

Chapter 1

Summary

1.1 Introduction

In January 2000, the Washington State Energy Facility Site Evaluation Council (EFSEC) received a revised application from Sumas Energy 2, Inc. (SE2) to construct and operate a 660-megawatt combined-cycle combustion turbine facility (the Sumas Energy 2 Generation Facility) in the City of Sumas, Whatcom County, Washington. As part of its review of the application, EFSEC has had this Environmental Impact Statement (EIS) prepared to evaluate the potential impacts associated with construction and operation of the proposed facility.

The scoping phase of the EIS process was completed on October 1, 1999. Based on the comments received and information compiled during the scoping phase, EFSEC determined that the scope of this EIS consists of the elements listed below, along with required content such as a description of the proposed action and alternatives; a discussion of the affected environment; an evaluation of the potential direct, indirect, and cumulative impacts; and an identification of suitable mitigation measures associated with the construction and operation of all components of the proposed project, including the generating plant, water supply pipeline, wastewater pipeline, natural gas supply pipeline, and electrical transmission line.

The Draft EIS for the S2GF project was published on March 15, 2000. The original comment period for the Draft EIS was to have ended on April 17, 2000, which was 30 days after publication. Prior to and during the public comment meetings on April 3 and 4 in Bellingham and Sumas, EFSEC received requests to extend the comment period. Based on these requests and as provided in the Washington Administrative Code (WAC) 197-11-455(7), EFSEC extended the comment period 15 days to May 2, 2000. In evaluating potential impacts from construction and operation of these components, the following elements of the natural and built environment are addressed in this EIS:

- Air Quality
- Water Resources/Supply
- Noise
- Wetlands and Vegetation
- Fish and Wildlife
- Visual Resources
- Cultural Resources
- Socioeconomics
- Energy
- Traffic and Transportation

- Communications
- Health and Safety

SE2 indicated in its January 2000 Revised Application for Site Certification (ASC) to EFSEC that it intends to operate the Sumas Energy 2 Generation Facility (S2GF) as a “merchant” plant, that is, selling power produced by the facility wherever there is a market. Either SE2 or power purchasers may obtain transmission rights and move the power to markets. In its application, SE2 proposed to connect the plant to the Canadian electric grid at BC Hydro’s Clayburn Substation in Abbotsford, British Columbia. BC Hydro has stated that they have the capability to accept and wheel the power but have no interest in purchasing it.

Two 115 kV transmission lines discussed in the Draft EIS have been removed in the Final EIS because neither the applicant nor Puget Sound Energy has any interest in proceeding with the sponsorship or permitting of the lines. They are not currently proposed and are not expected to be proposed within the reasonably foreseeable future.

This EIS incorporates information from a NEPA environmental assessment (EA) discussing evaluation of impacts associated with the Canadian portion of the 230 kV transmission line. The EA is entitled *Environmental Assessment Report, Sumas Energy 2, Inc. 230 kV Electric Transmission Line, Sumas, Washington to B.C. Hydro’s Clayburn Substation, Abbotsford, B.C.* (Norecol-Dames & Moore 1999). This is a NEPA report that was issued by the U.S. Department of Energy.

1.2 Purpose and Need for Project

Prior to the wholesale restructuring of the power industry, public authorities needed to undertake detailed energy planning to ensure the availability of adequate power supply, and to avoid construction of unnecessary energy facilities. However, in recent years industry restructuring has resulted in the development of a market-based wholesale power market in the western United States and Canada. This market is expected to encourage the development of efficient power facilities to satisfy increasing power demands and to discourage the development of inefficient and unnecessary facilities. In this market, project developers are expected to move forward with construction of projects only when convinced demand exists for the power the facilities would produce. Project financing, likewise, depends on a demonstration of demand and economic benefit.

Demand for power continues to grow in the Pacific Northwest. The *1999 Biennial Energy Report: Challenges and Opportunities for Washington’s Energy Future* prepared by the Washington State Department of Community, Trade and Economic Development (CTED) reports growing electric power demands in Washington State. BPA also predicts capacity deficits in the Pacific Northwest during the next 10 years in its *1998 Pacific Northwest Loads and Resources Study: The White Book*.

The *Washington State Electricity System Study* submitted by CTED in December 1998 to the Washington State Legislature states that:

Washington's electric power system is unique. The state relies heavily on hydropower and federally owned generation and transmission facilities. The majority of retail electricity service is provided by consumer-owner utilities, with only about one-third of retail sales accounted for by investor-owned utilities regulated by the Washington Utilities and Transportation Commission (UTC). (p 1).

The likelihood of supply and capacity shortages in the Northwest in the winter is growing. These shortages may occur under adverse hydropower conditions, due to power demands that exceed the region's combined capability to generate and import power. The prospect of shortfalls is exacerbated by market uncertainty. Utilities may be increasingly reluctant to develop and execute plans to meet future loads reliably when those loads may be served by other power suppliers. (p. 3)

Recent analyses of the Northwest power system loads and resources indicate that in some months, the demand for electricity could exceed the region's current ability to generate and import power to meet regional loads. (p. 2-12)

Without actions to prevent such shortfalls, the likelihood of deficits increases over time. (p. 3-14)

1.3 Description of Alternatives

Two alternatives are evaluated in this EIS, the Proposed Action (constructing and operating the S2GF and associated components), and the No Action Alternative (not constructing and operating the S2GF). These alternatives are described below. Alternatives for the plant location, utility routes, gas supply, water supply, and the cooling system which were considered by SE2 and eliminated from further study are also described in Chapter 2. Only one transmission system is under consideration and is evaluated in this EIS.

WAC 197-11-440 (5)(d) provides that when a proposal is for a private project on a specific site, the lead agency shall be required to evaluate only the no action alternative plus other reasonable alternatives for achieving the proposal's objective on the same site.

1.3.1 Proposed Action

The Proposed Action is the construction and operation of a 660-megawatt (MW) combined-cycle combustion turbine electrical generation facility and associated components in Sumas, Whatcom County, Washington (Figure 2-1). The generation plant component of the project would occupy a portion of a 37-acre site within the industrial

area of Sumas, just north of the Sumas Cogeneration Company LP No. 1 Generation Facility (SCCLP) 125 MW power generation facility. The facilities, equipment, and features to be installed on the generation plant site include (Figure 2-2):

- Two combustion turbines and their associated electrical generators
- Two heat recovery steam generators and their associated 180-foot-high exhaust stacks
- One steam turbine and its associated electrical generator
- One steam condensing system consisting of a dry-cooled condenser, a water-cooled condenser, and a cooling tower
- One substation, consisting of main electrical transformers and their associated switch gear
- One 2.5-million-gallon fuel storage tank¹, and associated containment dike
- A stormwater detention system, sized for the 10-year, 24-hour storm, and for the 100-year, 24-hour storm in the absence of flood waters that would inundate the stormwater detention pond
- Access driveways and parking areas
- A 2.81-acre wetland fill
- A 9.97-acre wetland mitigation area (creation and enhancement)
- A 9.4-acre forested wetland preservation/buffer area
- Landscaping, including mature tree plantings along the south, east, and north edge of the generation plant site

In addition to the above generation plant site facilities, equipment, and features, other components making up the project include the following:

- A natural gas supply pipeline consisting of a 4.5-mile-long, 16-inch-diameter pipeline constructed from the Canadian border to the plant site. The new pipeline would be constructed within the right-of-way (ROW) of an existing natural gas pipeline serving the SCCLP facility to the south. A new ROW would be required for approximately the last 0.25 mile of the line extending from the existing power plant north across State Route 9 to the proposed plant (Figure 2-3).
- A 230 kV U.S./Canadian electrical transmission line extending north from the site approximately 0.5 mile to the U.S./Canada border, then following the Canadian

¹ In its final briefing to the Energy Facility Site Evaluation Council (September 5, 2000) the applicant proposed to reduce the diesel storage tank size to 1.5 million gallons. The environmental impact of this proposed design modification has not been analyzed in this FEIS.

Pacific Railroad line for approximately 5.3 miles to BC Hydro's Clayburn station (Figure 2-3).

- A process/potable water pipeline from the City of Sumas water system to supply a maximum of approximately 760 gallons per minute (gpm) required by the S2GF. Delivery of this water would require that the City upgrade a 1,000-foot portion of an existing City supply line from a 6-inch-diameter to a 10-inch-diameter line, extend the new 10-inch-diameter line to the plant site, upgrade certain City water pumps and valves, and install an additional City well at the City's May Road Well Field site (Figure 2-3).
- A wastewater discharge pipeline from the plant to the City of Sumas wastewater collection system at the plant site boundary, and then through existing lines for treatment in Canada, to accommodate a maximum 39,000 gpd of combined blowdown and domestic wastewater from the S2GF. Within the City of Sumas, the City would be required to extend the gravity sewer line and force main serving the area, and upgrade Pump Station No. 3 to connect to and accommodate the S2GF wastewater stream (Figure 2-3).

1.3.2 No Action Alternative

Under the No Action Alternative, the proposed S2GF, natural gas supply pipeline, water supply pipeline, wastewater collection pipeline, and transmission lines would not be built. Power providers would continue to use other or new power sources to meet the needs of their customers.

1.4 Summary of Public Involvement/Consultation/Coordination

1.4.1 Scoping

EFSEC issued a Determination of Significance and Request for Comments on the Scope of the Environmental Impact Statement on August 10, 1999. Comments were solicited and received from local, state, and federal agencies and the public.

Two scoping meetings were held on September 16, 1999 to receive comments on the proposed project. An agency scoping meeting was held in the Training Room of the Bellingham Public Works Department in Bellingham, Washington, and the public scoping meeting was held at the Sumas City Council Chambers in Sumas, Washington. Comment letters were accepted by EFSEC until October 1, 1999. Comments and letters addressed issues concerning air quality, water resources and supply, noise, wetlands and vegetation, fish and wildlife, visual resources, cultural resources, energy, traffic and transportation, communications and potential interference to Sumas communications, health and safety, and socioeconomics.

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In addition to the scoping meetings, EFSEC held a public meeting and a land use consistency hearing on SE2's original ASC in the City of Sumas on March 2, 1999, conducted adjudicative hearings during 2000 (including public witness testimony hearings), and held public comment hearings with respect to a draft Prevention of Significant Deterioration permit.

1.4.2 Consultation

The National Marine Fisheries Service was consulted to identify whether any potential fisheries species listed, or potentially listed, as threatened, endangered or candidate under the Endangered Species Act would occur within the project area. Site-specific information on federal status species and state priority species and habitats was also requested from the U.S. Fish and Wildlife Service, the Washington Department of Fish and Wildlife, and the Washington Department of Natural Resources Natural Heritage Program.

The Nooksack Tribe has been informed about the project by SE2. The Tribe has indicated to SE2 that it has no concerns about the project.

Both SE2 and EFSEC have initiated discussions with the British Columbia Ministry of Environment, Lands and Parks (MELP) concerning water and air quality issues, and the B.C. Ministry was invited to the September 16, 1999 agency scoping meeting at which time they presented their concerns regarding potential air quality impacts.

The federal land managers, National Park Service and the U.S. Forest Service, have been consulted as part of the preparation and review of the Prevention of Significant Deterioration (PSD) permit for the plant, especially in regard to the potential degradation of visibility to Class I areas.

1.4.3 Role of EFSEC

EFSEC is the single non-federal authority for licensing major energy facilities in the state of Washington. If a project is approved, EFSEC specifies the conditions of construction and operation, issues a Site Certification Agreement in lieu of any other individual state or local agency authority, and manages the environmental and safety oversight program of project operations. As part of EFSEC's permitting process, SE2 submitted an Application for Site Certification in January 1999, and an amended application on

January 10, 2000. EFSEC is the sole state/local agency authorized to permit the project. Federal agency approvals are also needed.

For informational purposes, Table 1-1 lists the major state and local permit requirements preempted by EFSEC, as well as federal requirements.

Table 1-1: Overview of Permit, Approval, and Consultation Requirements for the S2GF Project

| Agency | Permit/Authority |
|--|--|
| Federal Government | |
| Advisory Council for Historic Preservation | Consultation under Section 106/National Historic Preservation Act |
| U.S. Army Corps of Engineers (ACOE) | Cooperating Agency |
| | Section 404(b)(1) Individual Permit/Clean Water Act |
| | Section 10 Permit/Rivers and Harbors Act of 1899 |
| | Department of Army Dredge and Fill Permit(s) |
| Department of Energy, Office of Fossil Energy (DOE/OFE) | National Environmental Policy Act (NEPA) Lead Agency |
| | Historic Preservation/Landmark Review |
| | Presidential Permit for Power Transmission Line Border Crossing |
| | Power Export Authorization |
| | Self Certification re: Alternative Fuel Capability |
| U.S. Department of Transportation, Office of Pipeline Safety | Natural Gas Import Authorization |
| | Gas Pipeline Safety Approval |
| Department of Energy, Federal Energy Regulatory Commission (FERC) | Presidential Permit for Gas Pipeline Border Crossing Facility |
| U.S. Section, International Boundary Commission | Construction Authorization for International Boundary |
| State Government (EFSEC has single permit authority over all state and local permits) | |
| State of Washington, Energy Facilities Site Evaluation Council (EFSEC) | Lead Agency and Site Certification Agreement/ EFSEC's responsibilities derive from the Revised Code of Washington (RCW) 80.50, and include siting large natural gas and oil pipelines, electric power plants above 250 megawatts and their dedicated transmission lines, new oil refineries or large expansions of existing facilities, and underground natural gas storage fields. EFSEC has been delegated authority by the U.S. Environmental Protection Agency to issue permits under the Federal Water Pollution Control Act and the Federal Clean Air Act for facilities under its jurisdiction. No other state or local permits apply. |
| | Section 309/ Clean Air Act |
| | National Pollutant Discharge Elimination System (NPDES) Permits |

| Agency | Permit/Authority |
|--|--|
| Northwest Air Pollution Central Authority (NWAPCA) | Notice of Construction Approval (NOC) |
| | Prevention of Significant Deterioration (PSD) Permit |
| | Air Operating Permit |
| | Acid Rain Permit |
| Washington Department of Fish & Wildlife (WDFW) | Hydraulic Project Approval (HPA) |
| Department of Ecology, Shorelands and Wetlands Program | Water Quality Certification |
| | Coastal Zone Management Program Consistency Certification |
| Department of Ecology, Water Quality Program | NPDES and State Waste Discharge Baseline General Permit for Stormwater Discharge Associated with Construction and Industrial Activities. |
| | Industrial Waste Discharge Permit for wastewater discharges to Sumas sewer system |
| Department of Ecology, Water Resources Program | Water Right Permitting and Review |
| Department of Transportation | Franchise/Encroachment Permit (Boring gas pipeline) |
| Washington Utilities and Transportation Commission | Natural Gas Pipeline Construction Approval |
| Department of Labor & Industries | Electrical Construction Permit |
| Local – Whatcom County (Gas Pipeline Only) | |
| Whatcom County Engineer | Accommodation of Utilities on Right-of-Way and Utility Construction Approval (Right of Way/Easement) |
| | Road Approach Construction Permit |
| Whatcom County Transportation Services | Encroachment Permit |
| Whatcom County Building Official | Building Permit |
| Whatcom County Planning Department | Critical Areas Ordinance |
| Local – City of Sumas | |
| City of Sumas | Comprehensive Land Use Plan and Zoning Compliance |
| | Compliance with City of Sumas Wetland Protection Ordinance |
| | Shoreline Substantial Development Permit |
| | Building Permits |
| | Certificate of Water and Sewer Availability |
| City of Sumas Fire Marshall | Fire Marshal Permit |
| Sumas City Utilities Superintendent | Flood Risk Zone Permit and/or Flood Hazard Development Permit |
| City of Sumas Police Department | Compliance with Noise Regulations |

1.5 Significant Areas of Controversy or Uncertainty and Issues to be Resolved

There are a number of areas of controversy and issues to be resolved. These are discussed below.

1.5.1 Water Resources

The large volume of groundwater that would be extracted from the Sumas city well fields to supply S2GF would result in increased drawdown in the area surrounding the well fields. While this drawdown would be mainly interference from pumping and not an indication that the aquifer is being depleted, it would be, in effect, a permanent condition because the City well fields would be pumped continually. There is the potential for water levels in nearby private wells to be lowered, especially in the summer months, as a consequence of this pumping. However, there is insufficient hydrogeologic information available to determine the extent of additional drawdown in any particular location, or to what extent any existing well uses would be impaired. Robinson & Noble calculated a radius where 1 foot of drawdown would theoretically occur in response to pumping the City well fields at their full allocation (actually not needed for several years). From this analysis, they concluded that a theoretical drawdown of 1 foot would be limited to an area within 1 mile of the Sumas Municipal well field. In their analysis, Robinson & Noble also identified five residential wells and one water right within this radius on the Washington side of the border. The actual number of Washington wells has not been confirmed, nor is it known how many wells may exist within this 1-mile radius in Canada.

In the adjudicative hearing, the applicant agreed to mitigate any of the six identified Washington wells that may become impaired by increased drawdown. They also implied that some form of baseline well survey would likely be conducted prior to project startup for use in determining if impairment has occurred, although they were not explicit what that survey would entail. Although these measures may prove adequate to address any adverse impacts to water levels in nearby wells, they provide no assurance that such mitigation would be adequate for wells in Canada, or impaired wells outside of the 1-mile radius in Washington. Therefore, the following additional mitigation measures would be warranted:

- The applicant should agree to mitigate all existing wells within the cone of depression of the City well fields that are impaired by a project-induced reduction in available water. This would include both Canadian and Washington wells regardless of their distance from the pumping wells. In practice, the area of influence probably would not extend beyond about a mile, but should be determined by hydrologic properties rather than a somewhat arbitrary distance.

- A range of mitigation measures should be specified, to include lowering and/or replacement of pumps, deepening or replacement of wells, or providing an alternative source of water. The application of these measures should depend on what action was necessary and feasible to restore the water supply.
- A baseline survey of the area should be conducted to identify all active wells within at least a mile of the Municipal well field. For each identified well, this survey should identify the historic and current use, including estimates of normal and maximum withdrawal rates, and the physical properties of each well (depth, diameter, screened interval, pump size and depth).
- A groundwater monitoring program should be implemented well in advance of project startup to establish seasonal fluctuation in groundwater levels. This information would be needed to help determine the extent to which a particular well was adversely impacted by the increased pumping. Ideally, this monitoring should be performed in the existing private wells, but could be accomplished using a series of observation wells installed specifically to monitor water levels. Groundwater levels should be monitored at least quarterly for two years in advance of project startup, and for as long as necessary afterwards to establish the extent and distribution of the cone of depression.

There is a possibility that the increased groundwater pumping required for the S2GF could contribute to increased nitrate levels in the City well fields. However, there is no realistic way to reliably predict when or even if this might occur. Nitrate concentrations in the May Road well field are above the federal drinking water standard, whereas those in the Municipal well field are below this standard, but have been slowly increasing. If the nitrate concentrations in the Municipal well field increase to above drinking water criteria, the City would no longer have a reliable source of potable water for its residential customers. In order to mitigate S2GF's contribution to this potential impact, SE2 has agreed that if nitrate levels exceed any applicable federal, state or local water quality criteria at any time during project operation, they would reimburse the City of Sumas for the purchase and installation of a treatment system to remove nitrates from the potable water supply. However, it is not clear that this mitigation measure provides adequate protection in the event that there is a time lag between the time when nitrate exceedances first occur, and when the treatment facility can be operational. Therefore, a suitable water quality monitoring program should be established to provide ample warning for the treatment system to be purchased and installed as soon as possible after an exceedance occurs. Furthermore, provisions should be made for the applicant to provide an alternate source of potable water until such time as the treatment system is operational.

No mitigation has been identified in the event that the increased pumping from the City well fields could result in nitrate exceedances in other wells. Although it is feasible that the changes induced in the aquifer could impact water quality in nearby wells, it would be very difficult to demonstrate that the increased pumping for the proposed project actually was the cause of such changes. To assess these potential impacts, the applicant should collect periodic water samples for nitrate analysis from drinking water wells within the

cone of depression of the City's well fields. A reasonable outer limit should be established for the area where this sampling and possible mitigation would be required. This could be accomplished by hydrologic modeling once the actual cone of depression has been determined by water level measurements in the monitoring wells. Careful analysis and interpretation of all data collected would be required, given the circumstantial nature of any evidence of adverse impact.

The long-term water withdrawal for this project could also contribute to reduced baseflow to streams and water in the aquifer available for other users. Based on a hydrogeologic study in Canada in the 1980s (Kohut 1987) and a major recent study in Washington by the U.S. Geological Survey (1999), such depletion does not appear to be occurring now because recharge currently appears to be considerably greater than discharge to wells. No mitigation for this future impact has been recommended in the Final EIS because the project's contribution to aquifer depletion would be an increasingly small percentage over time as general users increase. Although several commentors requested further study to evaluate this impact, the scope and duration of such study would be disproportionate to the magnitude of the relatively minor contribution this project would have to the cumulative reduction in baseflow.

Numerous comments were received that expressed concerns about the environmental hazards that would be posed by the 2.5-million-gallon diesel fuel tank. Although the numerous safeguards that have been identified by the applicant would provide a reasonable degree of environmental protection, a catastrophic release, albeit unlikely, could result in severe damage to nearby surface water bodies. Additional measures that would reduce this danger include a rigorous monitoring program (employing personnel) or an alarm system to detect and report leaks, and a performance bond or other suitable financial instrument to help ensure a corporate commitment to maintaining safety systems, and to restoring the environment.

Divergent opinions have been offered by specialists in floodplain modeling about the adequacy of the City of Sumas' 100-year flood determination discussed in the Draft EIS, especially with respect to offsite effects. The City's consultant maintains that the flood hazard has been evaluated adequately, using a two-dimensional steady-state model accepted by the Federal Emergency Management Agency. In contrast, a flood specialist with the Whatcom County Engineering Department maintains that also employing a more sophisticated unsteady-state model would allow both storage and dynamic impacts to be defined more reliably. Considering the magnitude of flooding that has occurred in Sumas in the past and the concern that has been expressed by residents, it may be prudent to perform unsteady-state modeling, taking into consideration the actual footprint of the proposed site fill pad. If this methodology identifies unacceptable flood impacts, mitigation measures such as scalping a veneer of soil from the floodway or building in additional flood detention capacity at or near the S2GF site could be appropriately designed to offset the impact.

1.5.2 Wetlands

The acreage of wetlands associated with the S2GF site that is subject to state regulation has not been resolved. The U.S. Army Corps of Engineers does not regulate prior converted croplands under Section 404 of the Clean Water Act. The Washington Department of Ecology (Ecology) has the authority to regulate prior converted croplands at the proposed plant site under the authority of RCW 90.48 as part of Clean Water Act's 401 Water Quality Certification process. The wetland impact acreage reported in the Final EIS, 2.81 acres, excludes any wetland areas present on previously designated prior converted croplands. The applicant and Ecology have continued to clarify regulatory jurisdiction over prior converted croplands and to evaluate the total acreage of such prior converted croplands present on the site. Mitigation to compensate for the loss of such wetland area and functions might be required in addition to that reported in the Final EIS.

Please refer to Volume 2, General Response C - Wetland Impacts and Mitigation, for additional details regarding wetland delineation on the proposed site.

1.5.3 U.S./Canadian 230 kV Transmission Line

With regard to evaluating the potential effects of electric and magnetic fields (EMF), information is lacking regarding receptor locations along the route, especially in Canada. Specific distances to receptors are necessary to estimate the magnetic field strength at those locations. Knowing the field strength would allow a comparison of the magnetic field from the transmission line to that normally experienced in the average home.

Environmental impacts resulting from the construction and operation of the 230 kV transmission line sited in Canada will be assessed by appropriate Canadian regulatory jurisdictions.

1.6 Summary of Potential Impacts, Mitigation Measures, and Significant Unavoidable Adverse Impacts

Potential environmental impacts from the Proposed Action and the No Action Alternative are described in Chapter 3 of this EIS.

Three types of measures to avoid or reduce adverse environmental impacts resulting from the project are presented in the EIS: (1) measures inherent in project design; (2) best management practices (BMPs) incorporated into construction and operation; and (3) mitigation measures recommended to the applicant through the EIS process.

Measures to reduce adverse environmental impacts inherent in project design are presented in Section 2.4. Construction and operation BMPs and mitigation measures are presented within each section of Chapter 3 (air quality, water resources, noise, wetlands

and vegetation, etc.). No mitigation measures are required or presented for the No Action Alternative.

With the incorporation of all three types of measures described above, this project is expected to have some adverse impacts on the environment. However, even if these mitigation measures were required, it is not clear whether the probable adverse environmental impacts could be adequately addressed.

The No Action Alternative would have no significant adverse impacts on the environment at the particular location of the proposed project. Other environmental impacts could result from power providers' continued use of other or new power sources to meet the needs of their customers. It is impossible for this Final EIS to assess such other impacts.

Table 1-2 summarizes potential impacts and mitigation measures for the Proposed Action.

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Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
|--|--|
| Air Quality | |
| <p>Construction</p> <ul style="list-style-type: none"> ▪ Fugitive dust generated by excavation and minor combustion emissions from vehicles and equipment would occur during construction of the gas pipeline, water and wastewater lines, and electrical transmission lines. ▪ Dust would be generated by excavation and grading activities for the generation plant. Minor amounts of combustion emissions from equipment and vehicles would occur, including commute vehicles. ▪ Odors could be released from oil-based paint or asphalt. | <ul style="list-style-type: none"> ▪ None required for emissions. ▪ Dust from access roads and other fugitive dust sources would be controlled by applying gravel or paving access roads and spraying water. ▪ None required. |
| <p>Operation</p> <ul style="list-style-type: none"> ▪ Emissions of air pollutants such as nitrogen oxides, carbon monoxide, volatile organic compounds, particulate matter, sulfur dioxide would occur. ▪ Emissions of toxic pollutants such as ammonia, benzene, formaldehyde, lead would occur. ▪ Decreased visibility in scenic areas could occur. ▪ Deposition of sulfur and nitrogen compounds could occur. ▪ Local fogging and icing could result from cooling tower plumes. | <ul style="list-style-type: none"> ▪ Use of Best Available Control Technology (BACT) to control levels of pollutant emissions under the regulatory requirements of the Prevention of Significant Deterioration Program of the Clean Air Act. Under BACT, the “most stringent control technology” must be applied to the control of each pollutant, unless it can be demonstrated to EPA that less stringent measures would provide required control. ▪ See BACT above. ▪ See BACT above. ▪ See BACT above. ▪ None proposed. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
|--|---|
| <ul style="list-style-type: none"> ▪ The generation facility would contribute to emissions of “greenhouse gases” such as carbon dioxide which contribute to global warming. | <ul style="list-style-type: none"> ▪ The applicant proposes a voluntary investment of \$100,000 per year in greenhouse gas research, offsets, or management projects for ten years. |
| Water Resources | |
| <p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Degraded surface water quality could result from erosion after native soils are stripped to allow placement of surcharge piles and permanent fill material. It is likely that some turbid sediment would leave the site during construction. ▪ Potential impacts to groundwater quality could occur if contaminants were released into the surface water and/or were able to infiltrate to the groundwater. ▪ Potential contaminants in hydrostatic test water could impact surface water quality if not properly disposed. | <ul style="list-style-type: none"> ▪ Construction-phase erosion and sedimentation control BMPs from <i>the Stormwater Management Manual for the Puget Sound</i> (Ecology 1992, or as revised) would be implemented (as required by law). These measures would include chemical source control, silt fencing, cobbled construction entrances, street sweeping, straw bale check dams, rock cobble check dams (for velocity dissipation), and a siltation pond (the permanent detention/wet pond). ▪ Erosion control structures or devices would be regularly maintained and inspected to ensure compliance with state water quality standards. ▪ A Storm Water Pollution Prevention Plan (SWPPP) would be developed to address construction activities and handling of hazardous substances associated with the construction of the power plant, the gas, water, and wastewater pipelines, and the transmission line. The plan would address structural controls (silt fences, straw bale barriers, etc.), vegetation practices (temporary and permanent cover practices), and site management of solid, liquid, and hazardous materials and wastes. ▪ Hydrostatic test water would not be discharged directly into waters of the state. The water would be discharged into a Publicly Owned Treatment Work and would meet all applicable pre-treatment standards. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
|---|--|
| | <ul style="list-style-type: none"> ▪ The SWPPP would include notification procedures for spills and emergency response actions. Guidelines for spill reporting, SWPPP modification procedures, and availability and types of cleanup equipment available would be included in the SWPPP. Employees would have access to the SWPPP and be responsible for following it. ▪ The natural gas pipeline crossings of all wetlands and Sumas, Johnson, and Bone Creeks would be accomplished by using horizontal directional drilling (HDD) to install the gas pipeline under the water bodies. If a release of drilling mud to a stream were to occur through fracture of overlying sediment during the drilling process, the operator would immediately cease operations, notify EFSEC and the Department of Ecology, and take necessary steps to clean up the release. ▪ Additional measures that could be implemented to protect surface water resources include use of drilling mud that contains no oil or toxic substances, and monitoring of drilling mud pressures and recovery during drilling to prevent hydrofracturing of the soil and release of drilling fluids to the stream or wetland. |
| <p>Operation</p> <ul style="list-style-type: none"> ▪ Degraded surface and groundwater could result from runoff at the generation plant site. | <ul style="list-style-type: none"> ▪ Permanent BMPs would be employed to treat runoff from the site to comply with the Stormwater Management Manual for Puget Sound. These BMPs include chemical source control, stabilized landscaped areas, stabilized paved areas, catch basins and underground storm sewers, a combination detention pond/wet pond, and a grassy discharge channel. Runoff would be treated in an oil-water separator, pond, and/or bioswales before being discharged through a pipe to the unnamed tributary of Sumas Creek east of the site. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
|--|---|
| <ul style="list-style-type: none"> ▪ Surface water quality could be affected by an accidental chemical spill (e.g., gasoline), during rainfall, in an area that drains to the lined detention/wet pond, or from breach of the petroleum tank containment structure. ▪ Site operations could adversely affect the quality of groundwater if contaminants were accidentally released onsite and allowed to infiltrate to the aquifer. ▪ Water for operation would be purchased from the City of Sumas and supplied from the City’s existing well fields. Nearby irrigation wells and domestic wells could experience a drawdown in their operating water levels, especially during the dry months. Although the water level in these wells would rebound if the water supply wells were shut off, the City’s wells probably will not be shut off often or for long periods because of the increased demands on the water supply system. Any new wells and pumps installed in this zone would need to be designed to accommodate the locally depressed water level (e.g., somewhat deeper wells and greater pumping requirements). ▪ An increase in nitrate levels in city water, though uncertain, could result in a significant adverse impact to the municipal water supply. | <ul style="list-style-type: none"> ▪ Normal hazardous material cleanup techniques would be used to remove any spilled chemical product from the stormwater collection facilities and other areas where it had accumulated. ▪ The tank containment structure should be monitored daily to ensure that containment capacity is not consumed (10 percent of volume) by standing rainwater. ▪ Chemical releases resulting from accidental spills would be contained by the impervious surfaces and the stormwater detention system, and cleanup of any releases would be accomplished so as to minimize the potential for migration to groundwater. Accidental releases during fueling would be contained in a paved bermed area, and the fuel tank will be enclosed in a dike and spill retention pond of sufficient size to accommodate one and one-half times the full tank volume. ▪ The applicant would construct a 1,000,000-gallon water storage tank to provide 500,000 gallons along with periodic water level monitoring to determine where mitigation would be necessary for its peak water demand. The storage tank would be filled during off-peak times (for example, at midnight and the early morning hours). ▪ SE2 has committed to pay for a potable water treatment facility if nitrates are detected in the City of Sumas water supply exceeding drinking water standards. Installation of such a system would reduce the impact to the city water supply. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
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| <ul style="list-style-type: none"> ▪ Potential long-term effects on baseflow of local streams due to lowering the level of the Sumas aquifer cannot be quantified due to insufficient data. ▪ There is a potential that increased groundwater extraction may result in increased nitrate levels in the City wells and streams. The increase in nitrates in well water released to surface water resulting from the cumulative effect of all groundwater extraction is not expected to cause a significant change in the nutrient dynamics of Johnson Creek due to the prevalence of agricultural sources of nitrate. If groundwater quality deteriorates as a result of pumping, any impact resulting from this project would be incremental and might occur over time with or without this project as the City finds other uses for its groundwater resource. ▪ There is a potential that increased groundwater extraction may result in increased nitrate levels in private wells within a 1-mile radius of the City well fields that are impaired as a result of the increased pumping for this project. ▪ Raising the generation plant site grade has a potential to raise the 100-year floodplain elevation on adjacent properties. If completely built out, the entire industrial area may increase flood levels up to 1 foot. The proposed S2GF would contribute incrementally to this increase. | <ul style="list-style-type: none"> ▪ The applicant has agreed to provide mitigation for any U.S. wells within a 1-mile radius of the City well fields that are impaired as a result of the increased pumping for this project. It is recommended that mitigation be provided to wells that are impaired in both the U.S. and Canada, and that a well survey be conducted to establish baseline conditions in these wells in advance of plant startup. ▪ None proposed. ▪ Water quality monitoring to test for nitrate levels would continue to be performed on a regular basis. The applicant proposes to provide for water treatment in the event that nitrate levels in the City’s potable water supply exceed drinking water standards. It is recommended that provisions be made to provide an alternative source of potable water to City water users if a lag time exists between water quality standard exceedance and operation of the treatment system. ▪ Periodic collection of water samples for nitrate analysis from drinking water wells within the cone of depression of the City’s well fields, with careful analysis and interpretation of data given the circumstantial nature of any evidence of adverse impact. ▪ None proposed. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
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| <ul style="list-style-type: none"> ▪ The proposed project could be an impediment to flood flow, redirecting flood flow and increasing flood water velocity toward a nearby building to the southeast. | <ul style="list-style-type: none"> ▪ The proposed site design incorporates a diversion channel around the south and southeast portion of the facility. A combination of 42-inch culverts and large open ditches would be provided to convey the water around the site and to prevent the concentration of floodwaters along ditches. The site would be graded so that in the event that any of the large culverts within the project were blocked, the floodwater would remain in an “overflow” alignment that would keep flood flows within the project boundaries and avoid damage to adjoining property. |
| Noise | |
| <p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Temporary noise from construction activities would occur during daytime hours. <p><i>Operation</i></p> <ul style="list-style-type: none"> ▪ Noise would be generated at the plant site within regulatory standards and federal agency guidelines. Under stable atmospheric conditions, noise levels generated at the plant are expected to be equal to or slightly lower than the City’s 50 dBA night limit for industrial noise sources affecting residential receivers, and at least 10 dBA lower than the daytime noise limit. | <ul style="list-style-type: none"> ▪ The construction site would comply with state and local regulations and ordinances for noise emissions during day-time hours. ▪ The turbines would be placed within an enclosed building to reduce noise. ▪ Noise levels would be measured at startup of the facility, and equipment suppliers would be required to retrofit equipment if necessary to meet the performance specifications. Although the noise modeling does not indicate it will be necessary, additional noise walls and other forms of mitigation would be employed to meet standards based on the monitored noise levels at startup. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
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| <ul style="list-style-type: none"> ▪ The highest sound levels from the plant would be along the eastern property line, where the maximum predicted sound level just meets the 70 dBA limit under stable atmospheric conditions. | <ul style="list-style-type: none"> ▪ The applicant plans to purchase the adjacent property east of the site from the Port of Bellingham. If this is accomplished, the plant site would be increased by the width of that property, and estimated sound levels at the new site property line would range from 60 to 62 dBA and would meet the standard. |
| Vegetation and Wetlands | |
| <p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ A total 27.5 acres of agricultural land at the plant site would be permanently lost. ▪ Wetland impacts include 2.81 acres of permanent fill (including farmed wetland pasture and a wetland ditch). | <ul style="list-style-type: none"> ▪ None proposed. ▪ A 1.1-acre mitigation area is proposed by the applicant to compensate for the emergent wetlands to be lost upon site construction. Compensatory mitigation would consist of creating and enhancing 9.16 acres of wetlands and 0.81 acre of wetland buffer. The proposed 9.16-acre wetland enhancement (5.99 acres) and creation area (3.17 acres) is located along the south edge of the 8.8-acre palustrine shrub/forested (PSS/PFO) wetland located immediately west of the plant site and a second site east of the plant. The combined mitigation ratio (creation/enhancement area to impact area) is 3.54:1. The entire 19.41-acre mitigation area of preserved, new or enhanced wetlands and buffer would be dedicated to the City of Sumas as permanent open space or placed in a conservation easement. ▪ A ten-year monitoring period would be implemented to ensure plant establishment and that wetland hydrology is functioning appropriately and would incorporate performance plans and monitoring methods identified in the supplemental agreement between SE2 and Ecology (Appendix G). |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
|-------------------------|---|
| | <ul style="list-style-type: none"> <li data-bbox="1062 337 1829 427">▪ All pre- and post-construction mitigation measures identified in the supplemental agreements with Ecology and WDFW would be implemented (Appendix G). <li data-bbox="1062 459 1850 516">▪ Disturbed emergent wetland areas would be reseeded or hydroseeded with a native grass mix. <li data-bbox="1062 548 1797 581">▪ Affected wetland areas would be graded to pre-project contours. <li data-bbox="1062 613 1885 703">▪ No staging of equipment or stockpiled soils for the gas pipeline are proposed within 50 feet of the wetlands, except for temporarily side-cast trench material in the approaches to the drilled sections. <li data-bbox="1062 735 1864 768">▪ No trees would be removed for the installation of the new gas pipeline. <li data-bbox="1062 849 1871 906">▪ Silt fencing would be used to protect wetlands outside the construction corridor from sedimentation. <li data-bbox="1062 954 1829 1044">▪ Impermeable material would be installed at the edge of the wetland where appropriate, and in the pipeline trench, preventing wetland drainage. <li data-bbox="1062 1076 1860 1166">▪ The top 12 inches of topsoil removed for utility and gas pipeline construction would be salvaged and then replaced after construction is complete. <li data-bbox="1062 1198 1881 1255">▪ Construction mats would be used in saturated wetland areas to minimize soil rutting and plant disturbance. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
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| <ul style="list-style-type: none"> ▪ Two of the poles for the 230 kV electric transmission line may be located at the edge of Category III PSS and PEM wetlands, resulting in less than 0.1 acre impact each; however, another unrelated project may impact these areas before the transmission line is constructed. ▪ Depending on tree location relative to the electrical transmission lines, some trees would be cut down, and some trees would be trimmed to a height of 25 feet. | <ul style="list-style-type: none"> ▪ Wetland buffer impacts would be compensated by hydroseeding any disturbed area in the pasture land with similar grass species. ▪ Trimmed material and tree trunks would be left on the ground in naturally vegetated areas for habitat features. Cut debris would be removed from streams to prevent obstructing flow through culverts. Clearing and trimming in areas that are not currently maintained would be minimized by strategic placement of utility and transmission lines. ▪ All pre- and post-construction mitigation measures identified in the supplemental agreements with Ecology and WDFW would be implemented (Appendix G). |
| Fish and Wildlife | |
| <p><i>Construction – Wildlife</i></p> <ul style="list-style-type: none"> ▪ Potential destruction of active bird nests or other breeding wildlife. ▪ Wildlife habitat associated with the S2GF site wetland would be lost. ▪ Temporary loss of common habitat types along natural gas pipeline (40 acres) and water/wastewater pipelines (1 acre). ▪ Disturbance along transmission lines to install poles. | <ul style="list-style-type: none"> ▪ Clearing during active breeding season (March 15 through July 15 of any given year) should be prohibited. ▪ Habitat functions would be replaced through wetland mitigation. ▪ None required. ▪ No specific measures required, but many BMPs serve to further reduce impacts. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
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| <ul style="list-style-type: none"> ▪ Additional width for pruning along existing transmission lines (two routes). | <ul style="list-style-type: none"> ▪ Pruned material should be left on the ground in naturally vegetated areas to contribute to woody debris and organic materials. |
| <p><i>Construction – Fish</i></p> <ul style="list-style-type: none"> ▪ Removal of some trees would occur in the riparian buffer at the transmission line crossing of Sumas Creek. ▪ There is potential for a reduction in water quality and thus fish habitat from construction activities. | <ul style="list-style-type: none"> ▪ A compensation plan should be developed for lost habitat function through riparian enhancement including removal of non-native vegetation (e.g. Japanese knotweed, Himalayan blackberry) and replacement with native vegetation (e.g. Sitka willow, Scouler’s willow, Pacific willow and cottonwood). ▪ See mitigation measures for water resources. |
| <p><i>Operation – Wildlife</i></p> <ul style="list-style-type: none"> ▪ Destruction of bird nests and/or eggs could occur during clearing to maintain transmission line rights-of-way. ▪ There is potential for avian collisions with transmission lines. ▪ There is potential for electrocution of hawks and eagles perching on transmission poles. | <ul style="list-style-type: none"> ▪ Clearing during active breeding season (March 15 through July 15 of any given year) should be prohibited. ▪ Measures recommended by the Avian Power Line Interaction Committee, including placement of visual markers over rivers and other known flyways should be implemented. ▪ Adequate spacing of conductors and other live-wire features (per O’Neil, 1988) should be provided. |
| <p><i>Operation – Fish</i></p> <ul style="list-style-type: none"> ▪ Water quality impacts could occur from storm water runoff at S2GF site. | <ul style="list-style-type: none"> ▪ See mitigation measures for water resources. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
|---|--|
| Socioeconomics | |
| <p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ It is expected that during the peak of construction, a maximum of approximately 140 construction workers would require temporary housing in the general vicinity of the S2GF site. ▪ Total payroll costs for the S2GF, including fringe benefits and other labor overhead costs, are projected at \$30.6 million. It is anticipated that approximately \$11 million would be expended in Whatcom County during project construction. ▪ Local (Whatcom County) non-salary expenditures for materials, services, and equipment leasing associated with construction are projected to total about \$22 million. ▪ Based on the IMPLAN database, the project would generate 645 worker-years of direct employment at the site during the 1-1/2 years of construction. The stimulus to enterprises and government agencies throughout Whatcom County from project and worker spending would create approximately 2,430 worker-years of additional indirect and induced employment. ▪ The state use tax levied on out-of-state procurements, coupled with the taxable in-state purchases of goods and services (total taxable purchases would equal approximately \$280 million), would generate an estimated \$18 million for the State of Washington. \$3.4 million would be generated for Whatcom County and the cities where purchases are made. | <ul style="list-style-type: none"> ▪ None required. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
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| <ul style="list-style-type: none"> ▪ Local park and recreation facility users are expected to experience minor impacts resulting from the use of RV spaces by construction workers. ▪ Construction workers commuting into the local communities may create a minor and temporary increase in the demand placed on public service providers, utilities, and schools. | <ul style="list-style-type: none"> ▪ None required. ▪ None required. |
| <p><i>Operation</i></p> <ul style="list-style-type: none"> ▪ Emergencies resulting from facility operation (e.g., fires, worker injuries, etc.) could place increased demands on emergency response services. ▪ There would be a potential positive impact on public service and utility finances due to S2GF operation. The operational plant’s assessed value would be approximately \$385 million, and would generate several million dollars per year in property and sales tax revenues for municipal, county, school district, and other local jurisdictions. | <ul style="list-style-type: none"> ▪ During operation, on-site security personnel, a fire brigade, and an emergency medical response team would provide essential public services. Use of on-site services and emergency response plans and devices, coupled with the relatively small number of employees that would staff the facility, would minimize additional demands placed on local public services during normal operations. ▪ The facility’s emergency response plan would incorporate the existing mutual aid agreements with Cherry Point refinery staff, or develop a plan to establish agreements with Canadian authorities, who may be closer. ▪ None required. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
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| Traffic, Parking, and Transportation | |
| <p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Trucks carrying fill for site preparation would travel between the S2GF site and gravel mining and processing facilities located to the south. The effect of 30 inbound and 30 outbound truck trips per hour on SR 9 would be a noticeable change during the site preparation phase. ▪ There is the potential that trucks leaving the S2GF site will carry mud onto adjacent roads. ▪ A peak of 400 construction workers may be onsite during the construction phase. The 300-car onsite parking lot may not accommodate the total number of worker vehicles. | <ul style="list-style-type: none"> ▪ The contractor should provide temporary traffic controls during periods of heavy truck traffic. ▪ Construction documents would require the contractors to submit (for review and approval) a traffic management plan addressing all aspects of project construction. The specification would further require specific repair procedures and cleanup provisions to maintain the existing roads in their preconstruction condition. If the construction traffic causes damage to the affected roads, the contractor would be required to repair those sections to meet state and local standards. The plan should include provisions to clean exiting trucks as well as monitor and clean adjacent roads as needed. ▪ Carpooling of construction workers would be encouraged. ▪ The applicant would provide additional nearby parking immediately if the 300-car lot is insufficient. ▪ The contractor should monitor adjacent roads if required to prevent spillover parking. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
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| <ul style="list-style-type: none"> ▪ Temporary street closures may occur while transmission poles are installed and maintained. | <ul style="list-style-type: none"> ▪ Construction documents would require the contractors to submit (for review and approval) a traffic management plan addressing all aspects of project construction. |
| <p><i>Operation</i></p> <ul style="list-style-type: none"> ▪ First filling of diesel storage tank would require tanker truck traffic at a rate of one truck per hour for ten to fifteen days. ▪ During periods of extended oil firing up to four tanker trucks per hour would be crossing the Canada/U.S. border and proceeding through the City of Sumas to the site. | <ul style="list-style-type: none"> ▪ None proposed. ▪ None proposed. |
| Communications | |
| <p><i>Construction</i></p> <ul style="list-style-type: none"> ▪ Excavations for the natural gas, water, or sewer pipelines could potentially damage underground utilities, including communications cables. | <ul style="list-style-type: none"> ▪ The contractor would be required to use the state “One-Call” system to locate and mark utilities prior to construction, and to coordinate with local utility providers. |
| Health and Safety | |
| <p><i>Construction/Operation</i></p> <ul style="list-style-type: none"> ▪ Potential explosion and fire could result from a failure of the natural gas supply pipeline, causing human and environmental damage. | <ul style="list-style-type: none"> ▪ Experienced pipeline engineers would design the natural gas pipeline to meet or exceed all regulatory and safety requirements. ▪ The pipe would be manufactured according to specifications that exceed the industry standard API-5L. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
|-------------------------|--|
| | <ul style="list-style-type: none"> <li data-bbox="1062 342 1850 399">▪ The pipe would be coated with fusion-bonded epoxy or an equivalent watertight coating to minimize the possibility of corrosion. <li data-bbox="1062 431 1871 578">▪ Construction would be governed by a comprehensive set of specifications, and would be monitored by an experienced construction management team to ensure compliance with those specifications. These specifications would be provided to EFSEC for review and approval prior to the start of construction. <li data-bbox="1062 610 1881 732">▪ Although federal regulations require natural gas pipelines to be buried a minimum of 3 feet, the applicant would construct the pipeline at a minimum depth of 4.5 feet to ensure that farming equipment would not come in contact with the pipe. <li data-bbox="1062 764 1871 854">▪ Welding inspectors would be onsite during construction to inspect each weld and verify that proper welding procedures have been used. The applicant would inspect all welds radiographically. <li data-bbox="1062 886 1850 943">▪ All pipe bends would be large-radius bends to minimize stress on the pipe. <li data-bbox="1062 976 1860 1130">▪ Following construction, the applicant would conduct a line inspection with an internal inspection device commonly known as a “smart pig.” This would verify the integrity of the line, remove debris, remove liquids remaining from the pressure testing, and serve as a baseline for use in evaluating the pipeline’s condition with subsequent inspections. <li data-bbox="1062 1162 1797 1252">▪ Following installation, the applicant would test the pipeline hydrostatically to not less than 1.5 times the maximum allowable operating pressure prior to covering. |

Table 1-2: Summary of Potential Impacts and Mitigation for S2GF Project

| Potential Impact | Mitigation |
|-------------------------|--|
| | <ul style="list-style-type: none"> ▪ The cathodic protection system would be designed based on the results of a site-specific cathodic protection survey. Test stations would also be installed at several locations along the line to facilitate monitoring of the system. ▪ Pressure control instrumentation would be used to keep the pipeline operating within specified pressure limits. Emergency pressure relief valves with vent stacks would be installed near the facility to relieve natural gas pressure buildup if a surge condition occurs. These relief valves would prevent the pressure in the line from rising above maximum allowable operating pressure. ▪ The location of the pipeline would be marked with staked signs. There would also be a warning tape placed in the trench above the pipeline to warn anyone excavating in the vicinity of the pipeline’s location. ▪ Qualified inspectors would regularly inspect the physical condition of the right-of-way, watching for encroaching activities that might damage the pipeline and other causes for concern. Qualified inspectors would monitor the effectiveness of the cathodic protection system. ▪ The applicant would conduct internal (“smart pig”) inspections of the pipeline to verify weld and pipe wall thickness and integrity every five years. ▪ The natural gas pipeline would be designed and constructed to meet or exceed all of the requirements set out in the partial settlement agreement between the applicant and the Washington State Utilities and Transportation Commission concerning natural gas pipeline issues (see Appendix G). |