SED 004: Pipeline Conservation and Reclamation Approvals Under the *Environmental Protection and Enhancement Act* (released July 2025) What We Heard – And Our Response

We thank all those who provided comments. We reviewed each one and consolidated comments covering similar issues. What follows is a summary of the issues raised and our responses.

Comments on grammar, punctuation, and cross-referencing have not been summarized, but changes were made where needed.

A list of the respondents is provided at the end of this document.

Stakeholder Feedback – Issue	AER Response
1. General	
Treaty rights are inadequately covered by the SED. Related issues on policy matters or government legislation should be raised by the AER to the appropriate government ministry.	For specified enactments, the AER's mandate includes the responsibility to consider the potential adverse impacts of energy resource activity on existing aboriginal and treaty rights recognized and affirmed under section 35 of the *Constitution Act, 1982*. The AER's role and responsibility is defined through the *Energy Ministerial Order 105/2014* and *Environment and Sustainable Resource Development Ministerial Order 53/2014*. The government's Aboriginal Consultation Office (ACO) directs project applicants to consult with First Nations and Métis settlements that may be impacted by the proponents' project. Where comments are raised that are outside of the authorities and jurisdiction of the AER, the AER will strive to relay comments to the appropriate Government of Alberta ministry.

Stakeholder Feedback – Issue	AER Response
Given the SED is focuses on the requirements associated with the pipeline project, we encourage the AER to consider additional conditions that would be more protective of Treaty and Indigenous Rights.	Crown consultation with Indigenous peoples is the responsibility of the Government of Alberta. The AER does not have authority over Crown consultation regarding the constitutionally protected rights of aboriginal peoples. The ACO provides information to the AER on its processes, status/adequacy of consultation, and possible mitigations. The AER takes into consideration advice it receives from the Alberta Consultation Office (ACO) regarding the adequacy of Crown consultation and any advice ACO may provide regarding mitigation of impacts. When making a decision on an application, the AER considers potential adverse effects to Indigenous communities, including to their rights, where it is provided with information regarding these potential impacts in the application and hearing processes. Where there is a concern that activities proposed in an application may result in direct and adverse impacts, a statement of concern can be submitted for review and consideration by the AER during the application review process.
The ACO should be included in all preapplication meetings.	The preapplication meeting often includes an update on Indigenous consultation recognizing that Crown consultation with Indigenous peoples is the responsibility of the Government of Alberta. The AER does not have authority over Crown consultation regarding the constitutionally protected rights of aboriginal peoples. The ACO provides information to the AER on its processes, status/adequacy of consultation, and possible mitigations. Where the AER has additional questions beyond the update provided by the applicant, the AER can follow up with the ACO directly.
Clarify if the SED applies to Freehold land as well as Crown land? Clarify if this supersedes the reclamation requirements in PILs and PLAs.	The SED applies to all class I pipelines located within the White Area of the province. Where the pipeline is on Crown land within the White Area, the *Environmental Protection and Enhancement Act* (*EPEA*) approval for the pipeline plus the surface disposition under the *Public Lands Act* (*PLA*) will apply. For the most part, the requirements under the *PLA* for the surface disposition and *EPEA* for the pipeline approval are complementary.
Please require reporting on Indigenous consultation as part of the information provided as per table 1 (concordance with the Approvals and Registrations Procedure Regulation)	The purpose of item (q) of table 1 (a description of the public consultation undertaken or proposed by the applicant) is to focus on the public input as part of the public notice of the *EPEA* application. It may describe open houses, public notices placed, or other avenues to engage on the *EPEA* approval application.

Stakeholder Feedback – Issue	AER Response
Consider adding "rightsholder" and "stakeholder" to the glossary.	These terms are relatively well established and used so it is not considered necessary to include them in the glossary.
The SED adds red tape and removes professional judgement from the application process. The ability to adjust to site-specific conditions is important.	The *EPEA* approval, if issued, allows for site-specific considerations, and the SED allows for flexibility, including the exercise of professional judgement. Red tape reduction efforts are not implemented at the expense of regulatory effectiveness. The SED recognizes the seven professional organizations who are eligible to conduct or supervise the activities covered.
The SED should include application and Postconstruction Reclamation Assessment (PCRA) review timelines.	The AER's application review timelines are available at https://www.aer.ca/regulating-development/project-application/application-processes. A timeline for PCRA review is not part of the SED. A key change included in the SED is shifting the onus to the approval holder for automatic follow-up where deficiencies have been identified in the PCRA report.
Approval renewals are not covered in the SED.	The *EPEA* approval for pipelines covers the "reclamation of the construction phase of the pipeline" and not the "reclamation of the end of life of the pipeline." This reclamation normally takes two growing seasons at most. Therefore, in most cases, if the pipeline is constructed and the land reclaimed properly, the timeline for this activity is likely three to five years and therefore a renewal would not be required in that time period.
Please include the description for items (i) and (j) in table 1, as this information would be useful.	Pipeline *EPEA* approvals are only for the construction and reclamation of the pipeline. The information associated with renewals in table 1 reflects requirements 3(i) and 3(j) in the *Approvals and Registrations Procedure Regulation.* These items refer to the monitoring provisions of the previous approval period (i.e., they apply to renewals only).
How will minor adjustments be handled? Will minor adjustments require an approval amendment?	The SED does not outline the situations where the proposed work does not require an amendment. These situations can be varied and complex, requiring case-by-case review. Activities requiring approval from the AER are specified in section 67 of *EPEA* and in the *EPEA* approval. Minor changes are typically authorized, if acceptable, via a letter of authorization.

Stakeholder Feedback – Issue	AER Response
The SED should allow for phased application submissions.	This approach has been used in past applications and will continue to be considered on a case-by-case basis. The applicant should identify this as a preferred approach at the preapplication stage. The AER does not believe this approach will decrease application review times. For each subsequent submission, the entire file is normally reviewed from the beginning in its entirety.
How does the SED relate to class II pipelines?	This SED only applies to pipelines requiring an *EPEA* approval (class I pipelines). While it does not apply to class II pipelines, adherence to many of the requirements may assist in the future reclamation certificate application for class II pipelines. Specified activities (e.g., class I pipelines) require an authorization under *EPEA*. All activities (including class II pipelines) are still subject to the general provisions of the legislation, which includes releases and reclamation as per the *Substance Release Regulation* and the *Conservation and Reclamation Regulation*, respectively.
It appears that the requirements are being updated to try to make them fit for all licence activities and purposes, but in its current form, assessing applicability is cumbersome and unclear. What guidance can be provided with respect to associated infrastructure?	The purpose of the SED is to clarify the *EPEA* application requirements for a class I pipeline and outline the PCRA expectations. These requirements apply for all pipelines that require an *EPEA* approval. Well sites and facilities are out of scope. Activities associated with the pipeline construction and reclamation are part of the scope of the pipeline project, including associated infrastructure (e.g., access roads, laydown areas, valves, pigging stations).
How is waste managed?	Where pipelines are licensed under the *Pipeline Act*, waste is managed in accordance with the *Oil and Gas Conservation Act* and applicable directives (e.g., *Directive 050: Drilling Waste Management*). For pipelines not required to be licensed under the *Pipeline Act* (i.e., geothermal heat distribution pipelines), existing provisions for waste management under *EPEA* apply. Waste (including field office, food, packaging, and shipping materials, etc.) must be managed and disposed of at an approved waste management facility.
The SED should require the invitation of affected Indigenous communities to all meetings between the proponent and the AER including any “preapplication” meetings.	The purpose of the preapplication meeting is to allow the applicants to meet with the AER on application content as well as answer any questions regarding the SED. All parties can request a meeting to discuss the proposed project at any time before the application is submitted.

Stakeholder Feedback – Issue	AER Response
The SED should provide more guidance on the considerations for the environmental assessment process.	Requirements for the environmental assessment process can be found in Part 2, Division 1, of *EPEA* and in the *Environmental Assessment (Mandatory and Exempted Activities) Regulation*. The SED allows the project proponent to request a preapplication meeting for any questions. Questions about the environmental assessment process can also be emailed to AEREnvironmental.Assessment@aer.ca.
Where are *EPEA* approval applications submitted?	*EPEA* applications are to be submitted by email to EPEA.WA.Applications@aer.ca.
The SED should provide guidance with respect to how review processes of other provincial agencies for the same pipeline project are to be integrated into the C&R plans and review process.	Applicants are expected to adhere to applicable requirements from other government departments and agencies for the activities being applied for. The onus is on the applicant to determine all application requirements for all other jurisdictions. The AER specifies the information required to be included in the *EPEA* application that is necessary to make a decision on the application.
The SED does not require conservation and reclamation monitoring beyond the initial years following pipeline installation. Monitoring is not done afterwards that confirms assumptions or triggers adaptive management actions.	The PCRA requirements ensure that the approval holder monitors and implements management actions until the *2010 Reclamation Criteria for Wellsite and Associated Facilities* is met. An *EPEA* Approval for a class I pipeline is only for the construction and reclamation activities of the pipeline (at the time of construction) and does not cover the operation phase of the pipeline. Under the *Pipeline Act*, licensees are required to monitor pipeline rights-of-way, which will inform licensees of any problems or issues which need to be addressed. Associated pipeline surface infrastructure which is required to be removed must be reclaimed in accordance with the 2010 reclamation criteria and obtain a reclamation certificate.
The SED does not include information on public hearings.	Information regarding AER hearings is available at: https://www.aer.ca/regulating-development/project-application/hearings.
How to file a reclamation certificate for a CER-regulated site?	The reclamation certificate process is part of *SED 002* for provincially regulated pipelines. This is outside of the scope of this SED.

Stakeholder Feedback – Issue	AER Response
Please provide a reporting process for impacts (e.g., a process to report subsidence over a pipeline).	The 2010 reclamation criteria is the standard against which successful reclamation is measured. The PCRA requirements imposed on the approval holder will demonstrate that the approval holder is on a trajectory to successful reclamation and equivalent land use. Noncompliances or issues related to an AER-regulated activity can be reported to the Energy and Environment 24-hour response line or their nearest AER field centre: https://www.aer.ca/providing-information/about-the-aer/contact-us.
How does this impact pipelines and segments that have a current abandoned status? Is there a pipeline legacy process for abandoned pipeline licenses?	Pipelines are expected to apply for a reclamation certificate at the time of abandonment, with the application submitted in accordance with *SED 002*. This SED applies to *EPEA*-regulated pipelines and contains application requirements and PCRA requirements. A pipeline *EPEA* approval issued as a result of an application under this SED is for construction and reclamation (at the time of construction) only. Pipelines are normally abandoned much later, and a pipeline *EPEA* approval is not typically in force when the pipeline is abandoned (recognizing that abandoned pipelines are still subject to, at the least, requirements contained in *Conservation and Reclamation Regulation*, SED 002, and the *Pipeline Act*).
Clarity on how due diligence can be done during acquisitions around whether or not licensees have met the 2/5-year reporting criteria, and how this process applies to pipeline licenses that are already abandoned. Will there be a new status listed for rec certified pipelines?	This SED only applies to *EPEA*-regulated pipelines applied for on or after this SED comes into force. It is the responsibility of the parties involved in an acquisition or asset transfer to ensure that all applicable regulatory requirements are met. The application requirements and PCRA requirements do not result in additional or changed status types.
The SED should include definitions for “Green Area” and “White Area.”	“Green area” and “White Area” are defined in the glossary.
The SED should include external links to the definitions provided.	The AER strives to ensure that links included in our regulatory instruments are kept up to date. In the event a link is broken, the title of the referenced document may be searched online or on our website. Requirements or definitions existing in other regulatory instruments are typically referenced instead of copied, to ensure that the referenced regulatory instrument remains the main source for the requirement or definition.

Stakeholder Feedback – Issue	AER Response
The definition of "problem soils" is an important definition when planning the soil evaluation. Consider adding definition to appendix along with link.	The current definition was developed in consultation with a pedologist and in consideration of the *Guidelines for Alternative Soil Handling Procedures During Pipeline Construction* and *Canadian System of Soil Classification*. This reference document is not changing as a result of the SED publication. The best practice for referencing other documents is to link to the other document, when possible, to avoid definition drift.
The SED should use a term such as "project impact area" which could be defined as the (Project Disturbance Area) + (Project Zone of Influence). This conforms more with industry terminology.	Agreed. Terminology has been updated.
2. Pipelines	
How does the SED apply to midstream operations, facilities, and associated infrastructure? The SED should have a suitable diagram to illustrate. Associated infrastructure should not include temporary work areas.	The SED applies to pipelines only as defined in the *Activities Designation Regulation*. Facilities are regulated separately. A preapplication meeting is recommended for specific questions of SED applicability. Application and approval requirements under this SED are in addition to requirements under the *Pipeline Act*. The application for the pipeline includes ancillary infrastructure but does not include associated injection facilities, monitoring wells, or processing plants. Temporary work areas falling within the definition of a pipeline should be included within the *EPEA* application. We have added a figure to section 1.4.2.1 of the SED to clarify that facility-to-facility pipelines are also within the scope of the SED.
How will the SED apply to applications under review at the time of publication or existing (previously approved and constructed) pipelines?	The SED is applicable to new applications submitted after the publication of the SED. Applications received prior to the SED publication will be reviewed using the guidance prior to the publication of this SED. Pipelines that previously required an *EPEA* approval have not changed as a result of this SED. An *EPEA* approval may still be required if there is an activity triggering an approval amendment even on an existing pipeline. Specific PCRA requirements are typically outlined as conditions of the *EPEA* approval. These will be specific to the original pipeline application unless otherwise amended by the approval holder.

Stakeholder Feedback – Issue	AER Response
How does the SED apply to CO_2 pipelines? Bundling of all aspects of carbon storage system should be permitted.	CO_2 pipelines regulated under the *Responsible Energy Development Act* related to energy and minerals development will be subject to requirements in this SED if they meet the definition of a class I pipeline. The AER allows and will review bundled applications when submitted. The bundling of *EPEA* applications can be discussed with the AER at a preapplication meeting. The application for the pipeline includes ancillary infrastructure (e.g., access roads, valves, pig launch/receivers), but does not include associated injection facilities, monitoring wells, or processing plants.
Clarify the expectation around approvals for reclamation.	Reclamation may be considered an activity requiring an approval as per the *Activities Designation Regulation*. An *EPEA* approval application is required if the reclamation activity triggers an approval (i.e., the index number of the activity is greater than or equal to 2690).
How does the SED determine what pipelines should be included in the project? The SED should consider all pipelines, existing and proposed, cumulatively when calculating the pipeline index and include the index on all pipeline licence applications to confirm when an *EPEA* approval is required.	The *EPEA* approval is for the construction and reclamation of the applied-for pipelines. The disturbance impact is localized, and pipelines are typically reclaimed at the time of construction. Future or previously approved pipeline segments do not need to be included in approvals for pipelines that have already been reclaimed. Class I and class II pipelines must be licensed under *Directive 056* for oil, gas, and minerals development. In pipeline licence applications, applicants must include the information needed to calculate the index of a pipeline. Pipeline licence applications are publicly available in OneStop.
Throughout the draft SED, there is frequent overemphasis on "landowners" and "landowner concerns." Indigenous perspectives are largely lacking.	Applicants are expected to work with anyone who may be impacted over all stages of the project.
The SED should apply to both Green and White Areas of the province.	The SED applies to the White Area of the province only. The threshold for a class I pipeline is established in the *Activities Designation Regulation*. Changes to the *Activities Designation Regulation* are out of scope for this project.
The application submission order for the *EPEA* approval and *Pipeline Act* licence is not addressed in the SED.	We do not require the applications to be submitted in a specific order. Either the pipeline licence or the *EPEA* approval application can be submitted first (or simultaneously). Pipeline construction cannot start until both authorizations are granted.

Stakeholder Feedback – Issue	AER Response
Why is the 2690 index used to determine when an *EPEA* approval is required?	The threshold for a class I pipeline is established in the *Activities Designation Regulation*.
Please clarify what infrastructure qualifies as a "processing plant" and how this interfaces with a pipeline application. What other SEDs address the conservation and reclamation activities of a processing plant?	*EPEA* and the *Activities Designation Regulation* provide definitions for regulated activities, including processing plants and requirements for approval for those activities. Typically, if processing plants and pipelines are required to have *EPEA* approvals, then separate *EPEA* approvals would be issued with unique requirements. A complete listing of the SEDs on the AER website can be found at: https://www.aer.ca/regulating-development/rules-and-directives/specified-enactment-directions.
The SED contains the reference: "where the applicant requires an approval from the Alberta Energy Regulator or the Natural Resources Conservation Board in relation to the activity, the date of the written decision in respect of the application" is confusing and should be removed from the SED.	This item is a direct reflection of the *Approvals and Registrations Procedures Regulation*. The intent of this requirement is to highlight any hearing decisions for licences issued under the *Pipeline Act* for the pipeline.
3. Predisturbance Assessment	
When describing the size of the project, please apply buffers around disturbance to adequately account for project disturbances to the environment and Indigenous rightsholders.	Where there is a concern that activities proposed in an application may result in direct and adverse impacts, a statement of concern can be submitted during the application review process.
Add subregional plans and Indigenous community land-use plans or similar guidance as application planning resources.	The SED has been modified to include references to subregional plans.
Please clarify how mineral rights apply to a pipeline.	Mineral rights do not apply. The SED has been modified to remove this reference.

Stakeholder Feedback – Issue	AER Response
Please include signage requirements such that land users are informed of the pipeline location, reclamation areas, and any areas of heightened risk (e.g., herbicide use, operational hazards).	The *EPEA* approval is only for the construction and reclamation of the pipeline. Signage requirements are mainly for the operational phase of the pipeline and are a requirement of the *Pipeline Rules* and addressed through the pipeline licence. Best practices for pipeline approval holders is to work directly with anyone who may be impacted. The *Environmental Code of Practice for Pesticides* includes signage requirements.
The SED should describe the project within the context of ecologically and culturally significant areas, disturbed areas, and indicate processing plants that are relevant to the proposed pipeline.	Most of this information is required as part of the SED. The SED has been modified to include a note to include start and end points of the pipeline.
For long linear pipelines, it is recommended to clarify that the large-scale map is an overview map with the details provided in the environmental alignment sheets.	Large-scale overview maps are acceptable with detailed alignment sheets provided that the application provides all information required by the SED.
Please include Indigenous reserve lands in addition to Green and White Areas; add heritage resources to ensure early, predisturbance discussions are held regarding reclamation of heritage resources; show legacy, existing, and proposed disturbance; and denote residential areas.	The SED has been modified to include this information. Residential areas do not need to be added as this is already addressed. Requirements pertaining to heritage resources are found within the *Historical Resources Act* and are outside of the AER's jurisdiction.
Add options for other wetland data layers beyond the Alberta Merged Wetland Inventory Class layer, especially where a more accurate option is available.	Field-based assessments, if available, would be preferred over the Alberta Merged Wetland Inventory Class layer.
The SED should differentiate between "mapped" and "unmapped" watercourses.	The location of all mapped watercourses in relation to the pipeline route must be included in the application to ensure reviewers are able to identify potential watercourses that may be impacted by the proposed pipeline. Mapped watercourses should be identified using GoA's GeoDiscover Base Stream and Flow Representation Layer. For waterbodies, use GoA's GeoDiscover Base Waterbody Polygon Arc Layer. Unmapped watercourses and waterbodies must be identified through field assessment and validation and should include a description of the habitat present and fisheries potential. Fish sampling should be conducted if instream works are proposed.
The SED should reference the planning tool in OneStop and not just the Landscape Analysis Tool for wildlife sensitivity and critical habitat layers.	We adjusted the text of the SED to include the planning tool in OneStop.

Stakeholder Feedback – Issue	AER Response
There should be the ability to submit revised shapefiles.	Updated information and final alignment sheets can be submitted during the application process. If the change is significant, an *EPEA* approval amendment may be required. If the application is materially different than the original submission, the applicant may need to resubmit their application.
Files in KML or KMZ format need to have a data dictionary for the file format.	The keyhole markup language format is an industry standard along with other data spatial data formats. The SED was modified to make the submission of shape maps or files in KML or KMZ format optional.
The SED does not specifically designate Indigenous-specific considerations. The SED should reflect Indigenous community, historical information, Indigenous knowledge, and traditional land use through consultation with Indigenous communities and also consult with Indigenous knowledge holders.	We expect applicants to carry out consultations with anyone who may be impacted, including through any consultation directed by the ACO, to inform the applicant's activity planning and application development.
The SED should require the applicant to describe how the proposed project considers existing disturbance (e.g., routing considerations).	The SED requires the applicant to discuss environmental factors associated with their preferred routing, including any factors that may impact the proposed project resulting from previously disturbed areas. The proposed routing is subject to AER review and approval.
Please provide greater clarity when field surveys are not completed, or standards are not followed.	The expectation is that field surveys will be conducted and appropriate standards will be used. Where field surveys are not completed or standards are not followed, the applicant must provide an explanation and justification as part of their application.
The SED does not have data timeline limitations for the collection of predisturbance data.	An applicant may submit data it believes is appropriate for the project. AER subject matter experts will review the submitted data to assess its suitability and may require additional information or updated data as a result of the application review process.
In section 3.2 about predisturbance assessments you say assessments under the *Water Act* codes of practice "will satisfy" SED requirements but that assessments under the *Wetland Policy* "may satisfy." Why?	Modifications have been made to provide additional clarity regarding expectations for submissions under the *Alberta Wetland Policy*.
Recommend replacing reference to "Restricted Activity Periods for Fish Species in the 10 Fish Management Zones of Alberta" with the Water Act Code of Practice Management Area maps for information on restricted activity periods.	The final SED was amended to reference the "Water Act Codes of Practice Management Area maps" for information on the restricted activity periods.

Stakeholder Feedback – Issue	AER Response
The SED should allow for a flexible approach to clubroot sampling or provide standardized methodology for clubroot sampling. A link to the Alberta cumulative clubroot map so applicant can determine if the proposed route traverses a county with clubroot infestations.	The final SED was amended to afford applicants the flexibility to either provide details on the clubroot cleaning process that they will implement or conduct clubroot sampling. Approval holders are expected to follow the Alberta Clubroot Management Plan based on provincial and other clubroot best management resources. Please note that the methodology for clubroot sampling is outside of the scope of the SED. The guidance for clubroot sampling can be obtained from best management practices typically used in industry and in published literature including the Alberta cumulative clubroot map. See below for clarification of expectations: https://www.alberta.ca/clubroot-pest https://www.alberta.ca/cumulative-clubroot-infestations-in-alberta#jumplinks-1
Clubroot (and all crop disease) information should be confidential.	The SED has been updated to provide more details regarding required clubroot information. Although the results of the clubroot sampling does not need to be provided as part of an application under this SED, the results must be retained by the applicant made available to the AER inspector or investigator upon request. Cleaning levels need to be identified as part of the environmental protection plan and identified on the environmental alignment sheets.
Please include a requirement to describe any collaborations with local Indigenous communities to conduct predisturbance baseline field surveys or steps taken to pursue such a collaboration.	Indigenous knowledge and traditional land use is informed by the Indigenous consultation process as directed by the Aboriginal Consultation Office.
Remove postconstruction monitoring requirements from the predisturbance information in the C&R report and leave them in the EPP.	The statement requiring postconstruction reclamation and monitoring procedures has been removed from the draft SED recognizing that the 2010 reclamation criteria sufficiently describe them.
Clarify the term “sufficient data” where additional field inspections may not be required.	Sufficiency of the data is evaluated on a case-by-case basis and many factors must go into this determination. The applicant can request a preapplication meeting to confirm. The purpose of this requirement is to let the applicant know of this potential option.
Clarify the definition of “significance” as related to problem soils.	“Significance” in this context refers to the magnitude of problem soils. The wording in the SED has been updated to reflect this.
In addition to soil variability determining the appropriate level of soil evaluation, please add uncertainty; greater uncertainty should result in more detailed levels of soil evaluation.	Approval holders are expected to monitor for unanticipated variability with respect to problem soils during construction and are expected to adjust their soil handling practices according to their EPP.

Stakeholder Feedback – Issue	AER Response
By definition, problem soils are defined as having "contrasting differences in soil quality between the upper and lower soil profile," this includes salinity as well as sand or gravel. Are soil samples required for sand and gravel as it is a visual observation or determined by auger refusal. Consider revising to clarify that soil samples for analysis are for salinity not sand and gravel.	Field samples must be collected for analysis to verify the extent and significance of problem soils with chemical or biological risk. Field samples may be collected to verify the extent and significance of problem soils with physical risks (e.g., coarse fragment content) if deemed necessary. The SED has been changed to state that soil samples can be collected for analysis to verify the extent and significance of salinity of problem soils.
The SED should include specific soil data to be on a pipeline soils map or on the environmental alignment sheets.	This information is typically on the environmental alignment sheets. Additional wording has been added to the SED to clarify.
The draft SED requires soil maps to portray "wet areas." This should include areas that are seasonally wet.	The intention is that seasonally wet areas are included. Modifications to the SED have been made to help clarify.
The SED should require that soils with unique seedbanks be salvaged separately.	Soils are typically salvaged in an area near the construction activity and are returned to the area from which they were removed upon the completion of construction.
The SED should require that soil maps show changes in vegetation communities, ecosites, and wetland classes.	Information pertaining to changes in vegetation communities and wetland classes is a requirement under this SED. When applicable, ecosites must be included in the environmental alignment sheets.
The SED should change the recommended soil inspection conditions to be inclusive of all ecosystems, requiring instead that soil inspections should be done when conditions are most protective of the soils at hand.	The expectation of the SED is that soil inspection and salvaging is completed or overseen by a qualified professional and adheres to any relevant best practices for the protection of soils.
Consider providing more description of actual thresholds for soil quality (or soil suitability?) that must be met when handling problem soils.	The SED was updated to provide additional information. Professional judgement is to be applied to problem soils because the definition is vague and not readily provided by other reputable sources (e.g., CANSIS). Being overly prescriptive would leave no room for professional judgement. *Guidelines for Alternative Soil Handling Procedures During Pipeline Construction* can serve as a guide, but at this time, the ultimate acceptable salinity thresholds at reclamation are the *Salt Contamination Assessment and Remediation Guidelines*.

Stakeholder Feedback – Issue	AER Response
There may be locations where sampling to 50 cm is not feasible (for example, with shallow bedrock). The SED should have flexibility to complete soil inspection locations to a minimum of 50 cm where possible. Shallow (30 cm) confirmation sites may be appropriate for confirmatory pits.	The applicant can raise this issue during the preapplication meeting and highlight in the application where deeper soil sampling depths cannot be achieved.
The SED should require landform and vegetation descriptions to include ecosite and wetland class and to indicate any that are of importance to Indigenous communities and traditional land uses as identified through consultation.	Per *Alberta Wetland Policy* requirements, wetland assessments are required prior to disturbance and include classification of wetlands utilizing the *Alberta Wetland Identification and Delineation Directive*. Landform and vegetation characteristics would not normally include ecosite and wetland class. However, this information is being collected as part of predisturbance assessments. The SED has been updated to require applicants to include in the potential project effects table any special circumstances informed through consultations that they carry out. The applicant is further required to include mitigation measures for each potential project effect in the potential project effect table in their environmental protection plan.
Table 3 in the draft SED lists soil characteristics but does not state that they may indicate problem soils. The description should be clarified.	The list is not an all-inclusive list, and the final SED has been clarified.
The document states that analysis must be performed on soil samples; however, it is up to interpretation of the applicant on what depth or horizons should be analyzed. The SED should clarify that all soil horizons from representative soil profiles should be analyzed.	It is the intent that horizons for all representative soil profiles shall be sampled and analyzed.
Where the suitability of upper subsoils may be reduced following soil replacement, please also require the applicant to describe measures taken to avoid the issue (e.g., techniques to preserve suitability of upper subsoils).	This item is addressed in the SED and through the application of applicable guidelines and standards. Applicants are required to identify all potential project effects, and their associated mitigations, as part of the application.
The SED should include a definition of "suitability" and what reference could be used to determine suitability (i.e., *Soil Quality Criteria Relative to Disturbance and Reclamation*).	The suitability criteria as per the physical and chemical criteria found in *Soil Quality Criteria Relative to Disturbance and Reclamation* has been added to the SED.

Stakeholder Feedback – Issue	AER Response
The "degree of colour change" in the soil evaluation report is subjective and needs greater definition.	We rely on the judgement of the professionals undertaking the assessment. The information should assist the equipment operators to watch for the colour change during stripping or other operations. Otherwise, a specific depth must be provided if an obvious colour change is not apparent.
4. Mitigation	
Sterilant use during construction of a pipeline is likely not to have any effect on final reclamation. A timeline should be included which nullifies particular requirements if used (e.g., two years for fertilizers). Additional guidance on the use of herbicides should be provided.	*SED 002* outlines the requirements for a reclamation certificate, including the application of herbicides, sterilant, and fertilizers. The purpose of this SED is to outline the application and postconstruction reclamation assessment requirements for class I pipelines. The SED must be followed when applying under *EPEA* for a class I pipeline as well as completing and submitting the postconstruction reclamation assessment.
The SED should include best practices to establish a resilient ecosystem (e.g., expectations for high biodiversity in reclaimed areas).	We expect the applicant to identify and use the most appropriate standards available. The SED is not intended to provide an exhaustive list of all relevant standards which may be applicable.
The SED should explicitly require the applicant to adhere to the *Alberta Wetland Policy*, *Alberta Wetland Mitigation Directive*, and best practices and wetland reclamation research evolves. In addition, please require that the applicant implement the following best management practices: • Consult with potential impacted Indigenous communities; • Provide opportunity for Indigenous communities to review of wetland avoidance and mitigation plans; • Develop offset and restoration protocols in collaboration with potentially impacted Indigenous communities; • Expand development of offset and restoration protocols to identify high-value wetlands based on cultural values.	Applicants are already required to follow the *Alberta Wetland Policy* (and associated directives under the policy) as it applies to a project; the SED need not explicitly state it. Consultation and incorporation of feedback from locally affected stakeholders (including Indigenous communities) would be through separate, but associated, processes (ACO adequacy, SOC process) required of any application under a specified enactment.

Stakeholder Feedback – Issue	AER Response
The draft SED lacks guidelines around the conservation or reclamation or wetlands and does not discuss conservation or reclamation to protect the exercise of traditional land use and rights.	The *Alberta Wetland Policy* takes into consideration human use, including traditional use, in determining wetland values. Specifically, the ABWRET-A assessment includes human use categories on how frequently an assessment area is visited and evidence of consumptive use, including harvesting of native plants, hay, or mushrooms; hunting; trapping; and fishing. Conservation and reclamation to protect exercise of traditional use and rights for Indigenous peoples will be captured through the regulatory application and Indigenous consultation processes.
The draft pipeline SED should also set out minimum requirements to achieve outcomes related to slopes.	Evaluation of steep slopes is completed during the PCRA. Where the PCRA shows that the pipeline is not on a trajectory to meet the 2010 reclamation criteria, the approval holder must address any related issues. Issues related to slope stability and pipeline integrity are also captured under the *Pipeline Act*.
The SED should include guidelines around the required depth of trenches and measures necessary to reduce subsidence, soil erosion, ensure buried pipelines will not be uncovered over time, etc. and reflect these added requirements in reclamation monitoring over the life of the project.	Requirements of the *Pipeline Act* and the *Code of Practice for Pipeline Crossings* specifies applicable minimum pipeline depth requirements. The AER will follow-up on subsidence issues brought to the attention of the AER.
The SED should adjust the recommended soil salvage conditions to be inclusive of all ecosystems, requiring instead that soil salvage should be done when conditions are most protective of the soils at hand. The SED should also provide a list of general practices for different soil types.	The expectation of the SED is that soil inspection and salvaging is completed or overseen by a qualified professional and adheres to any relevant best practices for the protection of soils.
The SED should include requirements and guidelines for transplanting rare and culturally important species, including opportunities for potentially impacted Indigenous communities to harvest culturally important species prior to disturbance.	The SED requires applicants to identify and provide mitigations for interactions with rare plant species, critical habitat, and provincially or federally listed species. The applicant's inclusion of any information pertaining to culturally and traditionally important plants would be informed through Indigenous consultation as directed by the ACO or any other consultations they carry out.
Table 5 (biophysical elements) of the SED should include reference to "Interactions with Indigenous cultural keystone species, ecosystems, and habitats."	The SED has been updated to require applicants to include in the potential project effects table, any special circumstances informed through consultations that they carry out, including Indigenous consultation.

Stakeholder Feedback – Issue	AER Response
The SED should require a description of how reclamation plans address the return of individual, local plants or their genes, and the same plant communities in support the exercise of treaty and Indigenous rights.	The applicant must identify potential project effects (including impacts to vegetation and rare plants) as well as any special circumstances informed through Indigenous consultation as directed by the ACO, and their resulting mitigations, in their environmental protection plan. The 2010 reclamation criteria also address plants local only to the disturbed areas.
Table 5 (biophysical elements) of the SED should include reference to reclamation to ensure these circumstances are adequately planned for (e.g., erosion, changes to soils, changes to plant community).	We made the recommended addition.
How is compliance assurance managed for approved pipeline projects?	See our website for information about our compliance assurance program, which includes proactive inspections and audits (https://www.aer.ca/regulations-and-compliance-enforcement/compliance-and-enforcement). If someone observes something of concern, they can call the AER 24-hour emergency line and file a complaint. An inspector will follow up with the concern and, if verified, begin compliance actions with the deficient company.
Provide opportunities for and with potentially impacted Indigenous communities to conduct sweeps prior to each (re)disturbance of habitat.	The AER expects applicants to use the best available sources of information when conducting wildlife sweeps and may include using information and feedback provided to the applicant during their consultations.
The SED should provide additional guidance regarding best practices for timber clearing and salvage, such as clearing in progressive stages to minimize erosion, dust, and influx of invasive species.	The Master Schedule of Standards and Conditions, as referenced in section 3.3.2, provides additional guidance regarding timber clearing and salvage. The SED is not intended to provide an exhaustive list of all standards that may be applicable.
Clarify the expectations of timber salvage on Freehold land within the White Area of the province.	The SED was clarified to ensure the minimization of loss of merchantable timber in Crown White Area lands or in White Area Freehold land where the landowner does not express a preference.
The SED should explicitly state the expectation that different soil horizons must be stockpiled separately and the viability preserved to the extent possible.	This requirement is addressed within the SED. Soils are typically salvaged in an area near the construction activity and are returned to the area from which they were removed upon the completion of construction.

Stakeholder Feedback – Issue	AER Response
The phrases “upper subsoil” and “spoil” are referred to in some sections and the term spoil is not used, but lower subsoil is used in the predisturbance section. It is recommended using one term: either “lower subsoil” or “spoil” consistently throughout.	The SED is referencing different aspects when using the terms “spoil” and “lower subsoil.” Lower subsoil is in reference to in-pit inspections, at which point it would not be considered spoil. Spoil could include C horizon, lower subsoil, or soft consolidated bedrock layers (R), and as defined by SED as any material below the topsoil and upper subsoil layers removed during excavation of the trench. Modifications have been made within the SED to provide additional clarity.
The SED should specify that stockpiles must not be placed in/on wetlands.	The *EPEA* approval for a class I pipeline typically includes standard conditions regarding specific stockpile location requirements.
Please require that direct placement occur as possible to avoid rehandling and loss of viability, and include guidelines (e.g., maximum retention times, erosion control, practices that minimize compaction) such that that any required stockpiling maximizes soil health and ability to result in successful reclamation.	These requirements are addressed in the SED. The expectation of the SED is that soil handling is completed or overseen by a qualified professional and adheres to any relevant best practices for the protection of soils.
The erosion control requirements should be extended to account for deeper soil strata and triggering mechanisms of landslide in prone areas.	The purpose of the SED is to focus on the reclamation of class I pipelines at the time of construction and specify the postconstruction reclamation requirements. Requirements under the *Pipeline Act* are in place to address geohazards related to pipelines.
Is it the intent of the document to contemplate reclamation requirements for mud disposal for HDDs as the same as for downhole mud? Recommend HDD drilling mud be specifically excluded from discussion of drilling waste.	Drilling mud is expected to be managed in accordance with *Directive 050*.
The SED should allow for the management of weeds by the landowner.	The approval holder must ensure that the requirements of the SED and the approval (if issued) are met. It is acceptable if the approval holder has an agreement with the landowners. Ultimately, the approval holder is obligated to ensure that the right-of-way is weed free.
The SED should add a placeholder for guidance documents from potentially affected Indigenous communities.	Clarification was added to the SED to recommend the applicant include the discussion and consideration of concerns regarding current standards for conservation, reclamation, and monitoring, as identified through consultations carried out by the applicant.

Stakeholder Feedback – Issue	AER Response
Reference to residual effects is vague and open to broad interpretation. Guidance should be provided including confirmation whether a formal cumulative impact assessment is required.	Specific instructions on how to describe residual effects is not included in the SED, as the applicant is expected to describe the residual effects of their project based on project-specific considerations. Guidance documents such as the *Canada Energy Regulator's Filing Manual Guide A* (https://www.cer-rec.gc.ca/en/applications-hearings/submit-applications-documents/filing-manuals/filing-manual/filing-manual-guide-a-facilities-applications-a2.html) may be used by applicants to assist in the identification of residual effects. If an applicant has questions regarding a cumulative impact assessment for their application, these questions can be raised in a preapplication meeting.
The SED should include requirements for monitoring and verification of anticipated residual effects. Where residual effects were not assumed, require that the applicant monitor to verify and be able to provide additional mitigation, if necessary, if assumptions were not met.	The PCRA will address any realized residual effects that were not anticipated in the initial application and ensure that the approval holder addresses any outstanding residual effects related to reclamation. All activities approved under an *EPEA* approval for class I pipelines are subject to inspection by the AER. Noncompliances are subject to compliance action by the AER.
The SED should specifically require the applicant to include traditional land use information to inform the environmental protection plan, identified through consultation and any protocols or guidelines provided by the Indigenous community. The submission to AER should provide an overview of traditional land uses in the area, how impacts will be mitigated, and how these uses will be restored.	The SED requires the applicant, when justifying their route selection, to discuss any concerns raised during consultations they carried out. Additionally, the SED has been updated to require the applicant to include any special circumstances informed by the consultations they carried out as part of their potential project effects table. The applicant must also describe mitigation measures for each potential project effect in the potential project effect table, which is included as part of the environmental protection plan.
For pipeline reclamation, an aerial and satellite imagery review is unlikely to provide additional information and should be excluded from being an SED requirement.	The alignment sheets normally use satellite or aerial photographs as a base map as standard practice. It enables quick assessment of the landforms (e.g., wetlands, crops, wooded areas). An imagery review is not required but is usually included as part of the desktop review prior to the field component.

Stakeholder Feedback – Issue	AER Response
The SED should require that, in reclamation planning, the applicant describe its early anticipation and mitigation of any constraints, externalities, or indirect impacts that may influence reclamation success, to the extent possible (e.g., various climate change scenarios, access roads increasing disturbance from recreational users, other industrial developments).	The purpose of the SED is to focus on the reclamation of the class I pipelines at the time of construction and specify the postconstruction reclamation requirements. Indirect effects and externalities are not normally considered under the review of applications for class I pipeline *EPEA* approvals, as they are also located within the White Area primarily on previously disturbed agricultural lands and rangelands. Where external or indirect impacts are identified, these concerns can be submitted to the nearest AER field centre. The PCRA must address any constraints that occurred that may impact reclamation success.
The SED should set out prescriptive minimum content and not rely on self-disclosure from the approval holder.	Each project is unique and may have different potential effects and residual effects that guide the applicant to generate mitigations specific to their project. AER subject matter experts review each application to ensure that necessary mitigations are in place, and that applicable standards and guidelines are adhered to.
The SED should clarify the difference between adaptive management and contingency plans.	Adaptive management is intended to promote greater monitoring of mitigation effectiveness before the point where outcomes are not met. It allows the approval holder to implement alternative mitigations to achieve the outcomes in an efficient and effective manner as it may not be necessary to require an approval amendment nor report a noncompliance event (i.e., mitigations are monitored and adjusted where not effective). Contingency planning is a requirement where the approval holder must have a process to respond to unexpected events or emergencies or where the planned mitigations are not effective. Contingency plans outline specific actions and procedures to be followed. The verbiage around adaptive management has been removed from the SED to make the document more understandable and improve compliance assurance.
The SED should require the approval holder to develop indicators, thresholds, and triggers when action is needed to correct ineffective mitigation measures.	The PCRA requirement is intended to provide the state of pipeline reclamation and confirm whether the pipeline is on a positive trajectory to reclamation. Where issues (e.g., subsidence) is noted during inspections or through a complaint, the AER will review and resolve, as appropriate, with the approval holder.

Stakeholder Feedback – Issue	AER Response
5. PCRA	
There is uncertainty and lack of detail in how reclamation trajectory will be measured. Applying the 2010 wellsite criteria is onerous and scientifically unjustified sampling intensity. Clarification of what is deemed "appropriate reclamation" is required when determining the need to submit a 5-year PCRA.	The 2010 well site reclamation criteria are the standards by which successful reclamation is measured. The PCRA requirements imposed on the approval holder will demonstrate that the approval holder is on a trajectory to successful reclamation and equivalent land use. All pipelines are specified land and require reclamation and, at the end of the pipeline life, a reclamation certificate (notwithstanding reclamation exemption requests). The 2010 reclamation criteria have currently and historically included linear disturbances. Inspection frequency guidance is provided in section 4 the SED.
The 2010 reclamation criteria state that all soil inspection sites on a site are to be assessed to a minimum of 50 cm. Typically, for PCRA, soil pits are dug to 30 cm to avoid ground disturbance requirements (e.g., line locates, One Calls), unless it is deemed necessary to go deeper, which would be flagged for further review. Assessing to 50 cm on all land uses will increase field time and cost of the program. Assessing to 30 cm is generally sufficient for identifying potential soil issues during the PCRA.	The onus is on the approval holder to demonstrate that the 30 cm depth is adequate and justify not going deeper where necessary. An example may be where a problem is identified (e.g., the vegetation is stunted) and deeper depths may be used to determine if there is subsoil compaction. The final determination of equivalent land capability is at the time when the land is certified. Meeting the 2010 criteria is the standard indicator used for this type of disturbance to demonstrate being on the trajectory equivalent land capability. Where the PCRA is not meeting the 2010 criteria, it is expected that the approval holder provide justification for the criteria deviations or request an extension to complete the final PCRA after the five-year PRCA report.
How will the well site criteria sampling frequency be applied to a linear pipeline right-of-way?	Section 4 of the SED provides the minimum density requirements. The baseline soil survey assessment will provide the density conducted at the time of application, and guidance is provided in section 3.2.1.1 for the baseline soil survey.

Stakeholder Feedback – Issue	AER Response
Clarify that the record of observation (RoO) for the access road can be used since the pipeline is a linear feature and is more similar in the use of paired assessment points versus the approach used to assess a well site.	RoO for the access road should be used *at a minimum*. Operators are free to use the linear RoO; however, the formulas within the linear RoO do not currently work properly, so use of the linear RoO is not required. Flexibility is provided in the PRCA assessment by allowing for proposed deviations and professional justification, in addition to a description of any advanced technologies to be used. Inspection density can vary from the appropriate reclamation criteria but must meet the density conducted during the baseline soil survey assessments, in addition to identified areas of concern. The RoO must be provided as standard information within a PCRA. It allows the inspectors to better understand and focus on the areas of interest and locations of subsequent inspections.
The SED should allow deficiency spreadsheets or alignment sheets to be used to indicate areas of concern when compiling and reporting the PRCA.	The alignment sheets are expected to show all information collected in a transparent and easily understood way. The deficiency spreadsheets (as identified in section 4) are also required to show the deficiency listing in addition to the extent of the deficiency with corrective actions and timing. The record of observation (RoO) must be provided as standard information as part of a PCRA. It allows the inspectors to better understand and focus on the areas of interest and locations of subsequent inspections.
What are the expectations for landowner consultation on the PCRA?	Expectations for consultation are that it is typically done when entering and working on someone's land. Engagement on construction and reclamation should take place on an ongoing, as needed basis. Documentation of key concerns, ongoing issues, or comments (positive or negative) should be captured. The approval holder is expected to include a description of any concerns raised during their consultations, and how the concerns were addressed.
Can the preconstruction/construction environmental alignment sheets be updated to show the PCRA results?	Yes.

Stakeholder Feedback – Issue	AER Response
The SED should outline that PCRA reports must detail how collaboratively developed reclamation practices have been implemented.	The 2010 reclamation criteria are the standard by which successful reclamation is measured. The PCRA requirements imposed on the approval holder will demonstrate that the approval holder is on a trajectory to successful reclamation and equivalent land use. Applications for reclamation certificates are assessed against the 2010 reclamation criteria. Any reclamation criteria developed in addition to the 2010 reclamation criteria should be described in the PCRA. Section 4.2.2 of the SED requires the approval holder to describe any deviations from the appropriate reclamation criteria.
The SED should clarify the requirements for ongoing post construction reclamation assessments and not rely on limited self-disclosure.	The purpose of the postconstruction reclamation assessment (PCRA) is to demonstrate that the project has met the appropriate approval requirements and is on a trajectory to meet reclamation certification requirements. If the two-year PCRA shows that all the requirements are met, there is no need for a five-year report. The project will also undergo appropriate reclamation assessments prior to submitting the reclamation certificate application. The project proponent or the AER should be contacted if issues arise during the operational phase of the pipeline (e.g., subsidence, weed growth, poor yields, etc.). Minor reclamation issues that do not interfere with normal land use and do not impose negative impacts to site capability (i.e., consistent with the surrounding land and offsite assessments) identified during the completion of the two-year PCRA should be resolved prior to or at the time of the submission of the two-year PCRA. The final determination of equivalent land capability is at the time when the land is certified. The 2010 reclamation criteria are the standard indicator used for this type of disturbance, as well as to demonstrate being on the trajectory toward equivalent land capability within a short amount of time.
Please replace “landowner consultation” with “public and rightsholder consultation” or similar language, require specific reporting requirements regarding Indigenous consultation, and specify that PCRAs must address local Indigenous concerns and restore the ability to exercise rights in the project area. The PCRA should describe specific consultation and how these concerns were addressed or rationale for not addressing them.	The expectation of the PCRA is that approval holders review it with anyone who may be affected to capture and address concerns raised. Rationale should be included in the PCRA for concerns raised.

Stakeholder Feedback – Issue	AER Response
The draft SED specifies submission of the PCRA two growing seasons after trench backfill. Some common circumstances (e.g., winter construction, spring rains, minor repairs) may impact first year vegetation success extending the time beyond two years from trench backfill. The AER should adopt an approach where two growing seasons from the replacement of topsoil is allowed.	If approval holders are unable to replace the topsoil within two seasons of backfilling the trench, section 4.1 of the SED allows the approval holder to submit an extension request to the AER for review.
For the listing of inspection sites from the construction phase of the project, is this a construction issues list of areas requiring ongoing monitoring? Or copies of all environmental inspection reports?	The SED only requires that the approval holder provide a list of the inspection sites during the pipeline construction (e.g., where the soil surveys were conducted).
Will applicants and approval holders be able to employ new or alternative technology?	The AER does not have a standardized process to consider advanced technologies such as drones or artificial intelligence, and soils cannot be directly assessed with this advanced technology at this time. Alternate reclamation assessment and evaluation criteria may be based on professional judgement and supported by alternative methods and criteria. This is considered on a case-by-case basis and must be approved by the AER in advance. The alternative method submission should include a description on the effectiveness of the technology. The issuance of the reclamation certificate is based on professional judgement but is also based on the 2010 reclamation criteria. Alternative assessment methodology is not, at this time, generally acceptable, recognizing this may change in the future.
The SED should require the applicant to demonstrate that weeds are removed or under control over the long-term, to ensure reclaimed areas are able to resist encroachment even following additional disturbance (e.g., wildfire, recreational use).	The *Weed Control Act* is applicable over the life of the pipeline.
Submission of updated environmental alignment sheets with the PCRA inspection locations and deficiencies should be acceptable to satisfy the SED and updated maps.	Yes. This is acceptable.
The SED should include the rationale behind why a deficiency occurred to promote understanding of the root cause of the deficiency, evaluation of whether the proposed "corrective action" addresses symptoms and root cause, and identification of best management practices to avoid similar deficiencies in future.	The SED was modified to include.

Stakeholder Feedback – Issue	AER Response
6. SMART	
Please clarify the use of SMART objectives and measures. The SED will result in a multitude of SMART objectives across multiple projects, similarly but not identically worded, would increase the complexity of the applications. SMART objectives should be collaborative and not specific to each applicant.	The reference to SMART objectives was removed from the SED in favour of direct mitigation monitoring and effectiveness of mitigations. This was done to make the SED clearer and improve compliance with the requirements.

Stakeholders Who Submitted Feedback **(in alphabetical order)**

360 Pipelines

Atco Gas & Pipelines Ltd.

Canadian Association of Petroleum Producers

Cold Lake First Nations

County of Minburn No. 27

E3 Lithium

Enbridge Inc.

Fort McKay First Nation

Jacobs

Keyera Corp.

Matrix Solutions Inc.

Pembina Pipeline Corporation

Skye Asset Retirement Inc.

Stantec Consulting