

PARADOX VALLEY SUSTAINABILITY ASSOCIATION, INC
"Growing a sustainable future in the Paradox Valley and beyond"

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Montrose County Commissioners
101 S Townsend
Montrose CO 81401

Dear Commissioners;

Paradox Valley Sustainability Association (PVSA) appreciates the opportunity to address Energy Fuels' response to public comments. While PVSA could limit its comments to again state that a mill and permanent disposal facility is a heavy industrial land use which cannot be allowed under the requested SUP, we feel that the important concern of the public's health, safety and welfare is an appropriate one considering the nature of the issues.

This letter is submitted to address additional issues and is provided as a supplement to PVSA's previous comments. This letter does not expressly or impliedly waive or withdraw any previous comments or concerns raised by PVSA.

PVSA appreciates that the Commission has recognized many of the serious concerns that were raised by the public and the staff during the past months. However, the vast majority of the Energy Fuels' written responses to these serious questions rely on bare statements, with no specific reference to the application or other supporting materials that have been provided for public review. Because Energy Fuels carries the burden of proof in these proceedings, the Commission should reject the Energy Fuels responses as inadequate to satisfy the health, safety, and welfare concerns. Instead, the Commission should require that Energy Fuels responses be specific and properly supported.

Air Contamination:

Energy Fuels continues to characterize the mill at the 500 ton/day (tpd) as the maximum daily output level, particularly when that will allow reduced numbers regarding air emissions to be portrayed as the expected amounts. Energy Fuels has stated that 1000 tpd remains the intended maximum operation and that, while they have stated the intention to

temporarily limit the daily production 500 tpd, the County Planner has said that Energy Fuels intends to ramp up to the 1000 tpd when possible, relying on an annual average to achieve a 1000 tpd rate.

The uncertainty regarding the mill's capacity and maximum daily production capacity confirm that the Energy Fuels' responses framed in the 500 ton/day level are little more than arbitrary and capricious attempts to diminish and obscure the real amounts of emissions that can be expected. In addition, when Energy Fuels was asked specifically about air emissions by David White at the Aug. 13, 2009 meeting, Energy Fuels was not forthcoming in their response, as is required by the Special Use Review Criteria. These considerations alone are reason to deny the permit. Although still preliminary, real sources of information are starting to emerge, including the pending air quality application which is currently under consideration by the CDPHE.

Wind erosion from evaporation ponds and tailing cells: is specifically addressed in the Air Pollution Emission Notices provided by Energy Fuels to the Colorado Air Pollution Control Division in July 2009. The notice states that up to 80% of the tailing cells and 50% of the evaporation ponds may be exposed to wind erosion at any time. The notice specifically states, "As an upper bound estimate, it is assumed that only 50% of the Tailings ponds are covered with aqueous solution, so 50% is exposed to wind erosion." With the use of water sprays to control dust, emissions due to wind erosion of particulate matter are expected to be 26.33 ton/yr according to Energy Fuels' notice. In the notice it is also mentioned that these emissions could be reduced to "84% control for dust suppressants to stabilize open areas. Routine watering is assumed to provide 50% control." In other words, the 26.33 ton/yr could be reduced to 8.43 ton/yr by using the more effective control measure of dust suppressants. However, there is no calculation that discloses the quantity of water required to achieve any level of control. PVSA maintains that Energy Fuels' claims that the mill would be "state of the art" are unjustified when it chooses to use lesser effective control measures. Considering these facts and the gross understatement of Energy Fuels of the expected conditions, PVSA respectfully requests that the Special Use Permit be denied. However, if the Commissioners vote to approve the permit, PVSA requests that a condition is in place that Energy Fuels must use the most effective controls including dust suppressants to minimize emissions from the tailings cells and evaporation ponds.

Additional estimates of emissions from tailing cells and evaporation ponds are cited as:

Volatile Organic Compounds (VOCs): 21.11 ton/yr

Sulfuric Acid: 14.2 ton/yr

Radionuclides (uncontrolled): 1362.89 lb/yr

Dust from ore pad: Three areas of emission of particulate matter are cited in the emission notice – ore unloading, driving between dumping platform and ore pad, and wind erosion of ore stockpiles. The notice uses an average wind speed (6.33 mph) in its calculations.

It appears that the consequences of more severe or dramatic dust storms have not been fully considered in the air permit or by Montrose County.

1. Ore unloading: The notice indicates that control of dust could be “62% for continuous water spray at transfer points. Since water spray will be intermittent, then control efficiency was reduced to 50%.” If the permit application is not summarily denied, PVSA requests that a condition is placed so that water spray will be continuous at transfer points to ensure “state of the art” emission control in that process.
2. Ore pad travel: An estimated 10.23 ton/yr of particulate matter is expected to be emitted after controls are implemented. The use of control is arbitrarily noted, “as needed.”
3. Wind erosion of ore stockpile: Emission of particulate matter is expected to be 12.2 ton/yr. Emission of radionuclides is cited at 3.34 lb/yr. These figures are for the 50% efficient controls that Energy Fuels plans to use. Interestingly, the emission notice states that efficiency could be “90% for hand watering or covering. Since water spray will be intermittent and covers will not be used, the control efficiency was reduced to 50%.” PVSA requests that if the permit is not denied, a condition be made so that the ore stockpile will be covered and water used accordingly to achieve the possible 90% efficiency. This could reduce the particulate matter emissions from the ore stockpile to 2.44 ton/yr and the radionuclides to 0.67 lb/yr.

A summary of Energy Fuel’s emission notice shows a total of 352.05 ton/yr of pollutants. Included in this total are 0.88 ton/yr of Hazardous Air Pollutants (HAPs) identified to be known or suspected carcinogens. Among these HAPs 0.68 ton/yr are radionuclides. PVSA takes note of Energy Fuels’ acknowledgement that a single radionuclide could cause cancer. However, Energy Fuels continually redirects any concerns regarding radionuclides into the affect they would have on background radiation, rather than the serious concerns of inhalation or ingestion.

Also included in the emissions totals are 21.96 ton/yr of sulfuric acid. PVSA maintains that the effects of this much acid emitted over a 30 to 40 year period requires investigation before any decision on the Special Use Permit is made. Acid precipitation has been found to damage vegetation, including agricultural crops and trees, chiefly by inhibiting nitrogen fixation and leaching nutrients from foliage. Montrose County Zoning Regulations require the impact on agricultural lands to be minimized or eliminated.

There are a number of studies confirming the damaging effect of acid precipitation on rock art also. It so happens that there are registered, protected petroglyphs on BLM land approximately three miles from the mill site. The possibility of conflict of the sulfuric acid emissions of the proposed mill with the protected status of the rock art should be investigated fully before any decision is made.

One final note regarding sulfuric acid is that it is damaging to human health as well.

Energy Fuels' initial proposal to process 1000 ton/day of ore called for an estimated 300 gal/min of water. As the expectation of a water source that would provide that quantity of water became unrealistic, Energy Fuels changed their proposal to 500 ton/day to match the quantity of water Energy Fuels claims may be obtained pursuant to preliminary "letter agreements" and water rights adjudications which have not been initiated.

The Final Addendum to the SUP Application provided to Montrose County identifies 11 gpm of water for dust suppression/truck washing/fire suppression. The July 2009 Operating Plans provided to CDPHE by Energy Fuels call for 16 gal/min of water for dust suppression/truck washing/fire suppression. It appears from this one discrepancy that the 141 gpm estimate of water usage is low. In addition, the previous discussion of air emissions shows Energy Fuels' intent to minimize water use in dust suppression at the cost of increased air pollution. Most importantly, Energy Fuels has not provided an estimate of the water needed to bring air emissions down to the "As Low as Reasonably Achievable" standard that Energy Fuels representatives cited during previous meeting of the Montrose BOCC.

While a 48 hour pumping test may be a common time interval for pump tests where wells are being used for intermittent drawdown which characterize residential use, it is wholly inadequate to establish projected well characteristics for the continuous drawdown of a project of this magnitude and significance for the next 40 years. The wide range of between 100 and 175 gpm exemplifies the inability to accurately characterize the wells. The hydrologic characteristics of the Chinle Formation are that it yields small quantities of water where fractured. This is consistent with Energy Fuels' findings of limited water under the proposed mill and Tailing Cell A. Energy Fuels' explanation that the aquifer is more permeable due to fracturing associated with faulting fails to explain how these wells in the same area can be conveniently adequate or lacking in water. These considerations indicate that the 100 to 175 gpm estimates might be erroneously high. It also raises questions regarding connectivity of the aquifers underlying the Energy Fuels property with other aquifers and with the surface water, through the extensive fracture system.

One important part of the County process has been to reveal that the on-site water supply is inadequate. However, Energy Fuels' response was to arbitrarily reduce the capacity of the mill from 1000 tpd to 500 tpd, with an equally arbitrary 50% reduction in the water requirements. The amended application provides no information to support the premise that a 50% reduction in daily capacity results in a 52% reduction in water use at the various components of the mill and tailings cells. Moreover, there is no current estimate of the quantities of water that will be consumed in keeping the tailings wet and covered with a meter of water until the tailings are capped, as EPA would require if indeed it allows Energy Fuels to use the phased disposal method, which EPA recognized was not the best technology available in 1986. See 51 FR 6382 (February 21, 1986)(comparing control technologies). In 1986, EPA recognized that continuous disposal would reduce Radon-222 emissions from about 700 curies per year for phased disposal to 500 curies per year for continuous disposal. EPA is currently revisiting these radon emission regulations and will examine what would constitute the best current disposal technology. In any event, Energy Fuels proposes to handle tailings using phased disposal, a control

practice which EPA judged as second-best in 1986 and which has been shown to pose additional and serious threats to groundwater.

Energy Fuels has aggressively sought to make deals with adjacent property owners and the town of Naturita to supplement their water need. Energy Fuels acknowledges that pumping could reduce the volume of water recharge into the Dolores River from the Chinle Formation. Naturita's water originates from the San Miguel River. The Division of Wildlife has advised the County Planning Commission that any depletion of surface waters in the Dolores River Basin would have negative consequences on several BLM-designated Sensitive Species of fish, several of which are protected under the Endangered Species Act. The Division of Wildlife specifically requests that the applicant's groundwater source is not connected to surface waters. PVSA submits that these impacts have not been adequately addressed or mitigated as is required by the Montrose County Special Use Criteria.

Energy Fuels states in the April 2009 Addendum to the SUP that it is considering the neutralization and recycling of raffinate from evaporation ponds to supplement water supply. The Air Pollution Emission Notice assumes that only 50% of the ponds are covered with aqueous solution. This plan is inconsistent with the current need to provide complete water coverage to address radon emission issues. The result of removing and recycling 80% of the water in the ponds would seemingly cause a greater portion of the evaporation ponds to be exposed to wind erosion. In this case, the consideration of this process becomes another attempt to supplement an inadequate water supply with measures that negatively affect environment.

In summary, Energy Fuels' estimation of water needed to operate the mill in a manner that minimizes impacts is low, is not based on an identified methodology, and ignores important regulatory requirements. Equally, Energy Fuels' estimation of currently available water is likely high, and even if accurate, fails to recognize foreseeable limitations on water supplies over the next 40 years. The only reasonable projection for the next 40 years is that water will become increasingly scarce. Any stated intentions that Energy Fuels would eventually increase production to 1000 ton/day seem arbitrary and capricious even in the context of water considerations outlined for a facility operated at 500 tpd, but requiring water for management of its air emissions regardless of whether or not the mill was currently processing ore. A deficiency in adequate water supply has caused Energy Fuels to reduce their expected production by one half. Any expectation by Energy Fuels that production could later be increased shows continued lack of foresight, and threatens to result in a facility without access to water required for continuous air quality control requirements.

General Environmental:

PVSA maintains that the many environmental considerations have not been adequately considered. Further, it appears that many environmental issues raised by entities such as the Division of Wildlife, for example, have been ignored. Energy Fuels' brief discussions about cumulative impacts, tailings pile characteristics, and sulfuric acid

smells do not properly characterize the many environmental concerns. A number of studies are yet to be conducted that would more fully investigate the impacts of the proposed mill. PVSA maintains that, other than a decision to deny the SUP, any decision should be delayed until additional information regarding environmental impacts are presented and fully considered.

Health and Safety:

The public comments and comments of other government agencies have raised many serious issues which require careful consideration of health impacts that would result from a uranium mill. However, Energy Fuels' responses are limited to just a few of these many issues. Further, Energy Fuels has narrowed its answers in the public hearings to the radiation exposure of uranium, ignoring the many other toxic materials and exposure pathways. The pattern of redirecting any concerns about radionuclides away from the consequences of inhalation or ingestion, to the amount of background radiation that they would produce, persists. Energy Fuels fails to address any health and safety issues regarding the many tons of chemical pollutants that would be emitted. These include Sulfur Dioxide, Nitrogen Oxides, Kerosene, Ammonia, Sulfuric Acid, and Carbon Monoxide.

Upon inhalation, radon causes severe lung damage from alpha particles. Radium, a significant component of tailings, travels through air and can be inhaled. It produces gamma radiation and decays into radon. Thorium, also a significant component of tailings, produces alpha and gamma radiation, decays into radium and then into radon. Uranium is also readily inhaled in airborne dust and decays into radium, which decays into radon.

Radioactive decay products from the mill are carried in the dust and settle on land and water. Radon travels through water and one of its specific exposure pathways is through contaminated drinking water. Radium travels through water and soil. It is absorbed by plants from soil and it concentrates in aquatic species, which are then ingested. Uranium is mobile enough to leach into and move through ground water, particularly in acidic environments. The acid precipitation produced by the tons of sulfur dioxide and sulfuric acid would facilitate this. Uranium "bioconcentrates" in food crops, livestock, wildlife and fish, and is then ingested.

Design/Tailings cells:

The assurance by Energy Fuels that the plastic liner "does not degrade significantly with long-term exposure to sunlight and cannot be pierced with a ballpoint pen or cracked under normal operating conditions," is in fact no assurance at all to PVSA. The fact is that the liners will degrade over a relatively short time compared to the life of the contaminants that they contain. Energy Fuels has not addressed how it will overcome the unexpected failure of tailings cells, which the DOE has identified in recent years.

Financial:

Regarding the estimated cost to build the mill Energy Fuels states that it, “believes that financing will be available provided uranium is adequately priced.” The World Nuclear Association (WNA) and the International Atomic Energy Agency (IAEA) have determined that no unmet uranium demand can be identified through the year 2020. Denison has stopped processing conventional ore through 2009 because their costs are higher than the price of uranium. There is no reason to assume that financing will be available to Energy Fuels based on demand and price of uranium.

Energy Fuels does not have the market capitalization to finance the construction and purchase of equipment for its proposed mill. Further, Energy Fuels’ estimates do not project the actual cost of the mill if the full cost of financing the mill, including associated interest, is considered.

Socioeconomic:

The socioeconomic considerations are many and should not be limited to assessments that are not comprehensive. For example, the Western Small Miners Association’s analysis is unrealistic in its projections not only because of faulty extrapolations of data, but because it fails to consider that mills and mines have not been shown to be capable of operating profitably in the current uranium market. Energy Fuels claims it, “believes that the (Sonoran Institute) study was biased and self-serving.” It is clear that additional studies are needed to be reviewed with a critical eye for comprehensiveness and lack of bias in order to fully evaluate the socioeconomic impacts of the proposed mill. Any decision other than denial of the SUP should be delayed until the socioeconomic impacts can be fully analyzed.

Tourism/Perception:

There are no apparent benefits that a uranium mill would have on agriculture and tourism. PVSA does not agree that a “stronger infrastructure” due to a uranium mill would benefit tourism. As an example, it is likely that rock climbers would be less interested in climbing in a valley where acid precipitation coats the rocks, regardless of whether or not there was a restaurant that served breakfast during the work week. Both real and perceived impacts can be expected from a uranium mill and a permanent hazardous waste site. PVSA maintains that the placement of a uranium mill in the Paradox Valley would conflict with agriculture and tourism.

General:

Paradox Valley and the West End should be allowed to grow without conflict. The public comment noting that people are unwilling to speak out against the mill because they are afraid is significant. Mill proponents have stated publicly that if opponents don’t like it they can leave. This kind of gang mentality causes division in communities.

Montrose County Commission
September 29, 2009

8

Healthy debate is one thing, but when it comes to a point where people are afraid to speak their mind, it becomes harmful. The welfare of the communities is suffering.

Sincerely,

s/Marie Moore

Marie Moore
President
Paradox Valley Sustainability Association