

**U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641**

DECISION RECORD

PROJECT NAME: Colorado Oil Shale Research, Development, and Demonstration (RD&D) Lease Tracts Project

ENVIRONMENTAL ASSESSMENT NUMBER: DOI-BLM-CO-110-2011-0177-EA

DECISION

It is my decision to recommend the authorized issuance of Oil Shale Research, Development, and Demonstration (RD&D) lease (COC74299), as described in the Proposed Action with specified mitigation of Environmental Assessment (EA), DOI-BLM-CO-110-2012-0177-EA to Natural Soda Holdings Inc. with the mitigation measures listed below. The terms and conditions of the RD&D lease form requires the Lessee to conduct all operations under the lease in compliance with all applicable Federal, State and local statutes, regulations, and standards, including future statutory and regulatory provisions applicable to oil shale. The following terms, conditions, stipulations, and other specified mitigation measures are incorporated in the Proposed Action as outlined in the EA, and are comprised of the Bureau of Land Management (BLM) specifications and guidelines, industry standard measures, and environmental commitments put forth by Natural Soda Holdings Inc. These measures were designed for site-specific and regional mitigation so as to lessen the potential for adverse effects to public lands administered by the BLM White River Field Office (WRFO).

Mitigation Measures

Air Quality and Climate

- Employ dust suppression techniques (i.e., freshwater use) whenever there is a visible dust trail behind service vehicles. Any technique other than the use of freshwater as a dust suppressant on BLM lands will require prior written approval from BLM.
- EPA standard techniques will be used to sample air emissions and utilize an approved outside laboratory to perform the gas analysis.
- Permits and Air Pollution Emission Notices (APEN) will be submitted to the Colorado Department of Public Health and Environment (CDPHE) in accordance with existing regulations.

Geology and Minerals

- The use of Natural Soda's facilities/ponds shall only be for the processing of nahcolite, as approved in Natural Soda Inc.'s approved Mine Plan, during the development of the lease tract.
- All sodium minerals recovered during operations remain the property of the federal government and shall not be disposed of without prior approval from the Authorized Officer.

Soils

- All new infrastructure and well pads on the lease tract will be located on old disturbance to the maximum extent possible to avoid additional disturbances in the project area.
- Salvaged topsoil will be re-spread during interim reclamation on stable cut and fill slopes and other areas. Topsoil will not be stored in piles during the interim reclamation.
- Excess salvaged topsoil will be placed in shallow stockpiles adjacent to construction zones and operational facilities to support and maintain those characteristics of topsoil that will aid in future reclamation and revegetation efforts.
- All new roads and existing access roads will be constructed and maintained according to BLM Manual 9113 standards.
- Gully crossings within lease tract will conform to BLM Manual 9113 standards and be stable without erosion for 10 year storm events and not fail with 25-year storm events.
- An impervious liner with a thickness of at least 24 mils will be required for any secondary containment structures or pits that contain liquids to be installed for new facilities or used for drilling.

Surface and Ground Water

- All storage tanks and roll-off bins located on-site will have secondary containments with capacity sufficient to contain the volume of the largest tank plus sufficient freeboard to contain precipitation, per *Gold Book* recommendations (BLM and USFS 2007). These secondary containments will be checked daily for possible pollutants. Accumulated precipitation within the secondary containments will be removed as necessary.
- Well pad storage tanks will be surrounded by an impermeable secondary containment structure capable of containing 110 percent of the contents of the largest tank.
- In the event of a leak from a storage tank to a secondary containment, the material in the leaky storage tank will be immediately and completely removed from the tank, and the storage tank repaired as soon as possible. The removed material will either be transferred to another on-site storage tank, or transported to an appropriate off-site disposal facility. Material contained within the secondary containments will be disposed of in a like manner.
- Any spill to the ground surface will be immediately remediated and shall be reported immediately to the WRFO. A spill will indefinitely shut down drilling or production operations until the spill has been appropriately remediated.
- Notifications of a spill will be sent to the appropriate local, state and federal regulatory agencies as required by applicable reporting requirement regulations.
- Develop a Stormwater Management Plan (SWMP) that conforms to the requirements established by the Colorado Department of Public Health and Environment (CDPHE) for compliance with Colorado's General Permit for Stormwater Discharges Associated with Construction Activities.
- Aquifers penetrated by all monitor wells will be isolated by competent annular cement seals.
- Use existing wells monitoring aquifers above the Saline Zone. Ground water quality will be analyzed quarterly in the existing monitoring wells. These wells will be analyzed for key constituents including: alkalinity, total dissolved solids, pH, organics, conductivity and VOCs.

- Monitoring activities associated with ground water quality (monitoring wells) will continue for three years after production operations cease.
- Should ground water contamination from the on-lease production activities be noted in the monitoring wells, production will be halted and remediation measures as approved by the Authorized Officer will be taken. Remediation measures may include secondary cement jobs, cement squeeze jobs, casing liners, casing replacement, or plugging and abandonment.

Vegetation

- In preparation for reclamation, all disturbed areas will be graded to slopes consistent with the surrounding area. Grading will also be done in a manner so as to control erosion and siltation of the affected and unaffected lands. Best Management Practices (BMPs) for erosion control measures such as contour furrowing, installing water bars, etc., will be used where necessary to ensure that slope and soil erosion are kept to a minimum. Surface drainage patterns will be re-established to pre-production conditions.
- Where necessary, heavily compacted surfaces will be ripped prior to receiving a topsoil cover from the topsoil stockpiles.
- The seed mix application rates and seeding techniques will be based on reclamation experience in the area and WRFO reclamation guidance, as well as on consideration of local environmental conditions of soil, slopes, elevation, and precipitation.
- For short-term stockpiles or other areas, a BLM approved interim seed mixture will be utilized.
- Any mulching will be with certified weed-free straw or native pasture hay.
- Any noxious weeds that may appear in the reclaimed area will be controlled, as necessary, by chemical and/or mechanical means.
- Successful reclamation of the well site and access road will be considered completed when:
 - reclamation has been performed according to the BLM requirements, and the total cover of live perennial vegetation, excluding noxious weeds, provides sufficient soil erosion control as determined by botanical study and the regulatory agencies through a visual appraisal per BLM monitoring requirements;
 - disturbances resulting from flow line installations have been reclaimed to the extent that they are reasonably capable of supporting the pre-disturbance land use;
 - a notice has been submitted describing the final reclamation procedures and any mitigation measures associated with final reclamation;
 - a final reclamation inspection has been completed by the BLM and there are no outstanding BLM compliance issues.
- Revegetation of the affected portions of the lease tract will be completed during the first fall following production shut-down. The monitoring of revegetation success will continue until bond release.
- A monitoring program will be established to evaluate the success of any reclamation effort. Monitoring will continue until bond release.
- Cut trees with a chain saw and/or mechanical shears and cutting brush with a hydro-axe or similar equipment as close to the ground as possible (six inches or less).
- Leave stumps and root balls in place except in areas requiring topsoiling, or as necessary to create a safe and level workspace.

- Shred or chip brush and salvage with topsoil.
- Salvage and replace topsoil to preserve and replace existing seed banks and return organic matter needed for seed establishment to the soil.
- Restore pre-construction contours, drainage patterns, and topsoil.
- Prepare a seedbed (scarifying, tilling, harrowing, or roughening) prior to seeding where needed to improve revegetation potential.
- Install and maintain erosion control measures until vegetation becomes established sufficiently to stabilize disturbed soils. All materials will be certified weed-free.
- Seeding methods should be drill seeding to ensure proper seed placement (broadcast seeding will be used only in areas where steep slopes make drill seeding impossible, and seeding rates will be doubled). Recommend seeding between September 1 and March 15.
- Complete drill and/or broadcast seeding prior to redistribution of woody material.

Invasive, Non-Native Species

- Provide BLM WRFO with a weed management plan to address treatment from pre-disturbance, the life of the project, and through final abandonment including a summary of methods used to monitor, treat, and report the presence of noxious or undesirable invasive weeds within the project area and surrounding area (i.e., within 200 feet of areas of direct use).
- Revegetate disturbed areas with BLM approved, weed free seed mixes. To reduce the need for repeated bare ground herbicide treatments around facilities, apply alternative methods such as gravel, weed barrier fabric, or low-growing, disturbance-tolerant herbaceous vegetation as approved by the BLM.
- Conduct pre-construction field surveys prior to construction to identify existing noxious weed infestations within the lease tracts.
- Require vehicles and equipment to arrive at the work site clean, power-washed, and free of soil and vegetative debris capable of transporting weed seeds or other propagules.

Special Status Animal Species

- For raptor species, construction or forest clearing activity is prohibited between February 1 and August 15, inclusive, unless a survey indicates that no functional raptor nest sites would be impacted by these activities. No surface occupancy will be allowed within ¼ mile of a goshawk nest (INSO-02 exception and modification criteria apply) or within ⅛ mile of other raptor species nests (NSO-03 exception and modification criteria apply).
- Raptor surveys consistent with the most-current WRFO raptor nest survey protocols will be conducted prior to construction periods during the nesting season. If an active nest is located appropriate WRFO timing stipulations will be applied. A ½-mile timing limitation buffer will be applied to active goshawk nests (TL-01 exception and modification criteria apply) and a ¼-mile timing limitation buffer will be applied to other active raptor nests (TL-04 exception and modification criteria apply).
- Construction or forest clearing activity is prohibited between February 1 and August 15, inclusive, (TL-01 and TL-04 exception and modification criteria apply) in the following area:
 - Township 1 South, Range 98 West
 - Section 35: NW1/4 Lot 3, N1/2 Lot 4.

Migratory Birds

- For all non-raptor migratory birds, ground or vegetation disturbing activity will be avoided to the extent possible during the nesting season (May 15 – July 15).
- To prevent raptor electrocutions when constructing powerlines, provide adequate clearances to accommodate a large bird between energized and/or grounded parts. It is recommended to use 60 inches of horizontal separation and 48 inches of vertical separation. If adequate clearances cannot be accomplished, covering or insulating phases or grounds is recommended. In addition, perch inhibitors may be used where clearances or cover cannot be used.

Terrestrial Wildlife

- Use of reclamation fencing would be required when and where necessary to achieve desired reclamation response (e.g., establishment of desired reclamation components).
- Provide all drivers with information and possible training describing the types of wildlife species in the area that are susceptible to vehicular collisions to reduce the potential for vehicle/big-game or vehicle/raptor collisions. Identify seasonal periods where reduced vehicle speeds would be implemented as a means to reduce potential for vehicle/wildlife collisions.
- Prevent accidental entries or inability of exit of temporary open excavations by wildlife, stock, and public by covering, fencing, sloping or flagging these areas.
- Prevent migratory bird access to facilities that store or are expected to store fluids which may pose a risk to such birds (e.g., drowning, toxicity, compromised insulation). Features that prevent access to such fluids must be in place and functional at all times until such facilities are removed or incapable of storing fluids. All lethal and non-lethal events that involve migratory birds inadvertently gaining access to fluids will be reported to the USFWS Special Agent in Grand Junction, Colorado (970-257-0795).
- Vegetation clearing and high intensity construction operations are not allowed on big game severe winter ranges from January 1 to April 30 on the lease tract. Exceptions and modifications may be granted by the WRFO Field Office Manager consistent with those provisions provided for in the 1997 White River RMP (TL-08 exception and modification criteria).

Cultural Resources

- The operator/holder is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
- If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the AO. The operator/holder will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The operator/holder, under guidance of the BLM, will implement the mitigation in a timely manner. The

process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.

- Pursuant to 43 CFR 10.4(g), the operator/holder must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), the operator/holder must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.
- No new surface disturbance is permitted within:
T 1S, R 98W, 6th P.M.
Section 35 N1/2NW of Lot 3, NENE of Lot 4.

Paleontological Resources

- A paleontological monitor will be present prior to and during any excavation into bedrock of the Uinta Formation, at the direction of the BLM.
- The lessee and the operator are jointly responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
- If any paleontological resources are discovered as a result of operations under this authorization, the lessee, operator or any of their agents must stop work immediately at that site, immediately contact the BLM Paleontology Coordinator, and make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. Work may not resume at that location until approved by the AO. The BLM or designated paleontologist will evaluate the discovery and take action to protect or remove the resource within 10 working days. Within 10 working days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

Visual Resources

- In consultation with the BLM WRFO Visual Resource Specialist, all above ground facilities will be painted a color selected from the BLM Standard Environmental Color Chart CC-001: June 2008 to blend with the surrounding landscape.

Fire Management

- Fire extinguishers will be conveniently located throughout the facility site for accessibility and rapid attack on a fire. Clear access to fire extinguishers will be maintained.
- Fire prevention for the lease will consist of controlling the supply of flammable and combustible materials as well as any possible sources of ignition. Designated smoking areas will be established and equipped with appropriate disposal containers.
- Produced kerogen oil, motor oil, flammable liquids and grease shall be kept in containers provided for them. The containers will be labeled as to their contents.

- Notify Craig Interagency Dispatch (970-826-5037) in the event of any wildland fire within or in the vicinity of the lease. The reporting party will inform the dispatch center of the location of the fire, size, status, smoke color, aspect, fuel type and contact information. The reporting party or a representative will remain nearby, unless otherwise directed, in order to make contact with incoming fire resources to expedite actions taken towards an appropriate management response.
- The applicant and contractors will not engage in any fire suppression activities outside the approved project area. Accidental ignitions caused by welding, cutting, grinding, etc. will be suppressed by the applicant only if employee safety is not compromised and if the fire can be safely contained using hand tools and portable hand pumps. If chemical fire extinguishers are used, the applicant will notify incoming fire resources of the extinguisher type and the location of use.

Forest Management

- All trees removed in the process of construction shall be purchased from the BLM. Prior to any surface disturbing activities, the operator must purchase and obtain a commercial vegetative materials removal permit from the WRFO-BLM. Once it is known where the infrastructure will be constructed, the amount of cords per acre to be removed must be determined and WRFO must be notified. This volume will be used to charge the applicant for the vegetative materials removed. Trees should first be used in reclamation efforts and then any excess material made available for firewood or other uses.
- Woody material smaller than 4 inches in diameter will be chipped and stockpiled for later use in reclamation. Woods chips can be incorporated into the topsoil layer to add an organic component to the soil to aid in reclamation success.
- Woody materials, not used for woods chips, required for reclamation shall be removed in whole with limbs intact and shall be stockpiled along the margins of the authorized use area separate from the topsoil piles. Once the disturbance has been recontoured and reseeded, stockpiled woody material shall be scattered across the reclaimed area where the material originated. Redistribution of woody debris will not exceed 20-30 percent ground cover. Limbed material shall be scattered across reclaimed areas in a manner that avoids the development of a mulch layer that suppresses growth or reproduction of desirable vegetation. Woody material will be distributed in such a way to avoid large concentrations of heavy fuels and to effectively deter vehicle use.
- Trees that must be removed for construction and are not required for reclamation shall be cut down to a stump height of 6 inches or less prior to other heavy equipment operation. These trees shall be cut in four foot lengths (down to 4 inches diameter) and placed in manageable stacks immediately adjacent to a public road to facilitate removal for company use or removal by the public.

Rangeland Management

- Project proponents must repair or replace to BLM specifications any livestock control facilities and/or rangeland improvements (e.g., fences, waterlines ponds, water tanks, etc.) impacted during this operation. Measures will be taken to maintain the function of these projects throughout construction and the life of these projects (i.e., temporary fences during specific construction activities to prevent livestock drift between pastures until permanent fences can be reconstructed).

Realty Authorizations

- If installation of linear facilities results in crossing existing federal rights-of-way (ROWs), the applicant will coordinate activities with the ROW holder(s).
- ROW application(s) will be submitted for any off-lease facilities and/or access roads.

Best Management Practice

- Minimize vegetation removal to the extent necessary to allow for safe and efficient construction activities.

COMPLIANCE WITH LAWS & CONFORMANCE WITH THE LAND USE PLAN

This decision is in compliance with the Endangered Species Act, and the National Historic Preservation Act. It is also in conformance with the 1997 White River Record of Decision/Approved Resource Management Plan.

ENVIRONMENTAL ANALYSIS AND FINDING OF NO SIGNIFICANT IMPACT

Based on the analysis of potential environmental impacts contained in the referenced environmental assessment (EA), and considering the significance criteria in 40 CFR 1508.27, a Finding of No Significant Impact (FONSI) was prepared. The Proposed Action with mitigation will not have a significant effect on the human environment. Therefore, preparation of an environmental impact statement is not necessary. This finding is based on the context and intensity of the alternatives as detailed in the FONSI.

PUBLIC INVOLVEMENT

The proponents' plans of operations were available and posted on the on the White River Field Office website on April 18 starting a 30 day scoping period that ended May 17, 2011. During the scoping period two informational public open houses provided the opportunity for questions and answer on specific project proposals were conducted on April 27 and 28, 2011, in Rifle and Meeker, Colorado, respectively. The preliminary Environmental Assessment was posted for 30 day comment period beginning May18, 2012 and ended June 16, 2012. A total of six comment letters were received from the following: Colorado Parks and Wildlife (CPW), Colorado Department of Public Health and Environment (CPDHE), Garfield County, Western Resources Advocates (WRA) (also represented Colorado Environmental Coalition, EcoFlight, National Wildlife Foundation, Natural Defense Council, Sierra Club, The Wilderness Society, Western Colorado Congress, and Wilderness Workshop), one individual and the National Oil Shale Association. These were summarized into approximately 50 comments concerned with air, water, greenhouse gasses, fracking, wildlife, need for second round RDD, and commercial development. Appendix F contains BLM's response to comments.

RATIONALE

The EA evaluated a Proposed Action, a Proposed Action with Mitigation (specified), and a No Action Alternatives for the proposed lease tract. The Proposed Action with specified mitigation is the preferred alternative and is recommended to ensure that impacts to health and human environment are reduced or minimized to insignificant levels. The Proposed Action with specified mitigation incorporates all practicable means to avoid or minimize impacts to health and the human environment.

The No Action Alternative was not selected because it would not fulfill the purpose, need and requirements of the RD&D program, or Congressional intent declared in the Energy Policy Act of 2005.

The decision to grant an Oil Shale Research, Development, and Demonstration lease to Natural Soda Holdings Inc. has been made in consideration of the factors described above. The Proposed Action with specified mitigation represents an opportunity to develop domestic energy sources and to inform and advance knowledge of commercially viable production, development and recovery technologies consistent with sound environmental management. It also will provide a basis for informed future decisions about whether and when to move forward with commercial scale development and allow for the assessments of its impacts on the environment.

Analysis of the Proposed Action with specified mitigation has concluded that there are no significant negative impacts and that it meets Colorado Standards for Public Land Health.

ADMINISTRATIVE REMEDIES

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 Code of Federal Regulation (CFR), Part 4.400 and Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from date of publication this decision. The appellant has the burden of showing that the Decision appealed from is in error. If you wish to file a petition for a stay of the effectiveness of this Decision during the time that your appeal is being reviewed by the Board, the petition for stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. A copy of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals (IBLA) and to the appropriate Office of the Solicitor (see 43 CFR4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for obtaining a stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied;
2. The likelihood of the appellant's success of the merits;
3. The likelihood of immediate and irreparable harm if the stay is not granted, and;
4. Whether the public interest favors granting the stay.

SIGNATURE OF AUTHORIZED OFFICIAL:


Field Manager

DATE SIGNED: 8/30/12