

ENVIRONMENTAL QUESTIONNAIRE

I. BACKGROUND

The Department of Energy's (DOE) National Environmental Policy Act (NEPA) Implementing Procedures (10 CFR 1021) require careful consideration of the potential environmental consequences of all proposed actions during the early planning stages. DOE must determine at the earliest possible time whether such actions require either an Environmental Assessment or an Environmental Impact Statement, or whether they qualify for Categorical Exclusion. To comply with these requirements, an Environmental Questionnaire must be completed for each proposed action to provide DOE with the information necessary to determine the appropriate level of NEPA review.

Separate copies of this Environmental Questionnaire should be completed by the principal offer or and each proposed subcontractor. In addition, if the proposed project includes activities at different locations, an independent questionnaire should be prepared for each location. Supporting information can be provided as attachments.

In completing this Questionnaire, the proposer is requested to provide specific quantities regarding air emissions, wastewater discharges, solid wastes, etc., to facilitate the necessary review. In addition, the proposer should identify the exact location of the project and specifically describe the activities that would occur at that location.

III. QUESTIONNAIRE

A. PROJECT SUMMARY

1. Solicitation Number: Cooperative Agreement No: DE-FC26-O5N-T42592
2. Proposer & All Proposed Subcontractors: University of North Dakota Energy & Environmental Research Center (EERC)
3. Principal Investigator: Edward N. Steadman
Telephone Number: (701) 777-5279
4. Project Title: Regional Carbon Sequestration Partnership – Phase III Fort Nelson
5. Duration: 10 years
6. Location (City/Township, County, State): Ft. Nelson, British Columbia, Canada
7. Indicate the type or scale of project:

II. INSTRUCTIONS

- | | |
|---|---|
| a. <input type="checkbox"/> Computer Modeling | b. <input type="checkbox"/> Library/Literature Search |
| c. <input type="checkbox"/> Paper Study | d. <input type="checkbox"/> Workshop/Conference |
| e. <input type="checkbox"/> Laboratory (Batch) Research | f. <input type="checkbox"/> Bench-scale Research |
| g. <input type="checkbox"/> Pilot- or Proof-of-Concept-Scale Research | h. <input type="checkbox"/> Pilot Plant Construction/Operation |
| i. <input type="checkbox"/> Full-Scale Demonstration | j. <input checked="" type="checkbox"/> Other (please describe):
MMV in support of Field Demonstration |

If either item a, b, c, or d was selected for Question A.7, proceed to Section IV (CERTIFICATION BY PROPOSER); submittal of the intervening parts of this Questionnaire is not required.

However, if either item e,f,g,h,i, or j was selected, continue with Question A.8

8. Indicate the size of the proposed project and the primary material processed (e.g., 200 tph of coal).

tph (of _____)

MM Btu/hr

scfm (of _____)

MW ☐ electric ☐ thermal

acfm (of _____)

Other: **We are monitoring the injection and storage of acid gas from a commercial gas processing facility. This project will not process any material.**

- 9a. Summarize the proposed work. List all activities or tasks planned at the location covered by this Environmental Questionnaire.

Spectra Energy Transmission (SET) will be conducting commercial activities focused on CO₂ capture, transportation, and injection into a geologic formation. All handling and injection of fluids will be conducted by SET. SET is working closely with the National Energy Board (NEB) and Oil and Gas Commission (OGC) of British Columbia to obtain the necessary permits and regulatory approval to conduct large-scale CO₂ injection activities in the area. The SET activities will receive no funding from the U.S. Federal government.

As part of Phase III of the Plains CO₂ Reduction (PCOR) Partnership, the EERC will conduct measurement, mitigation, and verification (MMV) activities at and around the injection site that will not interrupt the daily SET operations. The EERC will obtain sample analyses that are performed by SET as part of its regulatory compliance to monitor for elevated CO₂ and H₂S in the overlying Slave Point strata. Noninvasive geomechanical work (i.e., lab work to include rock mechanical properties, characterization of presheared discontinuities, potential for fault reactivity or bedding plane slip, and reservoir simulation and analysis to determine additional geomechanical tests to be done) will be completed to evaluate cap rock integrity. Pressures in the tubing/casing annulus of the injection well will be monitored by SET on a daily basis as part of its regulatory compliance. The EERC will obtain these results and incorporate them into the MMV reporting. Using existing geologic and hydrogeologic data, an assessment of the hydrogeologic regime will be conducted to determine regional aquifer systems and their inherent flow patterns.

PCOR Partnership Phase III activities (tasks and subtasks) covered for the purpose of these activities:

1.1 Project Design

This task will involve developing an experimental design package and designing the safety, regulatory, and permitting activities associated with the Fort Nelson field demonstration site.

1.1.1 Experimental Design Package Focused on the Validation of CO₂ Sequestration at Fort Nelson Gas Plant.

This package will be submitted to the DOE COR at least 30 days prior to commencing field work.

1.2 Project Implementation

1.2.1 Conduct Baseline Site Characterization

Baseline site characterization efforts for the Fort Nelson field demonstration site will include reservoir simulation modeling, calculations to estimate the expected storage capacity, and laboratory tests to predict possible interaction of the injected gases/fluids with the reservoir rock and fluids.

1.2.2 Sampling Protocols

A review of sampling requirements will be conducted to develop a sampling protocol to be submitted to the DOE COR.

1.2.3 Access to Injection Well(s)

SET will provide the research team with access to the acid gas injection well site.

1.2.4 Monitoring Wells

SET will provide access to previously existing wells that may serve as monitoring wells.

1.2.5 Preinjection Reservoir Characteristics

SET will provide a detailed analysis of the preinjection reservoir conditions.

1.3 Project Operations**1.3.1 Monitoring of Injection Data**

SET plans to utilize acid gas from the Fort Nelson gas plant, which is owned and operated by SET, and transport it via pipeline to the injection well(s) in close proximity to the Fort Nelson gas plant, where it will be injected into the target reservoir. The acid gas stream contains approximately 1.2 million tons of CO₂ and 200,000 tons of H₂S which will be injected per year at the Fort Nelson field demonstration site. This project will monitor the injection.

1.3.2 Monitoring of Reservoir

Stress regimes and geochemical properties will be monitored. The dynamic response of the injection zone and bounding rocks at the injection site will be monitored for changes over the course of the project. Seismicity within the reservoir may also be monitored.

1.3.3 Monitoring of Surface and Subsurface to Ensure Containment

Surface and shallow subsurface conditions will be monitored on a regular basis to ensure that the injected acid gas is being contained. Parameters that may be monitored include air quality, soil vapor gas composition, and groundwater pH.

1.3.4 Sampling Strategy

A sampling strategy will be developed and employed to measure and mitigate leakage from existing wells in the field.

1.4 Closeout and Reporting**1.4.1 Progress Reports**

Quarterly reports will be provided throughout the project. A final report will be provided at the conclusion of the project.

1.4.2 Postinjection Monitoring and Assessment

A suite of activities will be used to assess the condition of the reservoir with respect to CO₂ sequestration and EOR effectiveness.

1.4.3 Summary of Results from Testing, Sequestration Potential, and EOR Recovery

Preinjection predictions regarding the nature of acid gas in the target reservoir will be compared to postinjection reservoir conditions as monitored over the duration of the study period. The goals of this subtask will be to determine 1) the reliability of the preinjection modeling predictions and calculations and 2) the fate of injected acid gas within the target reservoir. Reliability of the preinjection modeling predictions and calculations with respect to acid gas sequestration potential will be assessed using material balances, by determination of the percentage of effective utilization of the available storage capacity, and through evaluation of the post injection reservoir conditions. The long-term fate of acid gas injection with respect to on-site conditions will be evaluated through monitoring activities.

- 9b. Characterize the work site at this location (check all that apply).

☐ Existing Building (Indoors) ☒ Developed Site ☐ Undeveloped Site

See attached site map.

10. List all other locations where work would be performed. (Note: Submit a separate Environmental Questionnaire for each location.)

Laboratory work will be completed by SET subcontractors (i.e., certified commercial contract laboratories) to satisfy their regulatory compliance commitment.

11. Describe the objectives of the proposed project.

The overall purpose of these activities, from the perspective of the EERC's Plains CO₂ Reduction (PCOR) Partnership, is to create a best practices manual that outlines a set of guidelines for MMV operations that is annually injecting over 1 million tons of CO₂ with high concentrations of H₂S into a brine-saturated carbonate formation for long-term sequestration.

The goal for the PCOR Partnership at the Fort Nelson field demonstration site is to develop and implement an MMV strategy that establishes the integrity of the Devonian carbonate formations in the Fort Nelson area with respect to large-volume CO₂-H₂S injection and storage.

The primary objective of the PCOR Partnership Phase III Fort Nelson test is to verify and validate the concept of utilizing the region's carbonate brine formations for large-scale injection of anthropogenic CO₂.

12. Identify the planned number of tests, the frequency of testing (e.g., tests per week), and the duration of tests by type (e.g., laboratory tests, pilot unit runs, etc.).

All samples and/or test results will be obtained from the operator (SET). EERC personnel will not be conducting any sampling. Produced fluids will be sampled by the operator periodically. The representative composition of the injected miscible fluid shall be determined on a monthly basis. Formation fluid sampling from monitoring wells in the vicinity will be conducted on a quarterly basis. Pressure will be monitored daily.

13. Identify all materials that would be used and produced by the project (materials can be grouped by category) and estimate their total quantities over the entire duration of the proposed project.

Materials Used	(Total Quantity)	Materials Produced	(Total Quantity)
<input type="checkbox"/> Coal	(0)	<input type="checkbox"/> Wastewater	(0)
<input type="checkbox"/> Natural Gas	(0)	<input type="checkbox"/> Air Emissions	(0)
<input type="checkbox"/> Oil	(0)	<input type="checkbox"/> Solid Waste	(0)
<input type="checkbox"/> Electricity	(0)	<input type="checkbox"/> Hazardous Waste	(0)
<input type="checkbox"/> Water	(0)	<input type="checkbox"/> Salable By-Products --	(0)
<input type="checkbox"/> Air	(0)	<input type="checkbox"/> List And Note Quantity	
<input type="checkbox"/> Organic Solvents	(0)	0	
<input type="checkbox"/> Others -- List And note quantity:		<input checked="" type="checkbox"/> Others -- List and note quantity:	
		Fluids sampled from subsurface not to exceed 4 L per sampling event.	
<input checked="" type="checkbox"/> None		<input type="checkbox"/> None	

B. PROPOSED PROJECT AND ITS ALTERNATIVES

1. List all alternative approaches considered to achieve the objectives described in A.11 and discuss the anticipated environmental effects of each. (Place the selected approach at the top of the list.)

No other opportunities existed in the region to test a large-scale sequestration test (1.2 million tons of CO₂ annually) with acid gas injection in confined stratigraphic units such as a deep brine-saturated carbonate formation within the budget of the cooperative agreement. The operator (SET) of the Fort Nelson Gas Plant has a planned acid gas injection program, and this project was able to add MMV operations to these activities. The acid gas (mixture of H₂S and CO₂) will be injected into a brine formation to be disposed of from an existing gas-processing plant. The MMV operations will strictly be used to determine the fate of the injected CO₂ and the effects of the H₂S on CO₂ sequestration and EOR operations. The owner/operator of the site is allowing researchers to observe and monitor the injection activities that are part of the everyday operation of the site.

2. Identify the environmental consequences of not implementing this project (e.g., emission increase).

Not implementing this project may result in unnecessarily limiting the available options for reducing CO₂ emissions via sequestration.

C. PROJECT LOCATION

1. Provide a brief description of the project location (physical location, surrounding area, adjacent structures).

Located approximately 10 miles SE of Fort Nelson, British Columbia, Canada, along Alaskan HWY mile 270.3. Classified by the Ministry of Forest and Range as boreal forest. Oil production equipment on location and in surrounding area (see attached site maps).

2. Attach a site plan or topographic map of the area that would be affected by the project and highlight (or otherwise identify) the specific location where the project would be performed.

See attached site plan.

D. ENVIRONMENTAL IMPACTS

This section is designed to obtain information for objectively assessing the environmental impacts of a proposed project. NEPA procedures require evaluations of all possible effects (including land use, energy requirements, natural or depletable resource use, historic and cultural resources, and pollutants) from proposed projects on the environment. Answer the following questions as completely as possible. Also, for "yes" or "no" questions, answer "yes" if there would be any effect, or if there may be an effect. (Failure to answer the questions completely could produce delays in project awards.)

1. Land Use

- a. Identify the location of the proposed project (i.e., city, county, state).

Approximately 10 miles SE of Fort Nelson, British Columbia, Canada (near Alaskan HWY mile 270.3)

- b. Identify the total size of the facility and the portion would be used for the proposed project.

This is an existing gas-processing facility. The area impacted by SET activities is approximately 2 acres. All of the MMV activities associated with this project will be conducted within the boundaries of this previously impacted area.

- c. Characterize present land use where the proposed project would be located.
- | | | | |
|-----------------------------------|--|--------------------------------------|---|
| <input type="checkbox"/> Urban | <input checked="" type="checkbox"/> Industrial | <input type="checkbox"/> Commercial | <input type="checkbox"/> Agricultural |
| <input type="checkbox"/> Suburban | <input type="checkbox"/> Rural | <input type="checkbox"/> Residential | <input checked="" type="checkbox"/> Research Facility |
| <input type="checkbox"/> Forest | <input type="checkbox"/> University Campus | <input type="checkbox"/> Other | |
- d. Describe how land use would be affected by planned construction activities.
☒ No construction would be anticipated for this project.
- e. Describe how land use would be affected by operational activities associated with the proposed project.
- Land use will not be affected.**
- f. Describe any plans to reclaim and/or revegetate areas that would be affected by the proposed project.
☒ No land areas would be affected ☐ None
- g. Would changes resulting from the proposed project affect future uses of the site or surrounding areas?
☒ No ☐ Yes (describe)
- h. Would the proposed project affect any unique or unusual landforms (e.g., cliffs, waterfalls, etc.)?
☒ No ☐ Yes (describe)
- i. Would the proposed project affect existing or future recreational opportunities in the area?
☒ No ☐ Yes (describe)
- j. Would the proposed project be located in or near a national park or wilderness area?
☒ No ☐ Yes (describe)

If the project would involve only laboratory or bench-scale research and be conducted within an existing building, proceed to Part D.8 (Atmospheric Conditions/Air Quality). If the project would be larger than bench-scale, continue with Part D.2.

2. Construction Activities and/or Operation

- a. Describe the topography at the project site, including any significant landforms, etc.
- Topography at the site is flat with no significant landforms.**
- b. Identify any transmission lines and/or pipelines that traverse the proposed site and clearly mark them on the site plan or topographic map. ☐ None
- See attached site map.**
- c. Would the proposed project require the construction of settling ponds?
☒ No ☐ Yes (describe, identify location, and estimate surface area disturbed)
- d. Would the proposed project affect any existing body of water?
☒ No ☐ Yes (describe)

- e. Would the proposed project be located in or impact a floodplain?
☒ No ☐ Yes (describe)
- f. Would the proposed project be located on (or near) or impact wetlands?
☒ No ☐ Yes (describe)
- g. Would the proposed project be likely to cause erosion?
☒ No ☐ Yes (describe)
- h. Would any wetlands be impacted by the discharge of wastewater from project activities?
☒ No ☐ Yes (describe)
- i. Would any construction activities planned under the proposed project result in stream diversion?
☒ No planned construction ☐ No ☐ Yes (describe)

3. Geological/Soil Conditions

- a. Describe any instability (e.g., subsidence) in the topography near the proposed project.
None.
- b. Is there faulting in the vicinity of the proposed project area?
☒ No ☐ Yes (describe)
- c. Describe the soil in the vicinity of the proposed project in terms of productivity, presence of unique species, and susceptibility to erosion.
The project site is located in a rural forested area. The Canadian Department of Agriculture classifies the regional soil type as silty clay.
- d. Would any construction activities planned under the proposed project result in subsidence or changes in soil permeability/filtration?
☒ No planned construction ☐ No ☐ Yes (describe)

4. Vegetation and Wildlife Resources

- a. Describe the indigenous flora and fauna in the vicinity of the proposed project.
The project site is located in a rural forested area. The regional indigenous flora and fauna are typical of boreal forest.
- b. Identify any state- or Federal-listed endangered or threatened species in the vicinity of the proposed project.
☒ None
- c. Would any threatened or endangered species or their habitat be affected by the proposed project?
☒ No ☐ Yes (describe)

- d. Describe any impacts that construction would have on sensitive or unique habitats.
☒ No planned construction ☐ No habitats ☐ None (discuss) ☐ Impact (describe)

- e. Would any species or subspecies, not indigenous to the area, be introduced as a result of the project (e.g., introducing a new bacterial strain, as in microbial desulfurization projects)?
☒ No ☐ Yes (describe)

- f. Would any migratory corridors be impacted or disrupted by the proposed project?
☒ No ☐ Yes (describe)

- g. What regulatory authority maintains cognizance over indigenous wildlife species?

**Fish and Wildlife Branch
 PO Box 9391 Stn Prov Govt
 Victoria B.C. V8W 9M8
 Canada
 Tel: (250) 387-9771**

5. Socioeconomic and Infrastructure Conditions

- a. What is the population in the vicinity of the proposed project and in communities near the project site?

Fort Nelson is approximately 10 miles northwest of the field demonstration site and has a population of approximately 4500.

- b. Describe employment and labor mix in the vicinity of the proposed project.

Oil and gas production and forestry are the primary employer in the vicinity.

- c. Would changes (increases/decreases) in regional labor requirements be created by the proposed project?
☒ No ☐ Yes (describe)

- d. Would the proposed project alter present traffic patterns?
☒ No ☐ Yes (describe)

- e. Would the proposed project require new transportation access (roads, rail, etc.)?
☒ No ☐ Yes (describe)

- f. Would the proposed project create an increase in local energy usage?
☒ No ☐ Yes (describe)

- g. Would the proposed project increase local energy efficiency?
☒ No ☐ Yes (describe)

- h. Would the proposed project significantly impact local fuel or energy supply?
☒ No ☐ Yes (describe)

- i. Would any new transmission lines be required?
☒ No ☐ Yes (describe location, voltage, and length of line)

6. Historical/Cultural Resources

- a. Describe any historical or cultural places in the vicinity of the proposed project; note any sites included on the National Register of Historic Places.

☒ None ☐ The following historical/cultural places are located in the project area:

- b. Are there any known archeological sites in the vicinity of the proposed project?
☒ No ☐ Yes (describe)

- c. Would construction or operational activities planned under the proposed project disturb any historical or cultural sites?
☒ No planned construction ☐ No historic sites ☐ No impact (discuss) ☐ Yes (describe)

- d. Has the State Historic Preservation Office been contacted with regard to this project?
☒ No ☐ Yes (describe)

7. Visual Resources

- a. Describe any scenic vistas or aesthetic landscaping in the vicinity of the proposed project?
☒ None ☐ The following visual resources exist in the project area:

- b. Would the proposed project interfere with visual resources (e.g., eliminate scenic views) or alter the present landscape?
☒ No ☐ Yes (describe)

- c. Would any facilities constructed under the proposed project contrast with the present landscape?
☒ No construction planned ☐ No ☐ Yes (describe)

For all proposed projects involving laboratory, bench-scale, or larger research and development activities, respond to the following questions.

8. Atmospheric Conditions/Air Quality

- a. Describe the local climate.

Tiaga “subartic” Plains; average mean summer temperature: 12°C (54°F), average mean winter temperature: -15°C (5°F), mean annual precipitation ranges from 400 mm to 500 mm (16–20 in)

- b. Identify air quality conditions in the immediate vicinity of the proposed project with regard to attainment of National Ambient Air Quality Standards. (This information should be available from the county environmental agency.)

	Attainment	Non-Attainment
O ₃	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SO _x	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PM ₁₀	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CO	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NO ₂	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lead	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- c. Would the proposed project be in compliance with the National Emissions Standards for Hazardous Air Pollutants?

☐ No (explain) ☒ Yes

- d. Would the proposed project be classified as either a New Source or a major modification to an existing source?

☒ No ☐ Yes (describe)

- e. Would the proposed project be in compliance with the New Source Performance Standards?

☒ Not applicable ☐ No (explain) ☐ Yes

- f. Would the proposed project be subject to prevention of significant deterioration review?

☒ Not applicable ☐ No (explain) ☐ Yes (describe)

- g. What authority regulates air quality in the project area (identify Federal, state, and local authorities)?

**Ministry of Environment
Government of British Columbia;
PO Box 9341
Stn Prov Govt
Victoria BC V8W 9M1
Canada
Tel: (250) 387-3205**

- h. Identify the contact person, address, and telephone number for each authority.

Provincial:

Maureen Bilawchuk
Section Head Environmental
Management Section
Suite 325 1011 4th Ave
Prince George, BC V2L 3H9
Canada
Tel: (250) 565-6459

Local:

Sajid A. Barlas, Ph.D.
Sr. Environmental Protection Officer
Ministry of Environment
Fort St. John, BC V1J 6M7
Canada
Tel: (205) 787 3204
Sajid.Barlas@gov.bc.ca

- i. When were these authorities contacted regarding the proposed project (if necessary)? Include results of discussions.

Not contacted because the sampling activities will have no impact on air quality (see answers to 8 a–f above).

- j. How does each regulator (authority) define a major source (e.g., greater than 100 ton/year; thermal input of 250 MMBtu/hr)?

Major source: greater than 100 tons/yr; thermal input of 250 MMBtu/hr.

- k. Would any types of emission control or particulate collection devices be used?
☒ No ☐ Yes (describe, including collection efficiencies)

- l. If no control devices are used, how would emissions be vented?

No emissions are anticipated.

- m. What types of air emissions, including fugitive emissions, would be anticipated from the proposed project, and what would be the total quantity and maximum annual rate of emissions over the duration of the project?

No emissions are anticipated.

☒ None

	(Maximum per year)	(Total for project)
<input type="checkbox"/> SO _x	_____	_____
<input type="checkbox"/> NO _x	_____	_____
<input type="checkbox"/> PM ₁₀	_____	_____
<input type="checkbox"/> CO	_____	_____
<input type="checkbox"/> Lead	_____	_____
<input type="checkbox"/> H ₂ S	_____	_____

☐ Organic solvent vapors or other volatile organic compounds -- list

☐ Hazardous air pollutants -- list

☐ Other – list

- n. Would the proposed project reduce the amount of air emissions in the area?
☒ No ☐ Yes (describe)
- o. Identify Federal, state, and local air quality regulations that govern emissions in the project area.

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9. Hydrologic Conditions/Water Quality

- a. What is the closest body of water to the proposed project area and what is its distance from the project site? Indicate on the site plan, if provided.

Fort Nelson River is approximately 1.5 miles from the test location. Sampling activities undertaken by this project will not impact river.

- b. What sources would supply potable and process water for the proposed project? Identify quantities consumed and uses. Identify the names of municipal or other water systems that would be used.

Essentially no water will be consumed on site for the proposed activities.

- c. Quantify the total amount of wastewater that would be generated by the proposed project.

- ☒ None
☐ Non-contact cooling water (_____ gallons)
☐ Process water (_____ gallons)
☐ Sanitary and/or grey water (_____ gallons)
☐ Other -- describe (_____ gallons)

- d. What would be the components of each type of wastewater (e.g., coal fines)?
☒ No wastewater produced

- e. Identify the local treatment facility that would receive wastewater from the proposed project.
☒ No discharges to local treatment facility

- f. Describe how wastewater would be collected and treated.

None.

- g. What Federal, state, and local authorities regulate water quality in the proposed project area?

**Ministry of Environment
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 PO Box 9341
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 Victoria, BC V8W 9M1
 Canada
 Tel: (250) 387-3205**

- h. Identify the contact person, address, and telephone number for each authority.

Provincial:

Charlie Ballek
Water Quality Officer
Environmental Quality Branch
Water Stewardship Division
PO Box 9341
Stn Prov Govt
Victoria, BC V8W 9M1
Canada
Tel: (250) 356-2080

Local:

Sajid A. Barlas, Ph.D.
Sr. Environmental Protection Officer
Ministry of Environment
Fort St. John, BC V1J 6M7
Canada
Tel: (205) 787 3204
Sajid.Barlas@gov.bc.ca

- i. When were these authorities contacted regarding the proposed project (if necessary)? Include results of discussions.

☒ Not contacted

The sampling activities will have no impact on hydrologic conditions/water quality.

- j. Would any run-off or leachates be produced from storage piles or waste disposal sites?
☒ No ☐ Yes (describe sources, nature of flow, and collection techniques)
- k. Identify Federal, state, and local regulations that govern water effluents/water quality in the project area.

Ministry of Environment
Government of British Columbia
PO Box 9341
Stn Prov Govt
Victoria, BC V8W 9M1
Canada
Tel: (250) 387-3205

- l. Where would wastewater effluents from the proposed project be discharged?
☒ No wastewater produced
- m. Would the proposed project be permitted to discharge effluents into an existing body of water?
☒ No ☐ Yes (describe water use and effluent impact)
- n. Would a new or modified National Pollutant Discharge Elimination System (NPDES) permit be required?
☒ No ☐ Yes (describe)
- o. Would the proposed project increase or decrease the surface area of an existing body of water?
☒ No ☐ Yes (describe)
- p. Would the proposed project adversely affect the quality or movement of groundwater?
☒ No ☐ Yes (describe)

10. Solid and Hazardous Wastes

- a. Describe in detail and provide the total quantity of all nonhazardous wastes that would be generated from the project. Solid wastes are defined in RCRA as any solid, liquid, semi-solid, or contained gaseous material that is discarded, has served its intended purpose, or is a manufacturing or mining by-product (40 CFR 260, Appendix I).

	Quantity
<input checked="" type="checkbox"/> None	()
<input type="checkbox"/> Municipal solid waste, i.e., paper, plastic, etc.	()
<input type="checkbox"/> Coal or coal by-products	()
<input type="checkbox"/> Other -- identify	()
	()
	()

- b. Describe in detail and provide the total quantity of all hazardous wastes (40 CFR 261.3) that would be generated, used, or stored under this project.

☒ None ☐ The following hazardous wastes would be generated, used, or stored:

- c. How and where would solid waste disposal be accomplished?

☐ On-site (identify and describe location) ☐ Off-site (identify location and describe facility and treatment)

None.

- d. How would wastes for disposal be transported?

None.

- e. How many trips would be required for landfill disposal?

☒ None ☐ Number of trips:

- f. What volume of the landfill would the solid waste occupy?

☒ None ☐ Volume: cubic feet

- g. What Federal, state, and local waste management authorities would have permit authority for the landfill?

**Ministry of Environment
Government of British Columbia
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Stn Prov Govt
Victoria, BC V8W 9M1
Canada
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- h. Identify the contact person, address, and telephone number for each authority.

Provincial:

**Barb Beyer
Sr. Head Environmental
Management Branch
Suite 325 1011 4th Ave
Prince George, BC V2L 3H9
Canada
Tel: (250) 565-7104**

Local:

**Sajid A. Barlas, Ph.D.
Sr. Environmental Protection Officer
Ministry of Environment
Fort St. John, BC V1J 6M7
Canada
Tel: (205) 787 3204
Sajid.Barlas@gov.bc.ca**

- i. When were these authorities contacted regarding the proposed project (if necessary)? Include results of discussions.

☒ Not contacted

Sampling activities will have no impact on soils nor generate hazardous waste.

- j. How would hazardous or toxic products be collected and stored?

☒ None used or produced

- k. If hazardous/toxic solid wastes are subject to land disposal restrictions, how would collection, treatment, and disposal of the wastes be accomplished?

☐ Not subject to RCRA land disposal restrictions ☐ Subject to RCRA land disposal restrictions (explain)

Not applicable.

- l. If hazardous wastes would require off-site disposal, have arrangements been made with a certified TSD (Treatment, Storage, and Disposal) facility?

☒ Not required ☐ Arrangements not yet made ☐ Arrangements made with a certified TSD facility (identify):

- m. How would hazardous waste(s) be transported?

☒ No hazardous wastes would be generated

- n. What treatment/storage/disposal methods would be used for hazardous wastes?

☒ No hazardous wastes would be generated ☐ Unknown ☐ Methods that would be used (describe):

11. Health/Safety Factors

- a. Identify any hazardous or toxic substances that would be used in the proposed project.

☒ None ☐ Hazardous or toxic substances that would be used (identify):

The objective of the research being conducted under this NEPA is to monitor the geologic regime into which acid gas is being injected. Sample results will be obtained from the field operator and are part of its regulatory compliance.

- b. What would be the likely impacts of these substances on human health and the environment?

None

- c. Would there be any potential for workers to be exposed to toxic/hazardous chemicals or wastes?

☐ No ☒ Yes (describe)

Research activities conducted under this NEPA will require yearly (or perhaps more frequent) site visits by EERC personnel. During this time, exposure to H₂S may occur. All workers visiting the site or working on-site will be trained under the SET Emergency Response Plan and/or the EERC Site Health and Safety Plan. All workers exposed to H₂S are doing so as part of the regular day-to-day operation of an ongoing gas processing facility and will be following safety procedures set forth in the SET Emergency Response Plan.

- d. Would there be any potential for exposure to extreme temperatures?
☐ No ☒ Yes (describe)

All workers exposed to extreme temperatures are doing so as part of the regular day-to-day operation of an existing gas processing facility and will be following safety procedures set forth in the SET Emergency Response Plan.

- e. Would there be any special physical hazards associated with the project?
☐ No ☒ Yes (describe)

See 11 c above.

- f. Would personal protective equipment or clothing be required?
☐ No ☒ Yes (describe)

See 11 c above.

- g. Does a worker safety program exist at the location of the proposed project?
☐ No ☒ Yes (describe)

Spectra Energy Transmission has an Emergency Response Plan in place.

- h. Would safety training be necessary for any laboratory, equipment, or processes involved with the project?
☐ No ☒ Yes (describe)

All workers participating at the site will be safety-certified prior to involvement. Spectra Energy Transmission will train all workers according to its established Emergency Response Plan. The EERC will also hold the required training credentials and will be documented in its Site Health and Safety Plan.

- i. Describe any increases in ambient noise levels from construction and operational activities.
☒ None ☐ Increase in ambient noise level (describe)

- j. Would project construction result in the removal of natural barriers that act as noise screens?
☒ No construction planned ☐ No ☐ Yes (describe)

- k. Identify the highest expected decibel level at the closest point of public access.

Ambient levels should not be exceeded by the activities covered under this NEPA.

- l. Identify the highest expected decibel level in the work area.

Ambient levels should not be exceeded by the activities covered under this NEPA.

- m. Would hearing protection be required for workers?
☒ No ☐ Yes (describe)

12. Environmental Restoration and/or Waste Management

- a. Would the proposed project include CERCLA removals or similar actions under RCRA or other authorities, meeting CERCLA cost/time limits?
☒ No ☐ Yes (describe)

- b. Would the proposed project include siting, construction, and operation of temporary pilot-scale waste collection and treatment facilities or pilot-scale waste stabilization and containment facilities?
☒ No ☐ Yes (describe)
- c. Would the proposed project involve improvements to environmental monitoring and control systems of an existing structure or building?
☒ No ☐ Yes (describe)
- d. Would the proposed project involve siting, construction, operation, and decommissioning of a facility for storing packaged hazardous waste for 90 days or less?
☒ No ☐ Yes (describe)

E. REGULATORY COMPLIANCE

1. For the following laws, describe any new or modified permits, manifests, contacts, etc., that would be required for the proposed project:

- a. Resource Conservation and Recovery Act (RCRA):
☒ None ☐ Required (describe)

Hazardous waste manifests will be completed for any resultant small amounts of hazardous wastes generated through this project.

- b. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):
☒ None ☐ Required (describe)

- c. Toxic Substance Control Act (TSCA):
☒ None ☐ Required (describe)

- d. Water Pollution Control Act (WPCA):
☒ None ☐ Required (describe)

- e. Clean Air Act (CAA):
☒ None ☐ Required (describe)

- f. Endangered Species Act (ESA):
☒ None ☐ Required (describe)

- g. Floodplains and Wetlands Regulations:
☒ None ☐ Required (describe)

- h. Fish and Wildlife Coordination Act (FWCA):

☒ None ☐ Required (describe)

i. Farmland Protection Policy Act (FPPA):
☒ None ☐ Required (describe)

j. National Historic Preservation Act (NHPA):
☒ None ☐ Required (describe)

k. Coastal Zone Management Act (CZMA):
☒ None ☐ Required (describe)

l. American Indian Religions Freedom Act (AIRFA):
☒ None ☐ Required (describe)

m. Wild and Scenic Rivers Act (WSRA):
☒ None ☐ Required (describe)

2. Identify any other environmental laws and regulations (Federal, state, and local) for which compliance would be necessary for this project, and describe the permits, manifests, and contacts that would be required.

None.

F. DESCRIBE ANY ISSUES THAT WOULD GENERATE PUBLIC CONTROVERSY REGARDING THE PROPOSED PROJECT.

☒ None

G. WOULD THE PROPOSED PROJECT PRODUCE ADDITIONAL DEVELOPMENT, OR ARE OTHER MAJOR DEVELOPMENTS PLANNED OR UNDERWAY, IN THE PROJECT AREA?

☒ No ☐ Yes (describe)

H. SUMMARIZE THE SIGNIFICANT IMPACTS THAT WOULD RESULT FROM THE PROPOSED PROJECT.

☒ None (provide supporting detail) ☐ Significant impacts (describe)

MMV work conducted under this project will evaluate the potential for geologic sequestration to mitigate greenhouse gases in the future. The results of the monitoring and protocols developed could help the United States meet its voluntary reduction goals and Canada meet its requirements under the Kyoto protocol. The monitoring will also evaluate whether or not CO₂ can be safely and permanently stored in geologic formations.

IV. CERTIFICATION BY PROPOSER

I hereby certify that the information provided herein is current, accurate, and complete as of the date shown immediately below.

DATE: ____ / ____ / ____
 month day year

SIGNATURE: _____

TYPED NAME: Edward Steadman

TITLE: Senior Research Advisor

ORGANIZATION: Energy & Environmental Research Center

V. REVIEW AND APPROVAL BY DOE

I hereby certify that I have reviewed the information provided in this questionnaire, have determined that all questions have been appropriately answered, and judge the responses to be consistent with the efforts proposed. Based on the information in the questionnaire, I conclude the following (check the appropriate box):

- ☐ The proposed action falls under one or more of the categorical exclusions (CXes) listed in Appendix A or B of Subpart D of the DOE NEPA Implementing Procedures and would not (1) violate applicable ES&H requirements, (2) require siting of waste TSD or recovery facilities, (3) disturb hazardous substances (excluding naturally occurring petroleum and natural gas), thus producing uncontrolled or unpermitted releases, and (4) adversely affect environmentally sensitive resources.

Additionally, the proposed action (1) would not present any extraordinary circumstances such that the action might have a significant impact upon the human environment, (2) is not connected to other actions with potentially significant impacts, and (3) is not related to other actions with cumulatively significant impacts.

Based on the Environmental Questionnaire and these conclusions, Categorical Exclusion of the proposed action would be appropriate.

- ☐ The proposed action does not qualify as a CX as identified in Subpart D of DOE's NEPA Implementing Procedures; therefore, the proposed action may require further documentation in the form of an Environmental Assessment or Environmental Impact Statement.

Project Manager: _____ Date: _____

