detection limit. Visual observations indicated vegetation is recovering, according to the DEQ.

Reiter said the state is gathering meteorological data at the station on a continuing basis and reported the Oregon Graduate Center has received a grant that will be partially used to monitor the area's potable water sources. The center will also drill an additional well to check water quality at deeper levels.

Sources that will be monitored twice yearly by the DEQ include North Artesian Well, Hutton Springs, South Artesian Well, Leehmann Sheep Camp, highway maintenance station and Cattle Trough.

In response to concerns about earthquake potential and contingency plans if the site should become a public health hazard, Reiter

said it would be necessary for the state Legislature to allocate more money for earthquake studies. He said it is possible an inactive fault exists under the site, but said because the seismic risk is low he believes effects of an earthquake would be minimal.

Reiter said studies of old maps showing strand lines of Alkali Lake in 1886 and 1916 indicate the lake appeared similar then. Analysis by the U.S. Geological Survey indicate the possibilities of flooding are minimal. Even if flooding should occur, he said it would not be severe enough to expose the waste or leach significant quantities of waste to surrounding areas.

Reiter said there is no evidence to support claims that 65,000 drums of waste were disposed at the site. The department claims 23,000 drums were deposited.

Further ground water studies have been deferred pending an Oregon Graduate Study grant proposal to the Environmental Protection Agency seeking a comprehensive study.

Regarding a mound outside the waste site's contained area, which some claim has

hundreds or thousands of drums of unknown chemicals, Reiter said some holes were dug in the top of the mound but could confirm only those barrels visible at the west end. He said the DEQ has unsuccessfully attempted to contact the owner of the privately owned land.

Reiter said he does not believe the Alkali Lake Basin will be developed for intensive agricultural use in the near future. Most land is managed by the Bureau of Land Management, which proposes to allow irrigation only if groundwater reserves prove adequate and after private lands in Lake County are developed first.

Additional monitoring data, taken the morning prior to last week's hearing, will be available when collected from the DEQ lab. Background information and monitoring data through April 1981 is available from Gordon Tracy, Lake County administrative assistant.

Reiter said there are 10 hazardous waste storage sites in Oregon and noted Alkali Lake holds a low priority.

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Lakeview Hearing Set On Waste Disposal Site

LAKEVIEW — Citizen concerns about the closed pesticide waste disposal site at Alkali Lake will be discussed at a public meeting Wednesday in Lakeview.

The hearing, sponsored by the Oregon Department of Environmental Quality, is set for 7:30 p.m. at the Lake County Senior-Community Center. Lakeview is the nearest major community to the disposal site.

Discussion about the 10-acre site on the south side of the Alkali Lake basin will center around concerns raised during a previous public meeting held in 1979.

Issues include:

- Effect of disposal site on local animals and native vegetation.
- Continuous and reliable operation of the meteorological station at the Alkali Lake highway maintenance station.
- Earthquake and flooding potential and effects on site.
- Preliminary evaluation of installing additional groundwater monitoring wells.
- Likelihood of major new irrigation programs adversely affecting the artesian pressure in the deep, fresh water aquifer.

DEQ supervised the controlled burial of about 23,000 55-gallon drums of pesticide waste and manufacturing residues in November and De-

ember 1976. Drums were stockpiled between 1969 and 1971 for disposal by a private contractor who never was able to carry out the plan. Through court action seeking proper site management, Oregon obtained ownership of the site and contracted for burial in shallow trenches.

According to the DEQ, the Alkali Lake basin is suitable for waste disposal because of the area's high elevation, desert environment, unusable shallow aquifer, low precipitation and remoteness. The area is practically lacking in vegetation, except for sagebrush and greasewood. The

area is fenced to keep out animals.

DEQ samples the site semi-annually to determine the effect of the waste on shallow groundwater. The DEQ said data shows some waste has migrated to the shallow groundwater, which has a naturally high alkaline content, is not suitable for drinking and is arsenic.

Besides reporting on public concerns, DEQ staff also will describe additional monitoring conducted since 1979. Staff also will review the ranking of the site according to a "degree of hazard" model developed by the Environmental Protection Agency. The DEQ reported that the Alkali Lake disposal site rates a very low degree of hazard, or less than 10 on a scale of zero to 100.

Bill may stop tailings clean-up plan

Recent actions in Congress threaten to eliminate the clean-up of uranium tailings sites in Lakeview and several other locations, and the national Wildlife Federation and a local action group have urged public outcry.

According to the National Wildlife Federation (NWF), Senate action is pending on a House bill, which contains an amendment that would halt enforcement of the Uranium Mill Tailings Radiation Control Act of 1978. This would halt the "remedial action" program under which a tailings site at Lakeview is scheduled to be removed by 1987.

Representative Samuel Stratton of New York offered a last-minute amendment to HR 4144, the House Energy and Water Appropriations bill, which passed almost without notice, according to the NWF. This amendment would block the Nuclear Regulatory Commission from enforcing the Mill Tailings Act.

Two Congressmen, John Dingell, chairman of the energy committee, and Morris Udall, chairman of the interior committee, wrote to the senate, protesting this unwelcome intrusion into their areas of jurisdiction.

Senator Mark Hatfield of Oregon reportedly supports deleting the controversial amendment, but is being opposed by New Mexico Senators Harrison Schmitt and Pete Domenici. The latter two themselves may offer amendments that would further weaken the Mill Tailings Act.

Under the act, the U.S. Department of Energy has been studying Lakeview's site and dozens of others, to set priorities for clean-up and determine the best course of action.

Lakeview's four-acre tailings site is located about a half-mile west of Precision Pine, which was formerly the Lakeview Mining Company's uranium processing plant. Lakeview Mining Company was one of many in the United States to process uranium ore in the decades from 1942 to 1970. The local plant operated from 1958 to 1960.

After processing operations ceased and many mills closed, including Lakeview's, tons of uranium tailings remained at the inactive sites. In 1966, the Colorado Department of Health found that the tailings from the Climax Mill, near Grand Junction, had been used extensively in Grand Junction for the construction of homes, schools and other buildings.

The principal hazard associated with this use of tailings is the possibility that radon gas may be emitted from the materials. Radon gas, when inhaled, can significantly increase an individual's chances of getting lung cancer.

The findings in Colorado motivated the Oregon Health Division to investigate the conditions of the Lakeview site, beginning in 1972. Extensive surveys in the Lakeview area have shown that no tailings have been removed from the site, and actions taken at the site since 1972 have satisfied the Health Division there is no present hazard to the public.

After monitoring of the site in 1979, George Toombs, supervisor of the

Health Division's Radiation Control Section, gave the site a clean bill of health. His monitoring included the entire 258 acres of the Precision Pine property.

"We found the entire area to be essentially background," Toombs said; no radiation beyond normal background levels is present. A member of the consulting firm that studied the site under a government contract said less than one percent of lung cancer cases in the Lakeview area would have any con-

nection with the tailings.

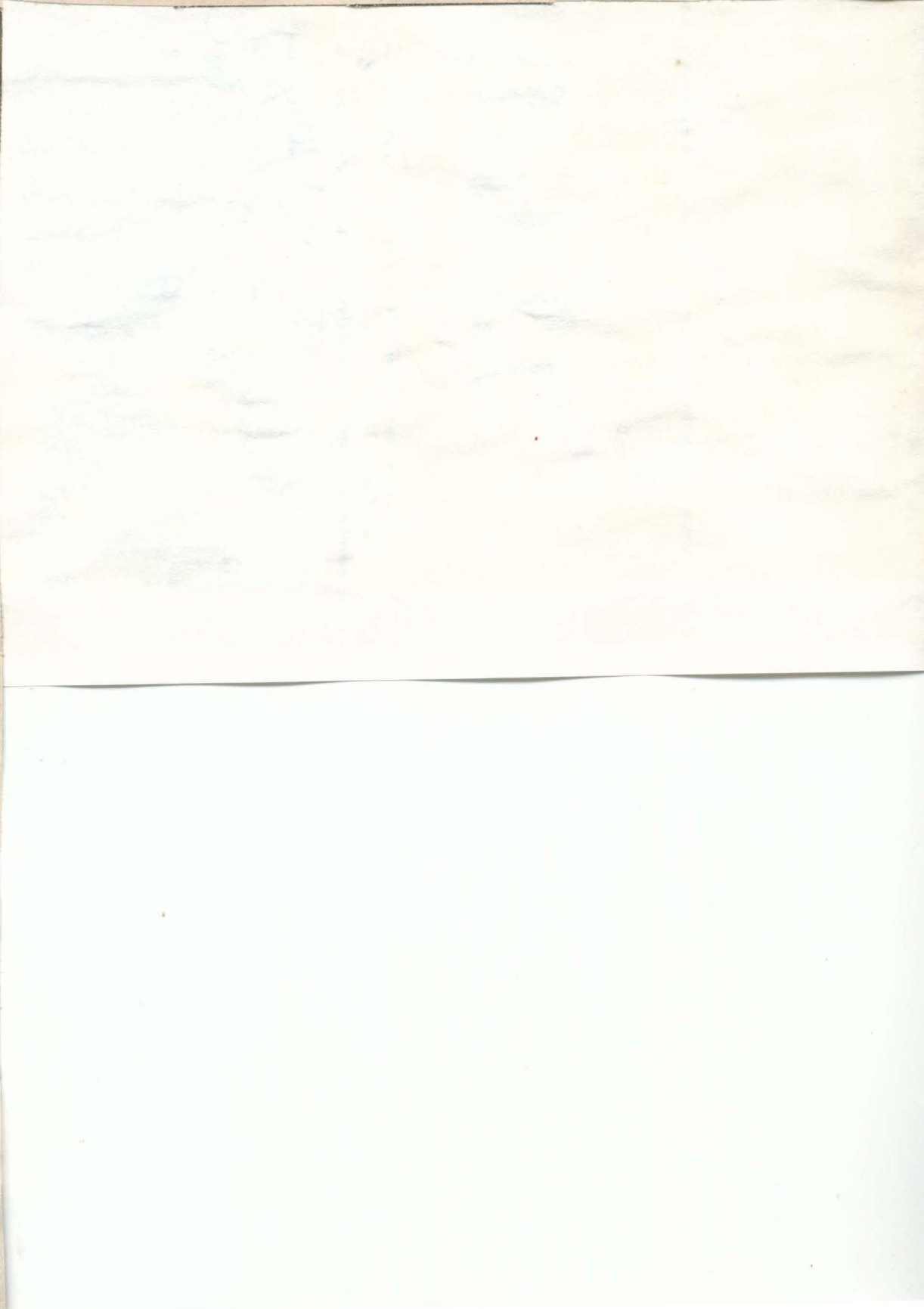
The area was still included in the Mill Tailings Act, to clean it up and avoid future hazards.

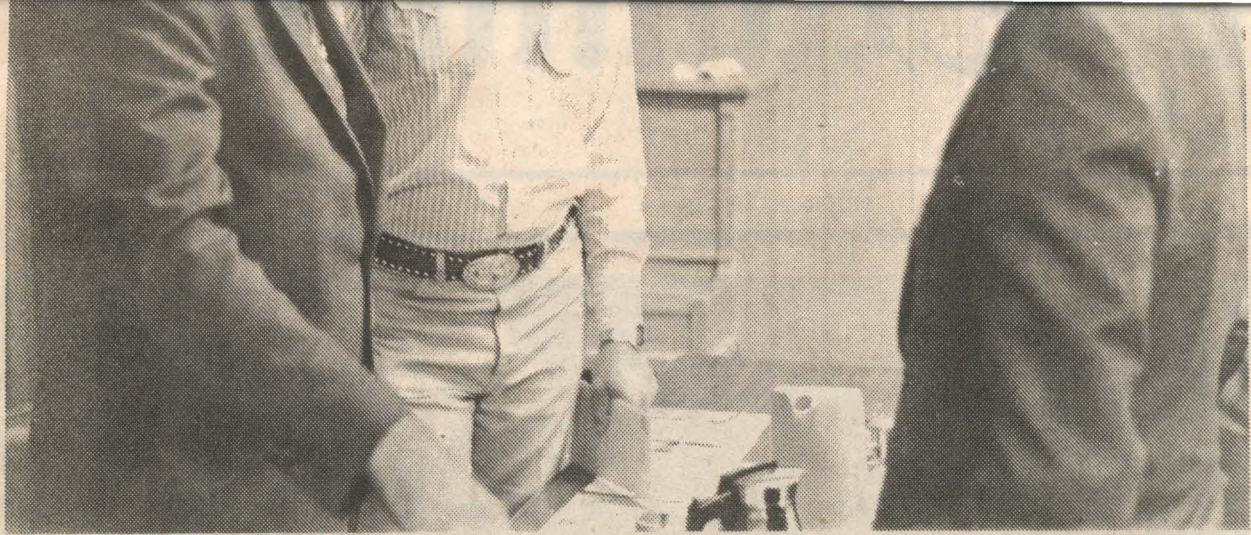
An environmental assessment was scheduled to begin in July, and be finished by next May. This study will determine whether an environmental impact statement for the site is in order.

Meanwhile, the Department of Energy is scheduled to be working on a

design for placing a containment lin around the site, or a plan for removing all the radioactive material. This segment of the program is supposed to be finished by 1985, with final action to be taken by 1986 or 1987.

Both the National Wildlife Federation and a local group, the Radiation Education Council, are urging concerned individuals to contact their senators about the bill which is scheduled for Senate action soon (see Voice of the People)





GEOTHERMAL DISCUSSED—Paul Hathaway, left, discussed the future of geothermal energy in Lakeview in Lakeview last week. After a Rotary Club meeting, he spoke with

Chuck Kelley (next to him), Earl Parsons and Don Liddycoat, all of Lakeview.

(Examiner photo)

DEQ to hold Alkali Lake hearing at community center October 28

Those who do, and are concerned, or those who don't and want to know more, will have an opportunity to hear the most up-to-date information on Lake County's toxic chemical waste dump October 28.

Fred Bromfeld of the Hazardous Waste Section, Solid Waste Division, Department of Environmental Quality, said a public meeting will be held at the Lake County Community Senior Center on that date, at 7:30 p.m. At that meeting, various representatives of DEQ and the U.S. Environmental Protection Agency, will divulge the results of monitoring over the past two years at the site.

Bromfeld said the ranking of the disposal site on a national "hazard assessment model" will also be discussed, and questions that have arisen since the last meeting, October 16, 1979, will be answered.

"We will be prepared to discuss other items as they may be brought up and will have on hand several DEQ personnel of various technical disciplines," Bromfeld said in a letter to Gordon Tracy, Lake County Administrative As-

sistant, setting up the meeting.

The biggest concern expressed locally about Alkali Lake is the possibility of water contamination from the chemicals stored there.

Alkali Lake, some 50 miles northeast of Lakeview, is a mostly dry lake bed. On one 10-acre tract on the lake bed, some 23,500 barrels of toxic chemical by-products were buried and crushed in 1976. There is a shallow water table at the site, which intersects the burial spot, about three to five feet below the surface.

The water in this table is not drinkable, and is not used for irrigation. But it may be used by area wildlife and cattle, and it does feed brush and grass, which wildlife and cattle eat.

There is also a reported fault beneath the storage site. Some have expressed concern that this contaminated water could somehow come into contact with the deeper, freshwater table.

State officials say there is little chance of that happening. The DEQ has taken the position that it will monitor the site regularly, and take remedial action only if the unexpected occurs.

Beginning in 1969, a trucking firm contracted with a Portland herbicide manufacturer to dispose of chemical waste products, reportedly 2,4-D and MCPA, which are used to kill broadleaf plants and are mildly poisonous to humans. The trucker owned land at Alkali Lake, and began storing the chemical residues in 55-gallon barrels there.

The trucker maintained he was eventually going to experiment with techniques of disposing of the chemicals by soil incorporation, but as the barrels piled up and some began leaking, the Lake County Board of Commissioners and others became alarmed.

Since there were no laws against creating such chemical disposal sites in Oregon at the time, and no Department

of Environmental Quality (which was created by the 1971 Legislature), the Alkali Lake situation posed a dilemma. As legislators were attempting to create such a department and to pass environmental laws, the barrels were piling up.

Residents of the area and travelers on Highway 395 complained of a noticeable smell.

The shipments were finally stopped by the Oregon State Police, after it was noticed some of the chemicals were leaking onto the highways from corroded barrels in transit.

In the early 1970s, the state's environmental laws were created, along with the DEQ. The owner of the chemical dump was forced to sell the land to the state, which then let bids for disposing of the chemical at the site. Eventually, the state settled for what was the least expensive method, which was to dig trenches, push the barrels into the trenches and cover them up, crushing them with a bulldozer in the process.

It is estimated that the chemicals will take about 100 years to fully decompose in the barren, alkaline soils of the lake bed.

At the 1979 meeting, county health officer Dr. Robert Bomengen and others requested that Lake County residents be periodically informed of the results of the DEQ's monitoring efforts. The upcoming meeting is the fulfillment of the DEQ's pledge to do so.



New research center

Oregon Senator Mark Hatfield Saturday, February 16, officially opened the nation's first hazardous waste microbiological degradation research facility, at which research is being done which could lead to the cleaning up of waste dumps such as that at Alkali Lake in Lake County.

The newly-established Land Use Research Center, on the campus of the Oregon Graduate Center in Beaverton, is run by George D. Ward on a grant from the National Science Foundation.

Ward's firm is working on biological ways to clean up waste products from

pesticide manufacturing, and his chief interest has been at Alkali Lake, where 25,000 barrels of phenoxy-herbicide wastes are buried in a shallow lake bed.

Research work at the Beaverton facility will investigate the possibilities that naturally-occurring (as well as genetically "manufactured") soil bacteria can safely decompose a wide range of hazardous wastes.

Ward's research program is being sponsored by the National Science Foundation, under the guidance of Dr. Edward H. Bryan, program manager for the NSF's Appropriate Technology

probes Alkali Lake

LAKEVIEW
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Program.

The waste chemical to be investigated is 2,4,6 Trichlorophenal. It is the principal residual waste which results from the manufacture of herbicide 2,4-D and is estimated to be similar to the main ingredient at Alkali Lake, and possibly in the 5,000 drums reportedly buried in Portland's St. John's landfill.

During the research, scientists will test the degradation capabilities of naturally occurring soil organisms found in various types of carefully selected and managed soils. These include ancient, organically rich lakebed sediments, rich

farm soil, black muck from Tillamook Bay and contaminated desert soils from Alkali Lake.

Various soil types and differing nutrient and chemical mixtures will be slowly blended together and allowed to "brew" in 22 fully contained metal tubs. These tubs are carefully designed to simulate actual conditions as they exist in many of the nation's largest chemical waste burial dumps. By changing the soil types, temperatures, rate of chemical circulation and other factors, it is possible to simulate almost any chemical burial site in the country.

'Super bug' developing at Alkali

Lake

A Portland environmental engineer says he may be close to a breakthrough in a process to eliminate toxic wastes stored at such sites as Alkali Lake in east-central Lake County.

George D. Ward, who has been experimenting for years with processes of biologic breakdown of such wastes, may have discovered a mutant strain of bacteria which thrives on trichlorophenols, the waste products present at Alkali Lake.

Ward, who heads a Portland engineering firm, has a research grant from the National Science Foundation to do such work. He is also currently seeking an Environmental Protection

Agency grant to further aid his studies.

He hopes to use Alkali Lake's dump site as a testing ground for his studies if he receives the EPA grant, but the Lake County Board of Commissioners in November turned down a request from Ward that it cooperate with his work there.

About 25,000 barrels of manufacturing residues from the herbicide 2,4-D are buried on a 10-acre plot at Alkali Lake. The chemicals are leaching into the shallow, alkaline groundwater table, and Ward, his associates and some others are concerned that they may get into the freshwater supplies.

Because of those concerns, the Oregon

Department of Environmental Quality is doing some test work this year at Alkali Lake, and is also developing plans for action in case such a situation develops.

Ward, whose firm is reportedly one of the tops in the nation in its field, has always maintained that biological degradation of the wastes was the best method of safely disposing of them.

Now he feels he may have found a bacteria that in effect eats the toxic wastes. He says so in a recent letter to Richard Reiter, supervisor of the DEQ's hazardous waste section.

"Although the concept is still speculative, it appears possible that contaminated soil and groundwater

Lake may be waste disposal key

B Examiner

Feb 7th 1980

samples recently obtained from the Alkali Lake area may hold the key for the development of a 'super bug' perfectly adapted, as well as being genetically modified in the laboratory, for thriving on and thus neutralizing the type of phenoxy herbicide wastes buried at Alkali Lake," he says.

"Ironically," he goes on, "it is the surviving soil bacteria species found in contaminated groundwater and soil samples that may have provided the source of environmentally adapted bacteria capable of surviving" by using the wastes as a food source.

He is in the process of isolating the bacteria species in the laboratory, which

will possibly be followed by genetic manipulation to see if the bacteria's chemical degradation ability can be improved.

Once this is done, "pure strains of 'chemical eating' bacteria" will be used in a test on soils exposed to the contaminated water and soil from Alkali Lake.

"We believe the results will firmly demonstrate the capability to utilize soil microorganisms to safely decompose toxic chemicals into totally harmless byproducts," he says.

Another leading scientist, Dr. A.M. Chakrabarty of the University of Illinois Medical Center, is doing similar work, and says Ward's discovery has

potentially great significance.

"Your work is quite relevant," he says in a letter to Ward's chemist. "I fully agree with you that your work on the development of a bio-treatment system is extremely important..."

Ward has offered to work with the DEQ in the event that DEQ chooses to go ahead with the development of a contingency plan for Alkali Lake.

The soils in which the "chemical eating" bacteria were found were collected from Alkali Lake as recently as December.

Ward is still awaiting word from the EPA on his \$862,000 research proposal for Alkali Lake.



Lake Co & Examined 10-25-79

County probably won't help to get Alkali Lake clean-up funds

The Lake County Board of Commissioners will probably not cooperate with the efforts of George Ward to obtain federal funding for research and clean-up at the Alkali Lake chemical disposal site.

Ward, a Portland engineer, is seeking \$862,000 from the Environmental Protection Agency to conduct experiments in containing and detoxifying chemical waste dumps. The commissioners, though recognizing the reasoning behind the idea, said they agreed more with the position of the Oregon Department of Environmental Quality (DEQ), that the money could be better used elsewhere.

Ward has applied for the money to conduct a research project at an unspecified site. He said if enough local interest were shown, Alkali Lake could possibly be chosen as that site.

He spoke with the commissioners Wednesday, October 17 at their regular meeting, and also at a public meeting the night before.

The focus of the issue is a 10-acre tract of state-owned land on the bed of Alkali Lake, some 50 miles north and east of Lakeview, which contains about 25,000 barrels of herbicide residues. The barrels were buried and crushed there in 1976. Some Lake County residents are concerned with the presence of the chemicals, some are unconcerned, Ward wants to clean them up and the DEQ wants to leave everything as it is.

Officials at the meeting Tuesday night briefly went over the history of Alkali

Lake and its current situation.

Beginning in 1969, a trucking firm contracted with a Portland herbicide manufacturer to dispose of chemical residues. The trucker owned land at Alkali Lake, and began storing the chemical residues in 55-gallon barrels there.

The trucker maintained that he was eventually going to experiment with techniques of disposing of the chemicals by soil incorporation, but as the barrels piled up and some of them began leaking, people in Lake County and especially the board of commissioners became alarmed. A lengthy battle began, to stop the stockpiling of the barrels.

Since there were no laws against creating such chemical disposal sites in Oregon at the time, and no Department of Environmental Quality, the Alkali Lake situation posed quite a dilemma. Even while legislators were attempting to create the DEQ and to pass environmental laws to prevent such things from happening, the barrels were piling up. Residents of the area and travelers on Highway 395 complained of a noticeable smell.

Finally, when it was noticed that some of the chemicals were leaking from corroded barrels onto the highway while in transit, the Oregon State Police forced a halt to the shipments, most of which were by then coming in the dead of night. By then the equivalent of 23,500 55-gallon drums of chemicals were stacked up at Alkali Lake.

The DEQ believes that most of what was in the barrels was residue from the manufacture of herbicides 2,4-D and MCPA, which are used to kill broad-leaf plants, and which are mildly poisonous to humans.

"To our knowledge, there is no 2,4,5-T in the site," said Richard Reiter, supervisor of the hazardous waste section of the DEQ.

The legislature, through laws passed in the early 1970s, forced the owner of the land to sell it to the state. Then the DEQ advertised for bids to dispose of the chemicals. The legislature allocated \$310,000 for the clean-up.

The DEQ eventually accepted a bid from a contractor who said he would dig trenches, push the barrels into the trenches, cover the barrels and crush them. This was done in late 1976.

Ward at the time insisted the state was making a mistake in disposing of the barrels by this method, but as he and others said at the meeting Tuesday night, whether it was right or wrong is not the issue any more.

"Alkali Lake presents a unique problem in that what's done is done," said Lake County public health officer Dr. Robert Bomengen. "We're faced with chemicals that are in the soil now... chemicals that there is a lot of conflicting evidence on." He said the people of Lake County now need to know the results of monitoring at the site, whether the water supply is endangered and if there is a possibility of cleaning up the site.

Others echoed Bomengen's sentiments.

"We don't care how it got there," said one woman at the meeting. "We want to know what you're going to do with it now. We just moved to Lakeview...and suddenly we find out we're surrounded by these poisons."

At the same time, many persons, notably ranchers who actually graze their cattle on BLM land immediately adjacent to the dump site, feel there is no cause for alarm. Bob Weir, whose cattle graze in the area every winter, said to disturb the site now would create more

(Continued on Page 8)

Alkali Lake--to clean up or not to clean u

(Continued from Page 1)

problems than to leave it alone.

"Burial is in my opinion the soundest way to take care of this," Weir said. "To go in and disturb that site today would be foolhardy." He said neither he nor other ranchers in the area have ever seen any ill effects on cattle or other animals there.

"It appears to me that the state has the only facts that have been presented here," Weir said.

Reiter and other officials at the meeting, including Fred Bromfield and Rick Gates of the DEQ, Bill Bartholomew of the Department of Water Resources and Jack Sceva of the federal EPA, said they believe the situation at Alkali Lake is not hazardous to man or animals.

Reiter said the chemicals are seeping into the groundwater table at Alkali Lake, but the water is alkaline and not consumed by animals. He stressed that no contamination has been measured in fresh water wells in the area, and none is anticipated.

Bartholomew, a geologist with the water resources department, said even if the groundwater is contaminated, it isn't going anywhere.

"The only way water can get out of the Alkali Lake basin is through evaporation," he said. "That water isn't going anywhere. It's like sweeping something under the rug--it will be right there in the morning.

"This may have been a bad place to put the chemicals, but they aren't going anywhere," Bartholomew said.

Bromfield said the chemicals at Alkali Lake are "mostly a nuisance. They aren't very acutely toxic," he said. "It would be my impression that 2,4-D is no more acutely toxic than aspirin."

Bromfield also pointed out that phenols (the broad chemical category containing 2,4-D and MCPA), are very offensive to animals, and animals will probably not consume contaminated water.

Ward, bio-chemist Dr. James Houck (an employee of George Ward & Associates) and Andy Gigler, a Klamath Falls health-food store owner, debated the conclusions of the DEQ officials.

Gigler claimed that there are traces of 2,4,5-T and dioxin at Alkali Lake, that air currents are spreading the chemicals great distances, and that many dead animals have been found in the area. Dioxin and 2,4,5-T are highly poisonous

chemicals which have been discovered in such infamous dumps as the Love Canal and the Valley of the Drums.

Ward and Houck attacked the statements of the DEQ on several fronts. They conceded that the chemicals 2,4-D and MCPA are not acutely toxic, but their effect is cumulative. Unlike aspirin, to which Bromfield compared the chemicals, the herbicides accumulate in fat cells in animals if they are ingested. Thus the comparison with aspirin was not accurate, Houck said.

Ward and Houck also claimed that they dug up a sagebrush near the site as recently as two weeks ago, the roots of which extended down into contaminated water. Evidence of cattle and rabbits around the possibly-contaminated plants was heavy, they said.

Ward also said there was no guarantee that the fresh water supplies near Alkali Lake will never be contaminated. Since the DEQ has estimated that it will take 50 to 100 years for the chemicals to totally break down, he said, there is no guarantee against anything.

"You'll probably see the day that center pivot irrigation will depend on those freshwater aquifers," Ward said. "To allow that, knowing that it could eventually become contaminated would be a mistake."

When asked by a woman at the meeting what the DEQ planned to do if something unforeseen, such as freshwater contamination, does occur in the future, Reiter said such plans have not been made. Jack Sceva of the EPA said the same thing.

"We plan to continue to watch the site and actively monitor it," he said. "If a hazard to the public health develops, then we will make some sort of move."

Ward disagreed with that line of reasoning for several reasons of his own.

"I think it's a hazard that should be addressed," he said.

Ward said he has been in contact with federal officials who are becoming alarmed about the number of hazardous waste disposal sites around the country. That number is estimated at some 30,000, and a Congressional committee had discussed a figure of \$55 billion to eventually clean up the mess.

The engineer sees Alkali Lake as: (1) A site which, while admittedly not posing an imminent human health hazard, needs to be cleaned up, and; (2) A perfect opportunity to carry out research which could be valuable in solving the national problem.

Ward explained his proposal to the county commissioners Wednesday. He would pump the liquid chemicals out of the site and spread them just below the surface of the earth; he hopes, on ground in the near vicinity. Then, by adding active bacteria to the ground, he would induce the natural decomposition of the chemicals--a technique he said is proven and accepted by environmental scientists.

Once they were combined with the proper bacteria, the chemicals would

probably break down in a matter of months, at the maximum a few years, opposed to the 50-100 years now estimated, he said.

DEQ officials said, while they thought that the techniques should work, they were not convinced it is necessary at Alkali Lake.

"We do not actively support what (Ward) is doing," said Reiter. "Because we disagree with it...but I think there are other, more critical areas around the United States that a large amount of federal funding should be directed to."

The county commissioners said they also could see the merit of Ward's proposal, but leaned to the Reiter position.

Clip

Environmental officials on slate

Alkali Lake public hearing set

Representatives of three governmental agencies will be in Lakeview October 16 for a public hearing regarding the toxic chemical disposal site at Alkali Lake. The exact time and place will be announced later, said Chamber of Commerce President Jim Floor.

Jack Sceva of the Region X office of the Environmental Protection Agency in Seattle will attend the hearing, as well as two representatives of the Oregon Department of Environmental Quality and one from the Oregon Department of Water Resources.

The chamber has sought such a hearing as a way of finding out what the situation is at Alkali Lake, and of making that knowledge public, in much the same way as was the situation at the tailings dump earlier this summer.

Some 10,500 barrels of chemical residues are buried on a 10-acre tract at Alkali Lake. They were placed there in the late 1960s and early 1970s by a Portland chemical company. The majority of the chemicals are believed to be dioxin, 2,4-D and 2,4,5-T residues, from the highly-toxic pesticides.

When the Lake County Board of Commissioners and others objected to the indiscriminate storage of such chemicals in Lake County, the state was brought into the situation. The state through the Department of Agriculture and later the DEQ, which was formed out of the agriculture and health departments, forced the company to halt the storage, and eventually the state purchased the 10 acres.

A series of hearings was held to determine what to do with the land and the chemicals, some of which were eating through the barrels, seeping into the ground and blowing in the wind. It was finally decided to simply bury the barrels where they were. That decision has been the focus of controversy since.

The state and federal environmental agencies are charged with monitoring the site, which includes seeing if the chemicals are leaking into the area's water table. Some evidence has been reported which indicated there is some

such leakage, though just how much is involved is debated.

It was originally thought that the underground water, if anything, moved toward the site, rather than away from it. But subsequent studies have shown that the water supply is moving away from the dump area, and possibly carrying some of the chemicals with it.

George Ward, an environmental engineer in Portland who was involved in the case originally to some extent, says he has evidence that the Department of Environmental Quality deliberately ignored the wishes of the Water Resources Department at the time. A memo from Water Resources in 1972 or 1973, before the barrels were buried, reportedly said studies had shown that the chemicals should in no way be placed any closer than they were to the water table. This memo never came to light at the time.

As a result, the recommendation of the DEQ to dig trenches, push the barrels

into them, crush them and bury them was followed. Ward and some others think that decision was wrong.

Ward also claims that studies by a chemist employed by him have shown that the chemicals will not break down as rapidly as the DEQ originally expected; in fact it may take many, many years for them to lose their toxicity. And all the while they are possibly working their way closer to water tables which could contaminate range and cattle for miles around.

And yet there are just as many who say there is nothing to worry about concerning Alkali Lake, and all the fuss is over nothing. Local officials, notably public health officer Dr. Robert Bomengen, felt that the public should have a chance to hear and ask questions of those who do know the score.

Accordingly, the chamber has been actively attempting to set up a hearing of the sort which will take place October 16.

Engineer wants to clean up Alkali Lake, state says wait

Lake Co 10/18/79

A Portland engineer Tuesday night urged the use of federal funds to clean up Alkali Lake and maintain the "environmental virginity of the State of Oregon," but the Department of Environmental Quality gave the proposal a cold shoulder.

Officials from the DEQ were at Lakeview for a public meeting Tuesday night, concerning the present condition of a chemical dump at Alkali Lake.

Public sympathy at the hearing seemed to lean toward cleaning up the site, or at least making plans in case of an emergency there.

Some 23,000 barrels of herbicide residues were dumped on the site in the early 1970s. The DEQ bought the land and buried the barrels in 1976. Public concern has arisen over whether the chemicals are spreading and whether they pose a hazard to animal or man.

George Ward, environmental consulting engineer, proposes that available

federal funds be applied for to clean up the site using soil incorporation techniques. But Rich Reiter and other DEQ representatives, as well as a federal EPA representative, stood by their watch-and-see approach.

"If there is a problem, we should go after these funds and clean it up," Ward said. "If there is no problem, we shouldn't be worried about it." Ward said he is convinced the Alkali Lake situation should be rectified, and the results of work there could be beneficial to the nation.

"We all have one thing at stake, the environmental virginity of the State of Oregon," he said. "If through federally funded research here, we can solve the nation's problem, then damnit, let's do it."

Ward indicated he would approach the county commissioners for support Wednesday.

'Site studied to death'

LAKE CO EXAM. 9-13-79

Board urges governor act on tailings

The Lake County Board of Commissioners have urged Oregon Governor Victor Atiyeh in a letter to respond to the federal government's request for input regarding Lakeview's uranium tailings dump.

Saying the site has been "studied to death," the commissioners' letter points out that federal designs on the site, which state investigators have declared safe, may hold up economic development in Lake County--an area declared to be economically lagging by a proclamation signed by Atiyeh only recently.

The tailings dump, containing residue of uranium processing done in the late 1950s, is a 30-acre parcel about one mile north of Lakeview. Actions by Oregon Health Division officials over the past seven years have contained the radiation hazard on that site, but a federal program has recently designated some 258 acres owned by Precision Pine as part of the site, which is destined for "remedial action."

The letter sent to Atiyeh says, in part: "At a meeting in Lakeview Wednesday night, August 29, 1979, officers of the Oregon and Federal Departments of Energy explained a program in which they are cooperating to 'establish assessment and remedial action programs' for tailings piles at inactive uranium mill sites.

"The Lakeview site, in their program, is not limited to the 30 acres of the

tailings pile and settling ponds, but includes the entire 258 acres of the original property at which new owners have converted the main building to a sawmill. It appears that 'remedial action' by the two DOE's could shut that sawmill down.

"The Lakeview mill site, and indeed the town and area surrounding the site, has been 'studied to death' by both federal and state agencies since closure in 1960.

"How do we get these people of our back?"

The letter goes on to observe that Precision Pine, which only recently went into operation, may be forced with shutting down as part of the remedial action program, and that a possible new industry may be scared away from the site by the remedial action program stipulations. "Will they dare to invest in

this economically depressed area with the DOE 'remedial action' hanging over their heads?

"And what is to be remedied if, as the State Department of Health says, there is no health hazard at the site? And why is the entire 258 acre property under the DOE gun when only some 30 acres compose the tailings pile and settling ponds combined? Does no one in the State and Federal bureaucracy use judgement?"

"We are told that DOE regulations have been published in the Federal Register and that your office has until September 14 to respond," the letter concludes. "We hope you will."

Under the program, the Oregon Department of Energy is compiling information about the site, and will make a recommendation to Atiyeh based on

(Continued on Page 5)

Tailings

(Continued from Page 1)

that information. Taken to the farthest extent of federal legislation, the site could be purchased by the federal government and either removed or left as it is and monitored forever.

Firm seeks land to conduct chemical breakdown research

A Portland environmental engineer is appealing for local help in his quest to try and clean up the Alkali Lake waste disposal site.

George Ward, of George D. Ward & Associates, an environmental consulting engineering firm, has been turned down repeatedly by the Bureau of Land Management in his requests to use land adjacent to Alkali Lake for chemical tests. So he hopes another landowner in the area will grant him such use.

Ward & Associates has applied for a grant of \$862,000 from the United States Environmental Protection Agency (EPA) to do research on a chemical waste containment process. He has already received a National Science Foundation grant for the same work. He hopes to develop a membrane which would be used to surround chemical waste dumps such as exist at Alkali Lake and keep the chemicals from entering water supplies.

Ward said he could not understand the rationale behind the BLM's refusal to

allow him to experiment with ways of breaking down the toxic chemical residues of pesticide 2,4-D on land it owns adjacent to the dump site, since on the other hand the agency is spraying 2,4-D in Josephine County, over loud protests from residents.

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Department of G
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Mailing address: P.O. BOX 41



Tailings Reassurances

K. FALLS H+N 8-21-79

By ISABELLE BARRY
H&N Correspondent

LAKEVIEW — Two State Department of Health officials Monday night outlined history of the department's work at the former uranium processing mill north of town and reassured residents settling ponds and tailing piles left by the operation are "not radioactive to the extent it might be hazardous to the health of the community."

George Toombs and Ray Paris, who work in environmental radiation surveillance, attended the public meeting. Toombs said his department's attention was focused on Lakeview in the late '60s after the problem of uranium waste material being used in landfills and roadbeds in Grand Junction, Colo., revealed radiation was being trapped in houses and other structures built on such sites, causing a definite health hazard. These conditions came about after a uranium processing plant had been closed in Grand Junction.

Toombs' department found similar conditions in Lakeview and a crew, sent to investigate, found radioactive dust blowing off the area, the area not properly fenced or signed and motorcycle tracks going through the tailing dump.

Oregon Health Department contacted the Atomic Energy Commission which sent a mobile monitoring system to scan the entire Town of Lakeview and a radius around the uranium mill site. No excessive radiation was found in town except in a few homes where extensive collections of uranium rock were stored.

In each instance, any excessive radiation was investigated until the source was discovered and steps taken to eliminate it, Toombs said.

Atlantic Richfield Co., which owned the old uranium plant at the time poor conditions were discovered, was notified it was in violation of state standards. Richfield scientists and state representatives assembled and found radiation on the north side of the building; several hot spots around the mill yard.

Richfield then moved all the material to the tailing site, covered it with 18 to 24 inches of earth, reworked berms

around the tailings and diverted a stream of water that had been running through the site.

Toombs said there was then no evidence of excessive radiation and currently a "healthy crop of wheat" is growing on the tailing pile, planted to control wind erosion. No excessive radiation showed up in the wheat grown on top of the pile; fields around the site have been scanned and show no danger, according to Toombs.

Precision Pine, now being put into operation at the uranium mill site, has installed equipment and put up some new buildings and the state will again monitor the site to find if anything has been done to disturb the tailing dump which is not excessively radioactive at this time, Toombs said. There are two monitoring stations at the site now, checked every six months. Ambient monitors are in place to show whether radiation travels into the water supply.

Toombs said at a monitor at Swan Lake, about 50 miles from Lakeview, radiation level is no different than at the tailing pile north of Lakeview.

When asked about the radiation level before the area was stabilized, Toombs said there was no radioactivity in the ground water and some slight excess in a field south of the mill.

Asked if the State Health Department feels there is any correlation between the reported high incidence of

cancer in Lake County and radiation from the mill site before stabilization, Toombs said there was not enough information to determine that. He said University of Oregon Health Sciences Center has offered to analyze data on the uranium mill from 1966 to 1977 and make the information available to the health department.

Dr. Bob Bomengen, Lake County health officer, said a local survey is being made with the help of Lake District

Hospital staff to review cancer cases in Lake County over the past several years. The survey will consider type of cancer, occupation, place of residence, alcohol and smoking habits and other influences and correlate this information to find if there is any relationship to the uranium mill before stabilization.

Bomengen said the survey will continue and information will be made available to anyone wanting it.

Engineer still concerned

Despite an apparent lack of concern locally, Portland engineer George Ward continues to express concern over the situation at Alkali Lake's chemical disposal site, hoping to receive a grant to study containment and breakdown methods at the site for possible use at more hazardous sites across the country.

A recent move by the federal Environmental Protection Agency (EPA) in Washington indicates the agency may be considering quick action on a number of sites across the country, to clean them up in the wake of bad publicity, Ward said. He intends to use this recent development to push for experimentation of his containment methods at Alkali Lake.

Ward said, in a letter and phone call to

the Examiner, that he was approaching Thomas Jorline, assistant EPA administrator, to express his ideas.

"I'm going to write him and let him know there is some chance for use of containment techniques on Alkali Lake," he said.

Ward's firm has received a grant from the National Science Foundation to experiment with his methods, and is attempting to receive funding from the EPA and the chemical industry.

"Our real interest in Alkali Lake is to utilize the site for full scale field trials of new techniques in containment," he said. "We are confident that adequate technology currently exists that would make it possible to totally surround the present

10 acre site with an impervious barrier extending to a considerable depth below the surface of the ground," to cut off any escape of containment by ground water.

Reassuring words from Paul McCormick, extension agent, on the results of state Department of Environmental Quality monitoring of the site's test wells failed to convince Ward that there is no possibility of groundwater seepage at the site. He pointed out that in the most recent test, no readings for 2,4-D were recorded.

"Nobody's proven that it's all right," Ward said. "I could be wrong myself, but just saying it doesn't make it so."

Ward is toying with the idea of using infrared aerial photography to check for

about Alkali Lake dump

seepage of the chemicals at Alkali Lake. He said Dr. James Houck, who recently joined the firm, thinks the photography may aid in determining whether the 2,4-D has seeped away from the disposal area.

"In the event the surrounding desert shrubs are taking up contaminated groundwater, it is almost (he emphasized the word "almost") certain that infrared film can detect the direction and extent of plant contamination far in advance of the human eye." He said it would probably take several flights over an entire season to determine the extent, if any, of the seepage.

"Dr. Houck's concern is that animals grazing on shrubs whose tap roots reach contaminated groundwater might be

accumulating toxic portions of waste chemicals contained in shrubs well ahead of the time their presence can be detected by the human eye," Ward said.

"The effect this might have on cattle is probably not known. The effect it might have on the unfortunate fellow who eats the beefsteak is also probably unknown! However, the possibility of bio-

accumulation of toxic elements in the flesh of foraging animals is a recognized phenomenon and should not be readily discounted."

Ward requests that any persons who have any opinions one way or the other on the site at Alkali Lake, or on the possibility of infrared photography, contact him in Portland, 222-4333.

Firm sees hazard with Alkali Lake chemical waste

Alkali Lake and its chemical waste disposal site are again threatening to enter the limelight in Lake County and the state of Oregon, as efforts continue to ensure that the site is and will continue to be safe.

George D. Ward, an environmental consulting engineer who has maintained interest in the site for several years, has been awarded a grant from the National Science Foundation to make a broad study of a method of making such sites safe, and he is interested in combining this project with work at Alkali Lake for the mutual benefit of both.

Ward has also expressed concern over the contamination of groundwater by the chemicals at the lake.

Ward and his firm have received a grant from the National Science Foundation (NSF) to thoroughly study methods of using bacteriologically active soil to break down chemical wastes, and methods of effectively containing such chemicals. The processes envisioned could be used at various sites around the country where such wastes pose immediate hazards to urban areas. He has requested an amount from the Environmental Protection Agency (EPA) of \$200,000 for the same work, and has also requested the use of 1,000 acres of BLM land adjacent to the Alkali Lake disposal site on which to carry out his experiments.

Ward proposes to use Alkali Lake as the experimentation ground because of its ideal conditions and because of the groundwater threat.

"It is a known area of potential groundwater contamination but where the results, should failure occur, are not likely to cause immediate threats to urban areas," Ward said in a recent letter to an EPA official. Among the advantages of the site he listed were "its ungodly remoteness, flat terrain, uniform and easily workable soils" and that it has been studied enough to be understood.

The process under study is of interest to several companies, including Hooker Chemical Company, which is trying to clean up a hazardous disposal at the now infamous Love Canal in Niagara, New York.

"It is entirely possible that both containment, as well as treatment methods already envisioned by our small consulting firm may turn out to be the final answer to one of our nation's largest known chemical waste contamination problems," he said in a letter to the

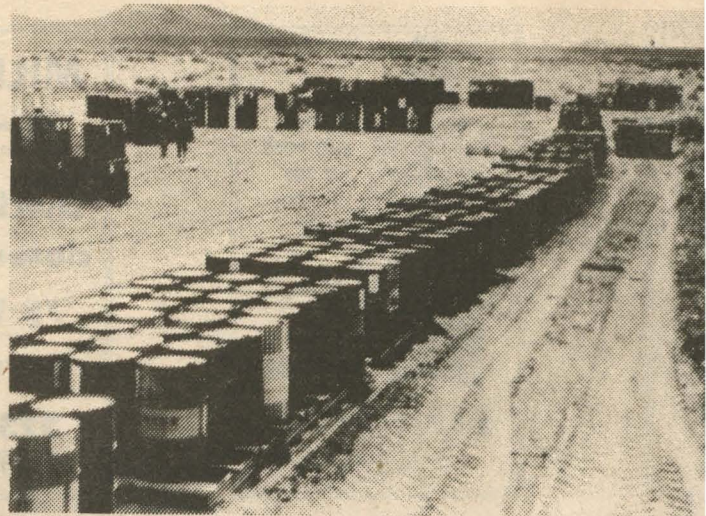
found that leakage did exist, possibly endangering the environment.

"There we were in the wide-open spaces and it smelled like a chemistry lab," said the leader of the expedition, Representative Nancie Fadeley of Eugene, as quoted in the Eugene Register-Guard.

As a result of this investigation and subsequent recommendations of the legislature, the Environmental Quality Commission began proceedings to condemn and buy the land for the state in January 1974.

Several methods of disposal were discussed, with much input from all over the state, and the controversial decision on the method was arrived at in August 1976. The proposal was to dig three-foot

(Continued on Page 13)



THESE BARRELS are some of the 25,000 at Alkali Lake they were buried.

it is entirely possible that both containment, as well as treatment methods already envisioned by our small consulting firm may turn out to be the final answer to one of our nation's largest known chemical waste contamination problems," he said in a letter to the Examiner.

But Ward's interest also is strongly tied to Alkali Lake, with which he has been concerned for a number of years.

The long and tangled history of the Alkali Lake problem began in 1968, when 5,600 acres of land at that lake north and east of Lakeview were sold to Chemical Waste Storage and Management Corporation of Beaverton by the estate of Dallas Lewis of Los Angeles. Howard James Hunt, president of Chem-Waste, as it was called, hoped to use the site to stockpile several thousand barrels of pesticide residues, including 2-4-D and 2-4-5T.

Hunt hoped to store the chemicals long enough for a commercial market to be established for them or for them to break down into a usable form, according to reports at the time. Stockpiling of the barrels at the lake began immediately, and the lack of state or federal regulation over this type of operation and the reportedly bad condition of some of the barrels caused local concern.

The Oregon Legislature began work on drawing up rules for such installations in 1969, and at the same time Oregon State University applied for and received permission from the local Planning Commission and the state to experiment on the site with various ways of disposing of the chemicals.

The case gained notoriety nationwide, being reported in the New York Times in September 1969. In the meantime, the Department of Environmental Quality was established and given jurisdiction over such things, taking it away from the Department of Agriculture. Local rumblings caused a state re-investigation of the situation and in December of 1971 the state ordered a moratorium on any further storage of barrels there. About 80 barrels were being shipped in every week, and reports said many local ranchers were concerned with leakage of many of the barrels.

The results of the OSU study were revealed in June 1972; they showed that biological degradation of the chemicals at the site was possible.

Then in April 1973 a legislative committee investigated the site and

Alkali Lake

(Continued from Page 12)

Ward's firm at the time presented a winter-proposal, with much pleading and cajoling on the part of Ward, to use the method of chemically decomposing the toxic material, rather than to merely bury it. Current investigation by Ward and others seem to show that the burial method may have negative results on the area's groundwater and may actually threaten Alkali Lake and its surroundings.

Ward thinks he now has a method of rendering the chemicals harmless in a short time, and hopes to alert the local population to both the current hazards and to his plans.

Ward has photographs which show some disturbing things: Sink-holes near the chemical dump which presumably go down to the water table, crushed barrels beginning to show through the soil due to corrosion, and a pile of barrels outside the fenced-in-10-acre area, some of which appear to have the same toxic chemicals inside them. Ward said local sources have informed him that wells in the vicinity have pink-tinted water, indicating contamination from the chemicals, which are of a reddish color.

Ward alleges that the DEQ violated the

intent of the legislature and the legislative emergency board in the way it allowed the chemicals to be disposed of.

Ward said state estimates of the life of the chemicals show them to be a serious

threat if they remain in their present condition.

"At the April 30, 1976 Environmental Quality Commission meeting in Albany,

one state official stated that if the chemicals were left exposed to sunlight it would require 50 to 100 years time span for the 2-4-D wastes to degrade," Ward said in his letter to the Examiner. "He went on to concede that very little degradation would take place with burial on the lakebed, whether the burial was in an aerobic soil horizon or not."

Ward disagreed, saying a study done by his firm under an earlier NSF grant showed that, under the right conditions, the break-down of these chemicals could be accomplished in considerably less time.

"...Almost total degradation occurred in less than 60 days when the same toxic materials were properly mixed into bacteriologically active soils."

The Lake County Board of Commissioners have asked that they be kept apprised of any actions contemplated by Ward or the DEQ at Alkali Lake. No decision has been announced yet by the BLM concerning the adjacent lands.

Ward hopes to get the project under way as soon as possible, through stirring up local interest.

"My purpose for keeping an eye on Alkali Lake is in hopes that we may somehow be able to stir up enough

interest to warrant the necessary funds to correct the problem. Perhaps if the local community knew more of the facts surrounding the errors made at Alkali Lake, the necessary funds might eventually be made available."



LEAKERS--These leaking barrels, photographed by Ward, are outside the protected area owned by the state.

Lake County Examiner

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Alkali Lake burial site in good shape

According to Paul McCormick of the Lake County Extension office, the burial grounds at the Alkali Lake dump site is in good shape.

"In my opinion we are basically in better shape than we thought we would have been," he said. "We are not getting any of the 24-D or Phenol acids in the underground pools as we feared."

The Alkali Lake burial site was the scene of much discussion last year when the Environmental Quality Board decided to bury contaminants that had been placed there for many years. The people of the Lake County area and the surrounding towns had many questions concerning the burial. Much fear was expressed as to the seepage of the contaminants into underground water used for farming and ranching in the area.

It was decided that the acids would be buried in large mounds and that they

would be checked periodically by the DEQ and by McCormick.

The report submitted to the county in December covered the period of June 20 through October.

During that period of time, wells were installed on BLM land west of the burial site. Their purpose was to permit the monitoring of possible diffusion of waste from the site.

The wells were installed sufficiently deep to assure continued intersection of the shallow ground water. Wells located in the shallow swale west of the site are 8' deep. Another that is south of the site is 12' deep.

According to the DEQ there is a marked difference in the solids in which these wells are located. Hopefully they will give a good cross-section of the underground water in the area.

According to tables now in the hands of the DEQ, the groundwater level is slightly humped toward the lake. "The

persistance of this hump in the absence of significant precipitation recharge to the lake is somewhat puzzling," said a DEQ inspector. "Evidently the continual running of the south artesian well and the various lakebed seeps are providing sufficient water to maintain it."

The groundwater level at the area has uniformly dropped more than two feet from June 20, 1977. The DEQ relates this with the unusually dry year.

The concentration of phenol in some of the wells has remained approximately the same in June and October as it was in March. The several springs and seepages in the area continued to show no phenol.

The report stated that the general appearance of the site on both June 20 and October 12 was satisfactory. "We found that the mounds are holding well and that there is little sign of wind

erosion," McCormick said. The report goes on to say that the fence and gate were in good condition and there still is no indication of wind erosion around the burial mounds.

They also said that there was a very slight phenolic odor on the site when the air is still. They said that evaporite has begun to appear in small scattered quantities on the mounds. "This is a good sign," McCormick said. "It is evidence of upward movement of the contaminants instead of down into the water."

The DEQ has proposed to install two more wells due west of the site at a distance of 500 and 1200 feet from the number 10 well now in existence. "We feel that the latter well will be beyond the area of loose fill," the spokesman said. "This will probably be done next spring after we review the results of another monitoring survey."

Alkali burial dump effective

There has been no change in the status of the Alkali Lake chemical dump, according to extension agent Paul McCormick. McCormick was commissioned by the Lake County Board of Commissioners to make on-site inspections of the dump periodically through the year.

"We were last out at the site on Jan. 3," said McCormick. "The smell has almost entirely left the area in the short period of time it has been buried and that was the most noxious part of the problem." There has been no visual change on the site and McCormick does not expect that there will be. "The rock that they have used on the top is such that it will not blow away. It isn't gravel as some had thought but heavy rock."

Ernie Schmidt of the Department of Environmental Quality was at the chemical dump at the end of December to make an on-site inspection, but the results of that inspection are not known at this time. According to the EPA, there was some chemical in the brine pool close to the dump during the time of burial. McCormick said that the level was not poisonous and that he was not sure how the chemical got into the pool. "It probably happened over a period of years," said McCormick. "We do want to assure people that it is not serious."

When asked about the possibility of 2-4-5-T chemical being buried in the Alkali Lake area, he said that he had been fairly well guaranteed that, during the period of time Rhodia Corporation was making chemicals, they did not make 245-T. "Even if there were some there, the possibility of ill effects from it are remote," said McCormick. "The basis of the 245-T scare comes from the concentrated use of it in Viet Nam. They did have some

birth defect problems there. However, if it is used properly and at the recommended rates, there are no problems with it."

According to McCormick, on-site inspections will be continued throughout the year.

Mailing address: P.O. BOX 417, GRANTS PASS, OREGON 97526
521 N.E. "E" STREET, GRANTS PASS, OREGON 97526 PHONE (503) 476-2496

Department of Geology and Mineral Industries

ROBERT W. STRAUB
GOVERNOR



12-9-76

LAKE COUNTY EXAMINER, Lakeview, Oreg

Final work done on burial of chemical waste

Final work was being done at Alkali Lake on Monday, Dec. 6, when local people and officials of the Department of Environmental Quality made an inspection of the chemical waste burial project.

Those from Lakeview were County Commission Chairman George Carlon, Watermaster Howard Daggett, Democratic Central Committee Chairman Jim Ogle, and Extension Agent Paul McCormick. The latter has agreed to monitor the project for the county commissioners.

Carlon said the site contains about ten long mounds in which have been buried the more than 25,000 drums of chemical wastes, mostly herbicides. The mounds have been piled high with a heavy clay soil and covered with layers

of heavy rock.

On Monday, the contractor, Chem-Nuclear, was completing a fence around the burial site and putting the finishing touches on a ditch which is intended to prevent run-off water from entering the burial grounds.

DEQ officials were John Borden, of Bend; and Pat Brown and Fred Bromfield, of Portland. Also present was the contractor, Pat Wicks.

DEQ Believes 'No 2,4,5-T' Buried At Alkali Lake Site

12-14-76

The State Department of Environmental Quality (DEQ) said in a statement today there is no reason to believe that waste from production of the herbicide 2,4,5-T, said to contain the deadly poison dioxin, was among materials buried last month at remote Alkali Lake in Lake County.

Bill Young, new director of the DEQ, in Portland, said, "We have reconfirmed with Rhodia Chemical Co. that no 2,4,5-T or the dioxin contaminant associated with it were in the materials that were shipped," to Alkali Lake.

Monday, Howard Hunt, Hillsboro, president of a now defunct company which haul-

ed the chemical wastes to Alkali Lake during a period from 1969 to 1971, said he "presumed" 2,4,5-T was among the materials taken there. The company, Chemical Waste and Disposition, Inc., had a contract with Rhodia, of Portland, to dispose of the wastes.

The military used 2,4,5-T for defoliation of forests in Vietnam along with another herbicide, Agent Orange.

Last week the Air Force shipped a half-ounce of dioxin, which had been stored at Chem-Nuclear Systems, Inc., Warehouse in Arlington, to Johnston Island in the Pacific Ocean. The dioxin was a residue from the manufacture of Agent Orange.

Young said experiemnts by Oregon State University at Alkali Lake from 1970 through 1972 also failed to turn up any of the dioxin TCDD. Further laboratory analysis of the materials by the Environmental Protection Agency this year found no trace of 2,4,5-T, he said.

Scientists have said that a half-ounce of the concentrated residue that was shipped out

of Oregon could potentially kill as many as 200,000 people.

"We are not aware of Mr. Hunt's motives in raising such a claim after all these years," Young said. "Obviously, the issue of 2,4,5-T has been in the press recently, and Mr. Hunt has been in an adversary position with the DEQ over the past several years for his involvement in causing the pesticide wastes to accumulate there (Alkali Lake) in the first place."

Young said that in the light of the scientific evidence and statements by the producer of the material the DEQ has no reason to believe there is any 2,4,5-T or TCDD dioxin at Alkali Lake.

Says Arlington Incident 'Mistake'

Straub Wants Word On Chemical Storage

SALEM, Ore. (UPI) — Gov. Bob Straub said Thursday he has given orders that he be promptly notified of any future proposals to store toxic chemicals in Oregon.

Straub said at a news conference that it was a mistake to have allowed the storage of a highly poisonous, concentrated residue of the herbicide "agent orange" in the state.

The chemical had been stored at a site near Arlington, Ore., but the Air Force, acting under pressure from Sen. Mark Hatfield, R-Ore. and other officials, flew the chemical to a new storage site on a Pacific Ocean island Wednesday.

"It was a mistake that that high toxicity poison was allowed to come into the state and I intend to

be notified promptly before any decision of this type is made in the future," Straub said.

The storage of the chemical at the Arlington site had been approved by officials of the Department of Environmental Quality. Straub said he did not intend to take any action against the department or the company that sent the chemical into the state because it was all done in conformance with existing state rules and regulations.

"The rules permitted the burial at Arlington, so the people handling it (the application) didn't think it was any big deal. I think it was a big deal. I think it was shocking," Straub said.

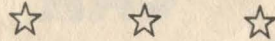
"The most shocking thing of all is that this monstrous chemical was permitted to be

dumped on the Vietnamese citizens during the war," he added.

The chemical was used by the U. S. military to kill jungle and forest plant growth in Vietnam in order to prevent communist troops from using the cover to hide from American air attacks.

American military officials have maintained that the defoliant is not harmful to human beings, but scientists estimated that the one-half ounce of concentrated residue that was shipped out of Oregon Wednesday could potentially kill as many as 200,000 persons.

Straub said he has been assured by DEQ officials that there are no other such chemicals being stored in Oregon.



Chemical Move 'Insignificant'

Transfer of a dozen canisters of a deadly chemical from Arlington is "insignificant" when compared to the volumes of potentially deadly chemicals buried at Alkali Lake, according to local environmentalist Andrew Gigler.

Gigler said earlier today he believes the 25,000-plus cans buried at Alkali Lake in Lake County contain the same chemical, Dioxin, that was moved from Arlington to a South Pacific island.

Gigler noted the same contractor is involved in both the Arlington and Alkali Lake areas. He also said the Alkali Lake chemicals were buried after only six of the 25,000-plus cans were tested. In addition, he noted final results of the six tested cans have still not

Department of Geology

521 N.E. "E" STREET, GRANTS PASS, ORE
Mailing address: P.O. BOX 417, GRANTS P



ROBERT W. STRAUB
GOVERNOR

Lake Co. Examiner 12/2/76

Monitoring of chemical waste assured in letters sent here

Visual monitoring of the chemical waste burial program at Alkali Lake, and immediate steps to correct any problems, were assurances given Lake County people this week in letters from Ernest A. Schmidt, administrator of the solid waste division of the Oregon Department of Environmental quality.

The letters have been received by James W. Ogle, chairman of the Lake County Democratic Central Committee, and Glen Bogart, president of the Lake County Chamber of Commerce, and possibly by others who were at Alkali Lake Nov. 17 for an inspection of the project. The letters to both Ogle and Bogart stated:

"Thank you for visiting with Fred Bromfeld during his inspection trip to Alkali Lake on Nov. 17. He has indicated your concern over the possibility of wind erosion and the Depart-

ment's commitment to future maintenance of the burial site.

"This commitment is unqualified. We are beginning a program of periodic visual monitoring of the site. Should any significant deterioration of the fence, berm, rock cover, or any other aspect of the site become evident, we will take immediate steps to correct the problem."

The chemical wastes, primarily from the manufacture of herbicides, have been stored at Alkali Lake on private land since 1969. Disposal of the wastes has been the subject of wide concern among ranchers, environmentalists and others for some time, and the DEQ has assured the people that burial of the materials will not harm the underground water or other parts of the environment.

11-23-76

Gigler Says Chemicals Will 'Have To Be Dug Up Again'

"They are going to have to dig it all up again. And the cost will be far greater than the burial," said Andrew Gigler, Klamath Falls, businessman and environmentalist.

Gigler was referring to his lost fight to prevent the state's massive burial of chemical wastes at Alkali Lake in Lake County.

Gigler was at the State Department of Environmental Quality's (DEQ) chemical-waste disposal site last Wednesday, along with the Lake County Chamber of Commerce.

The burial was temporarily halted by DEQ as result of concern expressed by the chamber. But later Chem-Nuclear Systems Inc., Portland, doing the work under an \$84,200 contract, was ordered to resume.

"They had three-fourths of the job done Wednesday," Gigler said. "The DEQ heard us. But what we had to say made little account in the long run."

Gigler says he is determined to stop any more of the long-stored and leaking barrels from going into the dry Alkali Lake bed. "I met a solid wall of official resistance from the beginning," he said. "And there has been apathy by local political

representatives and our Congressmen, the major news-wire services and the public generally."

Gigler now senses this is changing, however.

"Now everyone is coming around on this," he said. "The Klamath County Medical Association asked Gov. Straub to halt the burial pending further study. The Lake County Chamber showed its concern by its trip to the site.

"And environmental groups are contacting me offering to help," he added. "This disaster-in-the-making is becoming a national issue."

Gigler complained of "the arrogance and indifference" of both the DEQ and the federal Environmental Protection Agency (EPA) in his struggle to stop the burial.

"They listen to you — and then go ahead and do as they damn well please," Gigler said.

"The assurances they give are worthless, because they do not know exactly what they are burying without a true inventory," he said. "And the testing they've done is both quieting and incomplete."

Gigler has long stressed the hazards of airborne emissions from the volatile residues of the barrels, believing it responsible for dwindling deer

herds and Upper Klamath Lake fish kills as well as jeopardizing agricultural crops. These are apart from the dangers to potable water in the lake region, he said.

According to Gigler the lake was one of the least harmed by man until the Rhodia Inc., Portland, chemical wastes began being stored there several years ago.

"They do not proceed scientifically, with all possible safeguards," he continued. "Even the DEQ admits incineration of the wastes is the thing to do — but costs too much."

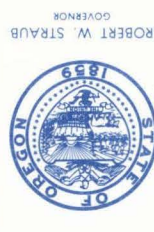
"Mrs. Sally Borurgiois, Box 408, Lakeview, asked Fred Bromfeld how many barrels have been tested, and he said 'six,'" Gigler said. "When asked if rabbits or other area animals had been tested, he hinted that would be too complicated."

Bromfeld (hazardous waste specialist with DEQ's solid waste division in Portland) was asked "both by Dr. Borurgiois and me about testing for dioxin, and seemed entirely disinterested," he said.

Dioxin is found in the herbicide 2,4-D — which DEQ officials say formed the contents of a good portion of the barrels. Dioxin in even drop amounts can kill hundreds, even thousands of people, if it reaches their systems, according to Gigler.

"A Rhodia official only this year stated he doubts but doesn't know whether dioxin is in the company's old waste barrels at the site," the environmentalist said. "Doesn't that show a thorough test was in order before burial?"

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TS PASS, OREGON 97526 PHONE (503) 476-2496
17, GRANTS PASS, OREGON 97526



ROBERT W. STRAUB
GOVERNOR

P O BOX 417

GRANTS PASS OR 97826

Phones hot between Chamber,

Lake County Examiner
11-18-76

DEQ over waste burial

Telephone lines were hot Tuesday, Nov. 16, between the Lake County Chamber of Commerce in Lakeview and the Department of Oregon Environmental Quality in Portland. Chamber President Glen Bogart had been surprised by a telecast from Klamath Falls showing the burial of chemical wastes in progress at Alkali Lake.

On Nov. 8, the CC board of directors had been joined by other organizations in advising the DEQ of certain precautions that should be taken in the burial program, and Bogart felt the CC had been assured he would be informed before the burial was started. Actually, on Nov. 8 equipment to accomplish the burial had been started to the site, and

the KOTI-TV pictures had been taken on Friday, Nov. 12, showing the burial work already in progress.

On the phone Tuesday morning, Bogart asked DEQ officials to halt the work until officials of that department and local people could meet at the site on Wednesday, Nov. 17, to inspect the work. Shortly after noon Tuesday,

Bogart had been informed that work was stopped pending the Wednesday inspection.

On Monday, Nov. 15, the chairman of the Democratic Central Committee of Lake County, James W. Ogle, had been told by DEQ that officers from that department would be at the site on Nov. 17.

Chemical waste dump arguments fall on deaf ears

BY LESLIE SHAW

They talked and they listened for three hours...but it appeared that nobody heard anybody Thursday night, October 28, when people from the Department of Environmental Quality met at Lakeview High School with local residents to talk about Alkali Lake chemical waste dump...and how to dispose of it. In his letter-to-the-editor this week, John Scoville makes that point pretty well.

The DEQ has accepted a bid for burying the chemical wastes at the lakebed site, which aroused local fears of basin water contamination, and of winds blowing the debris across the country.

The DEQ people came to Lakeview to explain their thinking and reasoning, but the local people heard nothing they said.

Which was matched, in fact, by the non-hearing DEQ representatives... answering repeatedly with only "We have reason to believe that burial at the site will be safe..."

THERE WERE NO CONTROLS

There were hints, too, that the county commissioners and county planning board had not done their duty when the dump was permitted. People forget that in 1968-69 there were no controls... federal, state or local. They forget that

...and come into being rock away and demolish the burial site. DEQ spokesmen said that if the rock is blown away, they will have to replace it...but there was no indication they believed Leehmann's knowledge of Alkali basin winds.

The Lakeview meeting of October 8 was held because the Lake County Democratic Central Committee adopted a resolution asking for such a meeting, and asking that nothing be done at Alkali until the meeting was held. Democratic Central Committee Chairman James Ogle, who presided at the session, got the meeting scheduled by contacts with Governor Straub, U.S. Rep. Al Ullman and other influential Democrats.

After the meeting, I asked Schmidt what the next step will be. He said the subject of the meeting will be discussed with Loren Kramer, director of DEQ. From statements of DEQ personnel during the meeting...their assurances of safe burial...it can be apparent that the burial project will proceed.

chemical wastes streams of the Portland area. His first idea was to store the wastes until future technology found ways to re-convert them into useful products. His second thought was soil-incorporation, and he reasoned that this would not only de-grade the chemical elements, but also would create a new soil conditioner that might be harvested and sold to agricultural areas.

The OSU project, using a federal grant, did prove that the chemicals could be de-graded by soil bacteria and

135,000 acres of land to dispose of the estimated 1,200,000 gallons of wastes at the dump site. (Since then, barrel leakage and evaporation have left an estimated 600,000 gallons at the site, and much of this has become a tar-like substance that would not feed through nozzles to be fed in to the soil.)

THE COURT SAID "NO"

After DEQ was given charge of chemical waste disposal in 1971, that agency tried to make Howard Hunt dispose of the materials. In 1974, the Oregon Court of Appeals upheld a circuit court decision that denied the DEQ contention, stating in effect that Hunt's company had been forced out of business by the state, and that "the state will not be allowed to complain in a court of equity where the condition of which it now complains was aided and abetted by the state itself and it would now, after disabling the defendant, ask this court to require the defendant to abate the nuisance."

The DEQ asked the 1975 Legislature for funds to dispose of the chemical wastes, and a fund of \$310,000 was allowed. Last summer, DEQ called for bids, asking the bidders to propose the method and the cost, allowing them to bid on burial, hauling the wastes away for disposal elsewhere, or securing the area and leaving the wastes where they are.

The bid of a firm called Chem-Nuclear, Inc., was accepted at \$84,200 for burial at the site, and later the state emergency board authorized that amount. Announcement of the plan brought objections from ranchers in the area and from environmentalists, who could see the buried chemicals contaminating the basin water and being carried even to fresh-water wells and springs.

HAVE NO FEAR

DEQ spokesmen stated that they have no fear of this happening, that a clay underlayer will prevent such seepage into the water supply. The burial plan calls for a pit three feet deep, the barrels and contents to be placed in that and crushed, and covered with dirt and crushed rock. Six ten-foot-deep monitoring wells would be placed around the perimeter to determine whether the chemicals do, in fact, get into the water.

Other methods of disposal were discussed. Incineration, which is believed could safely dispose of the herbicide residues, was estimated to cost up to a million dollars for construction of a kiln with high degrees of heat; and then, DEQ personnel pointed out, the kiln and its required facilities would yet have to be removed. Some who believe incineration to be the answer, however, such as Andy Gigler and Lloyd Baker, Klamath Falls environmentalists, contend that the cost of incineration should be borne not by the Oregon taxpayers but by the chemical manufacturing firms that created the wastes.

Another was the soil-incorporation

it out by allocating only \$310,000. Also, said DEQ, it would be difficult now to re-emulsify the congealed wastes so they could be impregnated into the soil.

HAUL IT AWAY?

There was much public opinion at the October 28 meeting that the wastes should be hauled away from Alkali Lake. One of the DEQ bids had suggested hauling them to Idaho to be dumped into abandoned missile silo pits which have concrete walls six feet thick. Also, the state does now have a chemical waste storage depot near Hermiston, owned by Chem-Nuclear. The answer by DEQ officials was that the barrels are in such deteriorated condition that they would not stand the handling and loading, and there would be much spillage along the highways during transportation. (Some proponents of hauling the wastes away were not hearing: There were comments to the effect that "There was spillage along the roads when the stuff was hauled to Alkali and you didn't care; why do you care now?"...forgetting that DEQ was not in existence when the wastes were hauled to Alkali.)

DEQ personnel, throughout the three-hour meeting, contended there is no danger to the basin water from burial... "and if there is, we will have to do something." One member of the staff drew a diagram showing water run-off and permeation of the soil, by which he proved to his own satisfaction that the chemicals will not saturate through the soil and into the basin's underground water.

WHAT'S THE HURRY?

Ernest McKinney asked about the hurry. Why not, he wanted to know, bury some of the wastes and see what happens? Then, if all is well, bury the remainder...but since the stuff has been at the site for eight years, he wanted to know why the present hurry. The answer from Ernie Schmidt, head of DEQ's hazardous waste division, was that "We see no danger in burying the chemicals; we believe it will be safe..."

A Portland engineer, George D. Ward, director of the non-profit Land Use Research Institute, agreed with McKinney in asking "what's the hurry?" He named a new federal law concerning hazardous wastes and said this law will provide funds for research on the subject. He asked both DEQ and its federal big brother, the Environmental Protection Agency (EPA) to go slow on burial of the waste materials and explore possibilities under the new federal law.

WHERE DID WATER GO

Pictures of the dump site, taken by DEQ personnel about two weeks earlier, showed water standing inside the dump area from a rainstorm. DEQ spokesmen said the water was all gone when they viewed the spot on the day of the meeting. They said the water had evaporated. Lloyd Baker and Andy Gigler, Klamath Falls men who are concerned about possible environmental hazards of the project, showed a

Lake Chamber Suggests Change In Waste Burial

11-9-76

LAKEVIEW—The Lake County Chamber of Commerce has recommended to the Department of Environmental Quality (DEQ) that it modify its plan to bury 25,000 barrels of hazardous chemical wastes in the remote Alkali Lake area.

Monday, the chamber wrote a letter to the DEQ suggesting a slightly different way of burying the wastes than the DEQ had planned. The chamber believes its solution would keep the wastes from getting into the ground water below the dry lake bed where they are stored.

The barrels have been sitting on 10 acres of the lake bed about 60 miles north of Lakeview for about seven years. John Borden of DEQ in Bend said that Chem-Nuclear Systems, Inc., which has a contract to bury the wastes with the DEQ, may have already begun the operation Monday.

Borden said he was going to the site in Lake County today. He said he had been read a copy of the letter from the chamber over the phone on Monday. There were "some

good suggestions" in it, he said.

Bob Barry, chamber manager, said the chamber has the support of the cattlemen whose stock use the Alkali Lake area and also environmentalists in Lakeview.

"We have all agreed on this one (plan)," Barry said.

The chamber does not want the barrels buried in three-foot trenches as planned. It recommends the waste be buried at "minimum depth retaining sufficient impervious material below the burial depth to prevent contamination of the (ground) water."

"We don't want the barrels to get their feet wet at all," Barry said. "We don't want them to go three feet, just a little below the surface and then cover them with rock and gravel."

The chamber is also asking the DEQ to do additional testing of adjacent wells and other water sources and continue testing after burial of the wastes.

Barry said the chamber is asking that the barrels be "bunched together" as closely

as possible and that a fence be built around the perimeter of the site along with a ditch to contain any runoff.

The chamber also met Friday to discuss the DEQ plan. Another suggestion to incinerate the wastes was "prohibitive" because of cost, Barry said.

"The DEQ seems to be cooperating," Barry said. "They are not riding roughshod over us and are trying to do what we want."

Borden said water in the Alkali Lake area does migrate downward toward the water table. He said the DEQ is satisfied the wastes would not get to the water table with the current disposal plan.

Andy Gigler Makes Plea For Support In Chemical Issue

Klamath Falls environmentalist Andrew R. Gigler today issued a plea for public support in his fight to stop the burial of 25,000 barrels of chemical wastes at Alkali Lake in Lake County.

"I'd like to ask all those who care about our environment to write their legislators, the Department of Environmental Quality (DEQ) in Portland and the Environmental Protection Agency (EPA) in Seattle," Gigler said.

"In question here is not only the public's safety from the additional massive release of poisons into the air and the earth, but also one of morality," he stressed. "Not only human and animal life of the present is involved, but life of future generations."

"People still do not have sufficient grasp of the high degree of toxicity and the hazards involved with these chemicals," he said. "They do not realize these chemicals can be caught up by the wind and spread in still potent form over large areas; and that they can penetrate to wells and drinking water, and even food."

Gigler concedes he is conducting an uphill fight so far to prevent an additional 800,000 gallons of herbicides from being buried at Alkali Lake. He has written, telephoned and talked in person to politicians, pertinent governmental agencies and private groups.

"I call the politicians and they say, 'No, there is nothing I can do,'" Gigler said. "Why can't they do something? They allowed the barrels to collect at Alkali Lake. . . or at least did nothing about it. Now why can't they disallow this burial?"

According to Gigler, "the politicians and the pertinent governmental agencies seem to have more concern for industry than the people they are paid to protect. . . ."

"Air emissions from the volatile materials from the barrels have been whirled into Klamath County, and in my opinion played a major hand in the large fish kill in Upper Klamath Lake," he said.

Winds also pick up the dry-residue poisons after they have leaked onto the dry lake bed, he pointed out.

He does not think this air pollution will stop with the burial since the barrels will be placed in three-foot trenches and then covered

with a mound — not crushed, as was originally planned. He believes the elements will soon expose them again.

"The U. S. Army learned a big lesson in Vietnam about the effects of Agent Orange (TCDD), the highly toxic defoliant," Gigler noted.

"Besides killing vegetation, the defoliation aircraft runs have had devastating after-effects, harming the Vietnam soil so even burrowing animals are not safe in it. But worst of all are the fears it has aroused regarding future genetic effect on human and animal offspring.

"We have phenoxy herbicides at Alkali Lake, by the DEQ's own statement," Gigler said. "All of the phenoxy herbicides contain dioxin — 2,4-D does."

"One drop of dioxin can kill 1,200 people," he declared. "And 30 gallons could kill every living thing on this earth. In addition, it has proven to be a mutagen — it destroys the genetic pattern — and it is also a carcinogen — capable of causing cancer."

Chamber suggests chemical cautions

LAKE CO. EXAMINER

11-11-76

While Portland and Klamath Falls environmental interests are seeking the help of Governor Bob Straub and the general public in halting the burial of chemical wastes at Alkali Lake, the Lake County Chamber of Commerce and other local organizations have joined in acquiescing to the burial plan but suggesting a number of precautions.

In session Monday, Nov. 8, the Chamber of Commerce directors and representatives of other groups drew up and adopted a resolution stating that the disposal of the chemical waste materials is of concern to Lake County citizens, but since it does not appear feasible to move the 25,000-plus barrels to another disposal site, the several precautions were suggested:-

First, the chemical wastes should be buried at a minimum depth, retaining sufficient impervious material below the burial depth to prevent contamination of the Alkali Basin waters;

Second, current tests should be made on adjacent wells and water sources and periodic testing be continued after completion of burial;

Third, the barrels should be bunched to the maximum extent possible;

Fourth, the barrels should be covered by a layer of dirt and rock;

Fifth, the state should maintain the fence, berm and rock covering on a regular basis.

The Chamber also recommended that an on-site county inspector be appointed.

Endorsing the Chamber's statement are the Lake County Stockgrowers Association, the Little Juniper Grazing Association, the Lake County Water Users, Inc., the Lake County Board of Commissioners, and the Lake County Central Committees of the Democratic and Republican Parties.

But burial of the estimated 600,000 gallons of chemical waste materials will not be accepted by George Ward of Portland, director of the Land Use Research Institute, nor by Andy Gigler, Klamath Falls environmentalist. The latter, in a news release issued Nov. 8,

urged all citizens to write their legislators and the state and federal environmental agencies, demanding a halt to the burial plan. "In question here," said Gigler, "is not only the public's safety from the massive release of poisons into the air and the earth, but also one of morality."

In Portland, Ward addressed a seven-page letter to Governor Straub, with copies to state and national legislators, agencies and officials, and to public and private environmental groups. He strongly urged a close look at a new federal law (HR 14496) which will provide substantial funds for seeking solutions to disposal problems concerning toxic chemical wastes.

Ward told the governor that contamination of the underground water supply has already started, for he found seven-foot deep fissures inside the 10-acre storage plot, into which water had descended, carrying with it the chemical wastes that have leaked from the barrels onto the ground since storage was begun there in 1969. (While it was estimated the 25,000 steel drums originally contained nearly 2,000,000 gallons of herbicide and other chemical waste materials, much has not solidified inside the drums and much has leaked from the drums as the containers eroded.)

Gigler, in his news release, charged that the government agencies (Department of Environmental Quality (DEQ)) "seem to have more concern for industry than the people they are paid to protect."

Ward wrote Gov. Straub that the owner of the Alkali property, Howard Hunt, is willing to transfer the land to an appropriate federal, state or local agency "so long as it will prevent the impending contamination of the lake and the underlying groundwater system."

He reported that not only is the waste material getting into the underground water through fissures, but storm water washing across the site is carrying the materials into the bed of Alkali Lake proper.

DEQ Halts Burial Of Chemicals

11-11

LAKEVIEW—The State Department of Environmental Quality (DEQ) Tuesday temporarily stopped its burial of more than 25,000 barrels of hazardous wastes at Alkali Lake in east-central Lake County after a protest by the Lake County Chamber of Commerce.

A group of Lake County people were to meet with DEQ officials today at the site of the burial to discuss the project. The chamber of commerce had objected to the method in which the wastes were being buried and last week made recommendations to the DEQ on how it wanted the project to proceed.

Glen Bogart, president of the chamber, said the recommendations were made from suggestions from a "good cross section" of the county.

The chamber asked the project be delayed because of some indication the project was not being done in line with the recommendations.

Bogart said the recommendations were "safeguard requests."

Chem-Nuclear Systems Inc., Portland, is burying the barrels of herbicide wastes in three-foot deep trenches under a \$84,200 contract with the state.

Bogart said Ernie Schmidt, administrator of the DEQ's solid waste division, has said that the DEQ will comply with the chamber's recommendations.

The burial operation started last week and is "40 to 50 per cent" completed, according to Jim Swenson, DEQ public affairs officer. However, it was reported that most of the barrels are already in the ground.

A rock covering is to be put over the area after the barrels are all in the trenches.

Swenson said concern had been expressed about barrels breaking open, however, that had been expected. The barrels are rusted and leaking, having been stored at the site for about seven years.

Fears about the burial project have centered around what some believe is a possibility the wastes will eventually contaminate ground water.

Swenson said DEQ inspected the project last week and there were "no problems."

The Klamath County Medical Association has also asked Gov. Bob Straub to consider delaying the project until further study is done on disposal of the wastes. It has recommended incineration as a possible method of disposal.

Dr. Glenn Miller, president of the medical association, said the association may ask the Oregon State Medical Association to adopt its stand on the issue.

Gigler Battling Chemical Burial

Andrew Gigler hasn't given up.

The decision has been made by the Department of Environmental Quality (DEQ) to bury 25,000 barrels of chemical wastes at Alkali Lake in Lake County.

The barrels have been standing on pallets at the lake since 1969.

Gigler, a Klamath Falls businessman, has mounted a crusade of several years against the barrels. He has made several trips to the state's remote chemical disposal site in the northeast corner of Lake County.

The DEQ revealed Friday it was allowing Chem-Nuclear Systems Inc., Portland, to bury the barrels, the entombing arrangements a bit altered from those originally announced. The firm has a \$84,200 contract to do the job.

The decision followed a public meeting in Lakeview Thursday night.

"It's just another step in the state's 'out-of-sight, out-of-mind' policy it has always pursued about the herbicides," Gigler declared. "Now they will try to hide them under the desert sand so they will be out of sight once and for all."

The altered burial plan now includes putting the barrels upright in three-foot trenches, covering them with a three-foot mound of lake bed soil, then topping the mound with a six-inch layer of crushed rock.

Previously the contractor was directed to crush the barrels in three-foot trenches, then fill the trenches.

The revised burial plan was disclosed at the Thursday night meeting.

"The DEQ men said they would await word from Lake County people," Gigler noted. "The people present couldn't seem to agree on how to take a straw vote. I got the idea the department would wait a few days until it heard from the people before announcing a

decision. It hasn't.

"It's a half-burial," Gigler said. "With the barrels mounded above the lake bed's surface, and a little crushed rock added — is there much difference now and the way they will be? And the state is \$84,200 poorer."

Gigler noted that Lake County residents at the meeting showed doubt about the new-type burial, especially from cloudburst and fierce wind.

Wants To Act

The DEQ representatives, with Ernest A. Schmidt, administrator of the Solid Waste Division, acting as chief spokesman, indicated his department "after five years of being involved" with the barrels, wanted to act.

"The shallow-trench approach is new," Schmidt acknowledged. "We want to make the situation better than it has been."

Despite the previously announced contract award to Chem-Nuclear Systems, Schmidt said his department has "not actually signed the contract," and is only now "securing property and easements involved."

Law requires the disposal of chemical wastes on state-owned land.

Fred Bromfeld, supervisor of the department's Hazardous Waste Section, stressed the barrels contained only two herbicides, 2,4-D and MCPA — both of which he described as being "little different" — and that highly toxic 2,4,5-T was "never at the site, as proven by random sample."

Gigler said he asked if Bromfeld had tested specifically for 2,4,5-T, and that "the answer was negative."

"Thus while the wastes cannot be considered innocuous, they certainly are not highly toxic," Bromfeld continued, adding, "these are not cumulative poisons," a

reference to their possible storage in fatty tissues of the human body.

Gigler claimed later, "They are cumulative. Thus they affect not only present populations but future generations," Gigler said.

He said today he is not convinced of Bromfeld's assurances, because a complete inventory and proper barrel labeling are lacking.

Some Alkali Lake area residents complained of the disposal site's "odor" — and a man who said he was a pilot declared "flying over it (the lake) at 3,000 feet — it gives me the smarts."

Schmidt sympathized regarding the situation, stating, "Portland is my home. Still, my job relates to this area" — which prompted Gigler to declare:

"How would you like this stuff dumped in your backyard? We need some cooperation down here."

The Environmental Protection Agency was represented by Robert A. Poss, chief, Pesticides Branch, Seattle.

"This is a situation that is in the hands of the state," Poss said, later adding, "there is nothing here to involve the EPA."

This was disputed by George Ward, Portland civil engineer and representative of a Portland firm which offered an unsuccessful bid to dispose of the chemical wastes through soil incorporation.

"Federal guidelines have been ignored," Ward said. "It (the federal government) provides a lot of money for this type of problem."

Could Pollute Lake?

Ward warned of danger of "disturbing the soil" by the burial method proposed. He also thought poisons from the barrels "can pollute the lake" by movement laterally through "porous layers."

Gigler and a fellow Klamath Falls environmentalist, Lloyd Baker, who also spoke at the Lakeview meeting, advocate incineration as the least harmful method of disposing of chemical wastes.

The DEQ people agreed incineration "ideally, it is best," but noted its high cost and the lack of a proper incinerator in the Northwest.

harmful method of disposing of chemical wastes.

The DEQ people agreed incineration "ideally, it is best," but noted its high cost and the lack of a proper incinerator in the Northwest.

Schmidt promised the disposal site will be fenced, regularly monitored and a berm raised around it.

The "disadvantages" of the site were listed as its remoteness; the necessity for the monitoring; the liability of the state regarding the property and the wastes, and the breakdown (degradation) of the chemicals over a long period of time.

Ogle called for a "yes" or "no" vote on the burial proposal. But no vote was taken because the people could not agree on how it should be worded.

Gigler said today he hasn't decided what his next step will be in the matter.

Chemical Burial OKd

By BRIAN HOPKINS
H & N Correspondent

LAKEVIEW — The Department of Environmental Quality (DEQ) plans to go ahead with burial of 25,000 deteriorated barrels of hazardous waste at Alkali Lake, 60 miles north of Lakeview.

A meeting on the planned burial of the herbicide wastes was held Thursday night at Lakeview High School by DEQ officials. It was attended by more than 60 persons.

Some Lake County residents had expressed fears about possibility of ground water being contaminated as a result of the burial of 2,4-D and MCPA wastes in shallow trenches.

Ernie Schmidt, administrator of DEQ's solid waste division, said the barrels will be buried three feet deep and covered with a layer of dirt plus six inches of crushed rock.

Bill Bartholomew, of the State Water Resources Department, explained the water conditions at Alkali Lake. He said it was his opinion and that of his department that the wastes would not infiltrate the ground water.

Walter Leehman, a cattle rancher in the area, said that the wind in the area would easily blow away the gravel cover and underlying dirt. He also was concerned about the

possibility that the chemicals would get into usable ground water.

Bartholomew said the site would be watched and if dirt and rock blows away it will be replaced. He added that instead of filtering down the materials would have a tendency to filter up and probably be caught between the dirt and rock covering.

He said the DEQ will main-

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DURYEE SHERIFF

Committee to Elect Tom Duryee Sheriff,
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* **Alkali**

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tain wells to monitor the site. There will also be periodic visits to the site by DEQ personnel.

Fred Bromfeld, of the DEQ hazardous waste section, said if the waste had been buried eight years ago, when the wastes were produced, "the problem probably would be behind us." The wastes have been stored at the site since they were trucked there in 1969 through 1971.

Several Lakeview residents were at the meeting to voice displeasure at materials being left at the site at all. Two opponents of the DEQ plant wanted the materials moved out of the area to a waste disposal site operated at Arlington by Chem-Nuclear Systems, Inc., which has a contract to bury the materials at Alkali Lake.

DEQ officials felt that proposal would be more hazardous in view of the deteriorated condition of the barrels. Also it would be extremely costly, they said.

Schmidt said that most of the barrels are leaking and some are only half-full. He said no date has been set for the burial.

The steel drums containing the tar-like waste are contained on a 10-acre site on the dry Alkali Lake bed. Chem-Nuclear was awarded a contract to bury them for \$84,200.

Delay Sought In Burial Of Chemicals

By LAYNE CREASON
H&N Staff Writer

The Klamath County Medical Association is asking Gov. Bob Straub to consider holding up burial of 25,000 drums of hazardous chemical wastes at remote Alkali Lake in Lake County until further study is done on the disposal project.

However, it was learned Thursday that burial of the wastes has already begun on the dry lake bed 60 miles north of Lakeview. John Borden,

with the Department of Environmental Quality (DEQ) in Bend, visited the site earlier this week and said one of about 10 or 12 trenches in which the barrels are to be buried had been dug.

Dr. Glenn Miller, president of the local medical association, said members of the association met this week and expressed concern about the chemical wastes in the drums and the method chosen by the DEQ to dispose of them.

Borden reported that one trench about 150 to 200 feet long had already been dug and partially filled with drums. Work was moving ahead, he said. He estimated that a trench would be completed every two days by the way work had proceeded thus far.

Chem-Nuclear Systems Inc., Portland, is burying the wastes said to be 2,4-D and MCPA residues under contract with the state.

Dr. Miller said a letter was to be sent to the governor on Thursday.

"I suspect we will ask him to seriously consider holding up the burial until there has been investigation," Dr. Miller said.

Of concern are the possible toxic effects the chemical wastes could have on water in the area, Dr. Miller said. If the wastes will "break up" in the soil the association has no objection, he said.

Miller said the association also has contacted Rep. Gary Wilhelms, R-Klamath Falls, and Sen. Fred Heard, D-Klamath Falls, about the situation. He said the association has received information which "shows a real cause for concern."

Indications are that the Alkali Lake area may not be a "dead basin" from which water cannot escape. Dr. Miller said there are concerns that wastes could indeed reach ground water because of geologic conditions in the area.

"If it is seriously toxic material and water goes down instead of up and evaporating, then water for a long ways could be affected," he said.

He said a determination should be made of just exactly what chemical wastes are contained in the barrels.

Dr. Miller said if the drums just contain organic herbicides and pesticides then a "much more realistic way" of disposing of them would be by incineration.

He said the processes to do this are available, although it would be more expensive than the current disposal method. However, it would decompose wastes into carbon dioxide

and water, "two elements which we live with."

Dr. Miller said the association has "come lately into the situation;" however, "supposedly we have agencies looking out for our welfare."

He said the association is not satisfied with the way the DEQ has handled the disposal problem.

The barrels of wastes have been stored on the Alkali Lake site for about seven years. They are leaking. It is estimated about half of the original 1.25 million gallons has leaked out.

Alkali Lake chem-waste hearing

The Oregon Department of Environmental Quality will hold a meeting at the Lakeview High School library at 7:30 tonight (Thursday, October 28) regarding the disposal of chemical wastes that are stored at Alkali Lake.

A part of the meeting will be informative, in which DEQ staff personnel will give a history of the dump and a discussion of recent plans for disposal of some 25,000 drums of chemical wastes. The other part will

be a public hearing in which interested persons can offer oral or written testimony about the dump and its problems.

The hearing was scheduled last week after the Lake County Democratic Central Committee adopted a resolution petitioning the DEQ to hold such a hearing before proceeding with plans for burying the waste materials and the drums at the site. The DEQ has told James W. Ogle, chairman of the

Democratic Central Committee, that no action will be taken to bury the materials until after the hearing, and final decisions about the project will be made after tonight's hearing.

The chemical waste dump was started in 1968, and through 1971 many thousands of tons of waste materials, mostly from the manufacture of herbicides, was stored there. The purpose was to hold the materials until a suitable disposal method was arrived

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slated here tonight

at, or until new technology found ways to refine them into useable products.

Hauling materials to the dump was stopped in 1971. Recently DEQ took bids and let a contract to Chem Nuclear to dispose of them by burial at the site. The bid was \$82,400 and this amount was approved by the state emergency board.

Since that time, however, a furor has developed over the burial plan, among local ranchers in the area and environ-

mentalists statewide.

Officials who will be present at tonight's meeting will be Fred Bromfield, supervisor of the hazardous waste division, DEQ; Bill Bartholomew, head of the ground water department, water resources division, DEQ; Ernie Schmidt, executive assistant to Bud Kramer, director of DEQ; and a representative of the Environmental Protection Agency, federal counterpart to the state DEQ, from Seattle.

"Apathy" story on n-waste

BY LESLIE SHAW

Last week's story about the Alkali Lake chemical dump said Lake County people are apathetic about the problem; that only people in Klamath Falls, Salem and Portland are interested in blocking the Department of Environmental Quality project to bury the

some 25,000 barrels and their toxic contents at the site.

The story, at least triggered response to the contrary. Local people do oppose the burying plan.

The first to call me was Walt Leehmann whose ranch operation extends to the Alkali Lake country. Far from not caring, he is horrified that the DEQ would consider burying the waste chemicals left over from the manufacture of herbicides, paint and other products, where it will contaminate the basin's underground water. And he knows there is underground water for there are springs nearby.

"When that desert ground is disturbed," he said, "it will blow, won't stay in place." And Leehmann believes the buried toxicants, when uncovered by the desert winds, will blow over the countryside even as they penetrate into the ground and pollute the basin's water.

Leehmann and other ranchers joined last spring in writing a letter of protest regarding plans to bury the chemical wastes. He has talked also to the county commissioners and they oppose burying the materials; they would prefer, and Leehmann would prefer, that the dump remain as it is. At least, above ground, said Leehmann, the materials are dripping slowly to the ground as the barrels deteriorate, and many of the wastes are solidifying. As they solidify, even the potent fumes are less detectable in the area. But to dump the whole mess...an estimated 600,000 gallons of waste chemicals and the barrels themselves...into a hole, he declares, would certainly speed the water pollution in the Alkali basin.

Last week, I talked also with the three county commissioners, and they

Ward continued: "Anywhere else in the state, it would be absolutely illegal (under rules of the same DEQ) to construct even a single septic tank drain field so close to a known ground-water reserve, regardless of the quality of water involved. To deliberately cause the release of so large a quantity of known hazardous liquids at less than three feet above the known water table is sure to bring a storm of protest from many Oregonians and quite likely may result in unfavorable national attention to Oregon's highly respected environmental image.

"I (have searched) for an acceptable answer that would be in keeping with the original intent of the Legislature and one that is in keeping with the safer, soil-incorporation plan originally specified by Mr. Pat Wicks in his 7-10-73 report to the DEQ. It may be that I have found one worth consideration.

"I appealed to Mr. Howard Hunt on behalf of the Land Use Research Institute and received his verbal pledge to permit us to use his land free of charge so long as it is used only for the purpose of solving the problem as originally intended by the Oregon Legislature. This means soil-incorporation in controlled doses in bacteriologically active soils only, and absolutely prohibits us to engage in any form of trench burial or any other form of disposal that has not first been authorized in writing by the appropriate agency of the federal government."

At Klamath Falls, well-known area environmentalist Andy Gigler also forwarded a written plea to Gov. Straub to intervene and halt the state's burial project. Gigler sent the governor a news release in which he stressed his position against "the careless handling

triggers Lake County reaction

How did it all come about?

In 1968, Howard Hunt of Chemical Waste Storage and Disposition, Inc. (Chem-Waste) bought 5600 acres of private land at Alkali Lake and, with a Department of Agriculture storage permit, began storing waste chemicals from herbicide, paint and other manufacturing firms. The purpose was two-fold:- One, to hold the waste materials until possible development of technology for their refinement into usable products; or, two, to determine whether the toxicity of the chemicals might be erased (biodegraded) by incorporating them with the soil...a degradation of the chemical elements through action of the sun and soil bacteria.

By 1971, about 25,000 drums were stored at the site. Oregon State University scientists got a federal grant to test the degradation theories, and this did prove feasible. It was estimated at that time that from 500 to 750 acres would be needed to degrade the waste materials, according to a 1972 report by the DEQ. A 1971 law had transferred supervision of chemical waste storage and disposal from the Department of Agriculture to the DEQ.

In 1971, Chem-Waste was ordered to stop transporting the waste materials to the Alkali site. Observers have reported that many of the barrels are decomposing due to weather, the waste is leaking to the ground, some barrel heads have come apart, some of the

chemicals are solidifying, many of the barrels are not full.

The DEQ condemned the ten-acre storage site and took possession, and since has been trying to find a means of disposing of it. Bidders were required to outline the disposal plan, and the plan and bid of Chem-Nuclear was accepted. In this plan, the barrels would be crushed in a three-foot-deep pit, to be covered with dirt and rock, and monitoring wells to be placed around the area. The bid was for \$84,200. The DEQ then went to the State Emergency board, which approved funds for the contract, and these facts have brought the Alkali Lake chemical dump question very much alive.