

<b>ALASKA</b> PipelineProject	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	

**APPENDIX 1J ALASKA PIPELINE PROJECT'S EROSION CONTROL,  
REVEGETATION, AND MAINTENANCE PLAN**

**TABLE OF CONTENTS**

I. APPLICABILITY ..... 2

II. SUPERVISION AND INSPECTION ..... 3

III. PRECONSTRUCTION PLANNING ..... 5

IV. CONSTRUCTION ..... 6

V. RECLAMATION ..... 12


VI. OFF-ROAD VEHICLE CONTROL ..... 14

VII. POST-CONSTRUCTION ACTIVITIES ..... 15

**LIST OF TABLES**


TABLE 1J-1 SUMMARY OF BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL ..... 8

TABLE 1J-2 COMPARISON BETWEEN STANDARD FEDERAL ENERGY REGULATORY COMMISSION AND ALASKA PIPELINE PROJECT PLANS AND JUSTIFICATION OF CHANGES ..... 16

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-II


## ACRONYMS AND ABBREVIATIONS

APDES	Alaska Pollutant Discharge Elimination System
APP	Alaska Pipeline Project
EI	Environmental Inspector
FERC	Federal Energy Regulatory Commission
TEI	Terrain Erodibility Index

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-1

***APP has developed this Erosion Control, Revegetation, and Maintenance Plan (APP Plan) to be applied to the Project. The APP Plan addresses the requirements of the FERC Plan, except where measures in the FERC Plan, as modified in 2003, are considered not applicable, technically infeasible, or unsuitable due to local conditions.***

***APP modifications to the FERC Plan are summarized in a table at the end of this document, including inserted and deleted text.***

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-2


## I. APPLICABILITY

The intent of this Plan is to identify baseline mitigation measures for minimizing erosion and enhancing revegetation. Once a project is certificated, further changes can be approved. Any such changes from the measures in this Plan (or the applicant's approved plan) will be approved by the Director of the Office of Energy Projects (Director), upon the applicant's written request, if the Director agrees that an alternative measure:

1. Provides equal or better environmental protection;
2. Is necessary because a portion of this Plan is infeasible or unworkable based on project-specific conditions; or
3. Is specifically required in writing by another federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.

Any requirements in this Plan to file material with the Secretary of the FERC (Secretary) do not apply to projects undertaken under the provisions of the blanket certificate program. This exemption does not apply to a request for alternative measures.

Measures to address erosion and sediment controls in this APP Plan are applicable to uplands, wetlands, and waterbody crossings.

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-3

## II. SUPERVISION AND INSPECTION


### A. ENVIRONMENTAL INSPECTION

1. At least one Environmental Inspector (EI) will be assigned by the Project for each construction spread during construction and reclamation (as defined in Section V). The number and experience of EIs assigned to each construction spread will be appropriate for the length of the construction spread and the number/significance of resources affected.
2. EIs shall have peer status with other activity inspectors.
3. Provided safety considerations, including U.S. Occupational Health and Safety Administration regulations, are not compromised, EIs shall have the authority to stop activities that violate the environmental conditions of the Certificate, federal and state environmental permit conditions, or landowner requirements; and to order appropriate corrective action.


### B. RESPONSIBILITIES OF ENVIRONMENTAL INSPECTORS

At a minimum, the EIs shall be responsible for

1. Ensuring compliance with the requirements of this Plan, the Procedures the environmental conditions of the Certificate authorization, the mitigation measures proposed by the applicant (as approved and/or modified by the Certificate), other environmental permits and approvals, and environmental requirements in landowner agreements.
2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance.
3. Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before starting construction activities.
4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area,
5. Identifying erosion/sediment control and soil stabilization needs in all areas per the APP Plan and associated BMP documentation.
6. Ensuring that the location of dewatering and water diversion structures will not direct water into known cultural resources sites or locations of sensitive species.
7. Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a wetland and waterbody. If such deposition is occurring, the dewatering activity shall be stopped and the design of the discharge shall be changed to reduce reoccurrence.
8. Ensuring that subsoil and topsoil are tested in actively cultivated and residential areas to measure compaction and determine the need for corrective action.

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-4

9. Advising the Chief Construction Inspector when conditions (such as wet weather) make it advisable to restrict construction activities to avoid excessive rutting.
10. Ensuring that the disturbed construction surface contours are stable.
11. Verifying that the soils imported for agricultural or residential use have been certified as free of noxious weeds and soil pests, unless otherwise approved by the landowner.
12. Determining the need for and ensuring that erosion controls are properly installed, as necessary to control sediment flow into wetlands, waterbodies, sensitive areas, and onto roads per the APP Plan and associated BMP documents.
13. During unfrozen conditions or during winter when a potential for runoff or snow melt may occur, inspecting and ensuring the maintenance of temporary erosion control measures per applicable permit requirements.
14. Ensuring the repair of ineffective temporary erosion control measures as soon as conditions allow for personnel, material and equipment access to the area.
15. Keeping records of compliance with the environmental conditions of the FERC certificate, and the mitigation measures proposed by APP in the application submitted to the FERC, and other Federal or state environmental permits during active construction and reclamation.
16. Identifying areas that should be given special attention to ensure stabilization and reclamation after the construction phase.

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-5

### III. PRECONSTRUCTION PLANNING

The Project will perform the following before construction.

#### A. CONSTRUCTION WORK AREAS

1. Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads) that would be needed for safe construction. The Project will ensure that appropriate cultural resources and biological surveys have been conducted.
2. The Project will consider expanding required cultural resources and endangered species surveys in anticipation of the need for activities outside of certificated work areas.

#### B. Not Used (DRAIN TILE AND IRRIGATION SYSTEMS)

#### C. GRAZING DEFERMENT

Develop grazing deferment plans with willing landowners, grazing permittees, and land management agencies to minimize grazing disturbance of revegetation efforts.

#### D. ROAD CROSSING AND ACCESS POINTS

Plan for safe and accessible conditions at all roadway crossings and access points during construction and reclamation.

#### E. DISPOSAL PLANNING

Determine methods and locations for the disposal of construction debris (e.g., timber, slash, mats, garbage, drilling fluids and cuttings, excess rock, rejected spoil materials). Off-site disposal in other than commercially operated disposal locations is subject to compliance with all applicable survey, landowner permission, and permit requirements.

#### F. AGENCY COORDINATION


The Project will coordinate with the appropriate federal, state, and local agencies as outlined in this Plan and in the Certificate.

1. Obtain written recommendations from the local soil conservation authorities or land management agencies regarding permanent erosion control and revegetation specifications.
2. Develop specific procedures in coordination with the appropriate agency to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and reclamation activities.

#### G. STORMWATER POLLUTION PREVENTION PLAN

Make available on each construction spread the Stormwater Pollution Prevention Plan prepared for compliance with the U.S. Environmental Protection Agency's National Stormwater Program General Permit requirements.



	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-6

#### IV. CONSTRUCTION

##### A. APPROVED AREAS OF DISTURBANCE

1. Project-related ground disturbance shall be limited to the construction right-of-way, extra work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the Certificate. Any Project-related ground disturbing activities outside these Certificated areas, except those needed to comply with the Plan and Procedures (e.g., slope breakers, energy-dissipating devices, dewatering structures) will require prior Director approval. All construction or reclamation activities outside of the Certificated areas are subject to all applicable survey and mitigation requirements.
2. The construction right-of-way width for the project is described in the FERC application unless otherwise modified by a Certificate condition. This construction right-of-way width may be expanded by up to 50 feet without Director approval to ensure safe and efficient construction where climatic, topographic, soil limitations or other conditions require expansion. Fifty feet of extra construction right-of-way width may be also used for truck turnarounds where no reasonable alternative access exists.


Project use of these additional limited areas is subject to landowner approval and compliance with all applicable survey and mitigation requirements. When such additional areas are used, each one should be identified and the need explained in the weekly or biweekly construction reports to the FERC, if required. The following material should be included in the reports:

- a. The location of each additional area by station number and reference to a previously filed alignment sheet, or updated alignment sheets showing the additional areas;
- b. Identification of where the Commission's records contain evidence that the additional areas were previously surveyed; and
- c. A statement that landowner approval has been obtained and is available in project files.

Prior written approval of the Director is required when the Certificated construction right-of-way width would be expanded by more than 50 feet.

##### B. TOPSOIL/LOOSE SURFACE MATERIAL SEGREGATION

1. During summer construction, unless the landowner or land management agency specifically approves otherwise, limit the mixing of topsoil/loose surface material with subsoil by stripping topsoil/loose surface material and segregating it from the subsoil in:
  - a. Actively cultivated or rotated croplands
  - b. Residential areas;
  - c. (Not applicable)

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-7

- d. Other areas at the landowner's or land managing agency's request.
- e. Wetlands where standing water is not present or soils are not saturated.

During winter construction, no stripping of topsoil will be performed. Where practical, loose surface material will be bladed, moved and stored on the right-of-way during winter construction.

2. In residential areas, importation of topsoil is an acceptable alternative to topsoil segregation.
3. In deep soils (more than 12 inches of topsoil), during summer construction, segregate at least 12 inches of topsoil. During summer construction, in soils with less than 12 inches of topsoil make every effort to segregate the entire topsoil layer.
4. During summer construction where topsoil, including loose surface material, segregation is performed, maintain separation from subsoil throughout the construction period.
5. Segregated topsoil or loose surface materials will not be used for padding the pipe.

C. Not Used (DRAIN TILES)

D. Not Used (IRRIGATION)

E. ROAD CROSSINGS AND ACCESS POINTS

1. Maintain safe and accessible conditions at all road crossings and access points during construction.
2. If crushed stone access pads are used in residential or active agricultural areas, place the stone on synthetic fabric to facilitate removal, as required.


F. PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL

Erosion and sedimentation controls (comprising a toolkit of BMPs) applicable to the unique conditions of the Project area are being developed. In particular, BMPs will be selected for use during construction and reclamation for upland, wetland, and waterbodies based on construction region, season, and terrain conditions.

1. Alaska Climatic Regions

The climatic regions considered for the route include Arctic and Interior Alaska, and Southcentral Alaska. These conditions will be used to define the practicality of applying the BMPs in each of the climatic regions. The BMPs will be categorized based on the format developed by the Alaska Department of Environmental Conservation and adapted for project use as follows:

- Generally Practical for Most Applications/Conditions;
- Practical in Certain Situations;

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	<b>PAGE 1J-8</b>

- Practical only with Design Adaptations (e.g., Permafrost); and
- Not Practical.

2. Season of Construction

The majority of the pipeline will be constructed during winter in frozen soil conditions which will mitigate adverse impacts of construction on unstable terrain (e.g., – tundra, muskeg, ice-rich permafrost). Generally erosion and sedimentation control procedures that would also be used for uplands can be applied to the wetlands along the route.

3. Terrain conditions

Soil will be assessed for a variety of conditions along the entire route including: material properties, slope angles of the terrain, frozen/unfrozen conditions, and, if soil is frozen, the ice content,

The following table provides some of examples of the BMP toolkit being developed. The selection criteria for the BMPs are grouped in classes identified by the general terrain condition to be maintained or mitigated.

TABLE 1J-1 Summary of Example Best Management Practices for Erosion and Sediment Control

Table 1J-1		
Alaska Pipeline Project		
Summary of Best Management Practices for Erosion and Sediment Control		
Class	Best Management Practice	Description
Soil Retention	Mulching	The application of organic matter or other normally biodegradable substance to the soil surface. Mulch serves as a protective layer to reduce raindrop and runoff erosion by absorbing impact energy and minimizing soil detachment on disturbed areas prior to revegetation. Mulching facilitates seed growth and plant germination through conservation of soil moisture, insulating the soil and suppressing weed growth.
Soil Retention	Manufactured Coconut/Jute Blanket	A permeable blanket or netting made from synthetic fibre, jute, straw, coconut fibre, or other product through which vegetation can penetrate. Manufactured blankets provide a cover to protect the soil surface from raindrop impact and surface erosion. Stronger synthetic materials provide longer-term reinforcement while natural materials are biodegradable and as such have a shorter effective duration.
Soil Retention	Seeding	Used to establish vegetation on disturbed soils by way of placement of seed atop a layer of organic topsoil. Through-seeding erosion protection is gained through the development of shallow-root structure from seed germination and subsequent plant growth.
Soil Retention	Woody Debris	Provides a rough surface to disrupt water-flow velocity and characteristics and aids in establishment of a vegetative cover by incorporating woody debris from the clearing and grubbing operations into the upper layer of the fill soils during final grading operations upon completion of pipe installation.

Table 1J-1

Alaska Pipeline Project  
Summary of Best Management Practices for Erosion and Sediment Control

Surface Water Control	Diversion Berms	Used to direct or control surface water flowing down a slope in an effort to reduce surface erosion. Surface water can be directed to suitable vegetated areas adjacent to the pipeline right-of-way or to drainage channels built along the edge of the pipeline right-of-way. The berms can be constructed of local soils if they are suitable, such as clay, or of sandbags. The quantity of berms and their configuration depend on the steepness of the slope, the type of surficial soils, and the local drainage patterns on and adjacent to the pipeline right-of-way.
Surface Water Control	Rock Flume	A rip-rap-lined channel used to convey water down a relatively steep slope thereby reducing the potential for erosion problems on or below the slope caused by flows over the slope face.
Surface Water Control	Silt Fence	Permeable fabric barriers installed vertically on support posts along contours to collect and/or filter sediment-laden runoff by allowing water runoff to pond behind the silt fence and sediment to settle-out as the water filters through the fabric. Silt fences are an effective perimeter control, around stockpiles, as a mid-slope grade-break and can be used at the bottom of cut or fill slopes to collect sediment-laden runoff.
Surface Water Control	Interceptor Diversion Ditch	An earthen control structure consisting of a ditch or combination of a ditch and earthen dyke barrier constructed along the perimeter of a disturbed site. The purpose of the interception/diversion ditch is to intercept the water runoff and control the velocity and/or route of the water runoff in an effort to isolate and/or prevent siltation or contamination.
Subsurface Water Control	Pipe Ditch Plugs	Used to restrict seepage erosion of the pipe ditch backfill, restrict pipe ditch water flow to limit thermal degradation of the permafrost surrounding the pipe and restrict the water flow at points of entry into the pipe ditch and/or points of exit from the pipe ditch. Pipe ditch plugs consist of a low permeability barrier constructed of materials such as sprayed-in-place polyurethane or similar product, or a fine gravel or concrete sand mixed uniformly with 15-20 percent of bentonite by weight.
Subsurface Water Control	Groundwater Control	Drains that intercept, collect and convey subsurface groundwater from the slope thereby mitigating the potential for a high localized groundwater table in an effort to minimize piping erosion and seepage flows on slopes.
Permafrost Degradation Mitigation	Granular Work Pad	Granular material placed atop the native ground surface to mitigate the potential of permafrost degradation and limit the disturbance to the ground surface from construction operations. Granular pads limit water runoff, raindrop or hail impact and thermal erosion by providing a protective granular layer atop the ground surface.
Permafrost Degradation Mitigation	Snow/Ice Work Pad	Snow and ice material placed atop the native ground surface to mitigate the potential of permafrost degradation and limit the disturbance to the ground surface from construction operations. Snow/ice pads limit construction impact to the tundra surface and mitigate thermal erosion by providing a protective layer atop the ground surface.

Table 1J-1


Alaska Pipeline Project  
Summary of Best Management Practices for Erosion and Sediment Control

Permafrost Degradation Mitigation	Thermosyphon	Thermosyphon technology consists of a sealed pipe, two-phase liquid/gas heat transfer system. Passive convection extracts ground heat and releases it to the atmosphere reducing the risk of thawing in permafrost soils. Thermosyphons are a very effective device that contain no mechanized parts and requires no external/mechanical energy to operate in winter conditions. Different thermosyphon systems can be selected and designed for site-specific requirements.
Permafrost Degradation Mitigation	Wood Chip Ground Cover	Used to mitigate the thermal degradation of permafrost soils by insulating the ground surface with a blanket of wood chips thereby reducing the potential for thawing and water runoff erosion. The wood chips retard the rate of thaw, particularly in ice-rich soils that contain the potential to generate high-pore water pressures that in turn can lead to subsurface instability as well as an increase in surface water runoff. Wood chip application is generally designed to permit long-term thawing at a slow rate thereby permitting pore water to be released gradually, as such reducing subsurface instability caused by high-pore water pressures in the subsurface soils.
Permafrost Degradation Mitigation	Granular Cover Insulation	Consists of granular material placed atop the native ground surface to mitigate the potential of permafrost degradation. Granular cover limits water runoff, raindrop or hail impact and thermal erosion by providing a protective granular layer atop the ground surface.
Permafrost Degradation Mitigation	Granular Cover plus Board Insulation	Consists of granular material and closed cell polystyrene insulation placed atop the native ground surface to mitigate the potential of permafrost degradation. Granular cover plus board insulation limits water runoff, raindrop or hail impact and thermal erosion by providing a protective granular layer containing board insulation atop the ground surface.
Watercourse Protection	Bladder Dam	A tubular device made of impermeable geotextile material, and when filled with water, creates a temporary gravity dam structure. The bladder dam is placed on the existing ground, providing a barrier between free water in the waterbody and silt-laden material in the work zone.
Watercourse Protection	Low Water Crossing	Provides vehicular access across relatively shallow and narrow waterbodies with granular beds and stable banks.
Watercourse Protection	Fabric Wrap	Used to reconstruct streambanks and provide protection from the erosive forces encountered on streambanks. The fabric wraps consist of local earthen material encased within a heavy coir geotextile. Live cuttings and brush layering revegetation techniques can be successfully incorporated with the fabric wraps, however, the placement of these materials is crucial to their development.
Watercourse Protection	Root Wads	Used for streambank protection that provides immediate riverbank stabilization, protects toe-of-slope and provides excellent fish habitat. Root wads consist of tree boles (trunks) with root fans attached. They collect sediment and debris that enhance bank structure over time and provide toe support for bank revegetation.
Watercourse Protection	Pump Around	Uses pumps and hoses and isolation dams to move clean stream flows around the pipeline trench, thus creating a work zone on the streambed that is free from running water. Streamflow is maintained at all times while instream sedimentation is reduced.

Table 1J-1

Alaska Pipeline Project  
Summary of Best Management Practices for Erosion and Sediment Control

Watercourse Protection	Riffle Structure	Used to control stream flow velocity, reduce erosion potential and offer passage for fish. Similar to check dams, they are often placed in series, creating a step-down profile along the waterbody; however, riffle structures have gentle slopes and are notched in the middle to allow normal flows to pass without building up.
------------------------	------------------	---

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-12

## V. RECLAMATION


### A. CLEANUP

1. Commence cleanup operations immediately following backfill operations. Where practicable, complete final grading, topsoil replacement, and installation of permanent erosion control structures within 30 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these timeframes, maintain temporary erosion controls until conditions allow completion of final cleanup, which may be performed as required in the following winter or summer.
2. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in Section IV.F and inspected and maintained (as specified in Sections II.B.12 through 14). When access is no longer required, permanent erosion control structures will be installed as required.
3. In non-agricultural areas, rock excavated from the trench may be used to backfill the trench to the top of the existing bedrock profile. Excess rock that is not returned to the trench may be spoiled on the right-of-way or other construction work areas as approved by the landowner or land managing agency
4. As conditions allow, remove excess rock from at least the top 12 inches of soil in all actively cultivated or rotated cropland, and residential areas. The size, density, and distribution of rock remaining after cleanup on the construction work area should be similar to adjacent areas not disturbed by construction. The landowner may approve other provisions in writing.
5. Grade the construction right-of-way to stable contours, with the surface soils in a suitable condition for reclamation.
6. Remove construction debris from all construction work areas unless the landowner or land managing agency approves otherwise.
7. Remove temporary erosion and sediment control measures when permanent erosion and sediment control measures are implemented or when reclamation is successful.

B. Not Used (PERMANENT EROSION CONTROL DEVICES – permanent and temporary erosion control devices are consolidated in the Plan)

### C. SOIL COMPACTION MITIGATION

1. Test topsoil and subsoil for compaction at regular intervals in actively cultivated or rotated cropland and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Use appropriate devices to conduct tests.
2. During summer construction plow severely compacted actively cultivated or rotated cropland areas with a deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing any segregated topsoil.

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-13

Alternatively, make arrangements with the landowner to plant and plow under a "green manure" crop, such as alfalfa, to decrease soil bulk density and improve soil structure. If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.


3. During summer construction, perform appropriate soil compaction mitigation in severely compacted residential areas.

#### D. REVEGETATION

##### 1. General

- a. The Project will promote successful revegetation of soils disturbed by project-related activities in accordance with applicable BMPs, except as noted in Section V.D.1.b.
  - b. Replace turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. Reclamation work must be performed by appropriately qualified personnel.
  - c. Requirements for revegetation of disturbed areas to facilitate and enhance APP revegetation by natural, non-introduced plant species will comply with the recommendations of land management agencies in the stipulations of their respective right-of-way lease documents. Conventional seed bed preparation, soil amendments, and seed mixtures will be customized to Arctic and sub-Arctic climactic zones and ecological regions.
2. Not Used (Soil Additives – See V.D.1.c)
  3. Not Used (Seeding Requirements – See V.D.1.c)




	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-14

## **VI. OFF-ROAD VEHICLE CONTROL**

The Project will implement and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include:

1. Signs;
2. Fences with locking gates;
3. Slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and
4. Conifers or other appropriate trees or shrubs across the right-of-way.

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1J	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
	<b>FERC Docket No. PF09-11-000</b>	PAGE 1J-15

## VII. POST-CONSTRUCTION ACTIVITIES

### A. MONITORING AND MAINTENANCE

1. Conduct follow-up inspections of disturbed areas after the first and second growing seasons to determine the success of revegetation.
2. If revegetation is required in non-agricultural areas, it will be considered successful if upon visual survey the density and cover of non-nuisance vegetation have achieved stability and self-propagating state. In agricultural areas, revegetation shall be considered successful in accordance with agreed criteria with landowner.  
  
In non-agricultural lands, continue revegetation efforts until successful; in agricultural lands, continue until agreed with the landowner.
3. Not Used (Drainage and Irrigation Systems)
4. Reclamation shall be considered successful if the right-of-way surface condition has achieved stability construction debris removal (unless requested otherwise by the land owner or land managing agency), revegetation is successful, and proper drainage has been re-established.
5. Routine vegetation maintenance clearing will not be done more frequently than every three years, however, to facilitate periodic corrosion and leak surveys, a corridor not exceeding 10-feet in width centered on the pipeline except where a helicopter landing is required, may be maintained annually in an herbaceous state. Routine vegetation maintenance clearing will not be performed during migratory bird nesting periods.
6. Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, will continue throughout the life of the project. Maintain signs and aboveground facility gates as necessary.

### B. REPORTING

1. The Project will maintain records that identify by milepost:
  - a. Method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used;
  - b. Acreage treated;
  - c. Dates of backfilling and seeding;
  - d. Names of landowners requesting special seeding treatment and a description of the follow-up actions; and
  - e. Problem areas and how they were addressed.
2. The Project will file with the Secretary annual activity reports documenting problems, including those identified by landowners, and corrective actions taken for at least 2 years following construction.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
I	The intent of this Plan is to identify baseline mitigation measures for minimizing erosion and enhancing revegetation.	The intent of this Plan is to <del>assist applicants by identifying</del> identify baseline mitigation measures for minimizing erosion and enhancing revegetation. <del>The project sponsors should specify in their applications for a FERC Certificate (Certificate) any individual measures in this Plan they consider unnecessary, technically infeasible, or unsuitable due to local conditions and to fully describe any alternative measures they would use. Applicants should also explain how these alternative measures would achieve a comparable level of mitigation.</del>	Changes the author of the Plan from the FERC to APP. Improves readability.
I	Measures to address erosion and sediment controls in this APP Plan are applicable to uplands, wetlands, and waterbody crossings.	<del>Project-related impacts on wetland and waterbody systems are addressed in the staff's Wetland and waterbody Construction and Mitigation Procedures (Procedures).</del> Measures to address erosion and sediment controls in this APP Plan are applicable to uplands, wetlands, and waterbody crossings.	Expands the scope soil erosion and sediment control at wetlands and waterbodies to include the measures identified in this Plan.
II.A.1	At least one Environmental Inspector (EI) will be assigned by the Project for each construction spread during construction and reclamation (as defined in Section V). The number and experience of EIs assigned to each construction spread will be appropriate for the length of the construction spread and the number/significance of resources affected.	At least one Environmental Inspector (EI) <del>is required</del> will be assigned by the Project for each construction spread during construction and <del>restoration</del> reclamation (as defined <del>by</del> in Section V). The number and experience of EIs assigned to each construction spread <del>should</del> will be appropriate for the length of the construction spread and the number/significance of resources affected.	Improves readability. Not a material change.
II.A.2	EIs shall have peer status with other activity inspectors.	EIs shall have peer status with <del>all</del> other activity inspectors.	EIs will maintains peer with other activity inspectors, but will report to the Chief Inspector.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
II.A.3	Provided safety considerations, including U.S. Occupational Health and Safety Administration regulations, are not compromised, Els shall have the authority to stop activities that violate the environmental conditions of the Certificate, federal and state environmental permit conditions, or landowner requirements; and to order appropriate corrective action.	<del>Provided safety considerations, including U.S. Occupational Health and Safety Administration regulations, are not compromised,</del> Els shall have the authority to stop activities that violate the environmental conditions of the Certificate, <del>federal</del> state and <del>state</del> Federal environmental permit conditions, or landowner requirements; and to order appropriate corrective action.	Places priority on safety.
II.B.3.	Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before starting construction activities.	Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before <del>clearing</del> starting construction activities.	Allows for the fact that some construction activities will precede clearing.
II.B.5	Identifying erosion/sediment control and soil stabilization needs in all areas per the APP Plan and associated BMP documentation.	Identifying erosion/sediment control and soil stabilization needs in all areas <del>per the APP Plan and associated BMP documentation.</del>	Clarifies that there will be erosion/sediment control BMPs documented separately from the Plan.
II.B.6	Ensuring that the location of dewatering and water diversion structures will not direct water into known cultural resources sites or locations of sensitive species.	Ensuring that the location of dewatering <del>and water diversion</del> structures <del>and slope breakers</del> will not direct water into known cultural resources sites or locations of sensitive species.	Provides APP flexibility to adapt to site-specific conditions where water diversion structures other than slope breakers are more appropriate.
II.B.7	Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a wetland and waterbody. If such deposition is occurring, the dewatering activity shall be stopped and the design of the discharge shall be changed to reduce reoccurrence.	Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a wetland <del>and</del> waterbody. If such deposition is occurring, the dewatering activity shall be stopped and the design of the discharge shall be changed to <del>prevent</del> reduce reoccurrence.	Improves reasonability of this performance standard.
II.B.8	Ensuring that subsoil and topsoil are tested in actively cultivated and residential areas to measure compaction and determine the need for corrective action.	Ensuring that subsoil and topsoil are tested in <del>agricultural</del> actively cultivated and residential areas to measure compaction and determine the need for corrective action.	Clarifies where compaction measurements will be taken.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
II.B.10	Ensuring that the disturbed construction surface contours are stable.	Ensuring <del>restoration of</del> that the disturbed construction surface contours <del>and topsoil</del> are stable.	Clarifies that disturbed areas will be stabilized after construction, but not necessarily re-established to original contours. Restoring disturbed areas to original contours may not be desirable for erosion control or for other reasons.
II.B.12	Determining the need for and ensure that erosion controls are properly installed, as necessary to control sediment flow into wetlands, waterbodies, sensitive areas, and onto roads per the APP Plan and associated BMP documents.	Determining the need for and <del>ensure</del> ensuring that erosion controls are properly installed, as necessary to <del>prevent</del> control sediment flow into wetlands, waterbodies, sensitive areas, and onto roads <del>per the APP Plan and associated BMP documents.</del>	Improves readability. Clarifies that there will be erosion/sediment control BMPs documented separately from the Plan.
II.B.13	During unfrozen conditions or during winter when a potential for runoff or snow melt may occur, inspecting and ensuring the maintenance of temporary erosion control measures per applicable permit requirements.	During unfrozen conditions or during winter when a potential for runoff or snow melt may occur, inspecting and ensuring the maintenance of temporary erosion control measures <del>per applicable permit requirements.</del> <del>at least:</del>  a. <del>on a daily basis in areas of active construction or equipment operation;</del>  b. <del>on a weekly basis in areas with no construction or equipment operation; and</del>  c. <del>within 24 hours of each 0.5 inch of rainfall;</del>	Clarifies when inspection will occur and that inspection will comply with [APDES] permit requirements.
II.B.14	Ensuring the repair of ineffective temporary erosion control measures as soon as conditions allow for personnel, material and equipment access to the area.	Ensuring the repair of <del>all</del> ineffective temporary erosion control measures <del>within 24 hours of identification;</del> as soon as conditions allow for personnel, material and equipment access to the area.	Allows flexibility for repairing erosion control measures to when access is available.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
II.B.15	Keeping records of compliance with the environmental conditions of the FERC certificate, and the mitigation measures proposed by APP in the application submitted to the FERC, and other Federal or state environmental permits during active construction and reclamation.	Keeping records of compliance with the environmental conditions of the FERC certificate, and the mitigation measures proposed by <del>the project sponsor</del> APP in the application submitted to the FERC, and other Federal or state environmental permits during active construction and <del>restoration</del> reclamation.	Changes the author of the Plan from the FERC to APP. Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.
II.B.16	Identifying areas that should be given special attention to ensure stabilization and reclamation after the construction phase.	Identifying areas that should be given special attention to ensure stabilization and <del>restoration</del> reclamation after the construction phase.	Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.
III	The Project will perform the following before construction.	The Project <del>sponsor shall do</del> will perform the following before construction.	Improves readability. Not a material change.
III.A.1	Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads) that would be needed for safe construction. The Project will ensure that appropriate cultural resources and biological surveys have been conducted.	Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads, <del>etc.</del> ) that would be needed for safe construction. The Project <del>sponsor must</del> will ensure that appropriate cultural resources and biological surveys have been conducted.	Improves readability. Not a material change.
III.A.2	The Project will consider expanding required cultural resources and endangered species surveys in anticipation of the need for activities outside of certificated work areas.	<del>The Project sponsors are encouraged to</del> will consider expanding <del>any</del> required cultural resources and endangered species surveys in anticipation of the need for activities outside of certificated work areas.	Changes the author of the Plan from the FERC to APP. Improves readability.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
III.B	Not Used (DRAIN TILE AND IRRIGATION SYSTEMS)	<p><del>Not Used (DRAIN TILE AND IRRIGATION SYSTEMS)</del></p> <ol style="list-style-type: none"> <li><del>1. Attempt to locate existing drain tiles and irrigation systems.</del></li> <li><del>2. Contact landowners and local soil conservation authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction.</del></li> <li><del>3. Develop procedures for constructing through drainless areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.</del></li> <li><del>4. Engage qualified drain tile specialists, as needed to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the project area, if available.</del></li> </ol>	Not applicable to the Project because this Project does not affect irrigated or tiled land.
III.D	ROAD CROSSING AND ACCESS POINTS	ROAD <del>CROSSINGS</del> CROSSING AND ACCESS POINTS	Improves readability. Not a material change.
III.D	Plan for safe and accessible conditions at all roadway crossings and access points during construction and reclamation.	Plan for safe and accessible conditions at all roadway crossings and access points during construction and <del>restoration</del> reclamation.	Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.
III.E	Determine methods and locations for the disposal of construction debris (e.g., timber, slash, mats, garbage, drilling fluids and cuttings, excess rock, rejected spoil materials). Off-site disposal in other than commercially operated disposal locations is subject to compliance with all applicable survey, landowner permission, and permit requirements.	Determine methods and locations for the disposal of construction debris (e.g., timber, slash, mats, garbage, drilling fluids and <del>cuttings</del> cuttings, excess rock, <del>eterejected</del> rejected spoil materials). Off-site disposal in other than commercially operated disposal locations is subject to compliance with all applicable survey, landowner permission, and <del>mitigation</del> permit requirements.	Improves readability. Not a material change.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
III.F	The Project will coordinate with the appropriate federal, state, and local agencies as outlined in this Plan and in the Certificate.	The Project <del>sponsor must</del> will coordinate with the appropriate <del>local</del> federal, state, and <del>Federal</del> local agencies as outlined in this Plan and in the Certificate.	Improves readability. Not a material change.
III.F.2	Develop specific procedures in coordination with the appropriate agency to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and reclamation activities.	Develop specific procedures in coordination with the appropriate agency to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and <del>restoration</del> reclamation activities.	Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.
IV	CONSTRUCTION	<del>INSTALLATION</del> CONSTRUCTION	Recognizes that the measures in this section will need to be applied throughout construction, not just during pipe installation.
IV.A.1	Project-related ground disturbance shall be limited to the construction right-of-way, extra work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the Certificate. Any Project-related ground disturbing activities outside these Certificated areas, except those needed to comply with the Plan and Procedures (e.g., slope breakers, energy-dissipating devices, dewatering structures) will require prior Director approval. All construction or reclamation activities outside of the Certificated areas are subject to all applicable survey and mitigation requirements.	Project-related ground disturbance shall be limited to the construction right-of-way, extra work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the Certificate. Any Project-related ground disturbing activities outside these Certificated areas, except those needed to comply with the Plan and Procedures (e.g., slope breakers, energy-dissipating devices, dewatering structures, <del>drain tile system repairs</del> ) will require prior Director approval. All construction or <del>restoration</del> reclamation activities outside of the Certificated areas are subject to all applicable survey and mitigation requirements.	Recognizes that the Project does not affect tiled land. Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.



TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
IV.A.2	The construction right-of-way width for the project is described in the FERC application unless otherwise modified by a Certificate condition. This construction right-of-way width may be expanded by up to 50 feet without Director approval to ensure safe and efficient construction where climatic, topographic, soil limitations or other conditions require expansion. Fifty feet of extra construction right-of-way width may be also used for truck turnarounds where no reasonable alternative access exists.	The construction right-of-way width for <del>a the</del> project <del>shall not exceed 75 feet or that is</del> described in the FERC application unless otherwise modified by a Certificate condition. <del>However, in limited, non-wetland areas,</del> This construction right-of-way width may be expanded by up to <del>25</del> 50 feet without Director approval to <del>accommodate full construction right-of-way topsoil segregation and to</del> ensure safe and efficient construction where <del>climatic, topographic conditions (such as side slopes) or,</del> soil limitations or other conditions require it. <del>Twenty-five</del> expansion. Fifty feet of extra construction right-of-way width may be also <del>be</del> used <del>in limited, non-wetland or non-forested areas</del> for truck <del>turn-around</del> turnarounds where no reasonable alternative access exists.	Recognizes that APP is seeking a Certificated right-of-way greater than 75 feet. Also recognizes the potential need for greater-than-average additional workspace to accommodate the unique climatic, topographic, and soil conditions of the Project area.
IV.A.2	Prior written approval of the Director is required when the Certificated construction right-of-way width would be expanded by more than 50 feet.	Prior written approval of the Director is required when the Certificated construction right-of-way width would be expanded by more than <del>25-50</del> feet.	Recognizes the potential need for greater-than-average additional workspace to accommodate the unique climatic, topographic, and soil conditions of the Project area.
IV.B	TOPSOIL/LOOSE SURFACE MATERIAL SEGREGATION	TOPSOIL/ <del>LOOSE SURFACE MATERIAL</del> SEGREGATION	Recognizes the lack of discernable topsoil and the presence of loose surface material (also known as duff) in parts of the project area.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
IV.B.1	<p>1. During summer construction, unless the landowner or land management agency specifically approves otherwise, limit the mixing of topsoil/loose surface material with subsoil by stripping topsoil/loose surface material and segregating it from the subsoil in:</p> <ul style="list-style-type: none"> <li>a. Actively cultivated or rotated croplands</li> <li>b. Residential area;</li> <li>c. (Not applicable)</li> <li>d. Other areas at the landowner's or land managing agency's request.</li> <li>e. Wetlands where standing water is not present or soils are not saturated.</li> </ul> <p>During winter construction, no stripping of topsoil will be performed. Where practical, loose surface material will be bladed, moved and stored on the right-of-way during winter construction.</p>	<p><del>During summer construction, unless the landowner or land management agency specifically approves otherwise, prevent limit the mixing of topsoil/loose surface material with subsoil by stripping topsoil/loose surface material and segregating it from either the full work area or from the trench and the subsoil storage area (ditch plus spoil side method) in:</del></p> <ul style="list-style-type: none"> <li>a. Actively cultivated or rotated croplands <del>and pastures;</del></li> <li>b. <del>residential areas;</del> Residential area;</li> <li>c. <del>hayfields;</del> and (Not applicable)</li> <li>d. Other areas at the landowner's or land managing agency's request.</li> <li>e. <del>Wetlands where standing water is not present or soils are not saturated.</del></li> </ul> <p><del>During winter construction, no stripping of topsoil will be performed. Where practical, loose surface material will be bladed, moved and stored on the right-of-way during winter construction.</del></p>	<p>Clarifies that topsoil stripping will only be feasible during the summer, although loose surface material may be stripped in the winter, where practical. Also recognizes topsoil/loose surface material may be stripped in unsaturated wetlands, but because hayfields are not present in the Project area, it will not be stripped in those locations.</p>
IV.B.3	<p>In deep soils (more than 12 inches of topsoil), during summer construction, segregate at least 12 inches of topsoil. During summer construction, in soils with less than 12 inches of topsoil make every effort to segregate the entire topsoil layer.</p>	<p>In deep soils (more than 12 inches of topsoil), <del>during summer construction</del>, segregate at least 12 inches of topsoil. <del>During summer construction</del>, in soils with less than 12 inches of topsoil make every effort to segregate the entire topsoil layer.</p>	<p>Clarifies that topsoil stripping will only be feasible during the summer.</p>

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
IV.B.4	During summer construction where topsoil, including loose surface material, segregation is performed, maintain separation from subsoil throughout the construction period.	<del>During summer construction</del> where topsoil, including loose surface material, segregation is <del>required performed</del> , maintain separation of <del>salvaged topsoil and from</del> subsoil throughout <del>all the</del> construction activities <del>period</del> .	Clarifies that topsoil stripping will only be feasible during the summer, although loose surface material may be stripped in the winter, where practical
IV.B.5	Segregated topsoil or loose surface materials will not be used for padding the pipe.	Segregated topsoil <del>may or</del> loose surface materials will not be used for padding the pipe.	Clarifies that segregated loose surface materials will not be used for padding the pipe.
IV.C	Not Used. (DRAIN TILES)	<del>Not Used. (DRAIN TILES)  1. Mark locations of drain tiles damaged during construction. 2. Probe all drainage tile systems within the area of disturbance to check for damage. 3. Repair damaged drain tiles to their original or better condition. Do not use filter covered drain tiles unless the local soil conservation authorities and the landowner agree. Use qualified specialists for testing and repairs. 4. For new pipelines in areas where drain tiles exist or are planned, ensure that the depth of cover over the pipeline is sufficient to avoid interference with drain tile systems. For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).</del>	Not applicable to the Project because this Project does not affect irrigated or tiled land.
IV.D	Not Used. (IRRIGATION)	<del>Not Used. (IRRIGATION)  Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.</del>	Not applicable to the Project because this Project does not affect irrigated or tiled land.



TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
IV.E.2	If crushed stone access pads are used in residential or active agricultural areas, place the stone on synthetic fabric to facilitate removal, as required.	If crushed stone access pads are used in residential or active agricultural areas, place the stone on synthetic fabric to facilitate removal, <b>as required.</b>	Clarifies that APP will comply with applicable requirements.
IV.F	[The entire section was replaced with revised text. Refer to the Plan for the new text.]	[The entire section was replaced with revised text. Refer to the Plan for the new text.]	APP is developing erosion and sedimentation controls (comprising a toolkit of BMPs) applicable to the unique conditions of the Project area. Example BMPs are provided in the Plan.
V	Reclamation	<del>RESTORATION</del> Reclamation	Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.
V.A.1	Commence cleanup operations immediately following backfill operations. Where practicable, complete final grading, topsoil replacement, and installation of permanent erosion control structures within 30 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these timeframes, maintain temporary erosion controls until conditions allow completion of final cleanup, which may be performed as required in the following winter or summer.	Commence cleanup operations immediately following backfill operations. <b>Where practicable,</b> complete final grading, topsoil replacement, and installation of permanent erosion control structures within <del>20</del> 30 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls <del>(temporary slope breakers and sediment barriers)</del> until conditions allow completion of final cleanup, <b>which may be performed as required in the following winter or summer.</b>  <del>The project sponsor should file with the Secretary for the review and written approval of the Director, a winterization plan if construction will continue into the winter season when conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring.</del>	Accounts for the potential increased duration between backfilling and cleanup on this Project due to Alaska-specific climatic, topographic, and soil conditions. Also recognizes that APP is proposing winter construction as part of its Project, and therefore, a winterization plan is not needed.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.A.2	A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in Section IV.F and inspected and maintained (as specified in Sections II.B.12 through 14). When access is no longer required, permanent erosion control structures will be installed as required.	A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in Section IV.F, and inspected and maintained (as specified in Sections II.B.12 through 14). When access is no longer required, <del>the travel lane must permanent erosion control structures will be removed and the right-of-way restored</del> installed as required.	Allows for a travel lane to be left in place for accessibility during post-construction reclamation.
V.A.3	In non-agricultural areas, rock excavated from the trench may be used to backfill the trench to the top of the existing bedrock profile. Excess rock that is not returned to the trench may be spoiled on the right-of-way or other construction work areas as approved by the landowner or land managing agency.	<del>In non-agricultural areas,</del> rock excavated from the trench may be used to backfill the trench <del>only</del> to the top of the existing bedrock profile. <del>Excess</del> rock that is not returned to the trench <del>should</del> may be <del>considered construction debris, unless approved for use as mulch</del> spoiled on the right-of-way or <del>for some other use on the</del> construction work areas as approved by the landowner or land managing agency.	Improves readability. Not a material change.
V.A.4	As conditions allow, remove excess rock from at least the top 12 inches of soil in all actively cultivated or rotated cropland, and residential areas. The size, density, and distribution of rock remaining after cleanup on the construction work area should be similar to adjacent areas not disturbed by construction. The landowner may approve other provisions in writing.	<del>As conditions allow,</del> remove excess rock from at least the top 12 inches of soil in all actively cultivated or rotated cropland <del>and pastures, hayfields,</del> and residential areas, <del>as well as other areas at the landowner's request.</del> The size, density, and distribution of rock <del>remaining after cleanup</del> on the construction work area should be similar to adjacent areas not disturbed by construction. The landowner may approve other provisions in writing.	Clarifies that rock removal may not be feasible at all times. Also, recognizes that pastures hayfields are not present in the Project area.
V.A.5	Grade the construction right-of-way to stable contours, with the surface soils in a suitable condition for reclamation.	Grade the construction right-of-way to <del>restore pre-construction stable contours and leave,</del> with the <del>soil</del> surface soils in <del>the proper</del> a suitable condition for <del>planting</del> reclamation.	Clarifies that disturbed areas will be stabilized after construction, but not necessarily re-established to original contours. Also, recognizes that not all stabilized areas will be replanted.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.A.7	Remove temporary erosion and sediment control measures when permanent erosion and sediment control measures are implemented or when reclamation is successful.	Remove temporary <del>erosion and sediment barriers control measures</del> when <del>replaced by</del> permanent erosion and sediment control measures are implemented or when <del>revegetation</del> reclamation is successful.	Improves readability. Not a material change.
V.B	Not Used (PERMANENT EROSION CONTROL DEVICES) – permanent and temporary erosion control devices are consolidated in the Plan).	<p><del>Not Used (PERMANENT EROSION CONTROL DEVICES – permanent and temporary erosion control devices are consolidated in the Plan).</del></p> <p><del>1. Trench Breakers</del></p> <p><del>a. Trench breakers are intended to slow the flow of subsurface water along the trench. Trench breakers may be constructed of materials such as sand bags or polyurethane foam. Do not use topsoil in trench breakers.</del></p> <p><del>b. An engineer or similarly qualified professional shall determine the need for and spacing of trench breakers. Otherwise, trench breakers shall be installed at the same spacing as and upslope of permanent slope breakers.</del></p> <p><del>c. In agricultural fields and residential areas where slope breakers are not typically required, install trench breakers at the same spacing as if permanent slope breakers were required.</del></p> <p><del>d. At a minimum, install a trench breaker at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and</del></p>	APP is developing erosion and sedimentation controls (comprising a toolkit of BMPs) applicable to the unique conditions of the Project area. Example BMPs are provided in Section IV.F. of the Plan.

TABLE 1J-2

Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change								
		<p><del>where needed to avoid draining a waterbody or wetland.</del></p> <p><del>2. Permanent Slope Breakers</del></p> <p><del>a. Permanent slope breakers are intended to reduce runoff velocity, divert water off the construction right-of-way, and prevent sediment deposition into sensitive resources. Permanent slope breakers may be constructed of materials such as soil, sand bags, or some functional equivalent.</del></p> <p><del>b. Construct and maintain permanent slope breakers in all areas, except cultivated areas and lawns, using spacing recommendations obtained from the local soil conservation authority or land managing agency.</del></p> <p><del>In the absence of written recommendations, use the following spacing unless closer spacing is necessary to avoid excessive erosion on the construction right-of-way:</del></p> <table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><del>Slope (%)</del></td> <td style="text-align: center;"><del>Spacing (feet)</del></td> </tr> <tr> <td style="text-align: center;"><del>5-15</del></td> <td style="text-align: center;"><del>300</del></td> </tr> <tr> <td style="text-align: center;"><del>&gt;15-30</del></td> <td style="text-align: center;"><del>200</del></td> </tr> <tr> <td style="text-align: center;"><del>&gt;30</del></td> <td style="text-align: center;"><del>100</del></td> </tr> </table> <p><del>c. Construct slope breakers to divert surface flow to a stable area without causing water to pool or erode behind the breaker. In the absence of a stable area, construct appropriate energy dissipating devices at</del></p>	<del>Slope (%)</del>	<del>Spacing (feet)</del>	<del>5-15</del>	<del>300</del>	<del>&gt;15-30</del>	<del>200</del>	<del>&gt;30</del>	<del>100</del>	
<del>Slope (%)</del>	<del>Spacing (feet)</del>										
<del>5-15</del>	<del>300</del>										
<del>&gt;15-30</del>	<del>200</del>										
<del>&gt;30</del>	<del>100</del>										

TABLE 1J-2

Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
		<p><del>the end of the breaker.</del></p> <p><del>d. Slope breakers may extend slightly (about 4 feet) beyond the edge of the construction right-of-way to effectively drain water off the disturbed area. Where slope breakers extend beyond the edge of the construction right-of-way, they are subject to compliance with all applicable survey requirements.</del></p>	
V.C.1	Test topsoil and subsoil for compaction at regular intervals in actively cultivated or rotated cropland and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Use appropriate devices to conduct tests.	Test topsoil and subsoil for compaction at regular intervals in <del>agricultural</del> actively cultivated or rotated cropland and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Use <del>penetrometers or other</del> appropriate devices to conduct tests.	Improves readability. Not a material change.
V.C.2	During summer construction plow severely compacted actively cultivated or rotated cropland areas with a deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing any segregated topsoil.	<del>During summer construction</del> plow severely compacted <del>agricultural</del> actively cultivated or rotated cropland areas with <del>a paraplow or other</del> a deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing <del>the any</del> segregated topsoil.	Recognizes that compaction is not likely during winter construction and that deep tilling is only feasible in the summer.
V.C.3	During summer construction, perform appropriate soil compaction mitigation in severely compacted residential areas.	<del>During summer construction</del> , perform appropriate soil compaction mitigation in severely compacted residential areas.	Recognizes that compaction is not likely during winter construction and that deep tilling is only feasible in the summer.
V.D.1.a	The Project will promote successful revegetation of soils disturbed by project-related activities in accordance with applicable BMP's., except as noted in Section V.D.1.b.	The Project <del>sponsor is responsible for ensuring</del> will promote successful revegetation of soils disturbed by project-related activities, <del>in accordance with applicable BMPs,</del> except as noted in Section V.D.1.b.	Improves readability. Not a material change.



TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.D.1.b	Replace turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. Reclamation work must be performed by appropriately qualified personnel.	<del>Restore all</del> Replace turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. <del>Restoration</del> Reclamation work must be performed by appropriately qualified personnel <del>familiar with local horticultural and turf establishment practices.</del>	Improves readability. Not a material change.
V.D.1.c	Requirements for revegetation of disturbed areas to facilitate and enhance APP revegetation by natural, non-introduced plant species will comply with the recommendations of land management agencies in the stipulations of their respective right-of-way lease documents. Conventional seed bed preparation, soil amendments, and seed mixtures will be customized to Arctic and sub-Arctic climactic zones and ecological regions.	Requirements for revegetation of disturbed areas to facilitate and enhance APP revegetation by natural, non-introduced plant species will comply with the recommendations of land management agencies in the stipulations of their respective right-of-way lease documents. Conventional seed bed preparation, soil amendments, and seed mixtures will be customized to Arctic and sub-Arctic climactic zones and ecological regions.	Recognizes that the climactic zones and ecological regions will be foremost in establishing seed bed preparation, soil amendments, and seed mixtures.
V.D.2	Not Used (Soil Additives – See V.D.1.c)	Not Used (Soil Additives – See V.D.1.c) <del>Fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches of soil as soon as possible after application.</del>	Recognizes that the climactic zones and ecological regions will be foremost in establishing seed bed preparation, soil amendments, and seed mixtures.
V.D.3	Not Used (Seeding Requirements – See V.D.1.c)	Not Used (Seeding Requirements – See V.D.1.c) <del>a. Prepare a seedbed in disturbed areas to a depth of 3 to 4 inches using appropriate equipment to provide a firm seedbed. When hydroseeding, scarify the seedbed to facilitate lodging and germination of seed. b. Seed disturbed areas in accordance with written recommendations for seed mixes, rates, and</del>	Recognizes that the climactic zones and ecological regions will be foremost in establishing seed bed preparation, soil amendments, and seed mixtures.

TABLE 1J-2

**Alaska Pipeline Project**  
**Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
		<p><del>dates obtained from the local soil conservation authority or as requested by the landowner or land management agency. Seeding is not required in actively cultivated croplands unless requested by the landowner.</del></p> <p><del>e. Perform seeding of permanent vegetation within the recommended seeding dates. If seeding cannot be done within those dates, use appropriate temporary erosion control measures discussed in section IV.F. and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Lawns may be seeded on a schedule established with the landowner.</del></p> <p><del>d. In the absence of written recommendations from the local soil conservation authorities, seed all disturbed soils within 6 working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a-c.</del></p> <p><del>e. Base seeding rates on Pure Live Seed. Use seed within 12 months of seed testing.</del></p> <p><del>f. Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydro).</del></p> <p><del>g. In the absence of written recommendations from the local soil conservation authorities, landowner, or land managing agency to the contrary, a seed drill equipped with a cultipacker is preferred for seed application.</del></p>	

TABLE 1J-2

Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
		<del>Broadcast or hydroseeding can be used in lieu of drilling at double the recommended seeding rates. Where seed is broadcast, firm the seedbed with a cultipacker or imprinter after seeding. In rocky soils or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the Environmental Inspector.</del>	
VI	The Project will implement and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include: <ol style="list-style-type: none"> <li>1. Signs;</li> <li>2. Fences with locking gates;</li> <li>3. Slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and</li> <li>4. Conifers or other appropriate trees or shrubs across the right-of-way.</li> </ol>	<del>To each owner or manager of forested lands offer to install.</del> The Project will implement and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include: <ol style="list-style-type: none"> <li>A-1. Signs;</li> <li>B-2. Fences with locking gates;</li> <li>C-3. Slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and</li> <li>D-4. Conifers or other appropriate trees or shrubs across the right-of-way.</li> </ol>	APP has made this measure broader and more inclusive.
VII.A.1	Conduct follow-up inspections of disturbed areas after the first and second growing seasons to determine the success of revegetation.	Conduct follow-up inspections of <del>all</del> disturbed areas after the first and second growing seasons to determine the success of revegetation.	Improves readability. Not a material change.

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.A.2	<p>If revegetation is required in non-agricultural areas, it will be considered successful if upon visual survey the density and cover of non-nuisance vegetation have achieved stability and self-propagating state. In agricultural areas, revegetation shall be considered successful in accordance with agreed criteria with landowner.</p> <p>In non-agricultural lands, continue revegetation efforts until successful; in agricultural lands, continue until agreed with the landowner.</p>	<p><del>Revegetation</del> <del>shall, it will</del> be considered successful if upon visual survey the density and cover of non-<del>nuisance</del> <del>vegetation</del> <del>are similar in density</del> <del>have achieved stability</del> and <del>cover to adjacent undisturbed lands</del> <del>self-propagating state</del>. In agricultural areas, revegetation shall be considered successful <del>if crop yields are similar to adjacent undisturbed portions of the same field</del> in accordance with agreed criteria with landowner.</p> <p>In non-agricultural lands, continue revegetation efforts until <del>revegetation is</del> successful; in agricultural lands, continue until agreed with the landowner.</p>	<p>Clarifies that disturbed areas will be stabilized after construction, but not necessarily actively revegetated. Where revegetation is required, self-propagating vegetation will be considered successful.</p>
VII.A.3	<p>Not Used (Drainage and Irrigation Systems).</p>	<p><del>Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in active agricultural areas until restoration is successful.</del> Not Used (Drainage and Irrigation Systems).</p>	<p>Recognizes that the Project does not affect irrigated or tiled land.</p>
VII.A.4	<p>Reclamation shall be considered successful if the right-of-way surface condition has achieved stability construction debris removal (unless requested otherwise by the land owner or land managing agency), revegetation is successful, and proper drainage has been re-established.</p>	<p><del>Restoration</del> <del>Reclamation</del> shall be considered successful if the right-of-way surface condition <del>is similar to adjacent undisturbed lands</del>, has achieved stability, construction debris <del>is removed</del> removal (unless requested otherwise by the land owner or land managing agency), revegetation is successful, and proper drainage has been <del>restored</del> <del>re-established</del>.</p>	<p>Clarifies that disturbed areas will be stabilized after construction, but not necessarily re-established to pre-construction conditions.</p>

TABLE 1J-2

**Alaska Pipeline Project  
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Plans and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.A.5	Routine vegetation maintenance clearing will not be done more frequently than every three years, however, to facilitate periodic corrosion and leak surveys, a corridor not exceeding 10-feet in width centered on the pipeline except where a helicopter landing is required, may be maintained annually in a herbaceous state. Routine vegetation maintenance clearing will not be performed during migratory bird nesting periods.	Routine vegetation maintenance clearing <del>shall</del> will not be done more frequently than every <del>3</del> three years <del>-,</del> however, to facilitate periodic corrosion and leak surveys, a corridor not exceeding 10-feet in width centered on the pipeline <del>except where a helicopter landing is required,</del> may be maintained annually in <del>an</del> a herbaceous state. <del>In no case shall</del> Routine vegetation maintenance clearing <del>occur between April 15 and August 1 of any year</del> will not be performed during migratory bird nesting periods.	Clarifies that helicopter landing areas beyond the 10-foot width will need to be kept clear on an annually for safety and accessibility reasons. Recognizes that the migratory bird nesting period is different than the vegetation maintenance window identified in the FERC's Plan.
VII.A.6	Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, will continue throughout the life of the project. Maintain signs and aboveground facility gates as necessary.	Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, <del>shall</del> will continue throughout the life of the project. Maintain signs, <del>and aboveground facility gates, and vehicle trails</del> as necessary.	APP will maintain sign signs and aboveground facility gates to control unauthorized off-road vehicle use.
VII.B.1	The Project will maintain records that identify by milepost:	The Project <del>sponsor shall</del> will maintain records that identify by milepost:	Improves readability. Not a material change.
VII.B.1.e	Problem areas and how they were addressed.	<del>any</del> Problem areas and how they were addressed.	Improves readability. Not a material change.
VII.B.2	The Project will file with the Secretary annual activity reports documenting problems, including those identified by landowners, and corrective actions taken for at least 2 years following construction.	The Project <del>sponsor shall</del> will file with the Secretary <del>quarterly</del> annual activity reports documenting problems, including those identified by <del>the landowner</del> landowners, and corrective actions taken for at least 2 years following construction.	APP is proposing to file annual activity reports after construction, not quarterly.