CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Cut Bank 3D Survey
Proposed Implementation Date:	September 2017
Proponent:	Rock Creek Oil, Inc. 2100 McKinney Ave. #1550 Dallas, TX 75201
Location:	Section 16 – T32N-R5W (Common School Trust)
County:	Glacier

I. TYPE AND PURPOSE OF ACTION

Rock Creek Oil, Inc. (henceforth referred to as the proponent) has requested to conduct a seismic survey on the state trust land listed above. Please see attached map for state trust land location and entire project area. This project would utilize heavy vibration equipment and seismic detecting equipment for the purpose of oil and gas exploration. The proponents plan would include 13 source lines and 11 receiver lines on state trust land. Source lines would run north-south, approximately 400 feet apart, with heavy vibration equipment traffic. Receiver lines with geophones would run east-west, approximately 330 feet apart, with small UTV vehicle and foot traffic. The proponent would use shot holes in steep terrain where heavy vibration vehicles cannot travel (slopes greater than 15%); however no shot holes would be approved on state trust lands.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:
Provide a brief chronology of the scoping and ongoing involvement for this project.

State of Montana Department of Natural Resources and Conservation – Seismic Exploration Permit for Oil and Gas application submitted with fee. Conrad Unit Land Use Specialist, Tony Nickol, and Minerals Resource Specialist, Heidi Crum, completed a site visit on August 9, 2017. Currently, there is no surface lessee on this tract; no surface damages settlements will be required.

Matt Kempfert, Baseline Minerals Inc. – Agent for proponent
Marvin Kimmett – Local landman for project
Paragon Geophysical Services, Inc. – Seismic survey

Bureau of Land Management – Seismic Permit
Glacier County – Notice of Intent to Engage in Geophysical Exploration
Secretary of State – Geophysical Surety Bond

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Bureau of Land Management – Seismic Permit

3. ALTERNATIVES CONSIDERED:

No Action Alternative: The proposed seismic exploration project will not occur. Current non-motorized recreational use and grazing leasing would continue.

Action Alternative: Rock Creek Oil, Inc. will have permission to conduct seismic exploration using heavy vibration equipment and seismic detecting equipment for oil and gas in T32N-R5W-Section 16.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:
Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

All of Section 16 consists of the Two Medicine Formation of the Upper Cretaceous period that can be up to 2,200 feet thick. This formation contains various colors of mudstone with sandstone. Sandstone beds are fine to medium grained and can vary from very thin to 165 feet thick. Fossils may be found in the upper 490 feet of this formation. Coal beds may be found approximately 250 feet above the base. Outcrops may occur in this formation creating badlands. During the site visit, DNRC staff did find some badlands and slopes greater than 15% that would be difficult for heavy vibration equipment to cross, and could cause soil and vegetation degradation and erosion. Source lines would need to be rerouted around these areas. DNRC staff would install lath and/or other flagging at sites where heavy vibration equipment will need to stop vibrations and reroute the source line.

Soil compositions in Section 16 consist of loam, steep outcroppings, clay loam and clay. Web soil survey indicates these soils have slight to moderate erosion hazards, with approximately 15 acres in the section having severe erosion hazards. The soils in this section all have slight to moderate susceptibility to degradation, and low soil compaction resistance. Approximately 460 acres of this section have an excellent rating for the ability to withstand heavy traffic when conditions are dry, while 227 acres have a poor rating for this description.

Some soil disturbance may take place through the use of heavy vibration equipment. Major disturbance can be mitigated through the exclusion of heavy equipment on some areas of trust land in which the soils are excessively compactable or fragile. Heavy equipment will not be allowed into any wetlands, sub-irrigated sites, rivers, streams, springs, reservoirs, or ponds on the project. Some soil compaction may take place in areas where heavy equipment will be operated.

Standard stipulations include no vehicle operation during wet or muddy conditions, no seismic testing on slopes greater than 15%, and no seismic testing in wetlands, coulees, or waterways. The proponent and seismic contractor agree to restore any disturbed soil from seismic activities.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:
Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

There is one water feature on the state trust land section that would need to be avoided by source lines on this survey. A reservoir dam is located in NW¼SE¼ of the section, and would have a 660 foot setback. This setback is determined by the Montana Board of Oil & Gas Conservation (BOGC).

A search on the Ground Water Information Center (GWIC) data base found 20 wells in this section. However, only one of these wells has any documentation. The documented site was an industrial well that is 3401 feet deep, yields 152 gallons per minute, with a static water level is 1300 feet deep. During the site visit, DNRC staff could not locate this well. There are old pad sites near the GWIC location of this well, but no wellheads are present. This well may have been plugged and abandoned, and the information not updated with GWIC.

A search on the BOGC data base found 18 oil and gas related wells on this section, all of which are plugged and abandoned. One of those wells was used as an industrial water source, was drilled to 2825 feet, and plugged and abandoned in 1974. Seven of those wells were injection wells used for enhanced oil recovery and drilled to approximately 3000 feet deep.

Records from GWIC and BOGC indicate the depth to the water table in this section could be over 1000 feet from the surface.

There are three ephemeral drainages on this section. In order to minimize damage to the surface, seismic crews would need to move equipment up or down the drainage and cross where the drainage is dry and where the side slopes are not steep. The areas where heavy vibration equipment is not permitted to cross will be marked by DNRC staff.

Water quality would be maintained by excluding access to any area where ground or surface water could potentially be disturbed. All equipment would be kept out of all surface water, wetlands, sub-irrigated ground or any area where water quality, quantity or distribution could be affected.

6. AIR QUALITY:
What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

Pollutants and particulates may be increased during the project as a result of dust from vehicles traveling along the seismic lines. After the completion of the project pollutant and particulate levels should return to normal.

7. VEGETATION COVER, QUANTITY AND QUALITY:
What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

The seismic source and receiver lines would cross grasslands with mixed grass prairie, which cover the entire section. Vegetative communities may be temporarily affected by this project. The use of heavy equipment has the potential to damage some areas of the plant community. This may come from the vegetation being compacted by heavy equipment, and should recover quickly. Damage to the plant community should be less at this time of year since most native species have produced seed, and vibration equipment would only be allowed to travel during dry and/or frozen conditions.

Vegetative species found on the site include; green needlegrass, needle & thread, blue grama, Sandberg bluegrass, fringed sagewort, broom snakeweed, prickly pear cactus, silver sagebrush, crested wheatgrass and cheatgrass.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

There may be minimal disruption to wildlife in the area. The scale and length of the project should not be enough to permanently disrupt wildlife species. Species in the area include antelope, whitetail deer, mule deer, raptors and other birds, various rodents, rabbits, reptiles and others.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

A search was conducted using the Montana Natural Heritage Program database to identify point observations of species of concern in the section of the proposed activity. Golden Eagle nesting areas have been documented near Cut Bank Creek, to the west of Section 16. The US Fish & Wildlife Service gives this species a 3,000 meter buffer zone from nesting areas which includes most of Section 16. The seismic survey would have short term, limited impacts to this species during the survey. No other species of concern have been documented in this section. The survey is scheduled to occur September-October 2017, weather permitting. Wet and muddy conditions could delay the project until the ground is frozen or dry enough for heavy vibration equipment traffic.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

TLMS search indicated that there are no cultural/paleontological resources documented on this section. The DNRC archaeologist, Patrick Rennie, has been informed of seismic surveys occurring throughout this region and does not have any cultural resource concerns with this type of seismic exploration as long as the operations are restricted to dry or frozen soil conditions.

The proponent will be required by the Standard Special Stipulations to avoid and report any historical, archeological, and paleontological resources encountered in the project area as well to conduct seismic activities only during dry and frozen conditions.

No damage to the cultural resources are expected in either alternative.

11. AESTHETICS:
Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

Very little impact should be noticed aesthetically in the scope of this project. This is a rural location with few homesteads in the entire project area. There should be minimal lasting effects on the landscape from this project. The project would be short term and the seismic crew would reclaim any sites that show disturbance.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

None

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:
List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

None.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project.

Dry conditions of this year pose a potential fire threat from equipment driving over vegetation. All vehicles will be required to be equipped with fire extinguishers. No other human and health safety risks were identified as a result of the proposed project other than the typical occupational hazards that coincide with seismic survey operations.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

The local economy (motels, restaurants, etc.) will temporarily benefit from this project. This project will not add to or deter from other industrial, agricultural, or commercial activities in this area.

This proposed oil and gas exploration project could lead to increased oil and gas drilling activity in the area. There is a potential for increased industrial activity associated with oil and gas production in this area.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:
Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

The proposed project would not create, move, or eliminate jobs.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

No impact.

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services.

No impact.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:
List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

No impact.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

No impact.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

No impact.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

No impact.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

No impact.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

The Seismic Exploration Permit includes a $50.00 application fee and a $1,300 ($100/mile of source line) permit fee. The previous grazing lease on the State Section listed above provided approximately $2,349, and the future grazing lease would provide the same amount, the existing oil and gas lease provides $960 in rental fees, in annual revenue from Section 16 that goes to Common Schools. If wells are drilled and oil is extracted from state land, the amount of royalties would benefit Common Schools.

EA Checklist Prepared By:	**Name:** Heidi Crum	**Date:** Aug. 14, 2017
	Title: Mineral Resource Specialist	

V. FINDING

25. ALTERNATIVE SELECTED:

After reviewing the Environmental Assessment, I have selected the Action Alternative, to issue a new seismic permit. I believe this alternative can be implemented in a manner that is consistent with the long-term sustainable natural resource management of the area and generate revenue for the common school trust.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

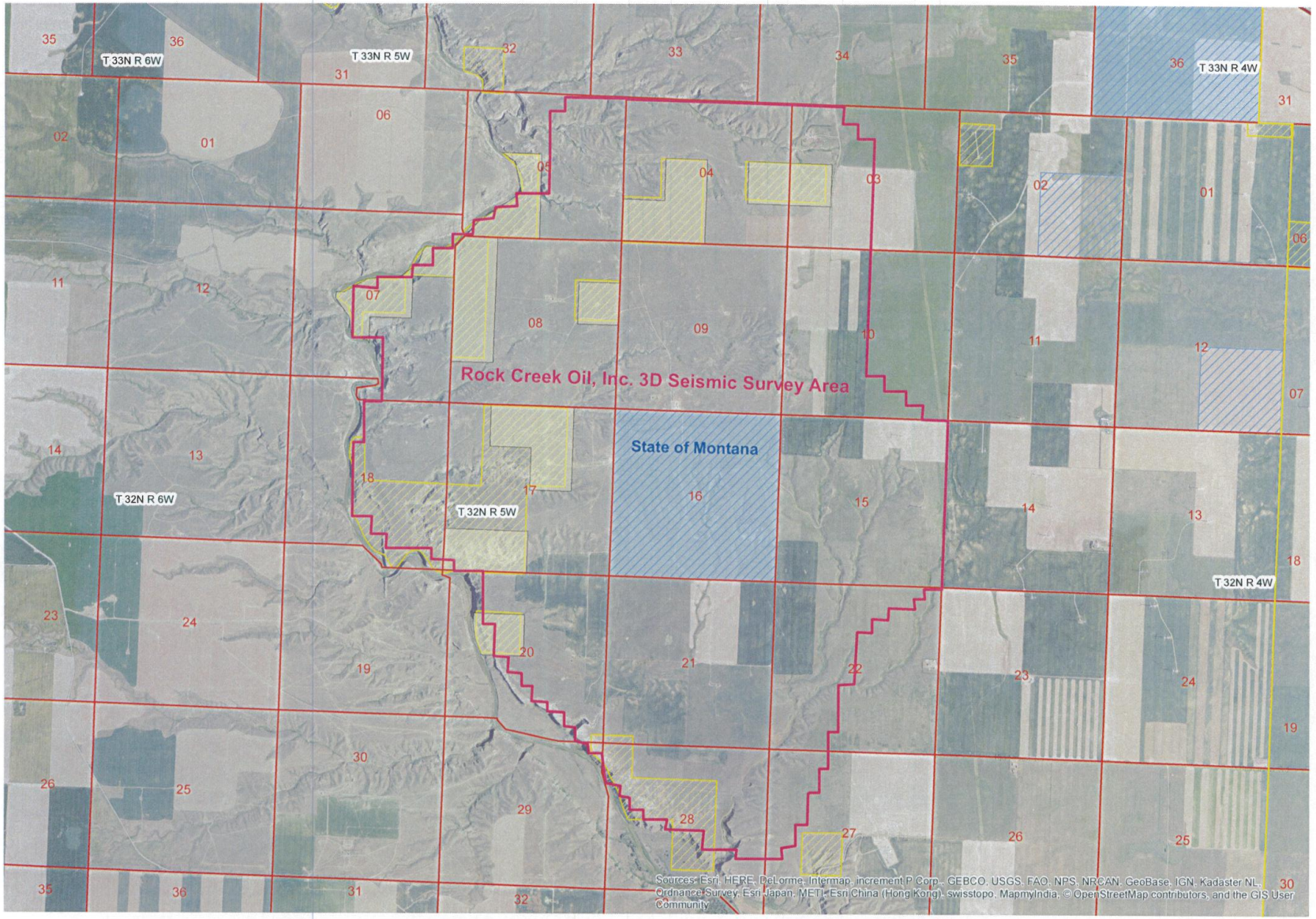
I conclude all identified potential impacts will be mitigated by utilizing the stipulations listed below and no significant impacts will occur as a result of implementing the selected alternative.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

[ ]	EIS	[ ]	More Detailed EA	[X]	No Further Analysis

EA Checklist Approved By:	**Name:** Erik Eneboe
	Title: Conrad Unit Manager

Signature:  **Date**: August 29, 2017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Rock Creek Oil, Inc. 3D Seismic Survey Area
State of Montana
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community