

STATEMENT FOR NUCLEAR REGULATORY COMMISSION
ON THE SCOPE OF THE PFS PROJECT EIS,
SALT LAKE CITY, JUNE 2, 1998

by Chip Ward,
spokesperson for West Desert HEAL, Chemical Weapons Working Group (CWWG),
and Citizens Against Chlorine Contamination (CACC)

My name is Chip Ward and I am here as a spokesperson for West Desert HEAL, the Chemical Weapons Working Group (CWWG), and Citizens Against Chlorine Contamination (CACC). All three groups are engaged in environmental issues near the proposed PFS facility. I hope that the range of issues and concerns I describe will convey to you that we who live on the West Desert, already suffer poor health and endure too many cumulative risks and unavoidable adverse impacts. These risks and impacts must be included within the scope of the environmental impact statement (EIS) on this project if that EIS is to be meaningful and meet the requirements of the National Environmental Policy Act (NEPA). I am confident that citizen activists I represent are willing to litigate, with or without the state, if NEPA is ignored or violated.

I want to remind you, before I begin, that NEPA was created to move decision making on proposals, like the one you are focusing on today, from a closed circle of powerful interests to a public arena where citizens can have a meaningful voice in decisions that may eventually be translated into their flesh and blood and living daily experiences. Although the marshalling of scientific expertise to inform decision-making is a crucial contribution of the NEPA process, please remember that the testimony of citizens is also significant. The evidence that citizens bring to the decision-making table may be anecdotal, but it can add an all-important local context and history to your deliberations.

I am here today as a spokesperson for West Desert Healthy Environment Alliance (HEAL) a local grassroots community group concerned with the impact of environmental degradation on our health. In 1996, West Desert HEAL conducted a community survey (attached) of Grantsville, the nearest large community to the proposed PFS facility, that we believe revealed high rates for cancer and birth defects, a multiple sclerosis cluster, and widespread respiratory ailments and other chronic illnesses. We believe ill health is already too common in our community and may be attributable to the cumulative impacts of downwind exposure to radiation from atomic testing; downwind exposure to open air nerve agent tests conducted at Dugway Proving Grounds, just west of Skull Valley, including the 1968 test that accidentally killed 6,400 sheep in Skull Valley; decades of episodic exposure to chlorine gas and other toxic pollution from the MagCorp magnesium refinery, just north of Skull Valley; as well as occupational exposures from solvents and pesticides. As you can see, the impacts and risks to health here are cumulative. The EIS must account for the health of Tooele County citizens and consider current health conditions and existing risks and impacts when calculating further risks and impacts.

I am also a spokesperson for the Chemical Weapons Working Group, a national umbrella organization for numerous local community groups that are challenging the wisdom of burning chemical weapons. The lion's share of the nations chemical weapons



arsenal is bunkered just east of Skull Valley. That stockpile is being destroyed using a controversial method in a program that is already 14 years behind schedule-and 900 percent over budget. A meaningful EIS must consider what it means to add a nuclear waste depository next to a chemical weapons arsenal that is being burned.

I am also a spokesperson for the Citizens Against Chlorine Contamination (CACC), now a working committee of the Utah Chapter of the Sierra Club. The CACC has been working for almost two years to challenge the Magnesium Corporation of America and its holding company, Renco, to clean up what is arguably the dirtiest industrial operation in America. Each year, MagCorp's magnesium refinery just north of Skull Valley emits 85 pct. of the point source chlorine gas emitted in the nation as well as thousands of tons of other toxic pollution. Because of MagCorp, more than 33 pounds of toxic pollution per capita is emitted each year in Utah, compared to a national average of just under 6 pounds per capita per year. The CACC recently convinced state regulators to start a thorough program of testing MagCorp for dioxin emissions. We are particularly concerned about the impact of dioxin exposure to millions of migrating birds that pass through the Great Salt Lake ecosystem. The EIS must consider the toxic burden we already bear from MagCorp and must consider the consequences of adding more unavoidable adverse impacts to those already suffered by Great Salt Lake wildlife. Transporting radioactive waste through a narrow transportation corridor bounded by a lake and mountains could have obvious and powerful negative impacts on our local economy should an accident happen, but transporting that waste along the shores and wetlands of the Great Salt Lake could also lead to a wildlife holocaust.

In addition to the risks and impacts I have described, an inventory of West Desert risks and impacts would have to also include two commercial hazardous waste incinerators, a massive hazardous waste landfill, a radioactive landfill, and the open burning and detonation of conventional munitions. Oh yes, F-16s from Hill Air Force Base crash into the West Desert and Great Salt Lake on a fairly regular basis and then there is the occasional stray missile that comes our way.

The citizens who belong to the groups I represent will be going over the EIS very carefully to make sure you get it right and you get it all. We are wary because we have learned some hard lessons. We have learned that the regulations that are supposed to safeguard the health of both humans and wildlife from environmental hazards are often inadequate because they are designed and enforced in a political context where the need for jobs, profits, and revenues can be very compelling, even blinding. When money talks, health walks. We have learned that expert reassurances can be tragically misleading. We have learned that things go wrong, the unexpected will happen. And, finally we have learned that if you want accountability, you better get it at the front end of a risky project before the burden of proof goes downwind.

In summary, we want the EIS to identify loudly and clearly, every single unavoidable adverse impact from the PFS project, and we want it to address the cumulative impacts and risks of adding those to the impacts and risks we already have. Earthquakes, brush fires, and terrorism are obvious concerns, but they are certainly not the only factors to understand and consider in a valid EIS, as I hope my statement has made clear. We especially want the EIS to consider whether the health of those downwind from the proposed PFS facility is already compromised and vulnerable and, if

so, how that effects the risk from potential exposure in case the unexpected happens again and the reassurances of experts and regulators is once more dead wrong. And finally, the EIS should assess the economic consequences to our communities if we are perceived as an environmental pariah, because if the PFS facility is added to what we on the West Desert already endure, that is surely how we will be perceived. Thank you.

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HEAL
West Desert Healthy Environment Alliance

The Grantsville Community's Health: A Citizen Survey

Conducted in January-February, 1996
by volunteers of the West Desert Healthy Environment Alliance



Report written by Chip Ward
with the assistance of West Desert HEAL.

Special thanks to Janet Cook for her dedicated and extraordinary organizing efforts

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Why We Did Our Own Community Health Study

The most direct link we have with our environment is our own health. We know we are personally responsible for health factors like exercise and diet. But when it comes to all of those environmental factors that affect our health, we trust our government to monitor our environment and protect us. In Tooele County, we suspect that our trust has been misplaced. If you live in Grantsville, you will hear stories about illness and death. We have asked for help, but our government at all levels has not been able to find the resources to follow through and provide answers that satisfy those who are concerned. The West Desert Healthy Environment Alliance (HEAL) is a group of concerned citizens who decided the time had come for citizens to take the lead. We are tired of living with uncertainty and waiting.


A Note of Caution

We emphasize that this was not a scientific study or survey. Although we sought professional guidance in designing the survey instrument, controls, and definitions, ours was a survey conducted by citizens with limited experience in such an endeavor. We realized at the outset that we could not find firm answers to questions about the health of Grantsville's residents. However, we believed it was important to start. Ours was a modest and humble effort by citizens to catalyze those with power, authority, expertise, and resources to take action on our behalf. Our survey and this report can identify problems and set targets and directions for further action. It is now up to the appropriate agencies to follow through.

How We Did It

Participants were asked to draw a map of their neighborhood, number households, and then, using uniform data sheets, look for a number of defined health problems. These included cancer, birth defects, MS, reproductive problems, and serious respiratory and immunological problems. Data sheets included the nature and specific description of the health problem, gender, years of residency, and age at onset. Approximately 35 individuals took part in mapping neighborhoods. In a couple of cases, participants had enough first hand knowledge of a neighborhood that they could fill in data sheets without going door to door, filling in gaps by making phone calls or consulting with others in the neighborhood. In almost all cases, however, participants went door to door for information. It was a painstaking and time consuming process. We were very careful not to violate privacy. Participants report that all or almost all residents they contacted were eager to cooperate.

We covered roughly half of Grantsville, a community of about 5,000 people. We debated covering the entire town but quit when we realized that although some neighborhoods showed more health problems than others, overall results were remarkably consistent. We decided to leave it to others to do a more comprehensive survey. We checked for duplications and are reasonably sure we eliminated them. No doubt we missed some households. No doubt information was sometimes withheld. We suspect this is especially true in regard to reproductive problems and birth defects which are very personal and may



even carry a stigma. In compiling data, we tried to be controlled, cautious, consistent, and conservative. We concede that this was not a professional effort and challenge all those who would critique it to do better. As flawed as it may be, what we have done for ourselves surpasses what others with expertise and charged with responsibility have been able to do for us.

What We Found

Sample size. We contacted approximately 650 households. We believe this represents about half, or somewhat more, of the town. Using census data of an average of three to four people per household in Tooele County, we estimate that those households could include 2,600 of the five thousand residents in town. The number of households is approximate because it represents sums of households as they appeared on maps and data sheets. However, it became clear when talking to volunteers and reading their notes that in every neighborhood there were at least some people who could not be contacted but in some cases their household show up on maps and data sheets. The actual number contacted, then, could be somewhat lower. This is important to remember when comparing the number of cancers and other health ailments reported to the size of the sample.

Cancer. We identified 201 cancers. We received many reports of people who had died of cancer or who were natives or long time residents who had cancer and had moved away. Because it was so difficult to get a comprehensive picture of past cancers and because of the problem of duplication when a person who died or moved away with cancer may have lived in more than one neighborhood or may be claimed by more than one family, we did not include those who had died of cancer if they were members of an immediate family household surveyed.

A report issued in December of 1995 by the Utah Bureau of Epidemiology listed a total of 237 cancers for Grantsville between 1973 and 1993. These were revealed by searching cancer registries. Based on their findings, they express concern about an increase in cancers, especially breast, cervical, colorectal, lung, and prostate. Our survey turns up almost as many cancers as their research, 201 vs. 237, but we surveyed about half of the town. Extrapolating that the rates for the other half we did not cover are similar to the half we did cover, one could assume approximately 200 additional cancers for a total close to 400. Even given a flawed methodology on our part, for example we included skin cancers that the state study did not, the difference is remarkable. We believe that it is just as likely that the statistical approach alone, taken by the state, is inadequate. Our results seem to support the conventional wisdom in Grantsville that the state does not have a complete picture of the number of cancers we are suffering. The discrepancy argues for a more comprehensive study by the state, one that hits the ground up close and personal rather than relying on distant data files. We recognize that a more comprehensive approach takes staff time and money. However, we believe that in our case the investment is justified.

It was often hard to characterize a type of cancer as some respondents used different terms. Eliminating specific tags for those that were ambiguous, we found the following types of cancers: 1 bladder, 1 blood, 3 bone, 9 brain, 23 breast, 9 cervical, 12 colon, 1 ear, 1 face, 3 leukemia, 3 liver, 11 lung, 10 lymphoma, 1 nervous system, 3 ovarian, 3 pancreatic, 16 prostate, 29 skin, 2 stomach, 4 throat, 6 thyroid, 4 uterine.

Most remarkable is that the cancers we found seem to be highly concentrated among

long time residents. Of the 201 cancers we found, 182 were among natives (in the case of children) or long time residents, those who report they have lived in the county for at least 25 years. Using census data on neighborhood mobility that indicates about one third of Tooele County residents have lived in their neighborhoods for more than 15 years, and assuming this percentage may be even higher in Grantsville, we still have to conclude that the high number of cancers we found are concentrated among a minority of residents, probably between a half and a third of all residents, making the rates even more startling. It should be noted that many of the cancers reported among long time residents occurred among people who were relatively young, in their 30's and 40's. There is a definite correlation between length of residency and old age, but it should not be overstated. We believe the high cancer rates among long time residents may offer evidence of cumulative negative environmental impacts, or may be the legacy of particularly damaging past environment exposures (see "What We Have Learned"), or may be due to some interplay between both of these factors. In any case, this aspect of public health should be targeted for further examination.

Respiratory problems. One hundred and eighty-one serious respiratory problems were reported. This number includes those diagnosed with asthma, emphysema, and "serious" or "chronic" sinusitis (many respondents reported surgery to remove polyps). We did not include those who mentioned bronchitis, allergies, or pneumonia. Several elderly respondents mentioned shortness of breath and these were not included. Several newer residents said they had never had so many respiratory colds as they had experienced since moving to Grantsville. These were not included. Also, it should be noted that some volunteers focused primarily on cancer and practically ignored respiratory ailments. A more thorough and consistent effort would probably turn up more respiratory problems.

The number of respiratory problems people are suffering seems high to those who conducted the survey and was a frequent observation and complaint of those surveyed. It seems to indicate poor air quality. Since Grantsville experiences many clear days, it may mean that there is something particularly harsh to respiratory systems in our air when it is polluted. Although some air monitoring is now being done in town, a more complete picture of air composition could shed light on what people are being exposed to currently.

Reproductive problems and birth defects. Discovering reproductive problems and birth defects was difficult. Survey volunteers reported that people were, understandably, reticent about reporting on such personal aspects of their health. They suspect only a fraction of reproductive problems were reported and only a portion of birth defects. Thirty-eight reproductive problems were reported. Many more reported miscarriages but were not included unless they had a history of multiple miscarriages. The other problems included in this category are infertility and endometriosis. Interesting anecdotal information about miscarriages was revealed. Some respondents said they were aware of clusters of miscarriages in their neighborhoods, particularly in the 1950's and 60's. This may indicate exposure to radiation, or even pathogens or nerve agent, from military testing (see "What We Have Learned").

Twenty-nine serious birth defects were reported. These include cleft palates, one kidney, hole in the heart, no brain, spina bifida, and other serious birth defects. Again, this number is large as is but probably represents a portion of the actual number and includes only half of the community. Interesting anecdotal evidence about birth defects also surfaced. One

respondent, for example, reported that she gave birth to seriously deformed twins several months after the infamous sheep kill in Skull Valley in 1968. Her doctor told her he'd never seen so many birth defects as he did that year. We believe birth defects are another likely target for a health study.

Other health problems. A number of other health problems were reported. These include: 8 lupus, 5 non-cancer thyroid, 10 chronic fatigue syndrome, 3 other serious immune system problems, and 4 other neurological problems. Many people reported seizures but these were not included. We found 12 cases of multiple sclerosis. This number includes a man who recently died, and four long time residents or natives who have moved away. Again, a more systematic, sophisticated, consistent, and probing survey may have found more.

We believe the number of cancers in Grantsville is too high. The number of cancers in long time residents is way too high. The number of serious respiratory problems, as suspected, is too high. We are alarmed by the number of birth defects. Generally, poor health seems widespread. As described in our recommendations, we want a health study to follow our efforts, not for its academic interest or value, but because by helping us understand the scope and specifics of public health, citizens may be better able to cope with their problems. Just as an ailing individual may seek a thorough physical examination as a first step in addressing his or her health concerns, a community can benefit from an examination of its health so it can address its well being. However, we are adamant that citizens be thoroughly involved in any study or it will not have credibility. We have had too many benevolent groups and agencies gloss over our problems. We believe there is a history of government sponsored studies of community health that are inconclusive by design.

In the meanwhile, there are a number of steps that can be taken to alleviate citizen suffering and the accumulation of more heart breaking illness. These are outlined in our recommendations.

What We Learned

What did we learn? First, **we are not alone.** The enthusiasm with which people volunteered to map neighborhoods, the indignation they expressed when they discovered the scope of health problems, and the encouragement they gave to continuing the project all indicate that people want to share their concerns and make a difference. Our project experience makes the case for citizen participation in any further study compelling.

Second, **the conventional wisdom that too many people in our community are suffering poor health is true.** Ill health is both varied and widespread. We have confirmed findings by the state's epidemiologist that there is an unusual number of cancers. We believe there is more cancer than they identified. Birth defects and serious respiratory ailments are also alarmingly high. This conclusion may not be an expert one, although the professionals we consulted concur. However, we believe it is the prerogative of a community to draw such conclusions about its own well-being based on the unique, intimate, intuitive, and profound experiences of its members over time. No one can convince us this is the way it was or is supposed to be. Something is wrong. It is important to find out what and why. We want action.

Many factors impact health. Some are behavioral, such as diet and smoking. Some are genetic. Occupational and environmental exposures are other factors. We do not think the genes or behaviors of Grantsville residents are so different from others that they could account for such widespread poor health.

Occupational exposures, however, may be significant. For example, residents who worked for the Tooele Army Depot may have been exposed to paint fumes and solvents. Ranchers and farmers may have been exposed to pesticides. Those who were in mining or heavy industry may have been exposed to carcinogenic chemicals, heavy metals, or chlorine gas. The role of occupational exposure in ill health should be targeted for closer scrutiny.

Past environmental exposures are another potential key factor in explaining the poor health of Grantsville residents. Given the disproportionate number of native and long term residents who reported health problems, past environmental exposures seems likely. Long time residents mentioned pollution from the old Tooele smelter. Before Kennecott installed a taller smokestack, they said, pollution was worse from that source. How much exposure Tooele County residents got from these sources is probably impossible to determine at this late date. This underscores the importance today of thorough air monitoring and record keeping. Monitoring is not only a key to understanding, it is critical for accountability.

One possibility of past exposure that we believe has been ignored is testing and experimentation that was done at Dugway Proving Grounds from the 1950's through at least the 1970's. These tests have been eloquently described and documented by Lee Davidson, Washington correspondent for the *Deseret News*, in a series of articles that appeared in 1994 and 1995. Testing dispersed significant amounts of radiation upwind from Grantsville. Citizens who lived in Utah during atomic testing in the 1950's probably experience radiation exposure from that source as well.

The principal effect of radiation exposure is the breakdown of cell structure which can actually be worse at low levels than at high ones. High level doses kill cells outright. Low doses scramble cellular chemistry, re-arrange genetic information, and leave cells vulnerable to invasion. Cellular disorganization can lead to a wide range of health problems. In addition, our survey revealed some past clustering of miscarriages which may be related to radiation exposure.

During the Cold War, the equivalent of 2.5 trillion lethal doses, 494,700 lbs., of nerve gas were released into the air at Dugway in 1,174 open-air tests or firings of munitions filled with nerve agent. The most infamous test was the one that killed 6,000 sheep in Skull Valley in 1968. We do not know what background exposure to nerve gas does to cellular chemistry, genetic information, immune system function, and so on. Most of the residents we talked to had no idea such levels of nerve agent had been released. At the very least, we want the sources of such exposure to be completely documented and publicized so that those who suspect this may be a factor in their health can have easy access to such information. Our survey also revealed unusual incidents of tularaemia in one neighborhood, raising the question of whether pathogen testing at Dugway was also uncontained.

Many residents are convinced that **open detonation of conventional munitions** at the Tooele Army Depot has played a role in the health problems they are experiencing. They

point out that although Army tests indicate that only soil blows downwind from open detonation, the soil itself could be contaminated from a long history of other kinds of weapons testing. Most do not believe Army assurances about the safety of open detonation. We also heard stories about soil, water, and plants contaminated by phosphorous.

We have learned the importance of vigilance. The evidence of past exposure to dangerous substances from Army activities when linked with widespread and varied health problems today raises important questions generally about the Army's credibility today when they tell residents new activities are not dangerous. Betrayal of past trust is not a confidence builder. Citizens would be well advised to be wary, monitor closely, and demand thorough evidence when new military activities are proposed.. The incineration of nerve agent is particularly worrisome in light of past exposures and current health status. Technologies are often used without adequate assessment of their human and environmental impact, without democratic decision making about their use, and without the community's knowledge of their dangers. As individuals, we take personal responsibility for an aware, balanced, and proactive approach to our own behaviors which impact our health. As members of society, we must insist that decision makers and policy makers are accessible, accountable, and responsible.

Current ongoing exposure to pollution has to be a factor with critical impact on public health. The high incidence of respiratory ailments, including asthma, severe sinusitis, and ongoing bronchial problems, that were reported are a powerful indication that air quality is often poor, especially during inversions. The way that government agencies set standards for allowable pollution seems to be seriously flawed. What is deemed a tolerable amount of air pollution by the government is based on abstract and relative comparisons of pollution levels from one area to another. What is missing is the condition of the people on the ground who must breathe the air. Regardless of how the various factors for health - behavioral, genetic, occupational, past and current exposures - weigh in and relate to one another, current exposure has to have an intensifying effect on respiratory problems. Our survey shows that Grantsville residents are suffering and vulnerable. Further increases in emissions cannot be tolerated. Enough, as determined by air quality regulators, is, in the case of a suffering and vulnerable population, too much. Pollution is not an act of God, nature, or fate. It is the result of human activity. It can be controlled, even stopped. It must be.

As described above, there are several potential environmental variables that may have contributed to the broken health of so many Grantsville residents. We offer these descriptions, not to assign blame, but to underscore the consequences of flawed decisions that did not carefully consider environmental/health impacts. If we learn to appreciate the human toll that resulted, we may be inspired to insist on a public environmental decision making process that is more informed, careful, far-sighted, and inclusive.

The most poignant lessons learned during this survey cannot be summarized. To talk to neighbors about their individual experiences can be heart breaking. One Grantsville resident, for example, buried her middle aged mother in the spring and her toddler daughter in the fall. Both died of cancer. Behind every number is a story. The stories tell of the real life experiences of individual human beings whose challenges and losses cannot be easily and neatly measured, tabulated, and compared.

Along with illness comes loss of capacity to work and to play treasured and sustaining roles as a family member. The ill lose social mobility, the ability to reach for cherished and validating goals. Illness is stressful and frightening. Illness is expensive. The suffering and loss of loved ones, friends, and neighbors goes way beyond those immediately affected. The ripple effects of poor public health extend throughout the community. Our survey taught us that the conditions and experience of individuals should never be reduced to mere statistics, means, averages, norms, margins for error, and valid sample sizes. Such measures are, after all, only tools to be applied for greater ends.

Finally, our concerns and findings underscore **fundamental and important understandings about our place as human beings within our environment**. We have learned that we are all downwind and downstream from one another. The environmental equivalent of the Biblical warning that we reap what we sow is that we also eat, breathe, and drink what we sow. As a society, we make collective choices about what we allow to enter our air and our food chain and we can no longer ignore that those decisions are eventually translated into flesh and blood and living experience. In Tooele County, Cold War imperatives and ambitions, the desire to preserve corporate profit, and a consensus about the need for jobs in a regional economy with limited options have often obscured those choices. No more. We are no longer willing to deny, rationalize, or justify environmental degradation. Clean air, water, and soil must be a priority because public health depends on them and we now stand warned.

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We express our great appreciation to the 40 Grantsville citizens who contributed their time, energy, and thought to the implementation of this survey, including:

Janet Cook	Leila Riding	Carol Barton
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Bonnie Bleazard	Colleen Dedricksen	Sadie Matthews
Karla Peterson	Diane Bevan	Charles Stromberg
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Peggy Pearce	Wilma Swenson	Ruth Ann Goins
Joyce Butler	Lillis Warr	Ruth Matthews
La Rue Brown	Myrtle Barrus	LaWayne Lemmon
Sue Simmons	Carol Henderson	Holly Nelson

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Recommendations

1. **A professional, thorough, health study with meaningful citizen participation.** We want a health study that identifies incidents of cancer not merely by number and type, but one that can also describe the personal characteristics of those with cancer, including age, length of residency, and occupational history. Only when such characteristics are included can meaningful and revealing patterns be discovered. We want the study to also identify birth defects and respiratory ailments, two other health problems that seem prevalent. We want significant citizen involvement in the health study from start to finish.
2. **No more emissions.** We want a complete moratorium on further deterioration of our air quality. Criteria for whether air is polluted should take into account not only the relative quality of the air, but the relative health of the citizens who breath it. Although the air in Tooele County may not be dirty enough by some standards to restrict more sources of pollution, the health of Grantsville citizens is too vulnerable to allow more.
3. **A strategic plan to improve air quality.** We want government at all levels to initiate a dialogue and planning process with industry and citizens to improve air quality in Tooele County. This should include a state initiative to set standards for chlorine gas emissions.
4. **Increased and broader environmental monitoring.** We want widespread and consistent air monitoring which includes not only federal criteria air pollutants but chlorine gas, dioxins, and ambient air.
5. **Complete documentation of past military testing.** We want all information regarding radiation dispersal and open-air testing of nerve agent and pathogens at all military facilities in Tooele County to be open and accessible to all citizens immediately.

for more information:

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