FEDERAL ENERGY REGULATORY COMMISSION

Office of Energy Projects

GUIDANCE MANUAL FOR ENVIRONMENTAL REPORT PREPARATION

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ACRONYMS AND ABBREVIATIONS

APE	Area of Potential Effect
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
COE	U.S. Army Corps of Engineers
Commission	Federal Energy Regulatory Commission
CRP	Conservation Resource Protection
CZM	Coastal Zone Management Act of 1972
dBA	decibels of the A-weighted scale
DEA	Draft Environmental Assessment
DOT	U.S. Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ER	Environmental Report
ESA	Endangered Species Act of 1973
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish and Wildlife Service
g/hp-hr	grams per horsepower-hour
hp	horsepower
ISO	International Organization for Standardization
L_{dn}	day-night sound level
LNG	liquefied natural gas
MAOP	maximum allowable operating pressure
MMS	U.S. Minerals Management Service
NEPA	National Environmental Policy Act of 1969
NGA	Natural Gas Act
NGPA	Natural Gas Policy Act
NHPA	National Historic Preservation Act of 1969
NMFS	National Marine Fisheries Service

ACRONYMS AND ABBREVIATIONS

NOI	Notice of Intent
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPS	National Park Service
NRCS	U.S. Department of Agriculture, Natural Resources Conservation Services
NRHP	National Register of Historic Places
NSA	noise-sensitive area
NWI	National Wetlands Inventory
OEP	Office of Energy Projects
PCB	polychlorinated biphenyl
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SPCC Plan	Spill Prevention, Containment, and Countermeasure Plan
THPO	Tribal Historic Preservation Officer
TSCA	Toxic Substances Control Act
USGS	U.S. Geological Survey
§	section

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KEY TO DATA SOURCES

A	Aerial Photographs
B	Agency Consultation
C	Agricultural Extension Agents
D	Applicant
E	Board of Health, State or County
F	COE (U.S. Army Corps of Engineers)
G	*Community Noise,* EPA 1971
H	Comprehensive Plans, County or Land Management Agencies
I	County/Municipal Agencies
J	EPA (U.S. Environmental Protection Agency)
K	Erosion Control and Drainage Plan Handbooks, State and County
L	Field Surveys
M	Fishery Biologist, State or Regional
N	FWS (U.S. Fish and Wildlife Service)
O	NWI (National Wetlands Inventory Maps)
P	Geological Survey Personnel, Federal, State, and Local
Q	Landowners
R	Manufacturer's Data
S	Mineral Resource Maps, Federal and State
T	NMFS (National Marine Fisheries Service)
U	Noise Surveys
V	NPS (National Park Service)
W	NRCS (Natural Resources Conservation Service)
X	NRCS Soil Surveys
Y	Plan (Upland Erosion Control, Revegetation, and Maintenance Plan)
Z	Procedures (Wetland and Waterbody Construction and Mitigation Procedures)
AA	Resource Reports 2, 3, and 4
BB	Resource Report 8
CC	Soil Authorities, Other than NRCS
DD	State Agencies
EE	State Air Quality Agency
FF	State Drinking Water Division

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KEY TO DATA SOURCES

GG State Water Quality Division
HH State Wetland Maps
II Surficial Geology and Bedrock Geology Maps
JJ U.S. Department of Labor
KK U.S. Bureau of the Census
LL USGS (U.S. Geological Survey) Topographic Maps

1.0 INTRODUCTION

1.1 PURPOSE OF THE MANUAL

This manual is a guide to sponsors of natural gas projects who file environmental information with the Federal Energy Regulatory Commission (FERC or Commission). The manual provides helpful information about required environmental documentation and is intended to be a "cookbook" for preparing that documentation, but is not a substitute for the regulations themselves.

The manual is part of the Commission's effort to streamline the environmental review process and to improve overall quality and consistency of data analyses and formatting of the environmental documents. It identifies information that we often find missing from filings.[1] This causes delays in the processing of applications because data requests are required. It also discusses our preferred format for certain documents. We hope that this manual will assist project sponsors in providing filings that do not require data requests, that will cover topics in a uniform fashion, and that can be reviewed more quickly. Nevertheless, project sponsors and other participants who prepare, use, or review these types of documents are not required to use this manual.

The primary focus of the manual is to identify the environmental documentation that needs to be included in Environmental Reports (ERs) filed under the Commission's regulations which implement the National Environmental Policy Act of 1969 (NEPA). Those regulations supplement the regulations of the Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) Parts 1500 through 1508. Also mentioned are environmental documentation requirements for Prior Notice Filings and Annual Reports of projects automatically authorized under the Natural Gas Act (NGA), and 30-day Advance Notification Filings and Annual Reports for projects done to provide transportation under the Natural Gas Policy Act (NGPA) or replacement of facilities under section (§) 2.55(b) of the Commission's regulations (18 CFR 2.55(b)).[2]

1.2 OVERVIEW OF THE MANUAL

Section 2.0 of this manual describes the notification requirements to affected

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1 The pronouns "we," "us," and "our" refer to the environmental staff of the Commission's Office of Energy Projects (OEP).

2 The Commission's regulations, which are in Chapter 18 of the CFR, will be cited by section or part, for instance § 2.55 or Part 380, rather than as 18 CFR 2.55, or Part 380 of Chapter 18 or 18 CFR 380. References to other agencies' regulations will include the full citation, for instance 40 CFR 1506.

landowners for certificate applications under Subpart A and Subpart F of Part 157 of the FERC's regulations and Section 7(c) of the NGA. Section 3.0 of this manual covers environmental documentation required for certificate applications prepared under Subpart A of Part 157 of the FERC's regulations and sections 7(a), 7(b), and 7(c) of the NGA. It also describes in detail the basis, content, and format for the ERs that will meet current Commission and NEPA requirements. Section 4.0 provides a description of the process by which an applicant can submit an applicant-prepared draft Environmental Assessment (DEA) with its application. Section 5.0 describes the third-party Environmental Assessment (EA) and third-party Environmental Impact Statement (EIS) options which are available to applicants.

Section 6.0 outlines the environmental information requirements for Prior Notice Filings and Annual Reports of projects automatically authorized under the NGA, and 30-day Advance Notification Filings and Annual Reports for projects done to provide transportation under the NGPA or replacement of facilities under § 2.55(b) of the Commission's regulations.

2.0 LANDOWNER NOTIFICATION

This section describes the requirements for notification of all affected landowners for certificate applications prepared under Subpart A and Subpart F of Part 157 of the FERC's regulations and Section 7(c) of the NGA. The applicant shall make a good faith effort to notify all affected landowners and towns, communities, and local, state and federal governments and agencies involved in the project.

All affected landowners (as defined in § 157.6(d)(2)) include owners of property interests, as noted in the most recent county/city tax records as receiving the tax notice, whose property:

- Is directly affected (i.e., crossed or used) by the proposed activity, including all facility sites, rights-of-way, access roads, pipe and contractor yards, and temporary work spaces;

- Abuts on either side of an existing right-of-way or facility site owned in fee by any utility company, or abuts the edge of a proposed facility site or right-of-way which runs along a property line in the area in which the facilities would be constructed, or contains a residence within 50 feet of the proposed construction work area;

- Contains a residence within one-half mile of proposed compressors or their enclosures or liquefied natural gas (LNG) facilities; or

- Is within the area of proposed new storage fields or proposed expansions of storage fields, including any applicable buffer zone.

Good faith efforts to notify affected landowners and local, state or federal jurisdictions must be:

- By certified or first class mail sent within three (3) business days following the date the Commission issues a notice of the application; or

- By hand, within the same time period; and

- By publishing notice twice of the filing of the application, no later than 14 days after the date that a docket number is assigned to the application, in a daily or weekly newspaper of general circulation in each county in which the

project is located.

If any notice is returned as undeliverable, the applicant will make a reasonable attempt to find the correct address and notify the landowner. For applications filed under Section 7(c) of the NGA an updated list of landowners must be filed within 30 days of the date the application was filed, including information concerning any notices that were returned or undeliverable.

Section 7(c) Notifications

Under Section 7(c), notifications to affected landowners must include the following information:

- The docket number of the filing;

- The most recent edition of the Commission's pamphlet (*An Interstate Natural Gas Facility on My Land? What do I Need to Know?)* explaining the Commission's certificate process and addressing the basic concerns of landowners. However, the pamphlet need not be included for pipeline notifications of abandonment, or in published newspaper notices. Instead, they should provide the title of the pamphlet and indicate its availability at the Commission's Internet address;

- A description of the applicant and the proposed project, its location (including a general location map), its purpose, and the timing of the project;

- A general description of what the applicant will need from the landowner if the project is approved, and how the landowner may contact the applicant, including a local or toll-free phone number and a name of a specific person to contact who is knowledgeable about the project;

- A brief summary of what rights the landowner has at the Commission and in proceedings under the eminent domain rules of the relevant state. Pipelines are not required to include the latter information in the published newspaper notice, but should provide the Commission's Internet address and the telephone number for the Commission's Office of External Affairs;

- Information on how the landowner can get a copy of the application from the company or the location(s) where a copy of the applications may be found; and

- A copy of the Commission's notice of application, specifically stating the date by which timely motions to intervene are due, together with the Commission's information sheet on how to intervene in Commission proceedings. However, pipelines are not required to include the notice of application and information sheet in the published newspaper notice. Instead, the newspaper notice should indicate that a separate notice is to be mailed to landowners and government entities.

Subpart F Blanket Certificates

For automatic authorizations (§ 157.203(b)) under the blanket certificate program, all affected landowners must be notified at least 30 days prior to commencing construction or at the time the company initiates easement negotiations, whichever is earlier. A landowner may waive the 30-day prior notice requirement in writing as long as the notice has been provided. The notifications must include the following information:

- a brief description of the facilities to be constructed or replaced and the effect the construction activity will have on the landowner's property;

- the name and phone number of a company representative who is knowledgeable about the project; and

- an explanation of the Commission's Enforcement Hotline procedures and the Enforcement Hotline telephone number.

For projects that the Commission must receive prior notification (157.203(c)), the affected landowners must be notified within at least three (3) business days following the date that a docket number is assigned to the application or at the time the company initiates easement negotiations, whichever is earlier. The notifications must include the following information:

- a brief description of the facilities to be constructed or replaced and the effect the construction activity will have on the landowner's property;

- the name and phone number of a company representative who is knowledgeable about the project;

- the docket number (if assigned) for the company's application; and

- the following paragraph:

  This project is being proposed under the prior notice requirements of the blanket certificate program administered by the Federal Energy Regulatory Commission. Under the Commission's regulations, you have the right to protest this project within 45 days of the date the Commission issues a notice of the pipeline's filing. If you file a protest, you should include the docket number listed in this letter and provide the specific reasons for your protest. The protest should be mailed to the Secretary of the Federal Energy Regulatory Commission, 888 First St., NE., Room 1A, Washington, DC 20426. A copy of the protest should be mailed to the pipeline at [pipeline address]. If you have any questions concerning these procedures you can call the Commission's Office of External Affairs at (202) 502-6088.

The four (4) exceptions for landowner notifications under the blanket certificate program include the following:

- Replacements which would have been done under § 2.55 of the Commission's regulations but are not of the same capacity (as long as they are located in the same location as the replaced facilities) or are done for safety, DOT compliance, environmental, or unplanned maintenance reasons, that are unforeseen and require immediate attention;

- Abandonments which involve only sale or transfer of the facilities and easement for continued transport of natural gas;

- Services or facilities requested by the landowner if that is the only landowner affected; or

- Activities that do not involve ground disturbances or changes to operational air and noise emissions.

If any of these exceptions apply, then no landowner notification is required.

3.0 PREPARATION OF ENVIRONMENTAL REPORTS FOR NATURAL GAS ACT SECTION 7 APPLICATIONS

Applicants initiate the environmental review process through filing of an application. The application must include an ER with Resource Reports as specified in § 157.14(a)(6-a), § 380.3 and § 380.12. The preparation of Resource Reports is addressed in detail in this section.

The applicant may also choose to file an applicant-prepared DEA, or a third party EA, or EIS paid for by the applicant but prepared under the sole technical control of the Commission staff. None of these options takes the place of the applicant's ER, which is a required part of the application. Sections 4.0 and 5.0 address the preparation of these documents.

The purpose of this section is to clearly identify the technical content requirements for the ER and each Resource Report that will allow us to efficiently review an application and accelerate the overall review process. Also identified in this section is guidance on how to collect required data, which agencies to contact, what have been reliable data sources in the past, and recommended presentation techniques. Guidance on the following Resource Reports is provided:

Resource Report 1	-	General Project Description
Resource Report 2	-	Water Use and Quality
Resource Report 3	-	Fish, Wildlife, and Vegetation
Resource Report 4	-	Cultural Resources
Resource Report 5	-	Socioeconomics
Resource Report 6	-	Geological Resources
Resource Report 7	-	Soils
Resource Report 8	-	Land Use, Recreation and Aesthetics
Resource Report 9	-	Air and Noise Quality
Resource Report 10	-	Alternatives
Resource Report 11	-	Reliability and Safety
Resource Report 12	-	PCB Contamination
Resource Report 13	-	Engineering and Design Material

Note that material filed under another docket may be incorporated by reference if the applicant identifies the docket number, filing date, and document in which the information

is contained. This incorporation by reference should be limited to items and issues that are not project specific. However, incorporation by reference tends to slow the review process, so to facilitate our review, we recommend that the material be incorporated into the current filing rather than being incorporated by reference only.

There are certain general principals that should be followed throughout the preparation of the ER. These principals have often been overlooked in past filings causing delays in the processing of applications as information must be verified through data requests to the company or independent research by us. These principals are summarized below:

- **Provide concise, clear statements of environmental impact and proposed mitigation.** The detail of each Resource Report should be commensurate with the complexity of the action and the potential for environmental impact. Each Resource Report should address:

  - existing conditions or resources that may be directly or indirectly affected by the project or that may affect the project;

  - effects on the resource as a result of construction, operation (including maintenance and malfunctions), or abandonment of the project, as well as cumulative effects that may result from the combination of the project and existing or reasonably foreseeable projects;

  - all proposed measures to enhance the environment or avoid, minimize, mitigate, or compensate for adverse effect;

  - a list of data sources (publications, reports, other literature and communications, including agency contacts) that were used in the preparation of the Resource Reports; and

  - evidence of agency consultation used to identify concerns and mitigation measures.

- **Clearly and correctly identify the facilities analyzed in the ER**. Often applicants will initiate environmental studies on one set of project facilities, but will change the facilities or the locations of the facilities before the application is filed with the FERC. Not infrequently, we find that Resource Reports include information on facilities or facility locations that are different from those identified in the application, or that supporting documentation for

a Resource Report (e.g., U.S. Fish and Wildlife Services (FWS) consultation letters and cultural resource survey reports) often does not cover the facilities actually filed in the application. Each Resource Report and the supporting agency documentation should clearly identify the facilities that are being evaluated.

- **At a minimum, address each of the topics identified in the Summary of Filing Information which appears at the beginning of the section of this manual applicable to each Resource Report, or identify the reason why the topic is not addressed or not applicable.** Each of these summaries identifies the minimum requirements specified in Appendix A to Part 380 for information (§ 380.12) that must be included for application acceptance. We have included bulleted lists under each minimum filing requirement to clarify what is needed. Many of these summaries also identify additional information that should be included in each Resource Report for further clarification of your project. Excluding this additional information from the ER may result in data requests from our environmental staff.

- **Note that failure to include any of the information specified in the minimum filing requirements can result in rejection of an application unless the Director of OEP determines that the applicant has provided an acceptable reason for the items absence and an acceptable schedule for filing it. Failure to file within that accepted schedule may also result in rejection of the application.**

- **In addition, it is frequently unclear if missing information is not applicable to a project or if the topic was inadvertently missed in the analysis**. If the project is exempt from any filing or reporting requirements, clearly provide the basis for such an exemption in the appropriate Resource Reports. Issues or topics that have not yet been adequately addressed, and studies or surveys that have not been completed at the time of filing with the FERC should be clearly identified. In each case, the anticipated schedule for completion of all outstanding issues or studies and the anticipated filing date of this information should be provided.

- **Ensure that all data are accurate and consistent throughout the Resource Reports**. Common data are often referred to in several different Resource Reports. These include: length of the pipeline or size of the aboveground facilities; acres required for construction and new permanent rights-of-way or extra work areas; acres of forest clearing; and acres of land use types affected.

These data are fundamental to the assessment of impact and must be consistent between different Resource Reports. For acreages that are presented, clearly identify the mathematical basis for determining the acreages and use the values consistently throughout the Resource Reports.

- **Provide documentation of consultation completed with Federal, state or county agencies and other individuals.** We must verify the data and conclusions presented in the Resource Reports as part of our environmental review and preparation of EAs and EISs. Each Resource Report should include a list of all publications, reports, and other literature or communications cited or used for analysis, including the name, title, and telephone number of each person or agency contacted.

Resource Report 1 - General Project Description

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES[1]
Minimum Requirements to Avoid Rejection	
☐ 1. Provide a detailed description and location map of the project facilities. (§ 380.12(c)(1)) • Include all pipeline and aboveground facilities. • Include support areas for construction or operation. • Identify facilities to be abandoned.	D
☐ 2. Describe any nonjurisdictional facilities that would be built in association with the project.(§ 380.12(c)(2)) • Include auxiliary facilities (See § 2.55(a)). • Describe the relationship to the jurisdictional facilities. • Include ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of Federal, state, and local permits/approvals. • Include the length and diameter of any interconnecting pipeline. • Apply the four-factor test to each facility (see § 380.12(c)(2)(ii)).	D
☐ 3. Provide current original U.S. Geological Survey (USGS) 7.5-minute-series topographic maps with mileposts showing the project facilities. (§ 380.12(c)(3)) • Maps of equivalent detail are acceptable if legible (check with staff) • Show locations of all linear project elements, and label them. • Show locations of all significant aboveground facilities, and label them.	D
☐ 4. Provide aerial images or photographs or alignment sheets based on these sources with mileposts showing the project facilities. (§ 380.12(c)(3)) • No more than 1-year old • Scale no smaller than 1:6,000	D
☐ 5. Provide plot/site plans of compressor stations showing the location of the nearest noise-sensitive areas (NSA) within 1 mile. (§ 380.12(c)(3,4)) • Scale no smaller than 1:3,600 • Show reference to topographic maps and aerial alignments provided above.	D
☐ 6. Describe construction and restoration methods. (§ 380.12(c)(6)) • Include this information by milepost • Make sure this is provided for offshore construction as well. For the offshore this information is needed on a mile-by-mile basis and will require completion of geophysical and other surveys before filing.	D
☐ 7. Identify the permits required for construction across surface waters. (§ 380.12(c)(9)) • Include the status of all permits. • For construction in the Federal offshore area be sure to include consultation with the MMS File with the MMS for rights-of-way grants at the same time or before you file with the FERC.	D
☐ 8. Provide the names and address of all affected landowners and certify that all affected landowners will be notified as required in § 157.6(d). (§ 380.12(c)(10)) • Affected landowners are defined in § 157.6(d) • Provide an electronic copy directly to the environmental staff.	D
Additional Information Often Missing and Resulting in Data Requests	
☐ Describe all authorizations required to complete the proposed action and the status of applications for such authorizations.	D

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES[1]
☐ Provide Plot/site plans of all other aboveground facilities that are not completely within the right-of-way.	D
☐ Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent right-of-way, and temporary construction right-of-way. See Resource Report 8.	BB
☐ Summarize the total acreage of land affected by construction and operation of the project.	BB
☐ If Resource Report 5, Socioeconomics is not provided, provide the start and end dates of construction, the number of pipeline spreads that would be used, and the workforce per spread.	D
☐ Send two (2) additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Energy Projects (OEP).	D
[1] D Applicant BB Resource Report 8	

This report is required for all applications and describes the facilities associated with the project, procedures for construction and operation of the facilities, timetables for constructions, future plans for related construction, compliance with regulations and codes, and permits and consultations required for the project.

1.1 Proposed Facilities

1.1.1 Purpose and Need

Briefly describe the purpose of and need for the facilities. Include in the description the total volume of gas to be delivered by the facilities, the location of the gas receipt and delivery points, a listing of each customer, and the volume of gas delivery to each customer.

1.1.2 Location and Description of Facilities

Provide a detailed description of the length, number, type and size of all facilities to be constructed, modified, abandoned, replaced, or removed. Include the following information in the description:

- For each pipeline segment (new pipeline or loop):
  - Name or segment designation
  - Pipe diameter in inches

- Approximate length in miles and beginning and ending mileposts[3]
- Type of activity (loop, new, replacement, abandonment, or removal)
- Location by county and state
- For abandonments, indicate if facilities would be abandoned "in place" or removed
- For replacements, indicate if pipelines would be replaced in the same ditch

• For each aboveground facility (compressor or meter station, well, or LNG plant):

- Name or facility designation
- Type of facility
- Type of activity (modification, new, abandonment, replacement, or removal)
- Amount of horsepower, if applicable
- Milepost location, if appropriate
- Acreage required for each facility
- Location by county and state

• For each associated facility (block valve, drip tank, regulator, meter station, pig launcher/receiver, etc.) that would be placed within existing or new permanent right-of-way or aboveground facility sites:

- Name or facility designation
- Type of facility

[3] Although mileposts are referred to throughout this manual, station numbers are also acceptable. It is also acceptable to use existing mileposts or surveyed station numbers for loops or abandonments.

- Type of activity (modification, new, abandonment, replacement, or removal)

- Milepost location

- Location by county and state

For large projects, summarize the above information in tables as shown in example Tables 1.1-1 and 1.1-2.

TABLE 1.1-1

Pipeline Facilities

Facility	Pipeline Diameter and Type	Approximate Length	Mileposts a/	State	County
Loop A	36" Loop	2.6	0.0 - 2.6	ST	County A County B
Loop B	12" Loop	1.2	2.6-3.7	ST	County B
Lateral A	24" New Lateral	3.6	14.2 - 15.0 15.0 - 17.8	ST ST	County D County E
Replacement A	20" Replacement	6.4	20.2 - 24.0 b/ 24.0 - 26.6 c/	ST ST	County F County G
Total - Pipeline Facilities		13.8			

a/ Mileposts for loops are reference points and may not equal total length due to rounding.

b/ Old pipe to be removed.

c/ Old pipe to be abandoned in place.

The applicant must also identify other companies that need to construct jurisdictional facilities related to the project, where the facilities would be located, and where they are in the Commission's approval process. Include the docket number if an application has been filed.

TABLE 1.1-2

Aboveground Facilities

Facility	New/Modified	Horsepower New	Horsepower Added	Approximate Milepost	State	County
Compressor Station A	Modified	-	12,600	829.4	ST	County A
Compressor Station B	New	23,500	-	8.7	ST	County B
Meter Station A	New	N/A	N/A	829.4	ST	County D
Regulator Station A	Modified	N/A	N/A	88.6	ST	County C

N/A - Not Applicable

1.1.3 Location Maps, Detailed Route Maps, and Plot/Site Plans

Provide a map showing the location of all pipeline and aboveground facilities in relationship to existing pipeline facilities (see Figure 1.1-1).

All pipeline segments, aboveground facilities (including block valves, drip tanks, communications towers, etc.), pipe storage yards, extra work/staging areas, contractor yards, and access roads need to be clearly and accurately shown on current original 1:24,000/1:25,000 scale USGS 7.5-minute series topographic maps or maps of equivalent detail, and 1:6,000-or-greater scale aerial photographs or photo-based alignment sheets that are preferably not more than 1 year old.

For pipeline segments, clearly show the pipeline centerline with integer mileposts identified, covering at least a 0.5-mile-wide corridor. Milepost markers must be shown clearly and accurately on the maps and photos since mileposts are used to locate and describe site-specific impacts, mitigation measures, and recommendations. In some cases it may be helpful to identify mileposts at 0.5-mile intervals, especially if there are numerous features of concern along the route. For looping projects, the maps, aerial photographs, or photo-based alignment sheets must clearly show on which side of the existing pipeline the loop would be placed. The alignment sheets should also show right-of-way widths and extra work spaces (see Figures 1.1-2 and 1.1-3).

Show new or additional compression and other nonlinear construction areas on the 1:24,000/1:25,000 scale topographic maps. Identify the boundaries of the compressor

Replace with Figure 1.1-1
General Location Map

Replace with figure 1.1-2
Detailed Location Map on USGS 1:24,000 Quad Base

Replace with figure 1.1-3
Typical Aerial Photo-Base Map

station property and the location of nearby NSAs (residences, churches, schools). In addition, provide a plot/site plan at a 1:3,600-or-greater scale showing: the property boundary; existing and proposed compressor station facilities; area to be disturbed during construction and operation of the station; compressor station fence line; and the distance and direction to the nearby NSAs. If there are no NSAs within one (1) mile of the site, note this on the plot plan or in the accompanying text. Figure 1.1-4 is an example of a compressor station location map and plot plan.

Alignment sheets should include a landowner line list with milepost (survey station) locations of property boundaries. It is also helpful to include the actual property outline to assist with routing concerns, and also to show locations or outlines of wetlands. Finally, a diagrammatical representation of the construction right-of-way showing the width and beginning and end points of each extra work area as well as right-of-way widths should be included.

In addition to the copy required for the application, two (2) additional copies of topographic maps and aerial photographs should be provided directly to our environmental staff.

1.2 Land Requirements

The extent of land requirements/disturbance must be clearly defined to determine the impacts associated with a project. Clearly make the distinction between land requirements for construction (temporary impact) and operation (permanent impact) of the project facilities. Additional guidance in calculating land requirements for the right-of-way, extra work/staging areas, access roads, and contractor yards is included in Resource Report 8 of this manual. Make sure all calculations and numbers are consistent with those of other Resource Reports.

1.2.1 Pipeline Facilities

Typical right-of-way cross section diagrams, required for Resource report 8 (8.1.1), may be included in this report.

In addition to the construction and permanent right-of-way requirements, include land requirements for extra work/staging areas for the project (e.g., road, railroad, waterbody, and wetland crossings; areas of steep side slope; areas at the beginning and end of each pipeline segment for contractor mobilization/demobilization; pipe and contractor storage yards, new or modified access roads; pull-back areas for horizontal directional drills; etc.). Summarize land requirements for the pipeline facilities in a table (see Table 1.2-1).

Replace with figure 1.1-4
Typical compressor station location map and plot plan

TABLE 1.2-1

Land Requirements for Pipeline Facilities

Facility	Right-of-Way Cross-Section a/	Length (miles)/ Number of Sites	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Loop A	A	2.6 mi	23.6	7.9
Loop B	B,C	1.2 mi	10.6	2.9
Lateral A	D	3.6 mi	32.7	21.8
Replacement A	E	6.4 mi	58.2	0.0
Extra Work Areas b/	N/A	12	1.4	0.0
Pipe Storage Yards	N/A	3	15.0	0.0
Contractor Office Yards	N/A	1	3.0	0.0
Total			144.5	32.6

a/ See figure 1.2-1 for typical right-of-way cross sections. Permanent and construction right-of-way widths should be based on the typical right-of-way widths for each pipeline segment.

b/ Expanded work areas in areas of steep slope and at waterbody, wetland, railroad, and road crossings, etc.

N/A Not Applicable.

1.2.2 Aboveground Facilities

For each aboveground facility, provide the following information:

- Total site area in acres (property size);
- Amount of land required for construction, including access roads, laydown areas, and other areas (disturbed during construction); and
- Amount of land required for facility operation, including access roads, communication facilities, parking, and other areas (permanently disturbed).

Table 1.2-2 is an example of a summary presentation of this information.

1.3 Construction Procedures

In addition to the information presented below, describe the procedures and/or personnel training that would be implemented to ensure that construction of the project would comply with the mitigation measures identified in the filed application and the requirements of other Federal and state permits.

TABLE 1.2-2

Land Requirements for Aboveground Facilities

Facility	Property Size (Acres)	Land Disturbed During Construction (Acres)	Land Required for Operation (Acres)	Comments
Compressor Station A	38.6	1.5	1.0	Existing facility
Compressor Station B	25.0	5.0	5.0	New facility
Meter Station A	1.0	0.5	0.5	New facility
Regulator A	N/A	<0.1	<0.1	Within existing right-of-way
Total	64.6	7.1	6.6	

Also describe the role of the environmental inspector. See the Upland Erosion Control, Revegetation, and Maintenance Plan (Plan). Describe:

- How the applicant will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

- The number of environmental inspectors assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;

- Company personnel, including environmental inspectors and contractors, who will receive copies of the appropriate material;

- What training and instructions the applicant will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change);

- The company personnel (if known) and specific portion of the applicant's organization having responsibility for compliance; and

- The procedures (including use of contract penalties) the applicant will follow if noncompliance occurs.

If Resource Report 5, Socioeconomics is not provided, include the following estimated work force requirements information as part of Resource Report 1:

- Number of construction spreads and their MP boundaries;
- Average workforce in each construction spread;
- Duration of construction (*e.g.*, days, months) from initial clearing to final restoration;
- Anticipated time (*e.g.*, spring, summer, winter, fall) and year of construction; and
- Number of new permanent employment positions created for project operations.

1.3.1 Pipeline

Summarize the construction and restoration techniques to be used for the project. For pipelines, the description should include:

- Procedures for marking (*e.g.*, flagging) the construction right-of-way and extra work/staging areas;
- Procedures for clearing, trenching, stringing, welding, hydrostatic testing, backfilling, and restoration;
- Procedures for disposing of timber, slash, and rock;
- Excavation depths and depth of cover over the pipeline, including identification of any areas where the pipeline would be buried deeper than usual (*e.g.*, streams, agricultural fields with drain tiles, etc.); and
- Pipeline construction schedule by segment, including approximate start date and duration for overall construction/restoration.

Place special emphasis on describing the construction and restoration techniques to be used in the following areas:

- Rugged topography - Describe side slope construction techniques, width of the construction right-of-way, erosion control and revegetation procedures, and the milepost locations where the construction technique would be used (see Resource Report 6 on Geology and Resource Report 7 on Soils).

- Residential areas - Describe the specific construction mitigation techniques (*e.g.*, reduced construction right-of-way, stove-pipe or drag-section techniques, etc.) that would be used in congested residential areas (see Resource Report 8 on Land Use).

- Active croplands - Describe how drain tiles would be identified and repaired if damaged during construction. Also describe the methods of topsoil segregation, procedures for minimizing soil compaction and removing rock, and special construction techniques that would be used for orchards or other specialty crops (see Resource Report 7 on Soils and Resource Report 8 on Land Use).

- Road crossings - Describe the methods for crossing federal, state, and local roads. If roads would be open cut, describe the duration of construction and how access would be maintained along the road (see Resource Report 8 on Land Use).

- Blasting - Describe blasting procedures (see Resource Report 2 on Groundwater, Resource Report 3 on Fisheries, and Resource Report 6 on Geology).

- Wetlands - Describe construction techniques (*e.g.*, standard, push/pull, boring, directional drill) that would be used (see Resource Report 2 on Surface Waters).

- Waterbodies - Describe construction techniques for waterbody crossings, including major or sensitive waterbodies (see Resource Report 2 on Surface Waters).

For abandonment or replacement projects, explain whether the existing pipeline would be abandoned in place or removed. Also specify whether replacement pipeline would be placed adjacent to the existing pipeline or in the same ditch from which the existing pipeline

is removed. If the existing pipeline would be removed, but same-ditch replacement is not proposed, explain why and describe the sequence of removal and replacement activities. For facilities abandoned in place, identify who will own and be responsible for the site after abandonment. Indicate whether landowners' requests for removal of abandoned facilities will or will not be honored, and provide explanations if they will not.

If the above procedures are discussed in the company's erosion control plan or another resource report, reference the appropriate section of the plan or resource report. Also specify if the project would be constructed using our recommended Plan and Wetland and Waterbody Construction and Mitigation Procedures (Procedures). If the company's erosion control plan would be used for construction and restoration, compare it to our Plan and Procedures, and describe and explain any difference. Any variances to the Plan and Procedures should be identified and discussed further in the appropriate Resource Report.

For pipelines that have been exposed to polychlorinated biphenyl (PCB) contamination, briefly describe how abandonment/replacement activities would comply with the Toxic Substances Control Act (TSCA) (see Resource Report 12 on PCBs).

1.3.2 Aboveground Facilities

Provide a description of the construction procedures for aboveground facilities. For LNG plants and compressor stations, include the approximate duration of construction of each facility, the number of construction workers for each facility, foundation excavation depths, and associated facilities (*e.g.*, access roads, office building, etc.). Provide plot/site plans of each facility showing existing, if any, and new facilities. For sites that would be abandoned, describe the procedures for dismantling and disposing of buildings, foundations, and equipment, and for restoring the site. Indicate whether landowners' requests for removal of abandoned facilities will or will not be honored, and provide explanations if they will not.

If any of the facilities or sites are potentially contaminated with PCBs, briefly describe the cleanup and disposal techniques that would be used as well as the status of the permits and approvals required to comply with the TSCA.

1.4 Operation and Maintenance

Provide a general description of the operation and maintenance practices for the project, including federal, state, and local regulations and guidelines which would be followed. Identify the number of <u>additional</u> operational personnel that would be hired because of the project.

For pipelines, include a description of the type and frequency of gas leak and cathodic protection surveys, aerial inspections, and right-of-way maintenance. For right-of-way maintenance practices, include the time of year for maintenance activities, the permanent right-of-way width that would be maintained in a grassy condition, and whether herbicides would be used.

For aboveground facilities, describe normal operation and maintenance procedures. Describe whether the facilities would be staffed 24 hours a day or maintained from a central operation center. Include a description of new operations or district offices which the project would require.

1.5 Future Plans and Abandonment

Provide information on the current or reasonably foreseeable plans for future expansion or abandonment of the project. Include type, size, and location of planned future facilities, extended schedule for construction or abandonment, approximate volume of gas to be transported, and a description of how the current project affects these future plans.

1.6 Permits and Approvals

Identify all necessary federal, regional, state, and local permits and consultation required for the project (in addition to the FERC Certificate of Public Convenience and Necessity) and provide the following information:

- The name of the permitting/approval agency and the name and telephone number of the person contacted;
- Type of permits/approvals or consultation;
- The current status of the permits/approval filing (*e.g.*, estimated schedule for permit filing, date of actual filing, and date permit/approval was granted or is anticipated); and
- Environmental mitigation requirements specified in the permit or proposed in the permit application.

Provide copies of all approved permits with this Resource Report. Table 1.6-1 is an example of a summary of this information for a project in New York State.

TABLE 1.6-1

Other Permits and Approvals Applicable to the Project

Permit/Approval	Administering Agency	Status a/
Federal		
Section 404 Permit/Review of Section 10 Applicability	U.S. Army Corps of Engineers, (Joint Application with NYDEC)	Application in preparation. To be filed 4/95.
Section 7 Consultation	U.S. Fish and Wildlife Service	Consultation completed on 1/12/95.
State		
Underground Storage Permit	New York Department of Environmental Conservation (NYDEC)	Application filed 1/95 and pending before the NYDEC.
New Drilling Permit and Well Rework Permit	NYDEC	Application in preparation.
Permit for Bulk Storage Facilities	NYDEC	Application in preparation.
Permit to Construct and Certificate to Operate Stationary Combustion Installation (or waiver)	NYDEC	Application filed 12/94 and pending before the NYDEC.
Section 401 Water Quality Certification	NYDEC	Application in preparation. To be filed 7/95.
Hydrostatic Test Water Discharge (State Pollutant Discharge Elimination System [SPDES] Permit)	NYDEC	Application in preparation. To be filed 7/95.
SPDES General Permit for Stormwater Discharges from Construction Activities	NYDEC	Application in preparation. To be filed 7/95.
Cultural Resource Consultation	State Historic Preservation Officer (SHPO/NYDEC)	Cultural Resource Report to be filed 8/95.
Notification of Withdrawal and Discharge Locations for Water Used in Hydrostatic Testing.	NYDEC	Application in preparation. To be filed 7/95.

a/ Indicates the status as of June 1, 1995.

1.7 Affected Landowners

During our initial review of the project, we may determine that the Notice of Intent (NOI) to prepare an EIS or EA should be mailed to potentially affected landowners as well as other interested parties, including federal, state, and local agencies, and the Commission's service list. If we do an NOI, we will attempt to mail it to all interested parties who may be directly affected or have clear interest in, or responsibility for, potentially affected sensitive environmental resources.

Provide the names and addresses of all affected landowners and towns, communities, and local, state, and federal governments and agencies involved with the project. Affected landowners include property owners directly affected (*i.e.*, crossed or used) by the proposed activity, adjacent landowners, residences within 50 feet of project work areas, residences within one-half mile of proposed compressor stations, and property owners within the area of proposed storage fields. Indicate that a good faith effort will be made to notify all affected landowners. The list you provide to the Commission should include all the addresses used for the landowner notification discussed in Section 2 of this manual.

Additional information on landowner notification requirements are included in Section 2.0 of this guidance manual.

1.8 Nonjurisdictional Facilities

Under NEPA, the FERC may need to consider the environmental impact of related nonjurisdictional facilities that would be constructed upstream or downstream of the jurisdictional facilities for the purpose of delivering, receiving, or using the proposed gas volumes. Integrally-related nonjurisdictional facilities could include major power facilities, such as cogeneration plants, as well as less significant facilities, such as lateral pipeline connections built by local distribution companies.

The extent of the Commission's analyses of nonjurisdictional facilities depends on the Commission's determination of its and other federal agencies' control and responsibility over these facilities. To assist in these determinations, the Commission has adapted the U.S. Army Corps of Engineers (COE) practice and has identified four factors to be considered in determining whether there is sufficient Federal control and responsibility over a project as a whole to warrant environmental analysis of portions of the project outside of its direct sphere of influence.[1]

[1] Refer to the Commission's June 2, 1992 order in Docket No. CP91-1983.

These factors include:

- *Whether or not the regulated activity comprises "merely a link" in a corridor type project (e.g., a transportation or utility transmission project).*

- *Whether there are aspects of the nonjurisdictional facility in the immediate vicinity of the regulated activity which uniquely determine the location and configuration of the regulated activity.*

- *The extent to which the entire project will be within the Commission's jurisdiction.*

- *The extent of cumulative federal control and responsibility.*

To assist the Commission in determining whether to expand the scope of the Commission's analysis to include the nonjurisdictional facilities, provide the following information regarding the identified nonjurisdictional facilities including auxillary facilities and facilities built by other companies:

- A brief description of each facility, including as appropriate: ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of federal, state, and local permits/approvals;

- The length and diameter of any interconnecting pipeline to be constructed; and

- Current 1:24,000/1:25,000 scale topographic maps showing the location of the facilities.

In addition, the applicant should apply the above four factor test and indicate its conclusions on a factor-by-factor basis as to whether the nonjurisdictional facilities should be included in the environmental analysis. If the applicant concludes that they should be included, then it should provide:

- Evidence that the appropriate State Historic Preservation Officer (SHPO) or duly authorized Tribal Historic Preservation Officer (THPO) has been contacted regarding whether properties eligible for listing on the National Register of Historic Places (NRHP) would be affected, or on the need to perform cultural resources surveys to support such a determination;

- Evidence of consultation with the FWS (and National Marine Fisheries Service

(NMFS), if appropriate) regarding potential impacts of the proposed facility on federally-listed threatened and endangered species; and

- For facilities within a designated coastal management zone, a consistency determination or evidence that the owner has requested consistency determination from the state's coastal zone management program.

Evidence that adequate comment or consultation has taken place should be in the form of a letter from the responsible state agency.

The applicant should be prepared to provide this information if the staff takes the position that the facilities must be included. Pre-filing conferences with staff would reduce the potential for different conclusions from application of the test.

Resource Report 2 - Water Use and Quality

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES [1]
Minimum Requirements to Avoid Rejection	
☐ 1. Identify all perennial surface waterbodies crossed by the proposed project and their water quality classification. (§ 380.12(d)(1)) • Identify by milepost • Indicate if potable water intakes are within 3 miles downstream of the crossing.	L, GG, LL
☐ 2. Identify all waterbody crossings that may have contaminated waters or sediments. (§ 380.12(d)(1)) • Identify by milepost • Include offshore sediments.	GG
☐ 3. Identify watershed areas, designated surface water protection areas, and sensitive waterbodies crossed by the proposed project. (§ 380.12(d)(1)) • Identify by milepost	FF, GG
☐ 4. Provide a table (based on NWI maps if delineations have not been done) identifying all wetlands, by milepost and length, crossed by the proposed project (including abandoned pipeline), and the total acreage and acreage of each wetland type that would be affected by construction. (§ 380.12(d)(l&4))	A, D, L, O, HH
☐ 5. Discuss construction and restoration methods proposed for crossing wetlands, and compare them to staff's Wetland and Waterbody Construction and Mitigation Procedures. (§ 380.12(d)(2))	D, Z
☐ 6. Describe the proposed waterbody construction, impact mitigation, and restoration methods to be used to cross surface waters and compare to the staff's Wetland and Waterbody Construction and Mitigation Procedures. (§ 380.12(d)(2)) • Although the Procedures do not apply offshore, the first part of this requirement does apply. Be sure to include effects of sedimentation, etc. This information is needed on a mile-by-mile basis and will require completion of geophysical and other surveys before filing. (See also Resource Report 3.)	D, Z
☐ 7. Provide original National Wetlands Inventory (NWI) maps or the appropriate state wetland maps, if NWI maps are not available, that show all proposed facilities and include milepost locations for proposed pipeline routes. (§ 380.12(d)(4))	D, O, HH
☐ 8. Identify all U.S. Environmental Protection Agency (EPA)- or state- designated aquifers crossed. (§ 380.12(d)(9)) • Identify the location of known public and private groundwater supply wells or springs within 150 feet of construction.	E, J, FF, GG
Additional Information Often Missing and Resulting in Data Requests	
☐ Identify proposed mitigation for impacts on groundwater resources.	D
☐ Discuss the potential for blasting to affect water wells, springs, and wetlands, and associated mitigation.	D
☐ Identify all sources of hydrostatic test water, the quantity of water required, methods for withdrawal, and treatment of discharge, and any waste products generated.	D

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES [1]
☐ If underground storage of natural gas is proposed, identify how water produced from the storage field will be disposed.	D
☐ If salt caverns are proposed for storage of natural gas, identify the source locations, the quantity required, the method and rate of water withdrawal, and disposal methods.	D
☐ For each waterbody greater than 100 feet wide, provide site-specific construction mitigation and restoration plans.	D
☐ Indicate mitigation measures to be undertaken to ensure that public or private water supplies are returned to their former capacity in the event of damage resulting from construction.	D
☐ Describe typical staging area requirements at waterbody and wetland crossings.	D
☐ If wetlands would be filled or permanently lost, describe proposed measures to compensate for permanent wetland losses.	L, N, T, DD
☐ If forested wetlands would be affected, describe proposed measures to restore forested wetlands following construction.	L, N, T, DD
☐ Describe techniques to be used to minimize turbidity and sedimentation impacts associated with offshore trenching, if any.	D

[1]

A	Aerial Photographs	T	NMFS
D	Applicant	Z	Procedures
E	Board of Health, State or County	DD	State Agencies
J	EPA	FF	State Drinking Water Division
L	Field Surveys	GG	State Water Quality Division
N	FWS	HH	State Wetland Maps
O	FWS NWI Map	LL	USGS Topographic Maps

This Resource Report is required for all applications, except for projects which involve only facilities constructed within previously disturbed areas of existing aboveground facilities, and if no wetlands or waterbodies are on the site, and there would not be a significant increase in water use. The report must describe water quality and provide data sufficient to determine the expected impact of the project and the effectiveness of mitigative, enhancement, or protective measures.

In text and tabular form, this report should present the documentation used to identify and quantify impact of construction on water use and quality. It should also discuss special techniques that would be used to mitigate or avoid impact during construction across water resources.

2.1 Groundwater Resources

Provide a brief description of the existing groundwater resources in the project area. Identify:

- General information on each aquifer underlying the project area, including type, depth, current and projected uses, average yield, known or suspected contamination problems, and water quality;

- Any other important groundwater withdrawal areas within 150 feet of the project area and their major uses (*e.g.*, residential agricultural, industrial, livestock); and

- Any springs within 150 feet of proposed construction areas.

This type of information is typically available from state and federal hydrologic publications, and the state or county Board of Health databases. If groundwater is not the main source of drinking water, indicate the water supplier/company supplying water for residents in the area and the surface water source.

Also identify segments of the pipeline and other aboveground facilities that overlie EPA-designated or state-designated sole source aquifers and wellhead protection areas. Information regarding sole source aquifers can be obtained from the regional EPA Groundwater Divisions. Areas of contaminated groundwater should also be identified by contacting the appropriate state Waste Management Division or Groundwater Division.

If a large quantity of groundwater would be used for the projects (*e.g.*, hydrostatic testing or solution mining storage caverns) provide a detailed groundwater resource and drawdown analysis. Also, describe in detail proposed wastewater disposal methods. Identify all regulatory requirements for the groundwater withdrawal/disposal and the status of approvals.

2.1.1 Public and Private Water Supply Wells

Identify by milepost all drinking water supply wells, including private, community, municipal/public wells, and springs within 150 feet of any area that would be disturbed by construction. This includes the construction right-of-way, extra work areas, new access roads, pipe storage and contractor yards, and sites for new or modified aboveground facilities (see Table 2.1-1 for an example). Supply well and spring information can generally be obtained from the county and state Board of Health Departments which compile information on drinking water supplies and springs. Information may be available from maps, in computer databases, in Board of Health reports, or from field surveys.

TABLE 2.1-1

Water Supply Wells and Springs within 150 Feet of the Construction Work Area

Segment	County, State	Supply Type	Approximate Milepost	Approximate Distance from Construction Work Area (feet)
Loop 1	Warren, OH	Private Well	787.9	17
		Municipal Well	789.0	0
Loop 2		None		
Loop 3	Fairfield, OH	Spring	867.3	0
		Well	870.8	23
Loop 4	Noble, OH	Spring	1080.8	2
		Spring	1074.0	21
		Spring	1078.6	13
		Well	1078.7	15

The information obtained in the "well search" is used to determine whether the pipeline and aboveground facilities could potentially affect a groundwater supply. To determine if the pipeline crosses a protected watershed area associated with a supply well, the municipal or public well owners/operators and the state Drinking Water Division should be contacted. Present the information, including the length of the protected watershed traversed by milepost in the text of the report or in tabular form (see Table 2.1-2).

TABLE 2.1-2

Locally Zoned Aquifer Protection Areas Crossed by the Proposed Route

Segment	Town/State	MP	Water Supply	Distance of Protection Area Crossed (ft)
X-1 Replacement	Seekonk, MA	1.7 - 3.4	Seekonk Water District	8,976
X-2 Replacement	Wareham, MA	0.3 - 3.1	Wareham Water District	14,784
	Bourne, MA	5.08 - 5.2	Buzzard Bay Water District	633

It should be noted that well searches and contacting agencies to identify the necessary information about drinking water resources can be a time-consuming process. For this reason, it is important to initiate research early in the process of preparing the application.

Where blasting would be required, discuss the potential for blasting to affect water wells and springs, and measures to be taken to detect and remedy such effects. (See also Resource Report 6.)

2.1.2 Groundwater Impact Mitigation

Identify measures for minimizing and mitigating impact on groundwater by describing the use of special blasting techniques, trench breakers, dewatering methods, and restrictions on refueling and storage of hazardous substances (generally prohibit refueling and storage of hazardous materials within a 200-foot radius of private wells, and 400-foot radius of community and municipal wells). Include a plan for monitoring groundwater quality and yield for public and private supply wells, with the owner's permission, before and after construction to determine whether water supplies have been affected by pipeline construction activities. Also indicate what types of mitigation measures would be undertaken to ensure that the water supply is returned to its former capacity in the event of damage resulting from construction (*e.g.*, providing temporary sources of potable water, restoration, repair, or replacement or water supplies).

If contaminated groundwater is present, describe its specific location, avoidance and/or other mitigation measures to minimize impact.

If underground storage of natural gas is proposed, identify how water produced form the storage field will be disposed of. For salt caverns, identify the source locations, the quantity required, and the method and rate of withdrawal of water for creating salt cavern(s), as well as the means of disposal of brine resulting from cavern leaching.

2.2 Surface Water Resources

Identify all waterbodies crossed by the pipeline using 1:24,000/1:25,000 scale USGS topographic maps submitted with the application. If dry swales are raised as an issue, then relevant information should be provided in this resource report. Provide a listing, by milepost, of all waterbodies that would be crossed including type designation (*e.g.*, perennial, intermittent, ephemeral, canal, etc.), the width at the crossing location, the associated state water quality classification, any known potential pollutants present in the water or sediments, any potable water intake sources within 3 miles downstream, and general fishery type (*e.g.*, coldwater, coolwater, warmwater). This information can be obtained from the state water quality and fisheries departments. Table 2.2-1 is an example of how the information may be presented.

TABLE 2.2-1

Waterbodies Crossed by the Pipeline

Pipeline	MP	Waterbody	Type a/	Crossing width (ft)	State Water Quality Classification b/	Fishery Type
Line F	1.2	Choctaw Bayou	P	31	ABC	Warmwater
	1.9	McCain Creek	P	30	ABC	Warmwater
	8.1	Twelve Mile Bayou	P	216	ABCD	Warmwater
	8.4	Unnamed	I	15	ABC	Warmwater
	9.7	Twelve Mile Bayou Slough	P	336	ABC	Warmwater

a/ P = perennial; I = intermittent

b/ State Designations — Use Descriptions

A — Primary Contact Recreation - Defined as any recreational or other water use in which there is prolonged and intimate contact with the water involving considerable risk of absorbing waterborne constituents through the skin or of ingesting constituents from water in quantities sufficient to pose a significant health hazard. Examples of this type of water use include swimming, water skiing, skindiving, and similar activities.

B — Secondary Contact Recreation - Any recreational or other water in which body contact with the water is either incidental or accidental, and in which the probability of ingesting appreciable quantities of water is minimal. Uses include fishing, wading, commercial or recreational boating, and any limited contact incident to shoreline activity.

C — Fish & Wildlife Propagation - Includes use of water for preservation and reproduction of aquatic biota such as indigenous species of fish and invertebrates as well as reptiles, amphibians, and other wildlife associated with the aquatic environment. This use also includes the maintenance of water quality at a level that prevents contamination of aquatic biota consumed by humans.

D — Drinking Water Supply - Water for human consumption and general household use. Surface waters designated as drinking water supplies are identified in the criteria tables; this designation does not apply to any tributaries unless specified.

Identify all waterbodies that are greater than 100 feet in width and provide the crossing widths, proposed site-specific construction methods (*e.g.*, open cut, directional drill), and site-specific mitigation and restoration plans. Note that this includes all offshore construction. The detailed description of the crossing plan should include:

- The method to be used to excavate the trench underwater;
- The location of the spoil storage both in the river and onshore and the mitigative measures that would be used to control and store the spoil;
- The method to be used to pull the pipeline across the river, including the amount of time required for the pull;
- The method to be used to backfill the trench underwater (such as natural redeposition or mechanical placement);

- An explanation of the size requirements of the extra work spaces on each bank (such as trench size and work to be done in each work space);

- A discussion of any special mitigation to minimize impact on riparian vegetation; and

- For navigable streams, include a discussion on how boat traffic interruption would be minimized.

Provide mitigation measures proposed to reduce the potential for adverse impact on surface waters. Provide information regarding storage of fuels and lubricants and disposal of all construction wastes, dredge spoil, etc.

If a directional drill is proposed, provide the following information:

- size and location of staging areas for the entry and exit pits;

- how an inadvertent release of drilling mud would be contained;

- the procedures that would be used to clean up any inadvertent releases; and

- how an abandoned drill hole would be sealed, if necessary.

Provide a contingency plan for the waterbody crossing in the event the directional drilling is unsuccessful or proves infeasible. Provide site-specific plans that include a scaled drawing identifying all areas to be disturbed by construction and a copy of any permits issued. Include all relevant information described above.

2.2.1 Contaminated Sediments

Identify all waterbody crossings that may have sediments contaminated with toxic chemicals along with a description of the type of contamination (*e.g.*, agricultural, industrial). Contact state water quality agencies for this information. For surface water crossings involving contaminated sediments, describe measures to prevent or minimize resuspension of sediments during construction. The proposed mitigation measures should include comments and recommendations of the appropriate state agency(ies). Provide the name and phone number of the agency contact, and include copies of all related correspondence. Site-specific sampling and analysis may be necessary, depending on potential impact and agency concerns.

2.2.2 Public Watershed Areas

Identify municipal watershed areas and associated reservoirs, if any, and any state/locally designated surface water protection areas that would be crossed by the pipeline. State drinking water agencies typically have maps or reports that list public surface water supplies. Once these are identified, the appropriate local agencies should be contacted regarding the presence of designated protection areas. A table summarizing such areas should include the length of each area crossed by milepost (see Table 2.2-2). Include a discussion of proposed mitigation measures. Proposed mitigation, if necessary, should include written comments and recommendations of the appropriate state or local agencies and a clear indication whether those recommendations would be adopted.

TABLE 2.2-2

Public Water Supply Watershed Areas Crossed by the Pipeline

State/Pipeline System/ Facility	Surface Water Supply	Milepost of Drainage Area Crossed	Distance/ Direction of Reservoir from Pipeline (mi)
IDAHO			
Mainline			
Pocatello North	American Falls	607.3 - 617	2-5 N
Pocatello South	American Falls	607.3 - 605	
WYOMING			
Mainline			
North Loop	Flaming Gorge Reservoir		1.5 - 4.0 E
UTAH			
Mainline			
Vernal North Loop	Matt Warner Reservoir	342 - 345.3	2

2.2.3 Hydrostatic Test Water

Identify all sources of hydrostatic test water and the quantity of water required for each pipeline segment. Provide a description of the withdrawal and discharge methods, the discharge locations by milepost, and indicate if the test water would be discharged in upland areas or into a waterbody channel. Contact appropriate state and federal agencies to determine if any significant fisheries or designated exceptional quality waters would be affected and if a permit is needed for water withdrawal and discharge activities. If sensitive surface waters would be used for withdrawal or discharge, provide comments and recommendations from the appropriate agency and an indication whether the

recommendations would be adopted. Discuss the quality of discharge water resulting from contact with the pipeline, particularly if an existing pipeline is being retested. Describe chemical or physical treatment of the pipeline or hydrostatic test water. Discuss waste products generated and disposal methods. State whether the applicant would adopt the hydrostatic testing procedures identified in section VII of our Procedures.

2.2.4 Construction Permits

Contact state water resources agencies to identify the permits required for construction across surface waters. In addition, contact the appropriate COE office regarding the Clean Water Act section 404 project evaluation and state whether the COE believes that the project would meet the requirements of a nationwide permit (specify which one(s)), or would require a regional permit or an individual permit.

The COE will identify navigable waterways that would be crossed. These are regulated by the COE under section 10 of the Rivers and Harbors Act of 1899. Construction across a navigable waterway may require an individual permit. Provide a copy of all correspondence with the COE regarding permit determination.

2.2.5 Sensitive Surface Waters

Identify sensitive waterbodies that may be affected by the project. State water resource/management agencies can identify sensitive surface waters and provide information on potential mitigation measures that may be required during construction. Sensitive surface waters include but are not limited to the following:

- Waters that do not meet the water quality standards associated with the waters' designated beneficial uses;
- Surface waters that have been designated for intensified water quality management and improvement;
- Waterbodies that contain threatened or endangered species or critical habitat;
- Waterbodies that are crossed less than 3 miles upstream of potable water intake structures. The distance from the crossing to the supply intake should be provided along with the name of the intake owner;
- Outstanding or exceptional quality waterbodies;

- Waters of particular ecological and recreational importance;
- Waterbodies located in sensitive and protected watershed areas;
- Waterbodies and intermittent drainages that have steep banks, potentially unstable soils, high volume flows, and actively eroding banks;
- Surface waters that have important riparian areas; and
- Rivers on or designated to be added to the Nationwide Rivers Inventory or a state river inventory (see Resource Report 8).

Describe the effects of construction and operation of the pipeline on designated sensitive waterbodies and proposed mitigation. Describe in appropriate detail the construction methods, the location of staging areas, and recommendations that were made by federal, state, and local agencies and how the recommendations would be implemented. If the applicant proposed not to carry out any recommendations, provide specific reason(s) and identify if other mitigation is proposed.

2.2.6 Waterbody Construction and Mitigation Procedures

Indicate whether our current Procedures would be adopted for the project. If not, include the applicant's procedures for waterbody construction methods, compare them to our Procedures, and explain any differences. For any individual provisions, that are considered unnecessary, technically infeasible, or unsuitable due to site-specific or location conditions, identify the location by milepost, and propose substitute measures to provide equal or greater protection to the resource.

Describe typical staging area requirements at waterbody crossings. Also, identify and describe waterbodies where staging areas are likely to be more extensive.

2.3 Wetlands

2.3.1 Existing Resources

Identify wetlands that would be affected by the project by conducting wetland field surveys or from review of existing map resources. At a minimum, use FWS NWI maps, where available, to determine the locations and types of wetlands that would be affected by construction and operation of the facilities. Include with the application the original and two copies of NWI maps with the facilities and mileposts clearly marked. If NWI maps have not

been prepared for all or parts of the project area, identify wetlands using information from other available sources, which may include: field delineation, state wetland maps; U.S. Department of Agriculture, National Resources Conservation Service (NRCS) (formerly the Soil Conservation Service) county soil maps; USGS topographic maps; and aerial photographs. If using sources other than NWI maps, identify the source and classify wetlands according to the NWI classification system.

Provide a table of wetlands that would be affected by the project, including all extra work space and staging areas, access roads, and contractor and pipe storage yards (see table 2.3-1). Identify and discuss major wetland complexes or significant wetlands, as identified by field review and/or by state or Federal agencies. Identify acres of wetland, if any, involving agriculture, silviculture, or rangeland.

TABLE 2.3-1

Wetlands Crossed by the Project

Facility	MP	MWI Classification a/	Length of Crossing (ft) b/	Area Affected Construction / Operation (acres)
Loop 1	1332.3	PEM	350	0.60 / 0.40
	1332.0	PEM	200	0.34 / 0.23
	1329.9	PFO	100	0.17 / 0.11
	1327.9	PFO	275	0.47 / 0.32
Lateral B	1326.1	PFO	350	0.60 / 0.40
	1326.0	PEM	450	0.77 / 0.52
	1325.6	PSS	800	1.38 / 0.92
TOTAL			2,525	4.35 / 2.89 c/

a/ NWI Wetland Types
- Palustrine Forested (PFO)
  - PFO1 = broad-leaved deciduous
- Palustrine Scrub-Shrub (PSS)
  - PSS1 = broad-leaved deciduous
- Palustrine Emergent (PEM)
  - PEM1 = persistent emergent vegetation

b/ Flag facilities to be abandoned in place.

c/ Totals calculated using total length of crossing. These do not equal the sums of this column due to rounding.

A field wetland delineation, using the current Federal manual, of all areas to be disturbed by the project should be provided in addition to the NWI maps. They must be provided before construction. If a wetland delineation has been completed, use information obtained from the delineation in this Resource Report instead of information obtained from NWI or other map sources. Prepare a wetland delineation report and include the report as an attachment to the Resource Report. The wetland delineation report should include:

- Name(s) and qualifications of person(s) conducting the delineation;
- Methods used and date(s) of the delineation;
- Areas surveyed, including milepost locations along pipeline routes;
- A summary of hydrology, soils, and vegetation for each wetland delineated;
- Wetland status (farmed, modified);
- Wetland determination data forms for each wetland delineated; and
- A map (to scale) for each wetland showing facility locations and wetland boundaries (see Figure 2.3-1).

2.3.2 Construction and Operation Impacts

Provide the total acreage of wetlands that would be temporarily affected, and the total acreage of wetlands that would be permanently affected. For major projects, provide a summary table listing total length crossed and total area affected by wetland type and by facility (see Table 2.3-2). For all projects, provide acreage of forested wetland that would be temporarily affected and the acreage of forested wetland that would be permanently affected. Identify the acreage, if any, of wetlands that would be filled or otherwise permanently lost.

Indicate whether our current Procedures would be adopted for the project. If not, include the applicant's procedures for wetland construction methods, compare them to our Procedures, and explain any differences. For any individual provisions that are considered unnecessary, technically infeasible, or unsuitable due to site-specific or location conditions, identify the location by milepost, and propose substitute measures to provide equal or greater protection to the resource. Include documentation of consultation with state agencies where appropriate to support alternative measures. Where required by the Procedures (*i.e.*, section II.B.), include site-specific plans for proposed exceptions to the Procedures.

Discuss the potential for blasting to affect wetlands and measures to be taken to detect and remedy such effects.

Describe typical staging area requirements at wetland crossings. Also, identify and describe wetlands where staging areas are likely to be more extensive.

Replace with figure 2.3-1 (moved from RR3, Figure 3.5-1)

TABLE 2.3-2

Summary of Wetlands Affected by Construction and Operations

Facility	NWI Classification a/		Length of Each Type Crossed (ft)	Wetland Area Affected During Constr./Oper. (ac)
Loop 1	PFO		1,450	2.5/1.7
	PSS		2,475	4.3/2.8
	PEM		11,375	19.6/0.0
		Subtotal	15,300	26.4/4.5
Loop 2	PFO		825	1.4/0.9
	PSS		1,650	2.8/1.9
	PEM		75	0.1/0.0
		Subtotal	2,550	4.3/2.8
Lateral 1	PSS		175	0.3/0.2
	PEM/SS		50	0.1/0.0
	PEM		500	0.9/0.0
		Subtotal	725	1.3/0.2
		Total	18,575	32.0/7.5

a/ NWI Wetland Types;
Palustrine Forested (PFO)
PFO1 = Broad-leaved deciduous
Palustrine Scrub-Shrub (PSS)
PSSI = broad leaved deciduous
Palustrine Emergent (PEM)
PEM1 = persistent emergent vegetation

If forested wetlands would be affected, describe proposed measures to restore these areas following construction. Restoration plans should include planting of wetland trees or shrubs, post-construction monitoring, and the development and application of criteria to determine restoration success. Consult with appropriate agencies (for instance, EPA, COE, and land management agencies) to develop restoration plans, and include copies of written recommendations from agencies.

If the project would result in permanent wetland losses, describe efforts that have been or will be taken to avoid and/or minimize wetland losses. Describe in detail any proposals to compensate (*e.g.*, land acquisition/wetland banking, research project funding) for these losses[2]. Compensation plans should include criteria to determine mitigation success. Include copies of any correspondence with respective agencies regarding compensation plans.

Identify any special permits required for construction within wetlands, comments from respective permitting agencies, and if known, special permit conditions. For major projects, arrange for preapplication meetings with the EPA, COE, and appropriate Indian tribal, state,

2 In compliance with Clean Water Act Section 404(b)[1] guidelines, February 7, 1992, Memorandum Of Agreement between the COE and EPA, and the White House guidance of August 24, 1993.

and local authorities to determine wetland permitting requirements. Describe results of any such meetings.

Provide an assessment of any cumulative effects on wetlands as a result of the project in combination with other existing or proposed projects.

Resource Report 3 - Fish, Wildlife, and Vegetation

SUMMARY OF FILING INFORMATION	
INFORMATION	**DATA SOURCES [1]**
Minimum Requirements to Avoid Rejection	
☐ 1. Classify the fishery type of each surface waterbody that would be crossed, including fisheries of special concern. (§ 380.12(e)(1)) • This includes commercial and sport fisheries as well as coldwater and warmwater fishery designations and associated significant habitat.	M
☐ 2. Describe terrestrial and wetland wildlife and habitats that would be affected by the project. (§ 380.12(e)(2)) • Describe typical species with commercial, recreational or aesthetic value.	L, DD
☐ 3. Describe the major vegetative cover types that would be crossed and provide the acreage of each vegetative cover type that would be affected by construction. (§ 380.12(e)(3)) • Include unique species or individuals and species of special concern. • Include nearshore habitats of concern.	A, L
☐ 4. Describe the effects of construction and operation procedures on the fishery resources and proposed mitigation measures. (§ 380.12(e)(4)) • Be sure to include offshore effects, as needed.	D, M
☐ 5. Evaluate the potential for short-term, long-term, and permanent impact on the wildlife resources and state-listed endangered or threatened species caused by construction and operation of the project and proposed mitigation measures. (§ 380.12(e)(4))	D, DD
☐ 6. Identify all federally listed or proposed endangered or threatened species that potentially occur in the vicinity of the project and discuss the results of the consultations with other agencies. Include survey reports as specified in (§ 380.12(e)(5)). • See § 380.13(b) for consultation requirements. Any surveys required through § 380.13(b)(5)(I) must have been conducted and the results included in the application.	L, N, T, DD
☐ 7. Identify all federally listed essential fish habitat (EFH) that potentially occurs in the vicinity of the project and the results of abbreviated consultations with NMFS, and any resulting EFH assessment. (§ 380.12(e)(6))	N, M, T
☐ 8. Describe any significant biological resources that would be affected. Describe impact and any mitigation proposed to avoid or minimize that impact. (§ 380.12(e)(4&7)) • For offshore species be sure to include effects of sedimentation, changes to substrate, effects of blasting, etc. This information is needed on a mile-by-mile basis and will require completion of geophysical and other surveys before filing.	A, D, L, N, T, DD
Additional Information Often Missing and Resulting in Data Requests	
☐ Provide copies of correspondence from federal and state fish and wildlife agencies along with responses to their recommendations to avoid or limit impact on wildlife, fisheries, and vegetation.	N, M, T, DD
☐ Provide a list of significant wildlife habitats crossed by the project. Specify locations by milepost, and include length and width of crossing at each significant wildlife habitat.	D, L, N, M, DD

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES [1]
[1] A Aerial Photographs D Applicant L Field Surveys M Fishery Biologist, State or Regional N FWS T NMFS DD State Agencies	

This report is required for all applications, except those involving only facilities within the improved area of an existing compressor, meter, or regulator station.

This Resource Report describes existing fish, wildlife, and vegetation resources that would be directly and indirectly affected by the project. The report should cover expected impacts on these resources, including potential effects on biodiversity, from construction and operation of the facilities as well as the mitigation measures that are proposed to reduce these impacts. The Resource Report should also describe all consultation with state fish and wildlife or land management agencies, the FWS, and the NMFS for projects potentially affecting marine species, and Federal land management agencies or private conservation organizations if the project would be within lands managed by these agencies or organizations. Include as appendices or attachments to this Resource Report copies of all correspondence with appropriate agencies. Also include copies of any studies or reports on field surveys that have been completed for the project. Do not include extensive lists of all species known or suspected of inhabiting the project area.

3.1 Fisheries

3.1.1 Fishery Classification

Classify the fishery type for each surface waterbody that would be crossed or otherwise affected by the project. Where available, use the state fishery classification, which indicates the type of fishery the surface water supports (*e.g.*, warmwater, coldwater, saltwater, and anadromous).

The classification information may be included on the surface water table (see Resource Report 2 Table 2.1-1) as a separate column, or it may be included in a separate table. It must identify the surface waters disturbed by each facility segment, the corresponding milepost at the crossing location, the county and state for each crossing, and the type of fishery the surface water supports.

If a state fishery classification is unavailable, contact the regional or local state fishery biologist to determine what type of fishery occurs in the general vicinity of each crossing

location. Also provide, in tabular format, a description of the representative fish species known to occur in the project vicinity (see Table 3.1-1).

TABLE 3.1-1

Representative Game and Commercial Fish Species Known to Occur in Project Area Waterbodies

Coldwater-Anadromous	Coldwater-Resident	Warmwater
Spring chinook salmon	Rainbow trout	Largemouth bass
Fall chinook salmon	Cutthroat trout	Smallmouth bass
Coho salmon	Brown trout	Bluegill
Chum salmon	Brook trout	Pumpkinseed
Pink salmon		White crappie
Sockeye salmon		Bullhead
Winter steelhead trout		Channel catfish
Summer steelhead trout		Walleye
Sea-run cutthroat trout		
American shad		
White sturgeon		

3.1.2 Fisheries of Special Concern

Based on information obtained from federal and state fish and wildlife biologists, or in state agency reports, describe any surface waters that support fisheries of special concern in the vicinity of the crossing location (see Table 3.1-2 for an example of a tabular presentation of these data). These may include surface waters containing fisheries of exceptional recreational value, such as those that support coldwater fisheries through natural reproduction, those that provide habitat for protected species, or those that are assigned special state fishery management regulations. Other special-concern fisheries may include those where economic investments, such as clean up or stocking programs, have been implemented, or those that support commercial or tribal harvests.

Identify all federally listed essential fish habitat (EFH) that potentially occurs in the vicinity of the project. Provide relevant information on all EFH, as identified by the pertinent federal fishery management plans, that may be adversely affected by the project and the results of abbreviated consultations with NMFS, an any resulting EFH assessment.

TABLE 3.1-2

Fisheries Resources of Special Concern Crossed by the Pipeline

State/Pipeline System/Facility	MP	Waterbody	Width (feet)	Anadromous Salmon and/or Trout	Fisheries Issues a/
WASHINGTON					
Mainline					
North Loop A	1332.3	Muck Creek	15	Yes	2, 4, 5
	1332.1	South Creek	10	Yes	5
Loop B	1227.6	Salmon Creek	40	Yes	5
	1216.7	Little Washougal River	49	Yes	2,5
OREGON					
Grants Pass Lateral					
Lateral D	4.7	Columbia River	3,900	Yes	1,2,3,4,6,7
	5.2	Sandy River	664	Yes	2,3,4,6

a/ Fisheries Issues:
1. Protected species (state or Federal)
2. Significant recreational fisheries or special fisheries regulations or considered high priority by state
3. Commercial fisheries
4. Substantial run of salmon or steelhead
5. Good salmonid spawning habitat near crossing
6. Primary migration route
7. Possibility of walleye, sturgeon, and shad spawning in the area.

Identify the pipeline segment and corresponding milepost for the location of each special-concern water, the name of the waterbody, and the fishery issue associated with that waterbody.

3.1.3 Construction and Operation Impacts

Based on the proposed construction and operational procedures, determine and describe the effects of construction and operation of the pipeline on the fishery resources. Where special construction or operational techniques or procedures for site-specific areas are proposed, describe the impacts based on using these techniques. Evaluation and discussion of impacts on fishery resources should take into consideration the time of year when construction across surface waters would occur, the site-specific need for underwater blasting, and the potential for habitat loss, including shoreline and in-stream cover loss and loss or sedimentation of critical spawning habitat. Also address the potential for impact caused by interruption of fish spawning migrations (where applicable), intake or discharge of hydrostatic test water, and the potential for fish mortality from toxic substance spills or blasting activity.

Proposed mitigation should address construction procedures or changes in operation that are proposed to reduce the impact on the fishery resources. Include any mitigation

measures that are recommended by state or federal agencies. Mitigation may include scheduling waterbody crossings to avoid sensitive spawning or migration periods, or the use of specialized construction procedures, such as directional drilling, fluming, scare charges, bubble curtains, or use of portable construction bridges to avoid in-stream construction and reduce the levels of turbidity or downstream sedimentation. The measures discussed should be those proposed in addition to the typical construction and operation procedures. Also address site-specific areas of impact or concern.

3.2 Wildlife

3.2.1 Existing Resources

Provide a description of the various types of terrestrial and wetland habitats that would be affected by the project. Habitat types should be described by vegetative cover types and should be consistent with vegetation cover types described in Section 3.3 and with land use categories used in Resource Report 8. List representative wildlife species for the types of habitat described. Identify any species with significant recreational, aesthetic, or commercial value.

Identify and describe significant or sensitive habitats. These may include habitats that provide breeding, rearing, nesting, or calving areas, migration routes, or overwhelming cover or forage areas. Tabulate the significant wildlife habitats crossed by the project, indicating the pipeline segment or aboveground facility that the habitat would be affected by, the beginning and ending milepost locations, the habitat type or name, the length of the crossing in feet, and the width of the proposed construction right-of-way at the crossing location (see Table 3.2-1).

TABLE 3.2-1

Significant Wildlife Habitats Affected by the Project a/

Facility	Location (milepost)	Habitat Type/ Name	Length Crossed or Area	Construction ROW Width (ft)
Compressor Station 1	NA	Black-tailed deer critical winter range	3 acres	NA
Loop 1	4.8-5.5	waterfowl nesting habitat/ Columbia River	3,500 feet	80
Loop 2	74.8-75.0	potential heron nesting habitat/North Santiam R.	1,000 feet	75

Source: BLM 1995, WADNR 1995, ORDFW 1994

a/ Does not include habitat of federal or state-listed endangered or threatened species. Refer to Section 3.4 for coverage of these habitats.

Identify any existing or proposed National Wildlife Refuges, state wildlife management areas, or privately owned management areas or preserves that would be affected, and describe how and by whom they are managed.

3.2.2 Construction and Operation Impact

Describe short-term, long-term, and permanent impact on the wildlife resources caused by construction and operation of the proposed pipelines and aboveground facilities. Calculate the loss of forested habitats and significant habitats, and present in terms of temporary impact (*i.e.*, the construction right-of-way and all extra work areas) or permanent impact (*i.e.*, the portion of the permanent right-of-way that would be maintained in a cleared condition).

Describe proposed mitigation to avoid or reduce impact on wildlife, especially significant habitats or habitat within wildlife management areas or preserves. Provide time windows for crossing sensitive habitats, and any specific restoration plans, including plantings. Identify any mitigation measures recommended by state or Federal agencies. Provide an assessment of any cumulative effects of the project in combination with other existing or proposed projects.

3.3 Vegetation

3.3.1 Existing Resources

Provide descriptions of the major vegetative cover types that would be crossed or otherwise affected by the pipeline or aboveground facilities. Each cover type description should include characteristic plant species. Also provide a description of the vegetation on the existing rights-of-way (for a looping project or other project with construction within or adjacent to existing rights-of-way) and within station yards or off-right-of-way work spaces that would be disturbed. If looping or replacing an existing pipeline, describe vegetation maintenance practices on the existing rights-of-way, including normal frequency and average width of the maintained right-of-way.

Describe and identify by milepost and length of crossing (in feet) any unique, sensitive, or protected vegetation types, plant communities, or individual trees (*e.g.*, state specimen trees) that would be affected. Federal- or state-listed endangered or threatened plants should be discussed in Section 3.4.

3.3.2 Construction and Operation Impacts

Provide the total acreage of vegetation that would be affected, by cover type, during both construction and operation. Base acreage calculations on the dimensions of the construction and permanent rights-of-way as shown on the cross-section diagrams submitted in Resource Report 1 and further described in Resource Report 8. Include all extra work space, staging areas, and contractor and pipe storage yards. The total acreage of vegetation affected, minus any non-vegetated areas, should equal the total area as reported in Resource Reports 1 and 8 (if not, explain the difference quantitatively).

Acreage of vegetation types affected may be determined by review of aerial photographs, supplemented with ground truthing as necessary. Emphasis should be placed on forest vegetation, or other vegetation types for which clearing would be a long-term or permanent impact. For large projects, present vegetation clearing information in tabular format (see Table 3.3-1).

TABLE 3.3-1

Estimated Clearing of Forest and Shrub Vegetation Cover Types

Facility	Forest-Covered Upland to be Cleared		Shrub-Covered Upland to be Cleared	
	Temporary (acres) a/	Permanent (acres) b/	Temporary (acres) a/	Permanent (acres) b/
Loop A	28.7	4.5	3.9	0.0
Lateral 1	41.7	22.3	12.5	6.5
Compressor Station 1	5.7	5.7	3.5	0.0

a/ Temporary cleared areas consist of that portion of the construction right-of-way and extra temporary work areas that would be allowed to naturally revegetate following construction.

b/ Permanently cleared areas consist of those portions of the construction right-of-way and aboveground facilities that would be maintained permanently free or woody vegetation during operation of the project.

Calculate the area of unique or sensitive vegetation types or communities that would be affected by construction, and the area of these types that would be within the permanent right-of-way. Describe any mitigation measures recommended by resource management agencies and any measures proposed to avoid or minimize impact on sensitive vegetation types.

3.4 Endangered and Threatened Species

3.4.1 Existing Resources

Initiate informal consultation with the FWS, and the NMFS if appropriate, to determine if any federally listed or proposed endangered or threatened species or their designated critical habitat potentially occur in the vicinity of the proposed project. Include in the FERC application copies of written correspondence to and from the FWS and NMFS. If the FWS and/or NMFS have issued clearance letters stating that no listed or proposed species would be affected, but the clearance letters are more than 1 year old, contact the FWS and/or NMFS to determine if updated letters are required.

If the FWS and/or NMFS recommend that project-specific field surveys be conducted for one (1) or more federally listed or proposed species, these surveys must be completed for all accessible project areas and the results filed with the application.[3] Provide a timetable for completion of surveys and filing survey reports for those areas not accessible, prior to filing. Surveys should be conducted by qualified biologists using methodology approved by the FWS and/or NMFS. Provide copies of survey reports and FWS and/or NMFS comments on the reports. Survey reports should include the following information:

- name(s) and qualifications of person(s) conducting survey;
- methods and date(s) of the survey;
- areas surveyed, including milepost locations for pipeline routes;
- areas where species or potential habitats were located, including milepost locations for pipeline routes;
- potential impact on the species or habitat, both positive and negative, that could result from construction and operation of the proposed project; and
- proposed mitigation that would avoid or minimize potential negative impact.

Prepare a table for the resource report that lists the federally listed and proposed endangered and threatened species that potentially occur in the vicinity of the project (see Table 3.4-1). The table should include the common and scientific name of the species, its status, and the name of the facility where the species may occur.

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[3] The process through § 380.13(b)(5)(i) must be completed before filing.

Prepare a brief description of each federally listed or proposed endangered or threatened species that potentially occurs in the vicinity of the project. The description should include general background information that is appropriate to the project area (*e.g.*, regional distribution, habitat preference, and important dates such as for breeding, nesting, calving, migration, or overwintering), as well as project-specific information such as known locations of designated critical habitat, suitable habitat, or occupied habitat. Identify specific recommendation made by the FWS or NMFS.

TABLE 3.4-1

Federally Listed and Proposed Endangered and Threatened Species that Potentially Occur in the Vicinity of the Project

Species	Status a/	Facilities Where Species May Occur
Wildlife		
Bald eagle	T	During migration: all facilities Nesting or Overwintering: Loop A Replacement 1
Columbian white-tailed deer	E	Compressor Station 1
Fish		
Razorback sucker	E	Loop C
Plants		
Bradshaw's lomatium	E	Loop A Compressor Station 2
Invertebrates		
American burying beetle	E	Lateral 2

Source: FWS 1995

a/ Status
E = Endangered
T = Threatened

Consult with the appropriate state agencies to determine state-listed endangered or threatened species that potentially occur in the vicinity of the project. Provide the same information for state-listed species as described above for federally listed or proposed species.

If nonjurisdictional facilities would be constructed in conjunction with the proposed project, the applicant should work with the nonjurisdictional company, and provide the same information for the nonjurisdictional facilities as described above for the proposed facilities. (See Resource Report 1 for the discussion of when this is required.)

3.4.2 Construction and Operation Impacts

For each species described in Section 3.4.1, describe the impact on the species that would result from construction and operation of the project. Provide an assessment of any cumulative effects of the proposed project in combination with other existing or proposed projects. Describe proposed mitigation measures to avoid or substantially minimize impact on each species. Address all FWS and NMFS comments and recommendations for federally listed or proposed species, and all state agency comments and recommendations for state-listed species.

Resource Report 4 - Cultural Resources

SUMMARY OF FILING INFORMATION	
INFORMATION	**DATA SOURCES [1]**
Minimum Requirements to Avoid Rejection	
☐ 1. Initial cultural resources consultation and documentation, and documentation of consultation with Native Americans. (§ 380.12(f)(1)(I) & (2)) • See § 380.14 for specific procedures.	D
☐ 2. Overview/Survey Report(s). (§ 380.12(f)(1)(ii) & (2) • See § 380.14 for specific procedures. • For the offshore area this will usually require completion of geophysical and other underwater surveys before filing.	D
Additional Information Often Missing and Resulting in Data Requests[2]	
☐ Identify the project APE in terms of direct or indirect effects to known cultural resources.	D
☐ Provide a project map with mileposts, clearly showing boundaries of all areas surveyed (ROW, extra work areas, access roads, etc.) and to be surveyed with corridor widths clearly specified.	D
☐ Provide documentation of consultation with SHPOs, THPOs, and applicable land-managing agencies regarding the need for and required extent of cultural resource surveys.	D
☐ Provide a narrative summary of overview results, cultural resource surveys completed, identified cultural resources and any cultural resource issues.	D
☐ Provide a project specific Ethnographic Analysis (can be part of Overview/Survey Report).	D
☐ Identify by mileposts any areas requiring survey for which the landowner denied access.	D
☐ Provide written comments on the Overview and Survey Reports, if available, from the SHPOs or THPOs, as appropriate, and applicable land-managing agencies.	D
☐ Provide a Summary Table of completion status of cultural resource surveys, and SHPO or THPO and land-managing agency comments on the reports.	D
☐ Provide a Summary Table of identified cultural resources, and SHPO or THPO and land-managing agency comments on the eligibility recommendations for those resources.	D
☐ Provide a brief summary of the status of Native American consultation, including copies of all related correspondence and records of verbal communications.	D
☐ Provide a schedule for completing any outstanding cultural resource studies.	D
☐ Provide an Unanticipated Discoveries Plan for the project area, referencing appropriate state statutes.	D

[1] D Applicant
[2] Missing from Resource Report or Survey Report.

This Resource Report is required for all applications. This report addresses the nature and extent of cultural resources including any "historic properties" (districts, buildings, structures, sites, and/or objects listed on or eligible for listing on the NRHP), or any Native

American traditional cultural places within the project's Area of Potential Effect (APE). The APE includes the area which may be affected by construction, operation, and maintenance of proposed facilities, and associated activities. It may extend beyond the limits of the project's construction and permanent right-of-way.

4.1 Application

The report submitted with the application should include:

- A description of the project's APE referencing both potential direct and indirect effects to cultural resources. This may differ from the construction and permanent rights-of-way due to nature of historic properties in certain areas, and may address visual, auditory, and emissions effects as well as incidental physical effects;

- Documentation of the need for cultural resource survey, and the level of survey required, from consultation with the SHPO(s) or THPO(s), as appropriate, and applicable land-managing agencies. If surveys are necessary, the Survey Report must be filed with the application;

- Documentation of initial cultural resources consultation (including copies of all correspondence) with the SHPO(s) and THPO(s), as appropriate, applicable land-managing agencies, Native American tribes or organizations, and interested persons (if appropriate);

- A summary (tabular, if appropriate) of the status of cultural resources investigations undertaken to date (see Table 4-1 and 4-2 for examples), including identification by milepost of any areas which could not be surveyed because the landowner denied access;

- A narrative summary of the completed Overview and Survey Reports, identifying any cultural resources issues. The summary will not identify specific property locations or sensitive information about cultural resource sites;

- Copies of all completed Cultural Resource Overview and Survey Reports, as appropriate. The Survey Report must include a brief management summary, including a statement of the number of acres surveyed;

TABLE 4-1. Completion Status of Cultural Resources Surveys

Facility/Segment	State/County	Milepost		Survey Complete*	Report Reference**	Date Submitted to SHPO	SHPO Comment / Date and any Federal Land Management Agency and Tribal Comment / Date
		Start	End				
Loop A	NY / Albany	0.0	5.1	Yes	A	15 June 2002	No NRHP-Eligible Site / 15 July 2002
		5.1	5.4	No (1)			
		5.4	6.0	No (2)	A		2 Sites Need Evaluation / 15 July 2002
		6.0	9.3	Yes	A	15 June 2002	
Loop B	NY / Greene	0.0	12.5	Yes	B	15 June 2002	Not received as of 31 July 2002
Winslow Compressor Station	PA / Erie	43.1	--	Yes	C	2 January 2001	No effect / 15 February 2001

* (1) Landowner refused access.
(2) Snow covered at time of survey.

** A Cultural Resources Survey Of Big Pipeline Company's Loop A. Archaeologists, Inc., May 2002
B Cultural Resources Overview/Survey of Big Pipeline Company's Loop B. Jones and Jones Consultants, April 23, 2002
C The Winslow Compressor Station - A cultural Resources Survey. Archaeologists, Inc., December 2001

TABLE 4-2. Identified Cultural Resources

Facility/Segment	State/County	Site Designation	Site Type*	Survey and/or Evaluation Report References**	Date(s) Information Submitted to SHPO	Last SHPO Comment / Date
Loop A	NY / Albany	A-I-1	PI	A	15 June 2002	Not Significant / 15 July 2002
		A-I-2	HI	A	15 June 2002	Not Significant / 15 July 2002
		24 AL301	P	A, B	30 May 2002 / 15 September 2002	Significant / 29 September 2002
		13-2900-003	A	A, B	30 May 2002 / 15 September 2002	Not Significant / 29 SeptmeberJuly 2002

* PI = Prehistoric Isolate, HI = Historic Period Isolate, P = Prehistoric Isolate, A = Architectural Site
** A Cultural Resources Survey Of Big Pipeline Company's Loop A. Archaeologists, Inc., May 2002
B Evaluation of Two Cultural Resources Sites on Loop A. Archaeologists, Inc., September 9, 2002

- A Project map clearly showing the boundaries of all areas that have been surveyed and that are to be surveyed with corridor widths clearly specified;

- An Ethnographic Analysis specific to the project area included with or separate from the Survey Report;

- A list identifying by milepost any areas requiring survey for which the landowner has denied access;

- Written comments on the Overview and Survey Reports, if available, from the SHPOs or THPOs, as appropriate, and applicable land-managing agencies, as appropriate;

- SHPO, THPO, and land-managing agency comments on the eligibility recommendations for identified cultural resources;

- A brief summary of the status of Native American consultation regarding traditional cultural places and concerns, including copies of all related correspondence;

- A plan, referencing the appropriate state statutes, for dealing with the unanticipated discovery of historic properties or human remains (or a reference to the Docket Number under which an appropriate and previously approved plan has been submitted); and

- A schedule for completing any outstanding cultural resource studies.

Copies of Overview/Survey Reports, Evaluation Reports, and Unanticipated Discoveries Plans, if required, and documentation of consultation should be presented as appendices to Resource Report 4. Specific cultural resources site location and ownership information should not be included in the main body of Resource Report 4. Such information should be confined to appended reports. Request privileged treatment for all material filed with the Commission containing location, character, and ownership information about cultural resources. The cover pages and all relevant pages or portions of the appended reports must be clearly labeled in bold lettering "**CONTAINS PRIVILEGED INFORMATION-DO NOT RELEASE**."

4.2 Post-filing, Pre-certificate Requirements

The following additional information should normally be submitted before the environmental analysis can be completed and a certificate can be issued:

- Any SHPO, THPO, or land-managing agency comments that were not available for the application on reports that were submitted with the application;

- Any Evaluation reports required by the SHPO, THPO, or land-managing agencies. If required evaluation entails extensive subsurface testing, substantial excavation, or other procedures that impact the integrity of a historic resource, a testing plan should be prepared in consultation with the SHPO, THPO, or land-managing agencies and the Commission;

- Any available SHPO, THPO, or applicable land-managing agency comments on Evaluation reports;

- Written comments from the SHPO, THPO, and applicable land-managing agencies on the National Register eligibility of all identified cultural resources in the project's APE; and

- Copies of any Treatment Plans, if required, addressing how impacts to historic properties which cannot be avoided would be mitigated, prepared in consultation with the SHPO, THPO, the Commission, and applicable land-managing agencies. Authorization to implement approved Treatment Plans will be granted only after the certificate is issued.

4.3 Pre-construction Requirements

All additional reports of cultural resource investigations, except monitoring during construction, and any additional documentation of consultation, must be submitted prior to construction. This could include:

- Any of the items in Section 4.2 not already provided;

- Survey reports for all remaining areas of the APE including areas for which the landowners had denied access, or which were not identified prior to the initial filing;

- Written comments from the SHPO, THPO, and appropriate land-managing agencies for all remaining reports; and

- Notification of Completion of any implemented Treatment Plans.

Additional guidance on preparing cultural resources documents is provided in the most recent version of *Guidelines for Reporting on Cultural Resources Investigations* issued by the OEP.

Resource Report 5 - Socioeconomics

SUMMARY OF FILING INFORMATION	
INFORMATION	**DATA SOURCES [1]**
Minimum Requirements to Avoid Rejection	
☐ 1. For major aboveground facilities and major pipeline projects that require an EIS, describe existing socioeconomic conditions within the project area. (§ 380.12(g)(1))	I, JJ, KK
☐ 2. For major aboveground facilities, quantify impact on employment, housing, local government services, local tax revenues, transportation, and other relevant factors within the project area. (§ 380.12(g)(2-6))	D, I
Additional Information Often Missing and Resulting in Data Requests	
☐ Evaluate the impact of any substantial immigration of people on governmental facilities and services and describe plans to reduce the impact on local infrastructure.	D
☐ Describe on-site manpower requirements, including the number of construction personnel who currently reside within the impact area, would commute daily to the site from outside the impact area, or would relocate temporarily within the impact area.	D
☐ Estimate total worker payroll and material purchases during construction and operation.	D
☐ Determine whether existing housing within the impact area is sufficient to meet the needs of the additional population.	I
☐ Describe the number and types of residences and businesses that would be displaced by the project, procedures to be used to acquire these properties, and types and amounts of relocation assistance payments.	D, I
☐ Conduct a fiscal impact analysis evaluating incremental local government expenditures in relation to incremental local government revenues that would result from construction of the project. Incremental expenditures include, but are not limited to, school operating costs, road maintenance and repair, public safety, and public utility costs.	D, I, JJ

[1] D Applicant; I County/Municipal Agencies; JJ US Department of Labor; KK US Bureau of the Census

This Resource Report is required only if significant aboveground facilities, such as conditioning or LNG plants, or large new compressor stations are proposed. It is not required for projects that only involve minor to moderate lengths of pipeline, expansion or modifications to existing compressor stations, or other associated facilities.

If concerns are raised during project coordination in the area, this report should be provided for minor projects and those with only below ground facilities.

However, for major pipeline projects that require an EIS, preparation of all or portions of this report may be necessary. In addition, federal, state or local land managing agencies

may require the analysis of the socioeconomic impact of pipeline construction as part of the review process for right-of-way grants.

5.1 Socioeconomic Impact Area

This section of the Resource Report summarizes the base existing socioeconomic conditions in the socioeconomic impact area (§ 380.12(g)(l)). The socioeconomic impact area generally comprises the municipalities or counties in which the facilities would be located or which might be affected by project construction. Depending on the specific agency/public concerns, prepare text and/or tables that describe the following socioeconomic conditions within the project area:

- Current population and population density statistics;
- Per capita income;
- Number and composition of workforce (*e.g.*, manufacturing; transportation and public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and services);
- Current unemployment rate (latest year of record);
- Number of units and vacancy rates for temporary housing (*e.g.*, apartment rentals, hotels/motels, and campgrounds) and proximity to the construction area;
- Location and availability of local government public services (*e.g.*, police, fire protection, medical services, and schools);
- Local tax revenues and sources of funding (*e.g.*, personal property, sales, hotel/motel occupancy, etc.); and
- Other relevant factors, such as condition and proximity of major transportation routes within the project area.

Table 5.1-1 is an example of a summary presentation of most of the above data for a significant pipeline project. For a gas conditioning or LNG facility, a greater level of detail would be required since the project would have a greater impact on a much more limited area.

Population statistics are available from the Bureau of the Census. Labor statistics are available from the Bureau of the Census, the U.S. Department of Labor, Bureau of Labor Statistics, or the Department of Employment for each affected state. All employment data provided should be for the most recent year of record. Detailed information on housing, transportation networks, and public services is generally available from county or regional planning offices, or the local municipalities.

TABLE 5.1-1

Existing Socioeconomic Conditions in the Project Area

State/County	1990 Population a/	1990 Population Density (People/Square Mile) a/	1990 Per Capita Income (dollars) b/	1994 Rental Vacancy Rate a/	1994 Civilian Labor Force c/	1994 Unemployment Rate (percent) c/	Major Industry c/
State							
County A	55,882	85.3	7,032	12.5	22,250	8.3	Agriculture
County B	380,105	834.1	10,738	13.4	209,600	5.4	Services
County C	5,569	6.7	8,309	11.1	2,999	5.0	Manufacturing

a/ U. S. Department of Commerce, Bureau of the Census, 1990 Census of Population and Housing. Summary Population and Housing Characteristics.

b/ U.S. Department of Commerce, Bureau of the Census. 1990 Population and 1990 Per Capita Income Estimate for Counties and Incorporated Places.

c/ U.S. Department of Commerce, Bureau of the Census and 1994 annual averages from the corresponding State Department of Labor.

5.2 Project Construction and Operation

This section of the Resource Report addresses the socioeconomic impact of construction and operation of significant aboveground facilities on the socioeconomic impact area. Develop these estimates as needed to address agency or public concerns.

The analysis of project construction and operation on the project area should include the following:

- Population - Estimate the total number of construction workers temporarily or permanently relocating into the municipality or county area, and the duration of their stay. Also estimate total number of construction workers residing within the project area and the number of construction workers that would commute daily to the construction site from places outside of the project area.

- Employment - Estimate the effect of construction employment on unemployment rates for the region, including on-site manpower requirements

and payroll during construction and operation.

- Housing - Assess the effect of construction worker immigration on the availability of housing. Since most construction workers prefer temporary housing, identify if there would be competing demand for housing either from other construction projects or seasonal recreationists. Another large project under construction in the same area may significantly reduce the availability of temporary housing. In areas which support seasonal tourism and where construction is scheduled for the peak season, construction workers may displace tourists. This may be a concern for motel and campground operators who are dependent on repeat business and may be reluctant to provide housing for construction workers since seasonal trade could potentially be turned away and lost. If there is a potential for a housing shortage, identify mitigation measures. These may include the provision of temporary camp sites or busing from more distant areas where temporary lodging is available.

- Displacement of Residences or Businesses - Identify the number of residences or businesses that would be removed by construction and operation of the facility. Discussion should include procedures for acquisition of properties and payments that would be made to affected landowners for relocation assistance and for loss of the property, as well as the status of negotiations.

- Infrastructure - Assess the effect of immigration on municipal services, such as police, fire protection, medical facilities, and schools. If projected immigration would potentially burden existing municipal services, identify proposed plans to alleviate this impact. These plans may include providing funds for hiring additional policemen, fire fighters, or medial personnel during the period of construction. For schools, determine if influx of construction workers' school-age children would significantly alter teacher-pupil ratios. Provide an assessment of the incremental costs to the local community versus the incremental increase in revenues that would result from the construction of the project.

- Construction Payroll and Material Purchases - Estimate the dollar value of construction payroll and material purchases that would affect the local economy. Discussion should include related payroll, sales taxes, and other local revenue.

- Tax Revenues - Estimate the dollar value of tax revenues to be paid to each municipality affected by operation of the facility. Also discuss additional government expenditures, such as school operating costs, public safety and public utilities.

- Transportation - Determine the effect of the movement of construction equipment, materials, and workers on the local road network. This may require preparation of estimates of construction-related traffic trips to and from the work site, frequency of the trips over the construction period, and times of peak traffic volumes. Mitigation would include construction of new roads, repair of roads to pre-construction conditions, or avoidance of existing peak traffic periods.

- Economic Value of Removal of Agricultural/Pasture Land or Timberland from Production - Determine the economic effect of construction and operation of the facilities on land resources. Identify acreage temporarily and permanently removed from production during construction and operation of the facilities. Include a discussion of effect of loss on the local or regional economy and compensation to be paid for loss of production for the life of the facility or until land regains former production.

- Environmental Justice Statement (Executive Order 12898) - Address the environmental effects, including human health, social, and economic effects, of the project on minority and low-income communities or Native American programs.

Resource Report 6 - Geological Resources

SUMMARY OF FILING INFORMATION	
INFORMATION	**DATA SOURCES [1]**
Minimum Requirements to Avoid Rejection	
☐ 1. Identify the location (by milepost) of mineral resources and any planned or active surface mines crossed by the proposed facilities. (§ 380.12(h)(1&2)) • Describe hazards to the facilities from mining activities, including subsidence, blasting, slumping or landsliding or other ground failure.	A, L, S, LL
☐ 2. Identify any geologic hazards to the proposed facilities. (§ 380.12(h)(2)) • For the offshore this information is needed on a mile-by-mile basis and will require completion of geophysical and other surveys before filing.	H, L, P, X, II, LL
☐ 3. Discuss the need for and locations where blasting may be necessary in order to construct the proposed facilities. (§ 380.12(h)(3))	L, X, II
☐ 4. For LNG projects in seismic areas, the materials required by "Data Requirements for the Seismic Review of LNG Facilities," NBSIR84-2833. (§ 380.12(h)(5))	
☐ 5. For underground storage facilities, how drilling activity by others within or adjacent to the facilities would be monitored, and how old wells would be located and monitored within the facility boundaries. (§ 380.12(h)(6))	D
Additional Information Often Missing and Resulting in Data Requests	
☐ Identify any sensitive paleontological resource areas crossed by the proposed facilities. (Usually only if raised in scoping or required by land-managing agency.)	B
☐ Briefly summarize the physiography and bedrock geology of the project area.	D
☐ If the application is for underground storage facilities:	D
☐ Describe monitoring of potential effects of the operation of adjacent storage or production facilities on the proposed facility, and vice versa;	D
☐ Describe measures taken to locate and determine the condition of old wells within the field and buffer zone and how the applicant would reduce risk from failure of known and undiscovered wells; and	D
☐ Identify and discuss safety and environmental safeguards required by state and Federal drilling regulations.	B

[1]
- A Aerial Photographs
- B Agency Consultation
- D Applicant
- H Comprehensive Plans, County or Land Management Agencies
- L Field Surveys
- P Geologic Survey Personnel, Federal, State, and Local
- S Mineral Resource Maps, Federal and State
- X NRCS Soil Surveys
- II Surficial Geology and Bedrock Geology Maps
- LL USGS Topographic Maps

This Resource Report is required for applications involving LNG facilities and all other applications, except those involving only facilities within the boundaries of existing aboveground facilities, such as a compressor, meter, or regulator station. It must describe geological resources and hazards in the project area that might be directly or indirectly affected by the proposed action or that could place the proposed facilities at risk, the potential effects of those hazards on the facility, and the methods proposed to reduce the effects or risks.

6.1 Geologic Setting

Include a description of the topography, including any distinguishing landforms, and relative relief with ranges in feet, identified from USGS quadrangle maps. If the application includes many pipeline segments in a wide variety of geologic settings, a table may be useful in presenting these data. The text should then describe the bedrock geology of the project area. This summary should include an identification of the milepost locations where the bedrock is likely to be near (less than 5 feet below) the surface.

If a storage field is proposed, describe the bedrock stratigraphy of the area. This description should identify the depth and thickness of the storage formation as well as the overlying cap rock. The discussion should also address the design of the wells, including the number and type of well casings to be used, and the ability of the cap rock to contain the storage gas at full operating pressures and prevent the migration of gas out of the storage formation. If salt solution mining is proposed to create the storage caverns, information should be provided regarding the size and dimension of the caverns, cap rock integrity, and brine handling and disposal plans.

6.2 Blasting

List any applicable federal, state, and local blasting regulations, including the responsible agency, and permits that must be obtained. State and local fire marshals can usually provide information and guidelines regarding blasting regulations.

Identify by facility and milepost all locations where blasting may be required using sources such as surficial geology maps, NRCS soil surveys, and field surveys. Analyze potential impacts on water wells, springs, wetlands, slopes, structures, and adjacent pipelines. Describe the mitigative measures that would be used to control adverse impacts, including measures to minimize vibrations and flyrock. Also discuss measures that address safety concerns. Specifically describe the procedures for pre- and post-blast inspections of structures and wells, as well as any monitoring that would be done during blasting. Describe what measures would be taken to rectify any damage caused by blasting such as replacing

or repairing damaged water supplies.

6.3 Mineral Resources

Include a description of mineral resources currently exploited or potentially exploitable in the project area. Information that may be used to identify surface and subsurface mines or oil and gas fields on or within about 0.25 mile (1,500 feet) of the construction right-of-way includes aerial photographs, USGS topographic maps, mineral resource maps and listings, and other published information as well as field surveys. Prepare a table that identifies by milepost all active, inactive, and planned mining operations crossed by (or adjacent to) the pipeline or directly affected by associated facilities. These should be listed in a table similar to Table 6.3-1. Describe what sources were used to identify these areas. If any active surface mines or land that is leased for future surface mining would be crossed, contact the mine owner/operator. Include the name, address, and phone number of the owner/operator and a description of any negotiations that have been or will be undertaken to secure the pipeline right-of-way through the mines. State whether a route alternative will be required. Also address the potential for the project to hinder mine reclamation or expansion efforts.

TABLE 6.3-1

Mineral Resources Crossed by the Pipeline

State/ Facility	Milepost	Operation	Distance from Construction ROW (ft)
STATE			
Loop A	0.1-1.0	Active Gravel Pit	Crossed
	30.0 -34.0	Future Coal Pit	1,000
	35.5 -36.5	Reclaimed Coal Pit	1,200
Loop B	126.3-126.8	Active Stone Quarry	1,300
	148.0	Inactive Flagstone Quarry	Crossed
Lateral D	205.1-206.0	Active Oil Field	Crossed a/
	207.0	Abandoned Stone Quarry	500

a/ Nearest well is 450 feet.

Specify methods to be used to prevent project-induced contamination from surface mines or from mine tailings along the right-of-way. If runoff from the mine tailings is a potential hazard, include a description of the hazard and specific methods that would be used

to control the problem.

6.4 Geologic Hazards

Describe by milepost the geologic hazards and areas of nonroutine geotechnical concern that exist or have the potential to develop in or near the project area using sources such as: USGS maps; surficial geology maps; NRCS soil surveys; other published information; comprehensive plans; aerial photographs; contacts with Federal, state, or local geologic survey personnel; or field surveys. Potential geologic hazards include earthquakes, active faults, areas susceptible to soil liquefaction, areas susceptible to landsliding, slumping, ground subsidence due to karst terrain or underground mining, flash flooding, and volcanism.

Discuss the seismic risk across the project area. Seismic zones for all pipeline and aboveground facilities must be identified. Consult state and seismicity maps for these data (see example shown on Figure 6.4-1). Identify by milepost or facility all active faults and areas susceptible to soil liquefaction and high susceptibility to landsliding. Site-specific information may be obtained from state geologic publications and USGS topographic maps, but a site study may prove necessary to identify hazard areas that are prone to slope instability or soil liquefaction.

In areas where karst terrain is present, and ground subsidence is a potential hazard, provide locations of karst terrain by milepost or facility. State publications and field investigation will provide detailed site-specific information. Historical site data (USGS, Federal Emergency Management Agency, and state geologic surveys) should be gathered to identify areas susceptible to flooding and volcanism. All areas of geologic hazard should be identified by milepost. For larger projects, a table similar to Table 6.4-1 may be useful.

Include the criteria and sources of information that were used to identify these areas, and the impact that the geologic hazard could have on the construction and operation of the facility. Describe how the project would be located or designed to avoid or minimize the effects from the hazard in question. Include all geotechnical investigations, such as use of inclinometer, and any past experience with slope instability in the project area. Any monitoring that will be conducted before, during, and after construction of the pipeline and associated facilities should be detailed. This description should include any proposed slope stability monitoring and any use of rock bolts, retaining walls, and nets.

FIGURE 6.4-1 SEISMIC ZONATION MAP

TABLE 6.4-1

Geologic Conditions Along the Pipelines

Physiographic Province/ Segment	MPs	Geological Formation or Stratigraphic Unit	Blasting Required	Geological Hazards		
				Type	MPs	Proposed Mitigation a/
Puget Lowland Chehalis North	1309.9 - 1335.0	Glacial continental outwash gravel; Eocene andesite flow; Pre-Fraser continental drift; Glacial continental till; Nonglacial alluvium; and Nonglacial peat.	– b/	Soil liquefaction Soil liquefaction	1310.0-1310.3 1312.5-1313.0	A A
Puget Lowland Plymouth South Loop	1216.2-1230.1	Continental sedimentary rocks; Oligocene andesite flow; Basalt flow; Nonglacial alluvium; and Periglacial flood sand and silt.	1216.2-1217.4	Landslide prone area	1216.6-1217.1	B, C
Deschutes Umatilla Plateau Plymouth South Loop	1048.3-1064.0	Fluvio-glacial deposits (gravel, sand, and silts); Columbia River Group; and Landslide debris.				
Columbia Plateau Pocatello North Loop	607.3-668.2	Loess; Stream alluvium; Sunbeam Formation; Table Mountain Basalt; Raft Formation; Alluvial fan; and Snake River Basalt.	662.2-664.2			
Basin and Range Lava Hot Springs South Loop	547.8-567.4	Gem Valley Basalt; Stream alluvium; Colluvium; Laketown Dolomite; Garden City Limestone; Salt Lake Formation; and Ordovician, undifferentiated rock.	555.5-565.9			

a/ A Add weights to pipeline.
B Install slope gauges to monitor slope movement.
C Install drainage system to remove water from the right-of-way.

b/ Not applicable

6.4.1 Avoidance and Minimization of Adverse Effects

Describe how the project would be located or designed to avoid or minimize adverse effects to the resources or risk to itself, including geotechnical investigations and monitoring that would be conducted before, during, and after construction. Discuss also the potential for blasting to affect structures, and the measures to be taken to remedy such affects.

6.5 Paleontology

Paleontology should be addressed and appropriate paleontological studies conducted if the project is located in an area known to contain sensitive paleontological resources based on published information or field surveys, or if requested by applicable state or other land managing agencies. Paleontology should also be addressed if the project crosses lands managed by state or other land-managing agencies that require paleontological studies as stipulations of easement agreements.

6.6 LNG Facilities in Seismic Risk Areas

If the application involves an LNG facility located in zones 2, 3, or 4 of the Uniform Building Code's Seismic Risk Map, or where there is a potential for surface faulting or liquefaction, prepare a report on earthquake hazards and engineering in conformance with "Data Requirements for the Seismic Review of LNG Facilities," NBSIR 84-2833, available from the OEP.

Resource Report 7 - Soils

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES [1]
Minimum Requirements to Avoid Rejection ☐ 1. Identify, describe, and group by milepost the soils affected by the proposed pipeline and aboveground facilities. (§ 380.12(I)(1)) • List the soil associations by milepost and describe their characteristics.	L, W, X, CC
☐ 2. For aboveground facilities that would occupy sites over 5 acres, determine the acreage of prime farmland soils that would be affected by construction and operation. (§ 380.12(I)(2)) • List the soil series, describe their characteristics and percentages within the site. • Indicate the onsite percentage of each series that would be permanently affected. • Indicate which series are considered "prime or unique farmland".	C, H, L, W, X, CC
☐ 3. Describe by milepost potential impacts on soils. (§ 380.12(I)(3,4))	C, K, W, Y, CC
☐ 4. Identify proposed mitigation to minimize impact on soils and compare with the staff's Upland Erosion Control, Revegetation, and Maintenance Plan. (§ 380.12(I)(5)) • Identify any measures of the Plan that are deemed unnecessary, technically infeasible, or unsuitable and describe alternative measures that will ensure an equal or greater level of protection.	C, D, H, K, W, Y, CC

[1]
C Agricultural Extension Agents
D Applicant
H Comprehensive Plans, County or Land Management Agencies
K Erosion Control and Drainage Plan Handbooks, State and County
L Field Surveys
W NRCS
X NRCS Soil Surveys
Y Plan
CC Soil Authorities, Other than NRCS

This Resource Report is required for all applications except those not involving soil disturbance. It must describe the soils that would be affected by the proposed project, the effect on those soils, and measures proposed to minimize or avoid impact. The report should identify the resources used to assess the impact of construction on soils. It should summarize findings in tabular and text form. The report should also clearly identify and discuss any proposed alternatives to our recommended Plan.

7.1 Pipeline

Identify, describe and group by milepost the soils that would be affected by the pipeline installation and operations using soil maps contained in the NRCS (formerly the Soil Conservation Service) county soil surveys. Include a description of the erosion potential, fertility, and drainage characteristics of each soil association. Consult with state offices of the NRCS to determine the names and phone numbers of the appropriate NRCS districts in the project area. Appropriate land management agencies may also have information. If published soil surveys are unavailable, substitute the best available soils data. Generally, unpublished soils information can be obtained by providing the county NRCS office with

maps of the facilities. Other sources of information include state and county soil maps and other environmental reports in the same general area.

While it is not required that soil series be identified for pipelines, the information necessary for this report is based on knowledge of the mile-by-mile occurrence of each soil series.

7.2 Aboveground Facilities

Use photo-based detailed soil unit maps published by the NRCS or other sources to identify and describe the soils at aboveground facility sites greater than five (5) acres in extent. Include the following:

- List the soil series within the property and the percentage of the property comprised of each series;
- List the percentage of each series which could be permanently disturbed;
- Describe the characteristic of each soil series; and
- Indicate which are classified as prime or unique farmland by the NRCS.

It may be helpful to provide a plot plan showing the area of each soil series within the boundaries of the site. Describe the characteristics of the soils on the site and discuss any limitations of the soils that may be pertinent such as erosion hazard, wetness, or shallow bedrock. Indicate which soils on the site are classified as prime farmland by the NRCS and specify the amount of prime farmland that would be permanently and temporarily disturbed on each site by construction and operation of the facility. Any prime farmland soils within the fenceline of the site should be considered precluded from future agricultural use and therefore permanently disturbed.

7.3 Construction/Operation Impacts

Identify by milepost potential impact from:

- Soil erosion due to water, wind, or loss of vegetation;
- Soil compaction and damage to soil structure resulting from movement of construction vehicles;
- Wet soils and soils with poor drainage that are especially prone to structural

damage; and

- Interference with the operation of agricultural equipment due to the probability of large stones or blasted rock occurring on or near the surface as a result of construction.

Describe the impact on soils and identify soil hazards using sources such as county soil surveys, comprehensive plans, other published information, contact with NRCS or agricultural extension agents, or field surveys. Present soils that are prone to the following hazards by pipeline segment and milepost in tabular format (see Table 7.3-1):

- Severe erosion;
- Compaction (limit identification to agricultural and residential lands);
- Introduction of rock into the topsoil (limit identification to agricultural and residential lands); and
- Poor revegetation.

TABLE 7.3-1

Soil Associations and Milepost Locations of Major Soil Limitations

Segment/ Soil Association	Severe Erosion Hazard	Severe Compaction Potential	Rock	Poor Revegetation Potential
Segment A			0.00-0.56	--
Rittman-Wadsworth	0.00-0.06 0.17-0.37 0.41-0.56 1.21-1.37	--	1.21-1.37	
Mechanicsbury-Berks	0.82-0.91 0.94-0.97	–	0.82-0.85	--
Segment B		--	0.00-0.17	0.00-2.01
Bennington-Cardington	--		1.02-1.18	
Mahoning Ellswork-Wooster	--	--	1.91-2.23	2.01-3.62
Fitchville-Chilli-Bogart	2.37-2.84 3.76-4.01	2.23-2.37	--	--
Segment C		0.49-0.87	--	--
Skerry-Brayton-Becket	--	0.91-1.58		
Naumburg-Croghan	--	1.87-2.76 4.37-4.68	--	--

Some factors that should be considered in determining where there is a severe hazard of erosion include: the capability classification of the soil; slope; runoff factor; permeability; soil texture; and erodibility. The analysis of soil erosion potential should also take into account the proposed season of construction.

The potential for soil compaction is affected by several factors. Some factors that should be considered in determining the areas that are most prone to compaction include the capability classification of the soil; soil hydrology; soil texture; soil drainage; season of construction; flooding frequency and duration; permeability; and the presence and duration of a seasonal high water table.

Rock can be introduced into the topsoil during various construction activities especially blasting and trenching. Some factors that should be considered in determining where the introduction of rock into the topsoil is likely to be a problem include: the capability classification of the soil depth to bedrock relative to trench depth; the need for blasting versus ripping of bedrock; and the percent of coarse fragment content or cobbles in the soil within trench depth.

Poor revegetation can result from numerous causes. Some factors that should be considered in determining where there is a potential for poor revegetation include: capability classification of the soil; topsoil quality; available water capacity; salinity; acidity; and the potential for the project to affect existing soil drainage (including drainage systems).

Also identify by milepost any other site-specific soil impacts that are associated with unique or rare soil conditions.

7.4 Cropland and Residential Impacts

Identify by milepost cropland and residential areas where the loss of soil fertility due to trenching and backfilling could occur. Impacts to agricultural land and residential areas are also addressed in Resource Report 8. Identify by milepost potential impacts to drainage tile and irrigation systems due to movement of construction vehicles and trenching activities.

7.5 Mitigation

Describe proposed measures to reduce impact on soils. Sources of proposed mitigation, in addition to our Plan, include contacts with soil conservation authorities and agricultural extension agents, state and county erosion control handbooks, and other published sources. Include a discussion of proposed topsoil segregation methods (ditch and spoilside, full ROW or ditch only), measures to restore compacted or rutted cropland and residential soils, measures to improve soil structure, such as planting a “manure” crop, and

measures for repair of damaged agricultural drain tiles.

Provide a copy of the erosion control and revegetation plan that would be used to construct and operate the facilities. Adopt the measures contained in our Plan or specify what measures of the Plan are objectionable and indicate alternative measures that would be implemented instead. Discuss why these alternatives would provide an equal or better level of protection to the soil.

Describe consultation with the local soil conservation authorities and recommendations for: seed mixes; seeding dates; application rates for fertilizer and lime; erosion controls; and noxious weed controls.

Include copies of government land management agency-required Erosion and Sedimentation Control Plans. Also specify special seeding requirements of government land management agencies.

Resource Report 8 - Land Use, Recreation and Aesthetics

SUMMARY OF FILING INFORMATION	
INFORMATION	**DATA SOURCES [1]**
Minimum Requirements to Avoid Rejection	
☐ 1. Classify and quantify land use affected by: (§ 380.12(j)(1)) a. Pipeline construction and permanent rights-of-way (§ 380.12(j)(1)); b. Extra work/staging areas (§ 380.12(j)(1)); c. Access roads (§ 380.12(j)(1)); d. Pipe and contractor yards (§ 380.12(j)(1)); and e. Aboveground facilities (§ 380.12(j)(1)). • For aboveground facilities provide the acreage affected by construction and operation, acreage leased or purchased, and describe the use of the land not required for operation.	A, L, X
☐ 2. Identify by milepost all locations where the pipeline right-of-way would at least partially coincide with existing right-of-way, where it would be adjacent to existing rights-of-way, and where it would be outside of existing right-of-way. (§ 380.12(j)(1)) • This may apply to the offshore as well.	A, D, L, LL
☐ 3. Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent right-of-way and temporary construction right-of-way. (§ 380.12(j)(1))	D
☐ 4. Summarize the total acreage of land affected by construction and operation of the project. (§ 380.12(j)(1)) • This applies to the offshore as well.	D
☐ 5. Identify by milepost all planned residential or commercial/business development and the time frame for construction. (§ 380.12(j)(3)) • Identify all planned development crossed or within 0.25 mile of proposed facilities.	I
☐ 6. Identify by milepost special land uses (*e.g.*, maple sugar stands, specialty crops, natural areas, national and state forests, conservation land, etc.). (§ 380.12(j)(4)) • This applies to the offshore as well, where it may include oyster and other shellfish beds, special anchoring or lightering areas, and shipping lanes.	A, B, O, I, L, DD
☐ 7. Identify by beginning milepost and length of crossing all land administered by Federal, state, or local agencies, or private conservation organizations. (§ 380.12(j)(4)) • This applies to the offshore as well.	B, I, DD, LL
☐ 8. Identify by milepost all natural, recreational, or scenic areas and all registered natural landmarks crossed by the project. (§ 380.12(j)(4&6)) • This applies to the offshore as well. • Identify areas within 0.25 mile of any proposed facility.	V, B, I, DD, LL
☐ 9. Identify all facilities that would be within designated coastal zone management areas. Provide a consistency determination or evidence that a request for a consistency determination has been filed with the appropriate state agency. (§ 380.12(j)(4&7))	DD
☐ 10. Identify by milepost all residence that would be within 50 feet of the construction right-of-way or extra work area. (§ 380.12(j)(5))	I, L
☐ 11. Identify all designated or proposed candidate National or State Wild and Scenic Rivers crossed by the project. (§ 380.12(j)(6))	B

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES [1]
☐ 12. Describe any measures to visually screen aboveground facilities, such as compressor stations. (§ 380.12(j)(11))	D
☐ 13. Demonstrate that applications for rights-of-way or other proposed land use have been or soon will be filed with Federal land-managing agencies with jurisdiction over land that would be affected by the project. (§ 380.12(j)(12))	D
Additional Information Often Missing and Resulting in Data Requests	
☐ Identify all buildings within 50 feet of the construction right-of-way or extra work areas.	A
☐ Describe the management and use of all public lands that would be crossed.	B
☐ Provide a list of landowners by milepost or tract number that corresponds to information on alignment sheets.	I
☐ Provide a site-specific construction plan for residences within 50 feet of construction	D

[1]
A Aerial Photographs
B Agency Consultation
D Applicant
I County/Municipal Agencies
L Field Surveys
O Landowners
V NPS
X NRCS Soil Surveys
DD State Agencies
LL USGS Topographic Maps

This Resource Report is required for all applications except those involving only facilities which are of comparable use at existing compressor, meter, and regulator stations. This Report addresses use of all land that would be affected by construction and operation of the project. The report should characterize and quantify land affected, identify public lands and designated recreation or other special use areas affected, summarize consultations with Federal and state agencies, and discuss special construction techniques or other forms of mitigation that would be used to reduce impact during construction and operation of the facilities. In addition, the report should include a discussion of potential visual impacts of the facilities, including compressor stations, on designated scenic rivers, areas, or roads, recreation areas, and public lands or residential areas.

8.1 Land Use

For all land affected by construction and operation of the facilities, the characteristics of the land should be identified, based on vegetative cover type or predominant land use, and measured from aerial photographs or field reconnaissance. Coordinate the classification of land use types with those presented in Resource Report 2 on wetlands and in Resource Report 3 on Vegetation. This includes land affected by the construction right-of-way, the aboveground facilities (*e.g.*, compressor stations, meter stations, pig launchers/receivers, storage wells, or other related facilities), extra work or staging areas, and pipe or contractor

yards. Typical land use categories would include:

- Agricultural Land - Active cropland, orchards, vineyards, or hay fields;
- Forest/Woodland - Tracts of upland or wetland forest or woodland that would be removed for the construction right-of-way or extra work/staging areas;
- Rangeland - Non-forested lands used primarily for grazing;
- Open Land - Non-forested lands and scrub-shrub wetlands used for open space or pasture;
- Residential land - Residential yards, residential subdivisions, and planned new residential developments;
- Industrial/Commercial land - Electric power or gas utility stations, manufacturing or industrial plants, landfills, mines, quarries, commercial or retail facilities, and roads;
- Open Water - Water crossings greater than 100 feet; and
- Other - Miscellaneous special use areas (*e.g.*, land associated with schools, parks, places of worship, cemeteries, sports facilities, campgrounds, golf courses, ballfields, etc.).

8.1.1 Pipeline Facilities

8.1.1.1 Construction and Permanent Rights-of-Way

Tabulate land use characteristics for pipelines by measuring each land use category crossed by the pipeline construction right-of-way and totaling the land use categories. The results of the tabulations should then be summarized by pipeline segment, county, and state. Ensure that the total for each pipeline segment equals the length of each pipeline segment. Clearly define each land use category as it applies to the project under consideration (see Table 8.1-1 for an example of a summary presentation of this information). All pipelines and rights-of-way should also be shown on the USGS topographic maps, aerial photographs, or alignment sheets submitted with the application (see Resource Report 1 of this manual). Identify by milepost the area of direct effect of each proposed facility and operational site on special land uses. Also identify if any public lands or special use areas are within 0.25 miles of any proposed facility.

TABLE 8.1-1

Land Crossed by the Pipelines

Facility	County, State		Agriculture a/ (mi)	Agriculture a/ (%)	Forest b/ (mi)	Forest b/ (%)	Open Land c/ (mi)	Open Land c/ (%)	Total (mi)
Loop A	County A, State		1.0	40%	0.0	0%	1.5	60%	2.5
	County B, State		2.0	67%	0.6	20%	0.4	13%	3.0
		Subtotal	3.0	55%	0.6	11%	1.9	34%	5.5
New Pipe	County C, State		0.5	20%	1.5	60%	0.5	20%	25
	County D, State		0.1	6%	0.5	31%	1.0	63%	1.6
		Subtotal	0.6	15%	2.0	49%	1.5	36%	4.1
		TOTAL	**3.6**	**38%**	**2.6**	**27%**	**3.4**	**35%**	**9.6**

a/ Active cropland.
b/ Upland and wetland forest.
c/ Open land, pasture, and golf course.

Provide typical right-of-way cross-section diagrams to clearly identify land requirements for construction and operation of each pipeline facility. Each typical diagram should identify the pipeline it pertains to and should show:

- The width of the total construction right-of-way;
- The width of the new permanent right-of-way;
- The width of the temporary construction right-of-way;
- The width of the existing right-of-way used for part of the construction right-of-way; and
- The location of existing and proposed pipelines.

If the new permanent pipeline right-of-way or temporary construction right-of-way will overlap existing utility or transportation corridor rights-of-way, each typical diagram should also show:

- The width of the existing utility or transportation right-of-way overlapped by the temporary construction right-of-way; and

- The width of the existing utility or transportation right-of-way overlapped by the new permanent right-of-way or existing permanent right-of-way.

Figure 8.1-1 is an example of typical right-of-way cross sections that may be used in a pipeline project.

Quantify the acreage of land affected by construction and operation of the pipeline by land use category using the proposed construction and permanent widths for each pipeline segment. The widths should agree with the right-of-way configuration for each pipeline presented in Figure 8.1-1, Typical Right-of-Way Cross Section.

Where the construction right-of-way would be wider than 75 feet, provide justification for the required width (*e.g.*, topsoil segregation, steep side slope, etc.). Similarly if the permanent right-of-way would be wider then 50 feet for operation of a new pipeline or more than 25 feet for operation of a loop pipeline, provide justification for the wider widths. Construction and operation of smaller diameter pipelines should use less right-if-way.

Table 8.1-2 is an example of a summary presentation of acreage affected by construction and operation of the sample facilities presented in Table 8.1-1. Be sure to explain how calculations were made in footnotes to the table or in the text accompanying the table. For example, a segment of a loop may depart from the existing right-of-way onto new right-of-way and would therefore require additional permanent right-of-way. The additional acreage affected by the construction and permanent rights-of-way must be included in the total land requirements section of Resource Report 1. Land requirements for extra work or staging areas should be quantified separately as discussed in the next subsection.

The text should further describe the land affected and should identify the mitigation measures that would be used to reduce impact from pipeline construction and operation. Typical additional information and mitigation measures may include the following by land use category:

- Agricultural Land - Identify typical crops (*e.g.*, corn, wheat, rice, etc.) and specialty crops (*e.g.*, orchards, vineyards, hop fields, etc.). Identify specialty crops by milepost and by length of crossing. Mitigation agricultural land or hay fields may include topsoil segregation or replacement of drainage tiles or other structures. Mitigation for specialty crops may include avoidance by a route deviation, pipe placement along the edge of orchards and vineyards, use

of a reduced construction right-of-way, or replacement of orchard trees or

Replace with Figure 8.1-1
Typical Right-of-Way Cross -sections

TABLE 8.1-2

Acreage Affected by Construction and Operation of the Pipelines

Facility/ County, State	Agriculture a/		Forest b/		Open Land c/		Total	
	Construction ROW	Permanent ROW	Construction ROW	Permanent ROW	Construction ROW	Permanent ROW	Construction ROW	Permanent ROW
Loop A d/								
County A, State	12.1	3.0	0.0	0.0	13.6	4.5	25.7	7.5
County B, State	24.2	6.1	3.6	1.8	5.4	1.2	33.2	9.1
Subtotal	36.3	9.1	3.6	1.8	19.0	5.7	58.9	16.6
New Pipe e/								
County C, State	6.1	3.0	13.6	9.1	4.5	3.0	24.2	15.1
County D, State	1.2	0.6	4.5	3.0	9.1	6.1	14.8	9.7
Subtotal	7.3	3.6	18.1	12.1	13.6	9.1	39.0	24.8
TOTAL	**43.6**	**12.7**	**21.7**	**13.9**	**32.6**	**14.8**	**97.9**	**41.4**

a/ Cropland.
b/ Upland and wetland forest.
c/ Pasture, golf course, and existing pipeline right-of-way.
d/ Construction right-of-way of 100 feet in agricultural land and 75 feet in forest and open land. However, in forested areas, about 25 feet is presently cleared for the existing pipeline right-of-way and is therefore included in the open land use category. Permanent right-of-way is 25 feet.
e/ Construction right-of-way is 100 feet in agricultural land and 75 feet in forest and open land. Permanent right-of-way is 50 feet.

NOTE: ROW = Right-of-Way

vines.

- Forest/Woodland - Identify by milepost and length of crossing all old growth forest, pine plantations, and forest used for timber, maple sugar, Christmas trees, or other forest production. Mitigation may include avoidance by a route deviation, use of reduced construction right-of-way, or replanting.

- Rangeland - Identify typical use of rangeland including the location by milepost of any sensitive lands (*e.g.*, remnant prairie) or public land used for grazing allotments. Mitigation may include topsoil segregation in arid lands, maintenance of fencing or natural barriers along the construction right-of-way during construction, repair and replacement of water supply lines and other structures, or fencing of the right-of-way until revegetation is complete (grazing deferment).

- Open Land - Identify use of open land (*e.g.*, pasture, open space). Also identify by milepost and length of crossing all land currently managed under

the CRP program. For any CRP land crossed, consult with the appropriate state agency and the landowner to determine if construction would affect the CRP status of the land or if special construction or revegetation techniques should be used. Provide copies of all correspondence and a description of the special construction or restoration techniques that would be used.

- Residential Land - See Section 8.2 for discussion of residences and residential land. Summarize issues and measures here.

- Industrial/Commercial Land - Identify typical use of the industrial or commercial land. Identify by milepost all business, commercial, or retail buildings that are within 50 feet of the construction right-of-way. Mitigation for business or commercial areas may include limiting the hours of construction or providing alternate access. Mitigation during construction across roads may include timing to avoid hours of peak use, providing alternate access, or boring the road. Mitigation for other industrial land such as landfills, mines or quarries is discussed in Resource Report 6.

- Open Water - See Resource Report 2 for discussion of waterbody crossings. For offshore facilities, see additional discussion in Section 8.3.5.

- Other - Identify special use areas by milepost (*e.g.*, land associated with schools, parks, places of worship, cemeteries, sports facilities, race tracks, campgrounds, golf courses, ballfields, etc.). See Section 8.3 for discussion of designated special use areas. Cross reference Section 8.3 and summarize issues relevant to pipeline facilities here.

8.1.1.2 Existing Right of Way

For all new pipeline right-of-way that would at least partially coincide with or be adjacent to existing utility rights-of-way (*e.g.*, pipeline, powerline, road), identify these locations by milepost, county, state, and type of right-of-way. Indicate whether these rights-of-way are held in easements or owned in fee. Also provide the width of the existing right-of-way, if available, and how much of that existing right-of-way would be used for construction and new permanent rights-of-way. This information can be summarized as shown in Table 8.1-3.

TABLE 8.1-3

Existing Rights-of-Way Paralleled by Pipelines

Facility	County, State	Mileposts	Type of Right-of-Way	Width of Existing Right-of-Way (feet)	Width Used for Temporary Construction Right-of-Way (feet)	Width Used for Permanent Right-of-Way (feet)
Pipeline A	County A, State	0.0-2.5	Pipeline	75	25	0
	County A, State	3.0-3.5	Powerline	150	50	25
Pipeline B	County A, State	5.0-10.0	Road	NA	50	50

NA Not available

For looping pipeline, identify by beginning and ending milepost each location where the loop would leave the existing right-of-way. Also identify by beginning and ending milepost any locations where the loop would be more or less than 25 feet from the existing pipeline. For each of these locations, provide an explanation for increasing or decreasing the separation (see Table 8.1-4 for an example of a summary presentation of this information).

TABLE 8.1-4

Locations Where the Loop Would Be More or Less than 25 feet from the Existing Pipeline

Facility	County, State	Mileposts	Total Length (feet)	Maximum Distance Between Existing Pipeline and Loop (feet)	Explanation
Loop A	County A, State	0.25-0.26	52	50	Engineering, waterbody crossing
	County B, State	2.45-2.58	686	200	archeological site
Loop B	County C, State	5.82-6.00	950	100	Engineering, steep slope
	County D, State	8.12-8.62	2,640	100	Crossover, residences,
		9.01-9.03	105	15	commercial building

8.1.1.3 Extra Work/Staging Areas

Identify by milepost and size all other extra work or staging areas required in addition to the construction right-of-way. These include extra work or staging areas at road, railroad, waterbody, or wetland crossings, in areas of steep slope or where blasting is required, or at

the beginning and end of pipeline segment for contractor mobilization/demobilization. Identify the land use category for each extra work or staging area. All extra work or staging areas should also be shown on the USGS topographic maps, alignment sheets, and aerial photographs submitted with the application.

Acreage calculation should be in addition to the typical construction right-of-way. For example, a road crossing may require a total work area of 200 feet by 200 feet on each side of the road. If the typical construction right-of-way is 75 feet wide, the extra work area would be 125 feet by 200 feet (0.6 acre on each side of the road or a total of 1.2 acres for the crossing). Table 8.1-5 shows an example of how these data may be summarized. The total acreage required for extra work or staging areas for each pipeline segment must be included in the total land requirements section of Resource Report 1.

8.1.1.4 Access Roads

Identify all temporary access roads that would be used to access the right-of-way during construction. This does not include existing interstate, state, county, or local roads,

TABLE 8.1-5

Extra Work or Staging Areas

Facility	County, State	Milepost	Description	Dimensions (feet)	Total Acres	Existing Land Use
Loop A	County A, State	0.0	Mobilization	1-25 x 100	0.06	Open
		0.5	Waterbody	2-25 x 100	0.11	Forest
		0.6	Road	2-50 x 100	0.23	Agriculture
	County B, State	1.6	Side Slope	1-50 x 500	0.57	Forest
		2.5	Demobilization	1-25 x 100	0.06	Open
TOTAL					**1.03**	

but does include farm lanes, private drives, logging roads, jeep trails, or other roads that may be modified or improved for construction equipment. It also includes new roads that would be created to access the right-of-way. The location of each of these roads should be identified on USGS topographic maps, alignment sheets and aerial photographs. The land use crossed by new roads should be specified.

The length and width of new roads and extent of modification of existing roads should be provided. Identify whether the new roads or modifications would be left after construction is complete and if not, how the area would be restored.

8.1.1.5 Pipe and Contractor Yards

Identify the location, size, and land use of all known pipe and contractor yards and show each yard on USGS topographic maps, alignment sheets, or aerial photographs. Include the distance and direction to the nearest pipeline milepost and the county and state in which each yard is located. Total acreage requirements for all pipe and contractor yards should be included in the land requirements section of Resource Report 1. Describe the extent of ground disturbance that would take place.

If pipe and contractor yards are unknown at the time of the application filing, identify estimated yard requirements. For example, a project consisting of three loops in three locations could be estimated to require three pipe/contractor yards of approximately 5 acres each. This information can be provided as part of the initial filing and should be updated once the location and size of each yard become established.

8.1.2 Aboveground Facilities

The location of each new or modified aboveground facility (*e.g.*, LNG plant, compressor station, pig launcher/receiver, block valve, well, etc.) should be clearly shown on USGS topographic maps, and alignment sheets, or aerial photographs. Mileposts should be included for all facilities located along the right-of-way.

For all facilities, except those such as block valves or pig launchers/receivers that would be placed within the permanent pipeline right-of-way, specify the amount of land required and if the land is presently owned or would be acquired by lease or purchase. Identify all the above ground facilities that would be entirely within the permanent right-of-way. If large parcels of land would be associated with a facility, identify the total size of the parcel and what use (*e.g.*, agriculture, open space, wildlife) would be made of land not directly or indirectly affected by construction and operation of the facility. For each facility, identify the acreage of each land use type (*e.g.*, agriculture, open land, forest, industrial) that would be affected by facility construction and operation. Identify how much land surrounding the compressor station site(s) would be held as a buffer, and what the land use would be for the buffer following construction.

Table 8.1-6 is an example of a summary presentation of this information. The total acreage of land affected for each aboveground facility must be included in the land requirements section of Resource Report 1.

For all new aboveground facilities that would occupy sites larger than 5 acres, consult with the county office of the NRCS to determine the acreage of prime farmland soils that would be affected, the discussion in Resource Report 10, Alternatives, should identify

TABLE 8.1-6

Acreage Affected by Construction and Operation of the Aboveground Facilities

Facility	County, State	Approximate Milepost	Construction Requirements (acres)	New Land Requirements (acres)	Present Land Use	Comments
Meter Station A	County A, State	1.5	1.0	1.0	Open	New facility a/
Meter Station B	County B, State	4.5	0.5	None	Utility	Within existing station
Compressor Station A	County C, State	10.0	5.0	40.0	Forest	New Facility b/
Compressor Station B	County D, State	1.0	1.0	None	Utility	Modification
Regulator A	County E, State	80.0	<0.1	None	Utility	Within right-of-way
Well A	County F, State	0.0	0.6	6.0	Agriculture	New well c/
Well B	County G, State	1.6	1.0	None	Open	Abandon well d/

a/ Land to be purchased adjacent to existing right-of-way.
b/ Land to be purchased adjacent to existing right-of-way. Only 5.0 acres will be fenced and the remainder of the site will be maintained as forest.
c/ Land to be acquired by easement.
d/ Well easement to revert to landowner.

alternative sites considered to minimize impact on these soils. Also consult with the COE, to determine if the new facilities would be within designated floodplain or flood storage areas and what mitigation would be necessary to construct the aboveground facilities within these areas.

8.1.3 Facility Abandonment/Replacement

For abandoned pipeline, identify by milepost the segments that would be abandoned in place and the segments that would be removed and why the particular method was chosen. Identify by milepost the locations that would be removed and why the particular method was chosen. Identify by milepost the locations that would be disturbed to cut or cap the pipe. Also, discuss the feasibility of removing segments of the abandoned pipeline at waterbodies, wetlands, and residential areas. In residential areas, consult with the landowners to determine if removal or abandonment in place is preferred. Explain whether the right-of-way easement would revert to the landowner or continue to be maintained by the company.

For pipelines that would be removed and replaced, specify if the replacement pipeline would be placed in the same ditch as the abandoned pipeline. If existing pipeline would be removed, but same-ditch replacement is not proposed, explain why and describe the sequence of removal and replacement activities.

For aboveground facilities (*e.g.*, block valves, compressors, building, tanks, etc.), describe how the facilities and other structures on the site would be abandoned or removed and how the disturbed areas would be restored to previous land use. If there are hazardous material at the site, discuss how these would be handled and disposed of.

For all facilities that would be abandoned or replaced, quantify the amount and type of land affected. If the abandoned facilities contain PCBs, discuss how abandonment activities would comply with the TSCA (see Resource Report 12, PCB Contamination, for further discussion).

8.2 Residential Areas

8.2.1 Planned Residential and Commercial Areas

Consult with county and local planning agencies to identify all planned residential or commercial/business developments and subdivisions that would be crossed or within 0.25 mile of the construction work area. Planned development means any development that is included in a master plan or is on file with the local planning board or the county. For each planned residential or commercial/business development, provide the status of permitting (*i.e.*, whether approved or under review by the local municipality), the time frame for development and start of construction, and proposed coordination to avoid impact on plotted land parcels. Mitigative measures may include avoidance, placement of the pipeline along property lines, or purchase of lot(s).

8.2.2 Existing Residences and Buildings

Identify by milepost each residence or building that would be within 50 feet of the edge of the construction right-of-way and extra work or staging area (*e.g.*, construction work area). Provide the distance in feet between the residence and the construction work area and the distance in feet between the residence and the pipeline centerline. Describe how construction impact would be minimized in residential areas, including:

- How and when landowners would be notified of construction activities;
- How access and traffic flow would be maintained during construction activities, particularly for emergency vehicles;
- How the hazard of open ditches would be minimized when construction activities are not in progress; and

- How fugitive dust from construction activities would be minimized.

In addition, adopt, or discuss why you do not adopt, the following mitigation for all residences within 50 feet of the construction work area:

- Mature trees and landscaping should not be removed from within the edge of the construction work area unless necessary for the safe operation of construction equipment;

- Immediately after backfilling the trench, all lawn areas and landscaping within the construction work area should be restored consistent with the requirements of our recommended Plan;

- The edge of the construction work area adjacent to the residence should be fenced for a distance of 100 feet on either side of the residence to ensure that construction equipment and materials, including the spoil pile, remain within the construction work area;

- Fencing should be maintained, at a minimum, throughout the open trench phases of pipe installation; and

- A minimum of 25 feet should be maintained between the residence and the construction work area for a distance of 100 feet on either side of the residence (*i.e.*, the construction work area should be reduced as necessary to maintain the minimum distance).

If a minimum of 25 feet cannot be maintained between the residence and the construction work area, or if the residence is within the construction work area, a site-specific plan should be included with the application that describes the construction techniques that would be used (*e.g.*, reduced pipeline separation, centerline adjustment, use of stove-pipe or drag-section techniques, working over existing pipelines, pipeline crossover, bore, etc.) and includes a dimensional site plan showing the location of the residence in relation to:

- The new pipeline and, where appropriate, the existing pipelines;

- The edge of the construction work area;

- The edge of the new permanent right-of-way; and

- Other nearby residences, structures, roads, wetlands or waterbodies.

If the pipeline centerline would be within 25 feet of a residence, explain how the company would ensure that the trench is not excavated until the pipe is ready for installation and that the trench is backfilled immediately after pipe installation. If the construction work area is within 10 feet of a residence, provide landowner agreement in writing unless the construction work area is part of the existing maintained right-of-way.

Table 8.2-1 is an example of a listing of residences within 50 feet of the construction work area and identified mitigation techniques. Figure 8.2-1 is an example of a site-specific plan. Mitigation for residences within 50 feet of the construction work area should include the above mitigation measures or identify alternate mitigation that would provide an equal level of protection from construction disturbance.

TABLE 8.2-1

Residence Within 50 Feet of the Construction Work Area and Proposed Mitigation

Facility	County, State	Milepost	Number of Residences	Distance from Construction Work Area (feet)	Distance from Pipeline Centerline (feet)	Proposed Mitigation
Loop A	County A, State	1.2	1	45	70	a/
		1.3	1	25	26	a/ and b/
		1.6 - 1.8	6	15 - 25	40 - 50	a/, b/, c/, and d/
Loop B	County B, State	4.5	1	11	25	a/, d/, and e/
New Pipe	County C, State	10.1	1	15	20	a/ and d/

a/ Avoid removal of mature trees, immediately restore all lawn areas after backfilling the trench, and fence the construction work throughout the open trench phase of construction.
b/ Reduce the construction work area to maintain 25 feet between the residence and the construction work area.
c/ Use stove-pipe or drag-section construction techniques.
d/ See site-specific plan.
e/ Reduce pipeline separation.

8.3 Public Land, Recreation, and Other Designated Areas

8.3.1 Public or Conservation Land

Identify by beginning milepost and length of crossing all land administered by

Figure 8.2-1 - Site-specific residential plan

Federal, state, county, or local agencies, or private conservation agencies (*e.g.*, National or state parks and forests, Indian reservations, wilderness areas, wildlife management areas, nature preserves, National trails, registered natural landmarks, flood control land, etc.). For each area affected, identify the primary uses, peak use periods, and any seasonal restrictions.

For public lands (*e.g.*, National Forests, state forests, BLM or BIA lands, etc.), summarize the status of the negotiations for the special-use permits or right-of-way grants and describe mitigation measures that have been identified by the land management agency or are proposed to resolve specific agency concerns. Address mitigation for public land that may include avoiding especially sensitive areas by route deviations, reducing construction and permanent right-of-way requirements, selective tree removal, replanting of trees or shrubs within the temporary construction right-of-way, timing of construction during low use or low impact periods, or use of special restoration practices. In forested areas, also address if off-road vehicle controls would be installed and maintained.

8.3.2 Natural, Recreational, or Scenic Areas

Identify by milepost all natural, recreational, or scenic areas, and all registered natural landmarks crossed by the project. Identify any areas crossed by or within 0.25 miles of the proposed pipeline or plant and operational sites which are included in or designated for study for inclusion in the National Wild and Scenic Rivers System, the National Trails System, or wilderness areas designated under the Wilderness Act. Also identify land of local historical or cultural significance (*e.g.*, religious sites, historic districts, etc.). See Resource Report 4. And identify land used for landfills, hazardous waste sites, quarries, mines, or other special use areas (see Resource Report 6).

8.3.3 Coastal Zone Management Areas

Identify all facilities that would be within designated coastal zone management areas. Provide a consistency determination or evidence that a request for a consistency determination has been filed with the state's coastal zone management program. This is required at the time of application. If the state does not want the application for such a determination filed until a later date, provide correspondence to that effect, or a contact for the staff to consult with. Consultation with the staff prior to filing is important to avoid misunderstanding.

8.3.4 Agency and Landowner Consultation

Public, recreation, or other designated special use areas should be identified during map and field review and from consultations with Federal, state, county, and local agencies.

Early agency consultations are essential to accurately identify use, concerns, and potential impact on these lands from pipeline or aboveground facility construction. Also contact landowners of campgrounds, golf courses, race tracks, and other recreational areas to identify constraints that may be associated with construction across these areas.

Table 8.3-1 is a checklist of typical agency/landowner contacts that should be prepared to identify potential constraints associated with pipeline construction across public or special use areas.

Since governmental structure varies from state to state, the checklist identifies a common breakdown of jurisdictional entities and is not representative of land management in every state.

Document agency and landowner contacts by letter and/or telephone or conference memorandum and include with the application. Include a listing which identifies the name and department of each agency contacted, the name and title of the person contacted, the telephone number, and the date on which the contact was made. Include copies of applications for all necessary permits with other Federal, state, and land management agencies concurrently with the FERC application. Agency and landowner contacts should determine or confirm the exact location of land directly affected by construction of the facilities, as well as any special concerns or constraints that may be associated with construction.

Summaries of meetings with agencies and open houses held with landowners are also useful.

8.3.5 Impact and Mitigation

List each identified public, recreation, or other designated special use area by milepost, crossing length, and acreage affected (see Table 8.3-2 for an example of a summary presentation). Describe each area and exactly what portion of that area would be directly affected by construction. For example, if a state forest is crossed, identify the agency that administers the forest, the total acreage of land encompassed, and the predominant use of the land (*e.g.*, wildlife management, wilderness, timber, recreation, etc.). Then, identify the specific resource area that would be affected by construction within the state forest (for example, adjacent to existing right-of-way within a wildlife management area).

For crossings of scenic rivers and national trails, address mitigation that may include special construction techniques (*e.g.*, boring, directional drill), screen plantings, installation of off-road vehicle barriers, and maintaining access throughout the construction period.

TABLE 8.3-1

Agency/Landowner Contacts

Jurisdiction	Agency/Landowner	Land Affected
Federal	Department of the Army Corps of Engineers	-Flood control and flood storage land
	U.S. Environmental Protection Agency	-Hazardous waste sites
	U.S. Department of the Interior Fish and Wildlife Service	-National Wildlife Refuges -Designated critical habitat
	Bureau of Land Management	-Public land
	Bureau of Indian Affairs	-Indian Reservation lands
	National Park Service	-National parks -National Wild and Scenic Rivers (designated and proposed) -National Trail system (including Appalachian Trail) -National Natural landmarks
	U.S. Department of Agriculture Forest Service	-National forests
	U.S. Department of Commerce National Marine Fisheries Service	-Protected species areas
State	Department of Environmental Management /Division of Natural Resources, or equivalent	-State forests and parks -Coastal Zone Management compliance -Designated recreation areas/trails -Scenic roads -State wild and scenic rivers -Designated open land
	Game and Fish Commissions	-Game management areas
County/Town	Planning Commissions	-Proposed residential/commercial developments -Open space/natural areas -Locally significant roads, scenic areas, or rivers -Schools, parks, ballfields, trails
	Levee Commission	-Flood control levees and structures
Other	Landowners	-Campgrounds -Landfills -Golf courses -Race tracks -Airfields

TABLE 8.3-2

Public Land and Designated Recreation, Scenic, or Other Areas

Facility	State, County	Mileposts	Name of Area	Crossing Length	Acreage Affected By Construction
Pipeline Facilities					
Loop A	County A, State	1.5 - 8.5	XYZ National Forest	7 miles	63.6
	County B, State	4.6	Scenic River	90 feet	0.2
	County C, State	6.0	Hiking trail	<50 feet	<0.1
		10.0	Airfield	100 feet	0.2
		12.5 - 13.5	Golf course	1 mile	9.1
New Pipe	County D, State	80.1 - 90.5	BLM land	10.4 miles	94.5
Aboveground Facilities					
Compressor Station A	County E, State	14.2	COE flood storage	Not Applicable	0.1

Also address mitigation measures for other designated areas (*e.g.*, campgrounds, golf courses, race tracks, etc.) that may include construction during the off season or as expeditiously as possible. Construction should be avoided through landfills and hazardous waste sites. Where construction would occur within or immediately adjacent to a landfill or hazardous waste sites, provide documentation that construction would not occur within contaminated areas of contaminated groundwater plumes.

For offshore facilities, identify shipping channels, shellfish beds, or other specific uses that may be affected by construction and operation of the facilities. Consult with the MMS, the U.S. Coast Guard, and the NMFS. Address mitigation that is proposed to minimize or reduce impact.

8.4 Visual Resources

The discussion on visual resources is generally confined to pipeline crossings or proximity of aboveground facilities to designated visually sensitive areas including residential areas. Visually sensitive areas, which include scenic roads and rivers may be designated at the Federal, state, or local level and should be identified during agency consultations. Visual classification systems have been developed at the federal level by the BLM and U.S. Forest Service and at some state levels to rank the scenic quality of various landscapes. Use these systems where appropriate to quantify the potential visual impact of pipeline or aboveground facility construction on a given scenic area.

For all designated or sensitive scenic areas, address mitigation proposed to reduce visual impact. Mitigation for pipeline construction may include route deviations to avoid areas of high visibility, clearing the right-of-way in forested areas in a feathered pattern (*i.e.*, not in a straight line), and planting of shrubs and small trees within the right-of-way. Mitigation for aboveground facilities, such as compressor stations, would include siting the facility to avoid proximity to visually sensitive areas or in areas which lend themselves to effective landscape restoration, painting the facility with colors that would harmonize with the landscape, or screening the facility with shrubs and trees.

8.5 Applications for Rights-of-Way and Other Land Use

Document that applications for right-of-way or other proposed land use have been or soon will be filed with federal land-managing agencies with jurisdiction over land that would be affected by the project. These applications should be filed by the time of the filing with FERC. If they have not been filed, the FERC filing must identify the time frame in which the applications will be made to the appropriate agencies. Failure to file shortly after filing with the FERC could result in rejection of the application.

Resource Report 9 - Air and Noise Quality

SUMMARY OF FILING INFORMATION	
INFORMATION	**DATA SOURCES[1]**
Minimum Requirements to Avoid Rejection	
☐ 1. Describe existing air quality in the vicinity of the project. (§ 380.12(k)(1)) • Identify criteria pollutants that may be emitted above EPA-identified significance levels.	EE
☐ 2. Quantify the existing noise levels (day-night sound level (L_{dn}) and other applicable noise parameters) at noise sensitive areas and at other areas covered by relevant state and local noise ordinances. (§ 380.12(k)(2)) • If new compressor station sites are proposed, measure or estimate the existing ambient sound environment based on current land uses and activities. • For existing compressor stations (operated at full load), include the results of a sound level survey at the site property line and nearby noise-sensitive areas. • Include a plot plan that identifies the locations and duration of noise measurements. • All surveys must identify the time of day, weather conditions, wind speed and direction, engine load, and other noise sources present during each measurement.	R
☐ 3. Quantify existing and proposed emissions of compressor equipment, plus construction emissions, including nitrogen oxides (NO_x) and carbon monoxide (CO), and the basis for these calculations. Summarize anticipated air quality impacts for the project. (§ 380.12(k)(3)) • Provide the emission rate of NO_x from existing and proposed facilities, expressed in pounds per hour and tons per year for maximum operating conditions, include supporting calculations, emission factors, fuel consumption rate, and annual hours of operation.	R
☐ 4. Describe the existing compressor units at each station where new, additional, or modified compressor units are proposed, including the manufacturer, model number, and horsepower of the compressor units. For proposed new, additional, or modified compressor units include the horsepower, type, and energy source. (§ 380.12(k)(4))	D, R
☐ 5. Identify any nearby noise-sensitive area by distance and direction from the proposed compressor unit building/enclosure. (§ 380.12(k)(4))	G, U, EE
☐ 6. Identify any applicable state or local noise regulations. (§ 380.12(k)(4)) • Specify how the facility will meet the regulations.	EE
☐ 7. Calculate the noise impact at noise-sensitive areas of the proposed compressor unit modifications or additions, specifying how the impact was calculated, including manufacturer's data and proposed noise control equipment. (§ 380.12(k)(4))	R
Additional Information Often Missing and Resulting in Data Requests	
☐ Provide copies of application for state air permits and agency determinations, as appropriate.	D, EE
☐ For major sources of air emissions (as defined by the EPA), provide copies of applications for permits to construct (and operate, if applicable) or for applicability determinations under regulations for the prevention of significant air quality deterioration and subsequent determinations.	D, EE
☐ Describe measures and manufacturer's specifications for equipment proposed to mitigate impact to air and noise quality, including emission control systems, installation of filters, mufflers, or insulation of piping and building, and orientation of equipment away from noise-sensitive areas.	D, R

SUMMARY OF FILING INFORMATION				
INFORMATION				DATA SOURCES[1]
[1]	D	Applicant	R	Manufacturer's Data
	G	*Community Noise*, EPA 1971	U	Noise Survey
			EE	State Air Quality Agency

This report is required for applications involving compressor facilities at new or existing stations, and for all new LNG facilities. This report addresses the effects of the project on the existing air and noise environment and describes any proposed measures to mitigate the effects. The report should also present long-term impacts of operation of any compressor stations additions or modifications. Pollutant emissions from the proposed compressor units must meet New Source Performance Standards, National Ambient Air Quality Standards, Prevention of Significant Deterioration, and state standards and regulations. The noise attributable to any new or additional or modified compressor facility must not exceed an L_{dn} of 55 dBA at any NSAs.

For existing compressor stations, identify the docket number in which the Commission authorized the facilities.

9.1 Air Quality

9.1.1 Existing Air Quality

Describe the existing air quality in the vicinity of the project, including attainment/nonattainment status for all criteria pollutants and the identification of any Federal Class I areas where visibility or other impact analyses may be required. Provide the background levels of nitrogen dioxide (NO_2) and other criteria pollutants that would be emitted above EPA-defined significant levels.

9.1.2 Air Quality Impacts

For major sources of air emissions (as defined by EPA), provide copies of applications for permits to construct and operate, if applicable. Provide estimates of pollutant emissions, air quality impacts of the emissions, and demonstrate compliance with State Implementation Plans (SIPs). Propose mitigation if violations are predicted to show that the emissions would conform to SIPs and applicable standards.

Describe the existing and proposed compressor units at each station where new, additional, or modified compressor units are proposed. Summarize this information as shown in Table 9.1-1, including manufacturer make and model number, type of compression, energy source, horsepower at standard conditions (ISO), horsepower at station conditions (used to calculate emissions), hours of operation in 1 year, emission rates in grams per horsepower-hour (g/hp-hr) and emissions (tons/year or lbs/hours) of NO_x and other pollutants that would be emitted above significant levels as established by the EPA (see CFR 52.21). Include CO emissions for any reciprocating engine-driven compressors and any required modeled concentrations of NO_x and CO.

TABLE 9.1-1

Air Quality Analysis for a Typical Compressor Station

Compressor Make & Model	Standard hp (ISO)	Station hp	NO_x emission factor (g/hp-hr)	Yearly Hours of Operation	NO_x Emissions (tons/year)
New Compressor					
Solar Centaur Type H	5,300	3,992	1.41	8,760	54.4
Existing Compressor					
Cooper-Bessemer GMVH-10C2	2,000	2,000	2.02	8,760	39.0
GE Frame 3 3002G	7,300	6,950	2.56	8,760	1714.7
GE Frame 3 3002G upgrade	458	348	2.71	8,760	9.1

Summarize anticipated impacts for each new or existing station and for the project.

Provide the applications for state air permits and agency determinations, if applicable.

9.2 Noise Quality

Identify any applicable state or local noise regulation.

9.2.1 Existing Noise Levels

Ensure that the plot plans (scale 1:3,600 or greater) as shown on Figure 1.1-4, submitted in response to Resource Report 1, show the sites of existing and proposed compressor units, station fencing, property lines, and any nearby NSAs. The plot plan should also identify the location of noise measurements and NSAs, NSAs (which include residences, schools, hospitals, churches, playgrounds, farms, and camping facilities) should

be identified in Resource Report 1 and quantitatively described in this report. In this section, identify all NSAs near the proposed compressor unit building on 1:24,000/1:25,000 scale USGS topographic maps provided in Resource Report 1 or describe by distance and direction from the location of the proposed compressor modification or addition. Provide the existing L_{dn} for each NSA, and as appropriate, denote NSAs and noise measurement locations on the plot plans.

If the compressors are to be installed at a new site, calculate the existing L_{dn} from sound level measurements, or estimate using typical noise levels for a land use type, such as in the EPA publication Community Noise (EPA, 1971). If the compressor units are being added to an existing facility, conduct a noise survey of the site property line and nearby NSAs when the station is operating at full load. Provide the results of the noise survey of the existing compressor units as: L_{eq} (day), L_{eq} (night), and L_{dn}, where L_{eq} is the steady sound with the same total (equivalent) energy as the time-varying sound averaged over a specified period. L_{dn} is calculated using the formula:

Describe conditions during the noise survey, including:

- time of day;
- duration of measurements;
- weather conditions;
- wind speed and direction;
- engine load; and
- other sources of noise present at each measurement location.

During any sound level measurement, try to avoid times when unusual or extraneous noise which is not typical of station operation, such as noise from pets, lawnmowers, air compressors used in spray painting, or nearby construction activity, is occurring. If the noise generated by the existing compressor station impacts any nearby residences with an L_{dn} greater than 55 dBA, indicate if an acoustical analysis of the existing units(s) at the compressor station would be performed to quantify the magnitude and frequency spectrum of principal noise sources associated with the operation of the existing unit(s). Specify possible mitigation measures, including specific noise control equipment, necessary to reduce the noise level(s) from the unit(s) to 55 dBA L_{dn} at the nearby NSAs. Specify which noise reduction measures would be implemented and the schedule for implementing the mitigation measures.

9.2.2 Noise Impacts

Describe noise impacts from construction activities, including drilling if storage wells are proposed to be constructed. Calculate the noise impact of the compressor unit additions or modifications on all nearby NSAs and summarize as shown in table 9.2-1. The noise impact from the compressor units should be based on far-field sound data provided by the manufacturer, or on sound level measurements of a similar unit in service elsewhere. If measured noise levels from a similar unit are used, that unit should be as similar to the proposed unit as possible, including engine/turbine model, silencing equipment, and compressor building attenuation capabilities. In addition, no extraneous noise should be occurring during the sound level measurements of the comparative unit. As part of the impact assessment, provide the far-field sound data on the compressor or the results of the sound level measurements of the comparative unit.

TABLE 9.2-1

Noise Quality Analysis for a Typical Compressor Station

Compressor Station/NSA	Distance to NSA (feet)	Existing L_{eq}(d) (dBA)	Existing L_{eq}(n) (dBA)	Existing L_{dn} (dBA)	Additional L_{dn} (dBA)	Total L_{dn} (dBA)	Noise Increase (dBA)
Residence (NE)	1,200	48	44	51	49	53	2
Residence (S)	1,750	46	43	50	46	51	1

L_{eq}(d) is L_{eq}(day)

L_{eq}(n) is L_{eq}(night)

Include step-by-step supporting calculations or identify the computer program used to model the noise levels, the input and raw output data and all assumptions made when running the model, far-field sound level data for maximum facility operation, and the source of the data.

Include:

- Sound pressure levels for unmuffled engine inlets and exhausts, engine casings, and cooling equipment;
- Dynamic insertion loss for all mufflers;
- Sound transmission loss for all compressor building components, including walls, roof, doors, windows and ventilation openings;

- Sound attenuation from the station to nearby noise-sensitive areas;

- The manufacturer's name, the model number, the performance rating; and

- A description of each noise source and noise control component to be employed at the proposed compressor station.

Identify all proposed noise control equipment (*e.g.*, inlet and exhaust silencers, building insulation, etc.) and provide the noise absorption capabilities of this equipment. Provide the sources of this information. Also explain how the noise level (L_{dn}) attributable to the proposed compressor units was calculated, including barrier, distance, air and other attenuation factors that were used, and include any model results or calculation spreadsheets or procedures.

For proposed compressors the initial filing must include at least the proposed horsepower, type of compression, and energy source for the compressor.

Far-field sound level data measured from similar units in service elsewhere, when available, may be substituted for manufacturer's far-field sound level data.

If specific noise control equipment has not been chosen, include a schedule for submitting the data prior to certification.

9.2.3 Mitigation

The noise estimate must demonstrate that the project will comply with applicable noise regulations and show how the facility will meet the following requirements:

- The noise attributable to any new compressor station, compression added to an existing station, or any modification, upgrade or update of an existing station, must not exceed a day-night sound level (L_{dn}) of 55 dBA at any pre-existing noise-sensitive area (such as schools, hospitals, or residences).

- New compressor stations or modifications of existing stations shall not result in a perceptible increase in vibration at any noise-sensitive area.

Resource Report 10 - Alternatives

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES [1]
Minimum Requirements to Avoid Rejection	
☐ 1. Address the "no action" alternative. (§ 380.12(l)(1)) • Discuss the costs and benefits associated with the alternative.	D
☐ 2. For large projects, address the effect of energy conservation or energy alternatives to the project. (§ 380.12(l)(1))	D
☐ 3. Identify system alternatives considered during the identification of the project and provide the rationale for rejecting each alternative. (§ 380.12(l)(1)) • Discuss the costs and benefits associated with each alternative.	D
☐ 4. Identify major and minor route alternatives considered to avoid impact on sensitive environmental areas (*e.g.*, wetlands, parks, or residences) and provide sufficient comparative data to justify the selection of the proposed route. (§ 380.12(l)(2)(ii)) • For onshore projects near to offshore areas, be sure to address alternatives using offshore routings.	A, B, L, LL
☐ 5. Identify alternative sites considered for the location of major new aboveground facilities and provide sufficient comparative data to justify the selection of the proposed site. (§ 380.12(l)(2)(ii))	A, I, L, W, X, LL

[1] A Aerial Photographs; B Agency Consultation; D Applicant; I County/Municipal; L Field Surveys; W NRCS Personnel; X NRCS Soil Surveys; LL USGS Topographic Maps

This Resource Report is required for all applications and must describe alternatives which were considered during the identification of the project and compare the environmental impacts of such alternatives to those of the proposal. It should discuss the systematic procedure employed to arrive at the project, starting with the broadest feasible range of alternatives to the project and narrowing the alternatives to a specific action on a specific site or right-of-way. The description of this systematic procedure should include the decision criteria used, the information weighed, and an explanation of the conclusion at each decision point. The decision criteria must show how environmental benefits and costs, even if not quantifiable, are weighed against economic benefits and costs, and technological and procedural constraints.

Four types of alternatives are discussed below: the no-action alternative, system alternatives, route alternatives, and aboveground site alternatives. Each of these alternatives should be addressed for large projects. All reasonable alternatives should be addressed for smaller projects.

10.1 No-Action Alternative

Address the consequences of not constructing the project. Obviously the impacts directly associated with the construction of the project (*e.g.*, disturbance of wetlands, air quality impacts, clearing of vegetation, etc.) would be avoided under the no-action alternative. For large projects, this section should also address the potential for accomplishing the energy objectives of the project through other means, including energy conservation, and the potential for using realistic energy alternatives, such as oil, coal, and electricity. The analysis of each should address both relative environmental benefits and costs and should be commensurate with the size of the project.

10.1.1 Energy Conservation

Address the effect of energy conservation (and load management) in the area where the gas is to be delivered. Describe the effect of any state or regional energy conservation, load-management, and demand-side management programs on the long-term and short-term demand for the energy to be supplied by the project. The discussion should include any technological, environmental, institutional, political, or social barriers that could inhibit the implementation of energy conservation and load-management programs in the area.

10.1.2 Energy Alternatives

Discuss energy alternatives in sufficient detail to convincingly present the advantages or disadvantages of natural gas relative to oil, coal, electricity, and other alternative fuels readily available in the project area. For customer-based projects (*i.e*, projects proposed to meet the needs of identified customers versus projects proposed for general system supply), this analysis should include a list of customers and the fuels which they presently use or the fuels which are primary competitive fuels to natural gas.

Identify and compare the potential impacts associated with using alternative fuels rather than natural gas. Include relative impacts on air quality (*e.g.*, oil versus natural gas), relative transportation impacts (*e.g.*, coal versus natural gas), and relative environmental and economic impacts associated with the construction of natural gas-based versus alternative fuel-based facilities. As with other no-action alternatives, provide a clear statement of the advantages of natural gas, including technological, environmental, economic, and scheduling considerations which led to rejection of energy alternatives.

10.2 System Alternatives

System alternatives would meet the objectives of the project, but would use a different (and often existing) natural gas pipeline system or a different configuration of

pipeline facilities that would obviate the need to construct all or part of the project. Although some modifications or additions may be required, the environmental impact of these modifications could be less than that associated with construction of the project. These modifications can include construction of additional compression facilities, either at new or existing compressor stations, construction of additional pipeline loops, or construction of new segments of pipeline to interconnect existing pipeline systems.

System alternatives should be analyzed for large projects and for projects where there are significant concerns about the disturbance of a particular resource. System alternatives can include pipeline system alternatives that may reduce overall environmental impact (*e.g.*, looping or new pipeline along other pipeline systems), alternative pipe diameters or compression scenarios that may reduce pipeline or compression requirements (*e.g.*, different pipe diameter and compression to meet the requirements of the project), or alternative placement of pipeline loop that may avoid sensitive resource areas (*e.g.*, upstream or downstream of the loop location).

The description of alternative pipeline systems should include a map identifying the location of existing pipelines to be used, any new pipeline which would be required, and new or additional compression facilities. The map used should be of a scale which also provides coverage of the corresponding segment of the project. Figure 10.2-1 shows a typical map of a proposed project and two pipeline system alternatives.

The analysis of pipeline system alternatives should include a comparative table which presents the characteristics and environmental factors of the pipeline system alternative(s) and the corresponding segment of the proposed project. Table 10.2-1 is an example of a comparison of the characteristics and environmental factors of the pipeline system alternatives shown on Figure 10.2-1.

The text should describe the environmental factors affected and should present a comparative analysis of the characteristics of the system alternative(s) and the corresponding segment of the project. Also, include a clear statement of the advantages of the project, including economic, environmental, technical, and scheduling advantages, which led to the rejection of each system alternative.

The description of alternative pipe diameters and compression scenarios, or alternative placement of pipeline loop, should clearly identify and compare the

Figure 10.2-1
System Alternatives Using Other Existing Pipeline Facilities

TABLE 10.2-1

Comparison of System Alternatives

	Unit	Proposed Project	Lateral System Alternative	Mainline System Alternative
Pipeline and Compression Facilities				
	(mi)	166.1	191.8	187.6
Total length	(mi)	166.1	97.4	0.0
New pipeline				
Loop pipeline	(mi)	0.0	31.4	60.9
36-inch-diameter pipe	(mi)	0.0	63.0	126.7
30-inch-diameter pipe				
Total compressor stations				
Upgraded	(no.)	0	0	3
New	(no.)	1	1	0
Total compression				
Upgraded	(hp)	0	0	20,000
New	(hp)	7,700	7,323	0
Environmental Factors				
	(ac)	1,510	1,744	1,706
Construction right-of-way a/	(ac)	1,007	877	341
Permanent right-of-way b/				
Length adjacent to existing right-of-way	(percent)	76	94	100
Total wetlands crossed c/	(mi)	7.1	6.5	11.5
Forested wetlands	(mi)	3.6	3.3	8.4
Scrub-Shrub wetlands	(mi)	3.5	3.2	3.1
Wetland complexes crossed	(no.)	100	98	148
Total perennial waterbodies crossed	(no.)	35	38	46
Major river crossings (>100 feet)	(no.)	5	6	1
Natural and scenic rivers	(no.)	4	4	0
Endangered or threatened species habitat	(no.)	1	1	0
Federal land crossed	(mi)	0.0	0.0	40.6
State land crossed	(mi)	1.3	1.3	0.0
Other recreation/designated land use areas	(no.)	2	2	2
Length of crossing	(mi)	0.7	0.7	1.8
Existing residences within 50 feet of construction work area	(no.)	180	201	343
NO_x emissions per year	(ton)	56	59	387

a/ Based on a 75-foot-wide construction right-of-way.
b/ Based on a 50-foot-wide right-of-way for the proposed project; a 15- to 50-foot wide right-of-way for the Lateral System Alternative; and a 15-foot-wide right-of-way for the Mainline System Alternative.
c/ All wetland information is based on NWI mapping.

alternative(s) considered and the corresponding segment of the project. Maps and tables as described above may be used as necessary to illustrate or summarize the comparative information. Again, include a clear statement of the advantages of the project and the reasons for rejecting the alternatives.

10.3 Route Alternatives

Route alternatives include alignments which differ from those of the project as filed. The discussion of these alternatives should address routes which were considered, but rejected, during the selection of the preferred route. This includes alternative routes identified, but rejected, because of environmental, economic, or technical reasons and alternative routes considered a viable means of accomplishing the same objectives as the preferred route, but not considered preferable.

Route alternatives may include "major route alternatives" which deviate from the preferred route for an extended distance (*e.g.*, for several miles) or are several miles away from the preferred route. Major route alternatives typically are geographically different routes and are primarily considered for new pipeline projects. Route alternatives may also include "route variations or deviation" that are identified to avoid and resolve localized resource issues (*e.g.*, cultural resource sites, wetlands, and residential areas). While route variations may be a number of miles in length, they are typically short and located relatively close to the preferred route. Route variations are typically considered for either new or looping pipeline projects.

10.3.1 Major Route Alternatives

Major route alternatives should be addressed in sufficient detail to justify the decision to eliminate them from detailed consideration. Present the location of each major route alternative on a map of a scale that covers both the alternative route and the corresponding route segment of the preferred route (see Figure 10.3-1 for an example).

The text should generally describe the location of the major route alternative, including the mileposts (of the preferred route) at which the major route alternative deviates from and rejoins the preferred route, and the environmental characteristics of the major route alternative and the corresponding segment of the preferred route. The environmental characteristics should include as many of the factors listed on Table 10.3-1 as can reasonably be calculated or obtained from published sources, such as USGS or NWI maps, or consultations with federal, state, or county agencies. Generally limit agency contacts for data collection to those necessary to identify regional resources (*e.g.*, endangered and threatened species habitat, location of historic districts or documented cultural resource

Figure 10.3-1, major route alternative

TABLE 10.3-1

Environmental Factors That May Be Considered for Analysis of Route Alternatives/Variations

Environmental Factor	Unit a/	Preferred Route	Route Alternative/ Variation
Total length	(mi)		
Type of right-of-way:			
New right-of-way	(mi)		
Adjacent to existing pipeline right-of-way (*e.g.*, loop)	(mi)		
Adjacent to other existing rights-of-way (*i.e.*, powerline, road, etc.)	(mi)		
Right-of-way requirements:			
Construction right-of-way	(ac)		
Permanent right-of-way	(ac)		
Wetlands:			
Forested wetlands	(mi)		
Scrub-shrub wetlands	(mi)		
Wetland complexes	(no.)		
Waterbodies:			
Total perennial waterbodies	(no.)		
Major river crossings (>100 feet)	(no.)		
Designated natural and scenic rivers	(no.)		
Significant fisheries	(no.)		
Ponds/lakes	(no.)		
Federally listed endangered or threatened species:			
Habitat	(mi)		
Species	(no.)		
Cultural resources:			
National Historic Landmarks	(no.)		
NRHP-listed properties	(no.)		
Unlisted/potentially eligible properties	(no.)		
Land use:			
Forest	(mi)		
Agricultural	(mi)		
Open (*e.g.*, recreation, historic districts, etc.)	(mi)		
Residential	(mi)		
Commercial/Industrial	(mi)		
Other (*i.e.*, recreation, historic districts, etc.)	(mi)		
Residences:			
Within 50 feet of construction work area	(no.)		
Federal land:			
National Forests	(mi)		
Bureau of Land Management	(mi)		
Indian reservations	(mi)		
Other (*i.e.*, wilderness areas, parks, flood storage control land, etc.)	(mi)		
State land:			
State forest/parks	(mi)		
Wildlife management areas	(mi)		
Other (*i.e.*, parks, open space, etc.)	(mi)		
Trails:			
National Trails (*i.e.*, Appalachian Trail, etc.)	(no.)		
Other (*i.e.*, snowmobile, hiking, biking, etc.)	(no.)		
Recreation or other designated land use areas:			
Ballfields, campgrounds, landfills, quarries, etc.	(mi)		
Paleontological resource sites	(no.)		

a/ Unit may be miles or feet depending on the length of the alternative considered.

sites, public lands, etc).

Discuss the characteristics of the major route alternative relative to the characteristics of the corresponding segment of the preferred route. Also compare the technical and economic characteristics of the major route alternative with those of the preferred route.

Finally, provide a clear statement of the reasons why the major route alternatives was considered inferior to the preferred route.

10.3.2 Route Variations or Deviations

Typically, route variations or deviations are the result of more detailed field review. They should be identified prior to filing of the application, if at all possible, or as early as practicable. The need for route variations might arise at any time during the review process, from the initial filing up to construction, as localized resource issues are identified.

For example, on a looping project, the application may be filed showing a preferred route that deviates from the existing pipeline right-of-way to avoid a residence. In this case, the application would include a comparison of the preferred route that avoids the residence and a route variation that follows the existing pipeline right-of-way. Alternatively, the application may be filed showing a preferred route that follows the existing pipeline right-of-way, but further field review identifies a new residence within the construction work area. To avoid the residence, a route variation is identified that would not significantly affect other environmental resources and is considered superior to the original preferred route. In this case, the route variation should be filed as the revised route and should be compared with the original route.

Since route variations are considered to resolve localized resource issues (*e.g.*, wetlands, residence, cultural resource sites, etc.), they are normally much shorter than major route alternatives and should be carried to a greater level of detailed analysis. This generally requires more contact with governmental agencies and private entities, more field review, more detailed map analysis, and a comparison of the pertinent environmental factors listed in Table 10.3-1.

Each route variation should be presented on 7.5-minute-series USGS topographic maps or alignment sheets that include both the route variation and the corresponding segment of the preferred route (see Figure 10.3-2). The text should include a description of the resource issue, a comparison of the environmental characteristics of the route

Figure 10.3-2 - Route variation map

variation and the preferred route, and a clear statement of the overall advantages of the preferred route. A table of the environmental characteristics of the route variation and the preferred route should be included where a number of environmental factors are considered.

10.4 Alternative Sites

For all new major aboveground facilities, particularly LNG plants or compressor stations, alternative sites should be considered and discussed. The consideration of alternative sites is necessary if specific problems are identified with a new site, such as loss of over 5 acres of prime farmland soils, land use incompatibility, location within designated flood storage land, proximity to NSAs, or presence of wetlands, critical habitat, endangered or threatened species, or NRHP-eligible cultural resources.

Describe the procedure used to identify the preferred site. Identify and discuss the decision criteria and weighting used at each decision point and clearly state the basis for each decision. Provide maps of the locations of the preferred and most viable alternative sites. The analysis and comparison of environmental characteristics of the alternative sites should include a discussion of the following factors:

- new stations versus additional compression at existing station(s);
- area (acres) required;
- land use (*e.g.*, wetland, agriculture, pasture, forest);
- land availability;
- visual impact;
- designated land uses (*e.g.*, flood storage);
- amount of prime farmland soils;
- presence of critical habitat or federally endangered or threatened species;
- presence of NRHP-eligible sites;
- zoning (*e.g.*, industrial, residential, agriculture);
- miles of pipeline required to reach site;

- number of NSAs;
- location of nearby NSAs;
- air quality considerations;
- noise considerations;
- technical considerations; and
- economic considerations.

As with alternative routes, discuss technical and economic characteristics of the alternative sites and compare them with the preferred site. Include a clear statement of why the alternative sites are considered unreasonable.

Resource Report 11 - Reliability and Safety

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES [1]
Minimum Requirements to Avoid Rejection ☐ Describe how the project facilities would be designed, constructed, operated, and maintained to minimize potential hazard to the public from the failure of project components as a result of accidents or natural catastrophes. (§ 380.12(m))	D
D Applicant	

This Resource Report is required for applications involving new or recommissioned LNG facilities. It should also be provided for pipeline projects where significant safety concerns have been raised in prefiling consultations. In either case, it should address the potential hazard to the public from failure of project components resulting from accidents (e.g., risk of explosion from natural gas pipeline failures, risk of gas migration from storage reservoirs, or injection/withdrawal well failures), natural catastrophes (*e.g.*, earthquakes, landslides, etc) or acts of terrorism. This Resource Report should address how these events would affect reliability, what procedures and design features would be used to avoid undue hazards or effects, and what measures, including equipment, training, and emergency notification procedures, would be implemented to protect the public from failure of the project due to accidents or natural catastrophes.

For LNG facilities the Resource Report must contain:

- A description of measures, including equipment, training, and liaison with local authorities, to be used to protect the public from failure of the proposed facilities as a result of accidents or natural catastrophes;

- A discussion of hazards, the environmental impact, and service interruptions which could reasonably ensue from failure of the proposed facilities as a result of accidents or natural catastrophes;

- A discussion of design and operational measures to avoid or reduce risk associated with accidents or natural hazards such as violent storms, floods, landslides, and earthquakes;

- A discussion of contingency plans for maintaining service or reducing downtime as a result of accidents or natural catastrophes;

- A description of measures to exclude the public from hazardous areas. Discuss measures to minimize problems arising from malfunctions and accidents (with estimates of probability of occurrence). Identify standard procedures for protecting services and public safety during maintenance and breakdowns; and

- A list of all publications, reports, and other literature or communications which were cited or relied upon to prepare the report. The list of communications and agency contacts should include the name and title of the person contacted, their affiliation, and telephone number.

For pipeline projects, discuss how the project would comply with the Department of Transportation (DOT) Minimum Federal Safety Standards specified in 49 CFR Part 192 that require each pipeline operator to:

- develop an emergency plan with local fire departments and other agencies to identify personnel to be contacted, equipment to be mobilized, and procedures to be followed to respond to a hazardous condition caused by the pipeline;

- establish and maintain liaison with the appropriate fire, police, and public officials to coordinate mutual assistance during emergencies; and

- establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation to recognize a natural gas pipeline emergency and report it to appropriate public officials and the company.

Discuss procedures for aerial surveillance flights, on-ground leak detection surveys, internal pipeline inspection with pigging equipment, and cathodic protection. Also discuss programs to monitor and certify reservoir pressure and storage wells, if appropriate.

Resource Report 12 - PCB Contamination

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES[1]
Minimum Requirements to Avoid Rejection ☐ For projects involving the replacement or abandonment of facilities determined to have PCBs, provide a statement that activities would comply with an approved EPA disposal permit or with the requirements of the TSCA. (§ 380.12(n)(1))	J
☐ For compressor station modification on sites that have been determined to have soils contaminated with PCBs, describe the status of remediation efforts completed to date. (§ 380.12(n)(2))	J
J EPA	

This Resource Report is required for applications involving the replacement, abandonment by removal, or abandonment in place of facilities determined to have PCBs in excess of 50 parts per million in pipeline liquids. A detailed Resource Report on PCB contamination/disposal is unnecessary if the company has received an "Approval to Remove Natural Gas Pipeline Contaminated with PCBs and Dispose of PCBs " permit from the EPA. Provide a statement that activities would comply with the EPA disposal permit. The date of the EPA approval and expiration must be identified. If the company has not received a permit, consult with us.

For compressor station modifications, determine if the compressor station site has been listed on the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System because of soils contaminated with PCBs. If the site is listed, describe remediation efforts completed to date or when remediation will be completed. Provide copies of correspondence documenting investigations, work plan approvals, submittal of closure reports, and the EPA determinations.

Resource Report 13 - Additional Information Related to LNG Plants

SUMMARY OF FILING INFORMATION	
INFORMATION	DATA SOURCES [1]
Minimum Requirements to Avoid Rejection ☐ Provide all the listed detailed engineering materials. (§ 380.12(o))	D
D Applicant	

This Resource Report is required for construction of new LNG facilities, or the recommissioning of existing LNG facilities. A report containing detailed engineering and design material as listed below must be prepared and submitted. If the recommissioned facility is existing and is not being replaced, relocated, or significantly altered, resubmittal of information already on file with the Commission is unnecessary, provided the applicant verifies that the information is still valid. The engineering and design materials report shall include:

- A detailed plot plan showing the location of all major components to be installed, including compression, pretreatment, liquefaction, storage, transfer piping, vaporization, truck loading/unloading, vent stacks, pumps, and auxiliary or appurtenant service facilities;

- A detailed layout of the fire protection system showing the location of fire water pumps, piping, hydrants, hose reels, dry chemical systems, high expansion foam systems, and auxiliary or appurtenant service facilities;

- A layout of the hazard detection system showing the location of combustible-gas detectors, fire detectors, heat detectors, smoke or combustion product detectors, and low temperature detectors. Identify those detectors that activate automatic shutdowns and the equipment that would shutdown Include all safety provisions incorporated in the plant design, including automatic and manually activated emergency shutdown systems;

- A detailed layout of the spill containment system showing the location of impoundments, sumps, subdikes, channels, and water removal systems;

- Manufacturer specifications, drawings, and literature on the fail-safe shut-off valve for each loading area at a marine terminal (if applicable);

- A detailed layout of the fuel gas system showing all taps with process components;

- Copies of company, engineering firm, or consultant studies of a conceptual nature that show the engineering planning or design approach to the construction of new facilities or plants;

- Engineering information on major process components related to the first six bulleted items of this section, which include (as applicable) function, capacity, type, manufacturer, drive system (horsepower, voltage), operating pressure, and temperature;

- Manuals and construction drawings for LNG storage tank(s);

- Up-to-date piping and instrumentation diagrams. Include a description of the instrumentation and control philosophy, type of instrumentation (pneumatic, electronic), use of computer technology, and control room display and operation. Also, provide all overall schematic diagram of the entire process flow system, including mass, material, and energy balances;

- Engineering information on the plant's electrical power generation system, distribution system, emergency power system, uninterruptible power system, and battery backup system;

- Identification of all codes and standards under which the plant (and marine terminal, if applicable) will be designed, and any special considerations of safety provisions that were applied to the design of plant components;

- A list of all permit or approvals from local, state, Federal, Native American groups, or Indian agencies required prior to and during construction of the plant, and the status of each, including the date filed, the date issued, and any known obstacles to approval. Include a description of data records required for submission to such agencies and transcripts of any public hearing by such agencies. Also provide copies of any correspondence relating to the actions by all, or any, of these agencies regarding all required approvals;

- Identification of how each applicable requirement of 49 CFR Part 193 and National Fire Protection Association 59A LNG Standards would be complied with. For new facilities the siting requirements of 49 CFR Part 193, Subpart B must be given special attention. If applicable, vapor dispersion calculations from LNG spills over water should be presented to ensure compliance with

the U.S. Coast Guard's LNG regulations in 33 CFR Part 127; and

- Information specified in Data Requirements for the Seismic Review of LNG facilities (NBSIR 84-2833 available from FERC staff) that would be located in zone 2, 3, or 4 of the Uniform Building Code Seismic Risk Map of the U.S.

4.0 PREPARATION OF APPLICANT-PREPARED DRAFT ENVIRONMENTAL ASSESSMENTS FOR NATURAL GAS ACT SECTION 7 APPLICATIONS

Applicants may prepare their own DEA in addition to the ER. This option must involve close coordination with us during the prefiling stages to maximize the potential benefit in time savings. Using this method, the application submitted would include an ER and an applicant-prepared DEA with the objective of accelerating our review and finalization of the EA. Rather than reviewing the ER and then preparing an EA, staff would: analyze and verify the data in the ER to ensure that it supports the DEA; make appropriate adjustments and revisions; and develop recommendations as necessary to prepare a final EA for the Commission's use. Because we would not have to develop the EA from scratch, but would be able to use correctly presented information from the applicant-prepared DEA, significant time savings could be realized. However, the supporting ER must be complete, accurate, and fully in compliance with the requirements for an ER.

The Commission has issued an *Interim Guideline for Applicant-prepared Draft Environmental Assessments* that is available from the OEP on the Commission's website at http://www.ferc.gov/industries/gas/enviro.asp.

5.0 PREPARATION OF THIRD-PARTY ENVIRONMENTAL DOCUMENTS FOR NATURAL GAS ACT SECTION 7 APPLICATIONS

In February 1994, the Commission announced the beginning of a voluntary third-party contracting program. An applicant seeking authority to build natural gas facilities may now fund a third-party contractor to assist the Commission in reviewing the environmental aspects of an application and preparing the environmental documents required by NEPA.[4]

In the context of the Commission's program, "third-party contracting" involves the use of an independent contractor to assist the staff in its environmental analyses and review of a proposal. Under this voluntary program, the independent contractor is:

- Selected by and works under the direct supervision and control of the staff;
- Responsible for conducting environmental analyses and preparing documentation, including EAs and EISs; and
- Paid by the project applicant(s).

Third-party contracting provides both OEP and project applicants with additional flexibility in satisfying the Commission's NEPA responsibilities. As with the DEA process, the applicant should contact the staff early in the process to discuss the applicability of the program to the specific project.

The *Handbook for Using Third-party Contractors to Prepare Environmental Assessments and Environmental Impact Statements* is available from the OEP or on the Commission's website at http://www.ferc.gov/industries/gas/enviro.asp

[4] See News Release issued February 9, 1994. Subsequent announcements were published in the Commerce Business Daily (March 25, 1994) and the Federal Register (April 20, 1994).

6.0 PREPARATION OF OTHER NATURAL GAS ACT AND NATURAL GAS POLICY ACT FILINGS

This section describes the environmental requirements for filings submitted under Subpart F of Part 157 (blanket certificates) of the NGA, Subpart A of Part 284 (transportation services under the NGPA), and § 2.55 of the NGA (replacement of deteriorated or obsolete facilities. These regulations are included as appendices to this manual.

Since the environmental requirements of § 157.206(b) are common to filings under the first two of these regulations, section 6.1 summarizes the requirements of § 157.206(b). The remaining sections identify the recommended environmental reporting requirements for projects filed under each of the above-listed regulations.

6.1 STANDARD ENVIRONMENTAL CONDITIONS UNDER BLANKET CERTIFICATES - SECTION 157.206(B)

The standard conditions of § 157.206(b) apply to all projects under the blanket program of Subpart F or the NGPA blanket of Part 284, but only if the project involves ground disturbance or changes to operational air or noise emissions. This section of the regulations states that the company will adopt the requirements set forth in § 380.15,"and shall issue the relevant portions thereof to construction personnel, with instructions to use them." In addition, it states that all activities will be consistent with all applicable law and the provisions of the following statues and regulations or compliance plans developed to implement them.

- Clean Water Act and the National Pollutant Discharge Elimination System Program
- Clean Air Act
- National Historic Preservation Act of 1966 (NHPA)
- Archeological and Historic Preservation Act of 1974
- Coastal Zone Management Act of 1972 (CZM)
- Endangered Species Act of 1973 (ESA)
- Executive Order 11988 (May 24, 1977) requiring Federal agencies to

evaluate the potential effects of any actions it may take on a floodplain

- Executive Order 11990 (May 24, 1977) requiring an evaluation of the potential effects of construction on wetlands

- Wild and Scenic Rivers Act

- National Wilderness Act

- National Parks and Recreation Act of 1978

- Magnuson-Stevens Fishery Conservation and Management Act

In order to be in compliance with these statues, the project sponsor:

- Must comply with Appendix I of Subpart F, involving consultation with the FWS and/or the NMFS (as appropriate), and the project may go forward only if this consultation results in the agency(ies) conclusion that:

  * There are no listed or proposed species or their critical habitat in the project area, or

  * There are listed species or their critical habitat in the project area, but the project is not likely to adversely affect a listed species or its habitat, or

  * There is no need for further consultation, and

  * If proposed species or their critical habitat occur within the project area, the project sponsor implements (at its discretion) mitigation resulting from continued consultation with the agency(ies)

- Must comply with Appendix II of Subpart F, involving consultation with the SHPO and/or the THPO (as appropriate), and this consultation results in the agency(ies) concurrence that

  * No surveys are required, and no eligible properties are in the project area;

  * Surveys are required and that as a result of the surveys no eligible properties are found in the project area; or

* There are eligible properties in the project area but the project would have no effect on any such cultural resource property.

- Must obtain the appropriate state agency's determination that the project will comply with the state's coastal zone management plan unless the appropriate state agency waives its right of review, if applicable;

- Must adhere to the Commission staff's current Plan and Procedures, or must obtain staff or appropriate state or federal agency approval to use other specific alternatives;

- Must make sure that the project will not have a significant adverse impact on a sensitive environmental area (see table 6.1-1 for the list of sensitive environmental areas);

- Must make sure that the noise attributable to any new compressor station, compression added to an existing station, or any modification, upgrade or update to an existing station not exceed an L_{dn} of 55 dBA at any NSA (such as schools, hospitals, or residences) unless the NSA is established after facility construction or modification.

If a project can not meet all of the above conditions, then it is not allowed to proceed under Subpart F or the appropriate portions of Part 284. If it is to proceed, a filing must be made for a certificate under the NGA.

A project is not allowed under Subpart F or the appropriate portions of Part 284 if the activity is located within 0.5 mile (project authorized under § 157.208 only) or 2.0 miles (projects authorized under § 157.215 only) of a nuclear power plant which is either operating or under construction, or for which a construction permit has been filed with the Nuclear Regulatory Commission.

Table 6.1

Sensitive Environmental Areas

- The habitats of species which have been identified as endangered or threatened under the Endangered Species Act and Essential Fish Habitat as identified under the Magnuson-Stevens Fishery Conservation and Management Act
- National or State Forests or Parks
- Properties listed on, or eligible for inclusion in, the National Register of Historic Places, or the National Register of Historic Landmarks
- Floodplains and wetlands
- Designated or proposed wilderness areas, national or state wild and scenic rivers, wildlife refuges and management areas and sanctuaries
- Prime agricultural lands, designated by the Department of Agriculture
- Sites which are subject to use by American Indians and other Native Americans for religious purposes

6.2 BLANKET CERTIFICATE - SUBPART F OF PART 157 (NGA)

This is the NGA Blanket certificate program where construction or abandonment activities may be authorized under one of several sections

- § 157.208, construction, acquisition, operation, replacement, and miscellaneous rearrangement of facilities;
- § 157.209, temporary compression facilities;
- § 157.211, delivery points;
- § 157.215, underground storage testing and development; or
- § 157.216, abandonment.

The blanket certificate program requires that all projects must be completed in compliance with § 157.206(b) and that an Annual Report (as specified by § 157.207) must be filed by May 1 on all activities completed during the previous calendar year under § 157.208 and all other activities authorized automatically.

Minor projects under § 157.208(a), temporary compression under § 157.209, installation of delivery points under § 157.211(a)(1), all underground storage testing and development under § 157.215, abandonment under § 157.216(a), all changes in rate schedules under § 157.217, and all changes in customer name under § 157.218, may be

done automatically under the appropriate requirements of those sections. These activities are subject to the annual report.

In addition, certain types of projects require prior notice to the Commission before start of the activity. For these activities there is a 45-day period following the Commission's notice of the prior notice filing during which protests of the activity may be filed. If there are no protests the activity may begin on the 46th day. If there are protests, the activity may not go forward under the blanket regulations unless the protests are withdrawn. If all protests are withdrawn the activity may proceed on the day following the withdrawal of the last protest.

Activities which require prior notice include major projects under § 157.208(b), installation of delivery points under § 157.211(a)(2), increase in storage capacity under § 157.214, and abandonment under § 157.216(b).

The following sections describe **only** the required environmental information for the annual reports or the prior notice filing. In most cases there are significant additional data requirements for those filings which are not "environmental" *per se*. Sections 157.214, Increase in storage capacity; 157.217, Changes in rate schedules; and 157.218, Changes in customer name, do not involve any construction and are therefore not covered by the environmental regulations.

6.2.1 Annual Report for Construction Projects (§ 157.208(a & b), § 157.209, § 157.211(a)(1) § 157.215, or § 157.216(a))

Projects that qualify for automatic authorization are those that for projects constructed under § 157.208, do not exceed the cost limit specified in column 1 of Table I of § 157.208(d) (less than $7,400,000 in 2001); meet the requirements of § 157.209 or the applicable subsections of § 157.211, or § 157.216; or are constructed under § 157.215. These projects are reported on an annual basis in an Annual Report that is due by May 1 of each year.

For projects constructed under § 157.208(a), § 157.209 and § 157.215, the annual report must provide a description of the contacts made, reports produced, and results of consultations completed to comply with the ESA, NHPA, and CZM before construction. Provide the date and name of the agency that cleared the project. Actual documentation is not required, although it is helpful to include the "clearance" from the agency. For § 157.211 and for § 157.216, if earth disturbance was involved, only the date of the "clearance" is required.

Projects conducted under § 157.208(b) must be included in the annual report.

However, since environmental information was provided in the notice filed prior to construction, no additional environmental information is required for the annual report.

Increases in storage capacity under § 157.214, and changes in rate schedules and changes in customer name under § 157.217 and § 157.218 are also done automatically and are reported annually. None of these sections include environmental requirements.

6.2.2 Prior Notice Filings Under § 157.208(b)

Projects that require prior notice under § 157.208(b) are those that cost more than the limitations set forth in column 1 but less than the amount specified in column 2 of Table I in § 157.208(d) (from $7,400.000 to $20,600,000 in 2001). For these projects, a concise analysis of the relevant issues outlined in Part 380.12 is required in addition to a general description of the activity that is to take place. For projects to be completed under this section, include the following environmental information for each project:

- A description of the facilities, including the length and diameter, wall thickness and MAOP of the pipeline; for compressors, the size, type and number of compressor units, horsepower required, horsepower existing and proposed, volume of fuel gas, suction and discharge pressure and compression ratios; metering facilities, taps, valves, etc.;

- The specific purpose of the facilities and relationship to other existing and planned facilities;

- A general location map (showing the facilities in relation to existing facilities);

- USGS 7.5-minute-series topographic maps or maps of equivalent detail (showing the location of each facility) and any sensitive environmental area within 0.25 mile of construction;

- The anticipated start and end dates of construction;

- A concise analysis summarizing the existing environmental conditions, the anticipated significant impacts as a result of construction of the facilities, and mitigation measures proposed to reduce or avoid impact on the quality of the human environment, including impact on sensitive environmental areas;

- A statement that the project will comply with the requirements of § 157.206(b), including for compression facilities, the Clean Air Act and the

applicable state implementation plans developed under the Clean Air Act, and the L_{dn} of 55 dBA at any NSA;

- Copies of correspondence or documentation of consultation with the FWS, SHPO, and appropriate state coastal zone management agency as described above under reporting requirements for Annual Reports; and

- Copies of all agreements received to comply with the ESA, the NHPA, and the CZM.

6.2.3 Prior Notice Filings Under § 157.211(a)(2) and § 157.216(b)

Although the regulations do not specifically require the filing of environmental information for construction or abandonment of facilities under these sections (other than abandonments involving earth disturbance, in which case USGS maps are required), the standard environmental conditions of § 157.206(b) apply to these projects. However, the following environmental information will assist us in our review:

- A description of the activity and its purpose;

- The anticipated start and end dates of activity;

- The county and state where the activity will take place;

- A general location map of where the activity will take place (copies of pipeline system maps or USGS topographic maps are acceptable provided that enough detail is included to allow us to locate the facilities in the field);

- A statement that the project will comply with the requirements of § 157.206(b) before construction; and

- Copies of correspondence or documentation of consultation (*e.g.*, telephone conversations or meetings) with the:

    * FWS and NMFS (see Appendix I of Subpart F, referenced at § 156.206(b)(3)(I));

    * SHPO and THPO (see Appendix II of Subpart F, referenced at § 156.206(b)(3)(ii)); and

    * Consistency determination from the appropriate agency that

administers the state's coastal zone management plan, if applicable.

6.2.4 Prior Notice Filings Under § 157.214

Increases in storage capacity are done under prior notice only if they can be accomplished without the construction of additional facilities. Such increases must be supportable by geological data and operating experience. While there are no specific environmental filing requirements for this type of prior notice, the environmental staff will assist the engineering staff in its review.

6.2.5 Landowner Notification

With four exceptions, landowner notification is required prior to any construction under the Subpart F blanket program. The definition of who constitute "landowners" who must be notified is found in § 157.6(d)(2). The specific requirements for the contents of the landowner notice are in § 157.203(d) and are described in section 2.0 of this manual.

For automatically authorized projects landowners must be notified at least 30 days prior to commencing construction or at the time the company initiates easement negotiations, whichever is earlier. A landowner may waive the 30-day prior notice requirements in writing as long as the notice has been provided.

For projects for which the Commission must receive advance notification the landowners must be notified within at least three (3) business days following the date that a docket number is assigned to the application by the Commission or at the time the company initiates easement negotiations, whichever is earlier.

6.3 NGPA SECTION 311 PROJECTS - SUBPART A OF PART 284

This section covers projects requiring construction or abandonment by removal to provide transportation under the NGPA. All activities must comply with the requirements of § 157.206(b). All projects must be reported either in an Annual Report or a 30-day Advance Notification.

6.3.1 Annual Report

An Annual Report of all activities completed during the previous calendar year must be filed by May 1 for projects that do not exceed the cost limit specified in column I of Table I of § 157.208(d) (less than $7,400,000 in 2001). These projects may be constructed automatically without advance notification. For each project constructed under NGPA Section 311, provide the following environmental information as specified in § 284.11(c)

and described below:

- A description of the facilities including pipeline size and length, compressor horsepower, capacity, and cost of construction;

- Current USGS 7.5-minute-series topographic maps showing the location of each facility;

- Evidence of having complied with each provision of §157,206(b), including copies of "no effect" for compliance with the ESA, NHPA, and CZM; and

- A description of the procedures to be used for erosion control, revegetation and maintenance, and stream and wetland crossings (this plan must be consistent with our recommended Plan and Procedures).

6.3.2 Advance Notifications

For projects that exceed the cost limit specified in column 1 of Table I in § 157.208(d) (over $7,400,000 in 2001), the company must notify the Commission at least 30 days before beginning construction of that project. For these projects, file the same environmental information identified in section 6.3.1 above. These projects are not included in the Annual Report.

6.4 REPLACEMENT PROJECTS - SECTION 2.55 (NGA)

This section covers replacement projects. There are no requirements to comply with § 157.206(b). No report is required for projects that only involve aboveground replacement, and do not involve compression facilities or the use of earthmoving equipment. However, all replacement facilities must be constructed within the same right-of-way or compressor station or other aboveground facility site as the facility being replaced as specified in § 2.55 (b)(1)(ii). Clarification of the requirement for the use of the same facility site may be found in appendix A to Part 2 of the regulations.

An Annual Report must be filed by May 1 for all replacement projects completed during the previous calendar year that do not exceed the cost limit specified in column 1 of Table I of § 157.208(d) (less than $7,400,000 in 2001) or that require immediate replacement to comply with DOT safety regulations. If a project exceeds the cost limitation (over $7,400,000 in 2001), an Advance Notification must be filed at least 30 days before beginning construction.

For both the Annual Report and Advance Notification, the following information

will assist us in our review of each project:

- A description of the facilities, including the pipeline length and diameter, capacity and cost, compressor horsepower, metering facilities, taps, valves, etc.;

- The specific reason for replacement of the facilities;

- For 30-day notifications, a general location map (showing the facilities in relation to existing facilities);

- A current USGS 7.5-minute-series topographic map (showing the location of each facility);

- The actual (or anticipated) start and end dates of construction; and

- A description of the procedures to be used for erosion control, revegetation and maintenance, and stream and wetland crossings (a plan must be submitted, but it does not have to be our recommended Plan and Procedures).