CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	PRISEM Geoscience Consulting – **Jefferson County Geologic Core Hole**
Proposed Implementation Date:	June-July 2015
Proponent:	PRISEM Geoscience Consulting, 823 W. 25th Ave. Spokane, WA 99203 Ph: 509-459-1300
Location:	Section 36 – T2N-R1W (Common School Trust)
County:	Jefferson

I. TYPE AND PURPOSE OF ACTION

The proponent has applied to the DNRC for a Land Use License in order to conduct geological drilling for 1 core hole approximately 150' in depth and to use a two track road on the state section for access to a core hole located on private land. Upon drilling the core hole, the well will be logged, and then plugged. Drilling is estimated to take 2-4 days. Water will be pumped to the drilling location through a water hose from the base of the hill. A small 5'x6'x6' pit is proposed to be used to recirculate drilling water and to hold cuttings. The pit will be lined with bentonite and once drilling is completed, the mud will be pumped from the pit and disposed of off-site and the cuttings will be backfilled in the pit. Only necessary motorized vehicles would be allowed to access the drilling site off of the existing two-track roads, provided the most direct route is utilized. The access road will be improved so that vehicles can safely travel to the core hole location. Some small trees that have grown within the existing road will need to be removed during the road improvement process. Two vehicles would be required at the drill site: a pick-up truck and a rubber-track drilling vehicle. A slim-hole logging truck is proposed to be used to log the hole. An additional truck will also be present during the well logging operation. The State land involved includes Section 36 of T2N-R1W, (Common School Trust) in Jefferson County.

II. PROJECT DEVELOPMENT

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

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

MMB Petroleum Engineer, Trevor Taylor, and Geologist, Teresa Kinley, conducted a field review in May 2015 of the core hole location and access route. Scoping was performed by contacting the surface lessee, researching the Montana Natural Heritage Program, and consulting Patrick Rennie, Montana DNRC Archaeologist.

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

NA.

3. ALTERNATIVES CONSIDERED:

No Action Alternative: The proposed Land Use License would not be granted. Current non-motorized recreational use and grazing leasing would continue.

Action Alternative: The Land Use License would be granted to PRISEM Consulting to conduct drilling, logging, and plugging of the core hole. Current non-motorized recreational use and grazing activities would continue.

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.

Section 36
The proposed drill site is located on less than 50 feet of alluvium consisting of well sorted gravel. The access road will cross the Lodgepole Limestone (Mississipian) and other alluvial formations.

Soil types on this site include silt loam, loam, stony and complex soils. The soils at the drill site and where the roads are located for this project are susceptible to degradation, and vehicles traveling in this area after a significant precipitation event could degrade the site. However, soil restoration potential is high.

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.

Milligan Creek is located ½ mile downhill from the proposed drill site. The USGS map shows this stream as perennial flowing.

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.

A short duration increase in airborne pollutants and particulates would occur from machinery during proposed drilling activities. Minimal short term impacts to air quality are expected.

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 proposed drill site and access roads are on Montane Grasslands. Some vegetative disturbance would occur from the proposed action. The proposed exploration hole is located approximately 150 feet off of an existing two-track road. Total ground disturbance for the core hole location would

amount to less than ½ acre of affected vegetation that would be exposed to four rubber-tired vehicles for ingress and egress to the drill sites. All motorized vehicle use would occur only during dry soil conditions. Mitigation of any impacts on vegetation are as follows: The proponent will repair any soil damage and seed any disturbed areas with native grass seed, the composition of the mix shall be approved by the Central Land Office prior to seed application. Proponent will monitor sites and control weeds for a period of two years after drilling. No significant impacts are expected to occur from the proposed activity.

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.

A variety of big game, small mammals, raptors, and songbirds use this area and activities from the proposed project could temporarily disrupt wildlife movement and patterns. Due to the limited disturbance area exposed to proposed project activities off of existing roads, most nesting and calving activities should not be affected; minimal impacts are anticipated.

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 within one mile of the proposed activity. A Sage Thrasher and a Clark's Nutcracker were documented ½ mile south of the drill site within 10 years ago. Also documented ½ mile to the northwest of the drill site over the past 10 years were a Golden Eagle, Pinyon Jay and Clark's Nutcracker. General Sage Grouse habitat is located 0.7 miles to the northwest of the proposed drill location on Section 26, although no leks were identified a several mile radius.

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

A field evaluation was conducted by DNRC Engineer Trevor Taylor and Geologist Teresa Kinely in which no identifiable historical or archaeological items were found to be at, or near the location of the proposed core hole. DNRC Archaeologist, Patrick Rennie was also consulted regarding the nature of the proposed action and the potential to impact historical and archaeological resources.

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.

Proposed core drill hole location is a relatively sparsely populated area and far away from highways. The drill location is 0.7 miles north of a county road (Milligan Canyon Road) and will be visible to the limited traffic that utilizes it. Due to the short term nature of the activity at each site, minimal aesthetic impacts are expected. Drilling will only occur during day time hours and some noise is expected during the operation.

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 proposed project will have a minimal impact on the land (less than 1/50 acre), will use an insignificant amount of water for drilling the core holes, and will temporarily affect the air quality due to airborne dust particles resulting from a road improvements and a maximum of two vehicles traveling to and from the core hole location at a time. No cumulative effects to environmental resources have been identified as a result of drilling the proposed core holes.

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.

No other environmental documents were found that pertain to Sections 36 in T2N-R1W.

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.

No human and health safety risks were identified as a result of the proposed project other than the typical occupational hazards that coincide with drilling operations.

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

The proposed project is not expected to alter current or future industrial, commercial, and agricultural activities and production.

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.

None.

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.

None.

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 known zoning or management plans exist for this 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.

Legal access does exist to the State section 36 upon which the core hole is proposed to be drilled. No wilderness areas exist on or near any of the drill sites.

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.

None.

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

None.

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

None.

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 proponent has provided $25 for a Land Use License application fee, would provide a one-time rental fee of $850 ($150/core hole+$100/mud pit+$400 access road+$200/access road to off-site core hole) for the land use license and would pay an additional $2,000 reclamation bond. The existing grazing leases on the State Sections listed above provide approximately $1,052 in annual revenue from Section 36 that goes to Common Schools.

EA Checklist Prepared By:	**Name:**	Trevor E. Taylor	**Date:**	06-18-15
	Title:	MMB Petroleum Engineer		

V. FINDING

25. ALTERNATIVE SELECTED:

After reviewing the Environmental Assessment, I have selected the Action Alternative, to issue a Land Use License. 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.

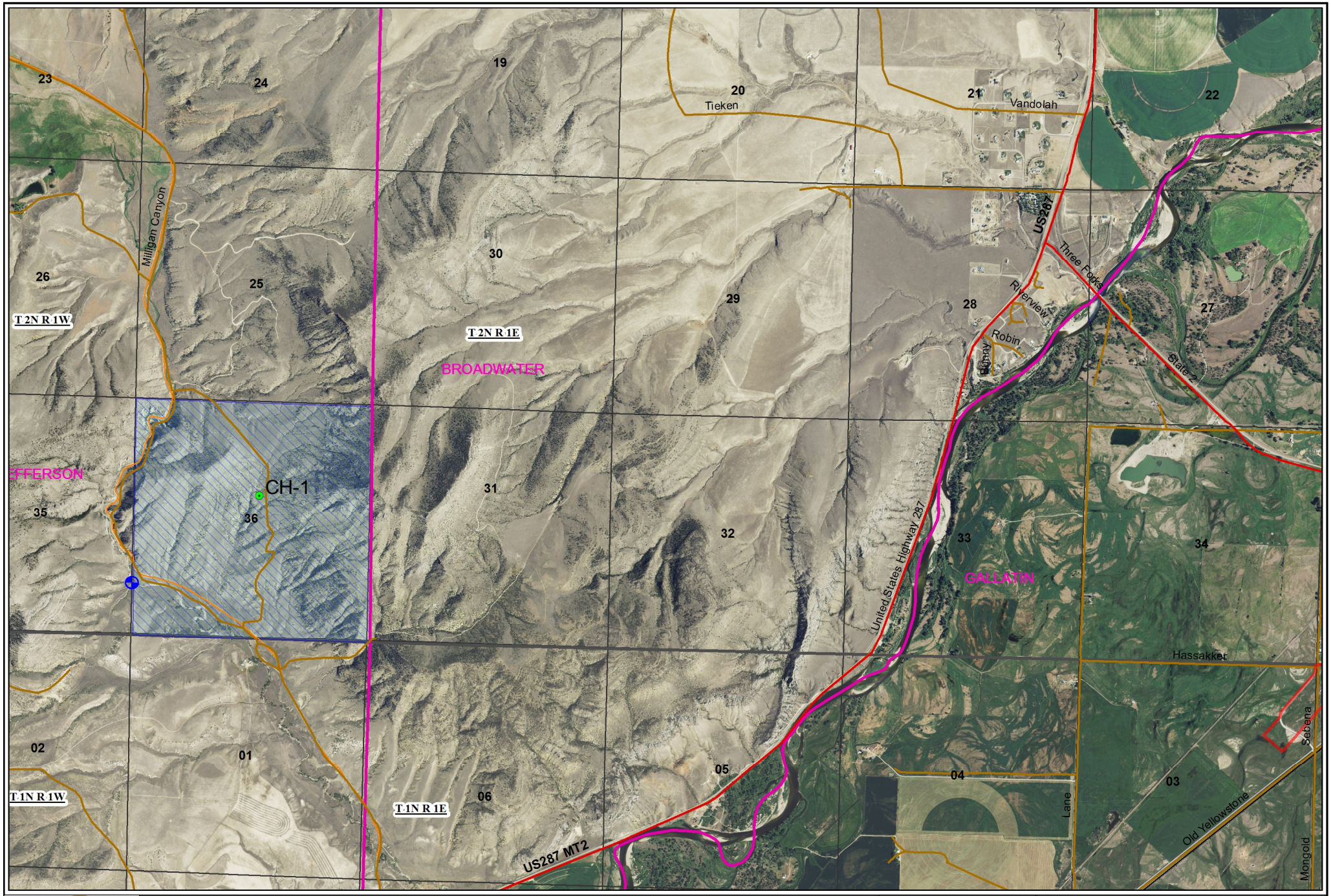
Stipulations:

1. Proponent will repair any soil damage and seed any disturbed areas with native grass seed. Proponent will monitor sites and control weeds for a period of two years after drilling.
2. All necessary permits will be secured.
3. All vehicle traffic must stay on established roads except when using most direct route to drill site and will be limited to time periods/conditions when use of the road will not create ruts, i.e. periods when the soil moisture content is below 20 percent.
4. All vehicles must be washed, particularly the undercarriage, to assure removal of dirt, plant material, and seeds prior to entering the tract.
5. Any brush or trees cleared during the access road improvements must be removed from state land.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

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

EA Checklist Approved By:	**Name:**	Monte Mason
	Title:	MMB Bureau Chief
Signature: /s/ Monte Mason		**Date**: 6-18-15



MONTANA DNRC

PRISEM Geoscience Consulting Core Hole Location

1500' 0 1500' 3000' 4500'

Geographic Scale: 1" = 3,000'

N W E S

Map Description: Site Map

Location: T2N - R1W, Section 36

Date: June 17, 2015

Prepared By: Trevor Taylor