

DWQ also received several other comment letters. In large part, these letters addressed issues other than ground water protection. While DWQ recognizes that there are other important issues related to oil shale mining that are worthy of public discussion and debate, the purpose of this comment period was to solicit comment on the draft ground water discharge permit for the EPS capsule at the Red Leaf mine site. Accordingly, only those comments relating to ground water protection will be taken into account in DWQ's decision to issue the permit with modifications.

Comment 1

DWQ received 35,761 form letters as comments, in a campaign sponsored by the Natural Resources Defense Council. The letters were sent by e-mail from people in various locations in the USA and around the world. The text of these form letters is as follows:

" I urge you to deny Red Leaf Resources a permit for oil shale operations on state land.

This project would involve intense strip mining using an experimental technology that has never been tried. The potential threats to local landscapes and water sources are enormous, yet the Utah Department of Environmental Quality is not planning to require sufficient provisions to protect water -- or even adequate monitoring of water sources like seeps and springs to ensure they are not contaminated. The department has concluded that the proposed project will not degrade the groundwater in the area, even though this is an experimental technology.

This project could pave the way for much more extensive, runaway development in the region and pose serious threats to the natural resources in the Book Cliffs area. This region contains some of Utah's most important wildlife habitat, stunning landscapes and a spectacular stretch of the Green River. This area is also home to outstanding outdoor recreation opportunities and local businesses that depend on a pristine landscape for tourism.

Opening the door to commercial scale oil-shale development would lead to industrialization of vast tracts of land as well as intense greenhouse gas emissions from extracting, cooking, and producing fuel in the Colorado River Basin -- an area and river already suffering from drought and water shortages.

The state should not issue a permit for this project. If the department does issue a permit, it must hold the corporation to the highest possible environmental standards to protect groundwater, rivers and wildlife habitat; require the most stringent protections; and ensure monitoring to measure all the risks and impacts of the technology being used.

Thank you for your consideration of these comments."

DWQ Response

As explained in the Statement of Basis and in the response to the Western Resource Advocates (WRA) comments above, ground water protection is insured by the nature of the facility- storage of dry spent shale in a lined capsule which will not develop significant saturated conditions over time; and by the site conditions- the capsule is constructed over low-grade oil shale of very low permeability which isolates it from the underlying aquifer.

As explained in the response to WRA Comments 5 and 7, seeps and springs discharge from a very shallow ground water system contained in near-surface soils, alluvium and weathered bedrock, and this surficial ground water flow system will not be affected by potential discharges from a capsule constructed inside a mine pit on the low-permeability bedrock.

Permit Action: None

Comment 2

“As a Utah citizen, I would like to register my protest of the Uinta Basin shale project by Red Leaf. For three reasons, I would like the state to deny further development:

*1. Despite theoretical arguments against ground water pollution, monitoring is the *only* way to ensure no breach of containment vessel or other adverse effects to the surrounding environment, including those potentially caused by unforeseen geologic conditions.*

2. Recreational use of Trust Lands is always in competition with mineral extraction activities, and the long-term economic value (which the State enjoys far less of than the private extraction companies) of oil exploration is outweighed by maintaining pristine environments for future generational enjoyment.

3. Development will necessarily involve vehicle and heavy equipment use that will contribute carbon and particulates to Utah's already-impugned air quality.

Please note this request for "no" by a voting Utah citizen.

Thanks for your consideration,

Trent Henry

Salt Lake City”

DWQ Response

With respect to Item 1: DWQ’s experience since the Ground Water Quality Protection Regulations were adopted in 1990 has been that ground water monitoring does not always give unequivocal evidence of discharge of contaminants to ground water; and it is not the best method of compliance monitoring at many sites. The reasons ground water monitoring is not appropriate at this site include:

- The spent shale is very dry and any discharge from it to the subsurface will be minimal and far in the future.
- Rocks underlying the capsule have very low permeability and contain minor quantities of ground water which do not circulate, as shown by the water’s high salinity and isotopic composition different from the present-day precipitation at the site.
- Available information indicates that any leachate from the spent shale would be of better quality than the site’s ground water and it would be very difficult or impossible to tell if water sampled by monitor wells was affected by this leachate.

Instead, DWQ has chosen source monitoring to evaluate leachate discharge from the capsule. Drainage from the capsule’s metal collection pan and from the top of the lower BAS liner will be monitored. Any water that is collected from these monitoring points will be evaluated to determine an appropriate disposal method.

With Respect to Items 2 & 3: The comments are not related to the technical merits of the proposed ground water permit.

Permit Action: None

Comment 3

"I am responding to your request for comments on the above captioned project. I FAVOR THE PROJECT.

Oil shale is a long dormant resource that is over due for development and production - much needed by the economy of Utah and the nation. The Seep Ridge project is well planned and WILL NOT adversely impact the Utah environment. Oil Shale has been subject to much hostile and unfounded speculation, fanciful claims of pending disaster and general opposition for many decades. Somebody with the Will to Succeed has got to demonstrate that oil shale's petroleum content CAN be safely produced, and this project looks like the best effort.

Too many so-called "Environmentalists" are really just opposed to any industrial activities, and cling to claimed "adverse environmental impacts" to gain support and justify their Luddite ideology. Your Division should "call their bluff," and approve the project as a model for future operations, eventual prosperity and needed progress. Good Luck.

*Robert Pruitt
4248 Mt. Olympus Way
Holladay, Utah"*

DWQ Response: Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None

Comment 4

I am against shale mining. Water is the main concern-where are they going to get it from and how much will they use. Will the company have a fund for restoration of lands they bulldoze?

Thank you for your time,
Pam Alexander
Salt Lake City, UT

DWQ Response

The mining operation will not use process water, but will use minimal quantities of water for dust suppression and to support the mining activities. It will be obtained from a water supply well tapping aquifers 600 to 800 feet below the ground surface.

Site reclamation is overseen by the Division of Oil, Gas and Mining, which has legal authority to collect a bond to assure reclamation takes place, even if the mine operator abandons the site.

Permit Action: None

Comment 5

“These comments on Red Leaf’s Groundwater Discharge Permit were prepared by Alan Walker and are being submitted on his behalf. He is copied on this email. Please contact me if you have any questions.

As a US Army Reserve soldier, I have deployed to combat zones three times. America’s dependence on foreign oil plays a large role in the purpose behind these deployments. As an engineer I have spent over thirty years in the energy industry, including related research and academia. I support the Red Leaf Resources proposal to develop oil shale resources in the Uintah Basin and recommend that Ground Water Discharge Permit UGW470002 be granted, as soon as feasible. Oil shale is a vast and important resource to the United States and one of the largest concentrations of oil shale in the world is located in the Green River formation, which contains an estimated 4,280,000 million barrels of hydrocarbons (Source: Dr. Jeremy Boak, Colorado School of Mines – Uintah Basin Energy Summit 2013). Dr. Boak’s work has been peer reviewed and is widely accepted in the geoscience community. Oil shale offers a tremendous potential benefit to the US, Utah and Uintah Basin economies as well as to global energy security concerns. These vast resources, however, must be developed responsibly.

Red Leaf Resources is a solid corporate citizen and a responsible steward of the environment. I have visited their field site numerous times and reviewed their proposed development. They are well positioned both technically and ethically to help Utah unlock the potential of oil shale resources. Their technology and plan of depletion utilizes innovative processes to minimize emissions. They understand their responsibility to develop in an environmentally sensitive manner and have committed to monitor groundwater closely throughout development. Water use is often a concern with other oil shale technologies. However, Red Leaf does not use any water during the hydrocarbon extraction process. Their only water consumption will be for dust control, manpower and mixing capsule clay liners. There are no aquifers near Red Leaf’s production so concerns over groundwater contamination are misplaced. Furthermore, Red Leaf has no discharge water so there should be no question that a groundwater discharge permit should be issued.

I support Red Leaf’s responsible development of Utah’s oil shale resources, which will bring a vast benefit to the State of Utah through jobs, taxes and royalties, the schoolchildren of Utah through SITLA land development and to the United States through curbing foreign oil imports. If you have any questions, please feel free to contact me.

*Regards,
Alan Walker”*

DWQ Response:

Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None

Comment 6

"I would like you to know that I am in favor of DEQ issuing Red Leaf Resources their "Ground Water Discharge Permit".

Red Leaf Resources will bring an industry to Utah that is very much needed and with that, they will bring good paying jobs to the Basin and in time will contribute tens of millions of dollars to be paid to state and local governments in taxes and royalties.

Red Leaf Resources has designed technology that is clean and has committed to DWQ that it will monitor groundwater during the demonstration phase and report its findings in order to ensure the process works as designed. Red Leaf Resources does not use any water in the oil extraction, but only uses water for dust control, manpower and mixing the capsule clay liners. there are no aquifers near Red Leaf's production, so there is no water table to impact. Since Red Leaf has no discharge water, there is no question that a permit should be granted.

Please approve and adopt the draft Ground Water Discharge permit for Red Leaf Resources.

Sincerely,

Tammie Lucero"

DWQ Response:

Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None

Comment 7

"I am writing because I deeply admire Utah's special lands and wildlife. I urgently ask you to deny a company called Red Leaf Resources a permit for oil shale operations on state land near Book Cliffs. Located in eastern Utah, the Book Cliffs area contains some of the West's most important wildlife habitat (home to bighorn sheep, pronghorn golden eagles and more), stunning landscapes, as well as a spectacular stretch of the Green River. This area is home to outstanding outdoor recreation opportunities and local small businesses that depend on a pristine landscape for tourism.

All of that could be destroyed in a matter of months, if Utah allows Red Leaf Resources to use experimental technology to strip-mine oil shale less than 15 miles from the Book Cliffs wilderness.

This project would involve intense strip mining using an experimental technology that has never been tried before. The potential threats to local landscapes and water sources are enormous, yet the Department is not planning to require sufficient provisions to protect water, or even adequate monitoring of water sources like seeps and springs to ensure they are not contaminated. The Department has concluded that Red Leaf project will not degrade the ground water in the area, even though this is an experimental technology. (Red Leaf must be held to the highest environmental standards to protect ground water, rivers and wildlife habitat, to require the most stringent protections, and ensure monitoring to measure all the risks and impacts of the technology being used.)

While this project may be described as experimental, it could pave the way for much more extensive development in the region and pose serious threats to the natural resources of the Book Cliffs area.

Commercial scale oil shale development would lead to industrialization of vast tracts of land, as well as intense greenhouse gas emissions from extracting, cooking, and producing fuel in an area already suffering from drought and water shortages. Producing oil shale involves heating rock to high temperatures and turning it to liquid oil.

Not only does oil shale development dramatically increase global warming pollution -up to five times more than conventional oil, it threatens wildlife habitat and could lead to groundwater contamination.

The consequences of large-scale oil shale development would be devastating. I urgently ask the State not to issue a permit and reject the Red Leaf project.

Thank you for your help on behalf of Utah's, and America's, irreplaceable lands and wildlife.

*Yours truly,
J. Capozzeli, New York"*

DWQ Response:

Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None

Comment 8

"Uintah County appreciates the opportunity to provide comments on the above matter. Uintah County takes the position that the responsible development of mineral resources is beneficial to communities within Uintah County and the State of Utah as a whole. The revenue generated from mineral extraction provides jobs; resources and opportunities for our community (see generally Uintah County General Plan). As such, Uintah County supports Red Leaf Resources project. The following comments are not listed in any particular order of importance.

The County understands that The Natural Resources Defense Council (NRDC), Utah Oil Sands Resistance and other environmental groups have pre-written comment forms on their websites that only require the input of a person's name to automatically submit a comment opposing Red Leafs permit. We anticipate many such submissions. Facts cannot be defined by the sheer volume of chatter.

Here are some facts about the Red Leaf process. Red Leaf doesn't use any water in the oil extraction process. Red Leaf only uses water for dust control, manpower and mixing the capsule clay liners. Further, it is our understanding that there are no aquifers near Red Leafs production, so there is no water table to impact. Red Leaf has designed technology that is much cleaner than traditional oil shale development. Additionally, Red Leaf has reported to the County that it has committed to DWQ that it will monitor groundwater during the demonstration phase and relay its findings in order to ensure the process works as designed with no impact. Finally, because Red Leafs process has no discharge water, the permit should be granted.

It is also appropriate to highlight some of the other benefits of this project. The oil shale industry in Utah could mean thousands of good paying jobs in the Uinta Basin. Over time, oil shale developers will contribute tens of millions of dollars will be paid to state and local governments in taxes and royalties. Increased domestic production will limit the nation's dependence on foreign oil.

Please feel free to contact us should you have any questions concerning our comments. We have no further comments at this time, but reserve the right to comment at a later date, if warranted.

*Uintah County Commission
Michael J McKee
Darlene R Bums"*

DWQ Response:

Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None

Comment 9

I support the Red Leaf Resources Early Phase Capsule (EPS) Seep Ridge Project and based on review of the provided materials, it appears that this project will not adversely affect the State's groundwater resources. In fact from my little understanding of the regions hydrogeology, the water table elevation is unknown. This coupled with the fact that the best available technology applied will alleviate the potential for a discharge to the environment. Even if some kerogen oil did find its way to the environment, it is naturally occurring there to begin with and from my understanding of the process, the closed loop system will not discharge water. No chemicals are added to the process.

This project also contributes to the nation's domestic oil production diplomacy thereby lessening the dependency of foreign oil bettering the U.S. economy. Consequently, this directly bolsters Utah's economy with jobs creation and equity for schools.

*The Red Leaf Resources EPS Seep Ridge Project has my unqualified support!
Sincerely,
Chris Ennes*

DWQ Response:

Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None

Comment 10

“Ames Construction, Inc. is a heavy civil, mining and industrial general contractor that has maintained its regional headquarters office in West Valley City, Utah since 1985. We are a major supplier of construction services to the US mining industry and to Departments of Transportation through the US.

We are the selected contractor for the Red Leaf EPS Seep Ridge Project. We understand the approaches to permitting, environmental protection, engineering, and construction of the project. We are working closely with the Red Leaf team in the design phase and will be constructing the project. Red Leaf has a well thought out, through plan.

Having performed work the Utah/Nevada/Colorado Region for over 30 years, we are very familiar with the challenges and concerns of performing construction in harmony with nature. Being a professional in the environmental, mining, and construction field for 40 plus years, I am familiar with the necessary actions required for project development in concert with environmental and economic stewardship. We support and understand the environmental disciplines required to protect our natural resources and human health. We also understand and support the need to make beneficial use of the natural resources to maintain and enhance the quality of life.

We believe Red Leaf is and will continue to implement responsible actions and safe guards to protect the environment and people. We believe DEWQ should issue Red Leaf a permit for their project.

This project will provide direct employment for approximately 150 Ames employees over a two year period.

*Mark Brenna
President”*

DWQ Response:

Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None

Comment 11

“I have reviewed the technical documents supporting Red Leaf Resources ground water discharge permit application for the Early Phase Capsule (EPS) Seep Ridge Project.

The technical research coupled with drilling data identified a possible aquifer under the mine site to be greater than 600 feet below ground surface. Shallow perched water zone(s) are of poor water quality with no recharge. The area geology is made up of very low permeability strata's. Trace levels of petroleum constituents were reported in water samples taken from most wells.

The capsule design contains extensive containment materials in excess of what is necessary for toxic chemicals. There are no chemicals or water used in the extraction and processing of the oil and gas products. This in itself protects the environment. The product(s) that could be released to the soils are hydrocarbons, which currently exist in the undisturbed geologic strata's.

The above natural environment facts coupled with the best available technology for extraction and process design elements alleviates the potential for a discharge to the environment and will not adversely affect the State's groundwater resources.

This project will have a direct and indirect positive effect on Utah's economy. Additionally, with the project being predominately on State Lands, the State's schools and children will be greatly benefited. Development of the resource contributes to the nation's domestic oil production diplomacy lessening the dependency of foreign oil.

I am in support of the Red Leaf Resources EPS Seep Ridge Project. DWQ should move forward with issuing a ground water permit to Red Leaf as soon as possible after the public comment period.

Lonnie Boteilho"

DWQ Response:

Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None

Comment 12

"The Salt Lake Chamber supports Red Leaf Resources' (Red Leaf) planned oil shale project in the southern part of the Uintah Basin, and specifically the issuance of Red Leafs ground water discharge permit.

Red Leafs development will contribute to Utah's energy security; produce long-term jobs that will help our community grow and keep families closer together. Further, Red Leaf and other oil shale developers will contribute millions of dollars to Utah's economy and tax base in an environmentally responsible and economically viable manner.

The Salt Lake Chamber recently toured Red Leafs development site in June of 2013 where Red Leaf demonstrated its commitment to being a good corporate citizen and a responsible water user. Additionally, Red Leaf staff has shown their commitment to environmental stewardship and desire to work together with our community to develop this project in the most responsible manner possible. Red Leaf has committed to monitor groundwater during the demonstration phase and report its finding in order to ensure the process works as designed with no negative impact on groundwater. If these findings hold true and Red Leaf has no discharge water, a permit should be granted.

Utah needs productive businesses like Red Leaf Resources that will produce economically and environmentally sound energy to help Utah and the nation become more energy independent.

*Sincerely
Lane Beattie
President and CEO
Salt Lake Chamber"*

DWQ Response:

Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None

Comment 13

Mr. Hall and Mr. Baker,

Please accept this email message as my contribution to the current public comment period in reference to Red Leaf Resources Ground Water Discharge Permit No. UGW47002.

To my understanding, a ground water discharge permit was initially issued to Red Leaf Resources in 2011 and now this permit approval is being challenged by an appeal from the Living Rivers group based in Moab, UT. Although I do not know of the specific information being presented by Living Rivers to support an appeal, I am continually surprised at the attention that these appeals from the same groups time and time again receive.

I agree that we need to be good stewards of the environment. I am a supporter of sustainable growth and sustainable use of natural resources, and I think a good balance of conservation and development benefits everyone. I do not agree that so many baseless appeals can have such a large impact in slowing or stopping construction / mining projects, and that they incur such a large amount of unnecessary costs to both public and private organizations for permits that have already been evaluated and issued.

From what I know of Red Leaf Resources and their processes they will do an outstanding job of operating an environmentally responsible project.

I would encourage the Utah Division of Water Quality to maintain their approval for the ground water discharge permit to Red Leaf Resources.

Thank you for your consideration.

Regards,

Bryan Larsen | Site Manager | Wheeler Mining Systems

DWQ Response:

Thank you for commenting on the Red Leaf permit, UGW 470002. The comment is part of the record. However, DWQ can only respond to comments substantively related to the regulatory requirements under R317-6.

Permit Action: None