

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Proposed St. Croix Seismic, Marias River 3D Seismic Project, Permit #1563
Proposed Implementation Date:	Summer 2011
Proponent:	St. Croix Seismic LLC, C/O Mark Kinghorn, on behalf of LXL Consulting, LTD. 4335 Johnny Creek Road, Pocatello, ID 83304
Location:	See below list of tracts
County:	Pondera County
Trust:	Common Schools (CS), see below list of tracts.

I. TYPE AND PURPOSE OF ACTION

St. Croix Seismic LLC on behalf of LXL Consulting LTD has applied for a seismic permit for Primary Petroleum LLC of 200, 744 4th Avenue SW, Calgary, AB T2P3T4. CGG Veritas Land Company will be performing the on the ground seismic operations. The proponent has requested a seismic permit to explore for natural gas and/or oil deposits on the tracts (listed below) of State Land in Pondera County Montana. The 3D seismic proposal will use vibro trucks (vibrosis) to generate source.

Marias River 3D SEISMIC PROJECT

Township	Range	Section	Portion	State Surface	Private Surface	State Oil&Gas	Private Oil&Gas	Trust
28N	4W	4	Lots 1-4, SE4NW4, SW4NE4, SW4SE4, S2SW4	509.43		509.43		CS
28N	4W	5	Lots 3, 4	156.05		156.05		CS
28N	4W	6	Lots 1-4		310.31	310.31		CS
28N	4W	16	All	480.00	160.00	640.00		CS
29N	4W	31	Lots 3, 4, SE4, E2SW4		319.94	319.94		CS
29N	4W	32	S2	160.00	160.00	320.00		CS
29N	4W	33	S2	320.00		320.00		CS
TOTALS				1625.48	950.25	2575.73	0.00	CS

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

- St. Croix Seismic (Mark Kinghorn) - Proponent
- DNRC-Surface and Mineral Owner
- Montana Board of Oil and Gas Conservation
- Stephen Hutton and Lisa Schmidt-Surface Lessee
- Tom and John Peterson-Surface Lessee
- Ronald Warwick-Surface Lessee
- Donald and Debra Mecham-Surface Lessee
- Ralph and Anna Lindberg-Surface Lessee
- Zone Exploration Inc.-Oil and Gas Lessee
- Altamont Oil and Gas Inc.-Oil and Gas Lessee
- Brave River Production LLC-Oil and Gas Lessee

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

The DNRC Trust Land Management Division and Minerals Management Bureau has jurisdiction over this proposed project on State surface and mineral ownership. A County permit and proof of qualification to conduct business in the State of Montana will also be required.

DNRC is not aware of any other agencies with jurisdiction or other permits needed to complete this project

3. ALTERNATIVES CONSIDERED:

Alternative A (No Action) – Deny St. Croix Seismic permission to conduct the 3D seismic survey.

Alternative B (the Proposed action) –Grant St. Croix Seismic permission to conduct the 3D seismic survey using the Conrad Unit Office’s recommendations to minimize adverse environmental impacts.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

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| <ul style="list-style-type: none">• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i>• <i>Enter “NONE” If no impacts are identified or the resource is not present.</i> |
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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.

The soils within the proposed project areas are silty, sandy, dense clays, clays, thin hilly and rough breaks. The terrain of the Marias River 3D project is mostly rolling hills, brush filled coulees, and draws consisting of mainly native rangeland with a very small amount of agricultural land which is all currently enrolled in CRP. The proposed action may cause localized areas of soil erosion and compaction from the manipulation of vehicles and equipment on the surface. The proposed seismic project work may only be done when the topsoil is dry or frozen to minimize soil erosion and compaction. The proposed action will temporarily disturb a small portion of the landscape. Any impacts to the soil are expected to be minor, and temporary.

Standard Special Stipulations including no vehicle operation during wet or muddy conditions, no seismic testing on slopes greater than 25%, and no seismic testing in wet zones, which will minimize any impacts.

No cumulative effects to the soils are anticipated.

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 are numerous documented and/or recorded water rights associated with the proposed project areas. There are also numerous reservoirs, pits, wells, and springs in the proposed project areas. The proponent will be required by the Standard Special Stipulations to stay 300 feet from springs, water wells, streams, lakes, or water storage reservoir facilities while conducting vibratory operations. No drilling or blasting operations are planned for this project. The Dry Fork of the Marias River touches the North edge of Section 31, T29N, R4W, and numerous brushy coulees cut the tracts in the proposed project area. Standard Special Stipulations Attachment “A” requires no seismic activity within 100 feet of woody draws. This requirement will limit the damage to these areas.

No important surface or groundwater resources will be impacted by the proposed project by utilizing the above Standard Special Stipulations.

Other water quality and/or quantity issues will not be impacted by the proposed action.

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.

The proposed seismic project will not consist of any disturbance to soils, so no cumulative effects to air quality are anticipated.

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 vegetation within the proposed project area consists primarily of native rangeland grasses, forbs, and shrubs with a small amount of agricultural land that is enrolled in CRP. Woody draws and riparian areas will be avoided. The vegetation along the proposed seismic routes will be minimally impacted. Restricting the vibroseis and vehicle activity to only frozen and/or dry conditions will minimize any impacts to the vegetation. Vehicle traffic will flatten some standing, native and tame vegetation. Compacted (trampled) vegetation is expected to recover quickly and naturally.

A review of Natural Heritage data through the NRIS was conducted and there were no plant species of concern noted or potential species of concern noted on the NRIS survey.

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.

The areas are not considered critical wildlife habitat. However, these tracts provide habitat for a variety of big game species (mule deer, whitetail deer, and pronghorn antelope), predators (coyote, fox, and badger), upland game birds (ring neck pheasant, sharp tail grouse, Hungarian partridge), other non-game mammals, raptors and various songbirds. The proposal does not include any land use change which would yield changes to the wildlife habitat. The proposed action will not impact wildlife forage, cover, or traveling corridors. Nor will this action change the juxtaposition of wildlife forage, water, or hiding and thermal cover. Wildlife usage is expected to return to "normal" (pre-action usage) following the seismic operations. Physical ground disturbing activities are not planned. The project will be completed after primary nesting season of birds are complete. The proposed action will not have long-term negative effects on existing wildlife species and/or wildlife habitat.

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.

There are no threatened or endangered species, sensitive habitat types, or other species of special concern associated with the proposed project area. At this time, no known unique, endangered, fragile or limited environmental resources have been identified within the proposed project area. Physical ground disturbing activities are not planned. The project will be completed after primary nesting season of birds are complete.

A review of Natural Heritage data through the NRIS was conducted for T28N, R4W. There were two animal species of concern and three potential species of concern noted on the NRIS survey: Birds-Burrowing Owl and Ferruginous Hawk. Mammals-Hayden's Shrew. Fish-Brook Stickleback and Brassy Minnow. These particular tracts of agricultural and grazing land do not contain many, if any of these species. If any are present, they will be dispersed into the surrounding permanent cover and return to the project area once it is completed.

A review of Natural Heritage data through the NRIS was conducted for T29N, R4W. There were two animal species of concern and three potential species of concern noted on the NRIS survey: Birds—Ferruginous Hawk and Great Blue Heron. Fish-Brook Stickleback, Brassy Minnow, and Burbot. These particular tracts of grazing land do not contain many, if any of these species. If any are present, they will be dispersed into the surrounding permanent cover and return to the project area once it is completed.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine effects to historical, archaeological or paleontological resources.

A review of previous field evaluations as well as on site inspections indicated the presence of numerous stone circles and rock cairns on Section 4 and 5, T28N, R4W and Section 32 and 33, T29N, R4W. This type of seismic activity has very low impacts to historical, archaeological, and paleontological resources. 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.

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.

During seismic operations, a variety of vehicles, including ATVS, pickups, buggies, and large vibroseis trucks will be seen and possibly heard by people in the vicinity of the operations. The survey vehicles and equipment will only be visible during the seismic operation and therefore no long term affects to the aesthetics of this area will occur.

The state land does not provide any unique scenic qualities not also provided on adjacent private lands. The proposed activity will be conducted in a remote area, so there would be no change to the aesthetics in either alternative.

No direct or cumulative effects to aesthetics are anticipated.

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.

The demand on environmental resources such as land, water, air, or energy will not be affected by the proposed action. The proposed action will not consume resources that are limited in the area. There are no other projects in the area that will affect the proposed project.

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.

There are no other projects or plans being considered on the tracts listed on this EA.

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.

There will be some health and safety concerns associated with the operation of heavy seismic equipment in remote areas during the summer. The proponent and their employees are aware of any health and safety hazards and accept them as occupational hazards.

Once the survey has been completed, there will be no health and safety concerns associated with this project.

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 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 activity will create a limited number of jobs. These positions are already held by employees of the proponent. No new jobs will be created.

No cumulative effects to the employment market are anticipated.

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.

This seismic project will temporarily increase the tax base or tax revenues through payroll taxes and vehicle registrations.

There are no other direct or cumulative effects to taxes or revenue for the proposed project.

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

There will be a temporary increase in local traffic if this project is approved, but the traffic levels will return to normal, "pre-action", levels once the project is completed.

There will be no direct or cumulative effects on government services.

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.

The proposed action is in compliance with State and County laws. No other management plans are in effect for the area.

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.

The tracts of state land are rural and generally have low recreational value. The majority of the tracts are legally accessible and the proposed action is not expected to impact general recreational and wilderness activities on the state tracts.

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

The proposal does not include any changes to housing or developments.

No direct or cumulative effects to population or housing are anticipated.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

There are no native, unique or traditional lifestyles or communities in the vicinity that would be impacted by the proposal.

23. CULTURAL UNIQUENESS AND DIVERSITY:

How would the action affect any unique quality of the area?

The proposed action will not impact the cultural uniqueness or diversity of the area.

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 Settlement of Damages returns approximately \$5/acre to the Common Schools Trust for seismic exploration on these tracts. The Marias River 3D project will traverse approximately 1,625.48 Common Schools surface acres for a total of \$8,127.40. Of this \$5/acre Settlement of Damages, \$1.00/acre will be given to the surface lessees for a total of \$1,625.48. The total revenue generated after the \$1.00/acre deduction will be \$6,501.92 for Common Schools. There is also potential for the proposed project to locate extractable gas and/or oil resources on state land.

The development of gas and oil resources would generate additional revenue to the trusts.

EA Checklist Prepared By:	Name: Tony Nickol	Date: July 18, 2011
	Title: Land Use Specialist, Conrad Unit, Central Land Office	

V. FINDING

25. ALTERNATIVE SELECTED:

Alternative B (the Proposed action) –Grant St. Croix Seismic permission to conduct the 3D seismic survey using the Conrad Unit Office’s recommendations to minimize adverse environmental impacts.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Significant impacts are not anticipated to occur as a result of issuing this seismic permit. Seismic testing practices are well established, common practices which have demonstrated to result in little long term impact. There are no critical or unique habitats within the project area and stipulations within the seismic permit and on attachment “A” will address immediate resource concerns.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

EIS More Detailed EA No Further Analysis

EA Checklist Approved By:	Name: Erik Eneboe Title: Area Manager, CLO, DNRC
Signature: 	Date: July 18, 2011

