



Federal Energy  
Regulatory  
Commission

Office of  
Energy Projects

March 2020

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Puget Sound Energy, Inc.

Docket No. CP20-15-000

# Jackson Prairie Storage Project

## Environmental Assessment

Washington, DC 20426

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## TECHNICAL ACRONYMS AND ABBREVIATIONS

AQCR	Air Quality Control Regions
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
Commission	Federal Energy Regulatory Commission
CO <sub>2</sub>	carbon dioxide
dBA	decibels on the A-weighted scale
DOT	Department of Transportation
EA	environmental assessment
EI	environmental inspector
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
ft, bgs	feet below ground surface
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gas
GWP	global warming potential
L <sub>eq</sub>	24-hour equivalent sound level
L <sub>dn</sub>	day-night sound level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NNSR	Nonattainment New Source Review
NOI	<i>Notice of Intent to Prepare an Environmental Assessment for the Proposed Jackson Prairie Storage Project</i>
NO <sub>x</sub>	nitrogen oxides
NSA	noise sensitive area
OEP	Office of Energy Projects
Plan	FERC's <i>Upland Erosion Control, Revegetation, and Maintenance Plan</i> FERC's <i>Wetland and Waterbody Construction and Mitigation</i>
Procedures	<i>Procedures</i>
Project	Jackson Prairie Storage Project
Puget Sound	Puget Sound Energy, Inc.
Secretary	Secretary of the Commission
SO <sub>2</sub>	sulfur dioxide
USGS	U. S. Geological Survey

## **A. PROPOSED ACTION**

### **1.0 INTRODUCTION**

On November 15, 2019, Puget Sound Energy, Inc. (Puget Sound) filed an application with the Federal Energy Regulatory Commission (FERC or Commission) in Docket No. CP20-15-000 for authorization under section 7(c) of the Natural Gas Act (NGA)<sup>1</sup> to perform well recompletion activities at its existing Well SU-50 within its Jackson Prairie Storage facility in Lewis County, Washington. The proposed project is known as the Jackson Prairie Storage Project (Project).

We<sup>2</sup> prepared this environmental assessment (EA) in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality's regulations for implementing NEPA (Title 40 of the Code of Federal Regulations [CFR], Parts 1500-1508 [40 CFR 1500-1508]), and the Commission's regulations for implementing NEPA (18 CFR 380). The assessment of environmental impacts is an important and integral part of the Commission's decision-making process. As such, we prepared this EA to assess the environmental impacts that would likely occur as a result of the proposed Project. We have developed and incorporated measures into this EA that we believe would appropriately and reasonably avoid, minimize, or mitigate environmental impacts associated with the Project activities.

The Jackson Prairie Storage facility is an aquifer-type storage facility that includes three natural gas storage reservoirs referred to as Zone 1, Zone 2, and Zone 9. All three reservoirs are sandstone saline aquifers overlain by shale caprock. Well SU-50 in Zone 2, the primary storage reservoir, is at a depth of 1,783 to 1,920 feet below the ground surface (ft, bgs). Zone 1 is at a depth of 1,384 to 1,496 ft, bgs and is used to recapture and reinject natural gas that migrates from Zone 2. Zone 9, a separate reservoir below Zone 2, is used to help maintain the deliverability for storage services provided from the Zone 2 reservoir.

Well SU-50 was originally constructed in the 1970s, with two casing strings installed and cement grouted to meet state regulations. Surface casing (10.75-inch-diameter) and associated cement grout extend to a depth of 616 ft, bgs, below which blank production casing (7-inch-diameter) was installed and cement grouted above the top of the Zone 2 reservoir at a depth of 1,783 ft, bgs. A 4-inch-diameter slotted casing was then set and gravel packed through Zone 2 to a depth of 1,940 ft, bgs.

Pursuant to its existing blanket certificate authority, Puget Sound plugged Well SU-50 in 2019 via installation of a cast iron bridge plug and cement plug above the Zone 2 interval, at depths of 1,742, and 1,742 to 1,642 ft, bgs, respectively.

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<sup>1</sup> Title 15 of the U.S. Code, section 717f (c) (2020).

<sup>2</sup> "We," "us," and "our" refer to the environmental staff of the Office of Energy Projects.

Puget Sound proposes to recomplete Well SU-50 from Zone 2 to Zone 1, making it a gas recycle well. Currently, Well SU-63 is the only gas recycle well for the Zone 1 gas reservoir. Well SU-63 needs to be taken offline for maintenance in order to replace the well's sand liner. Well SU-50 recompletion efforts would involve setting a cast iron bridge plug below the Zone 1 interval, then perforating the existing production casing within the Zone 1 interval (1,426 to 1,448 ft, bgs). Finally, Puget Sound would install a new slotted liner, gravel pack the wellbore, pull the existing well string, and complete visual inspections of the string prior to reinstallation. No new casing would be installed, and existing production and surficial casing above Zone 1 would not be modified. Current and proposed well completion schematics for Well SU-50 are provided in Appendix A. ReCompleting Well SU-50 from Zone 2 to Zone 1 would provide Puget Sound with a backup recycle well when maintenance is conducted on Well SU-63. Further, Well SU-50 is on an existing well pad shared with Well SU-63. All well recompletion work would be conducted downhole, there would be no surface disturbance associated with Project construction. No other facilities are proposed.

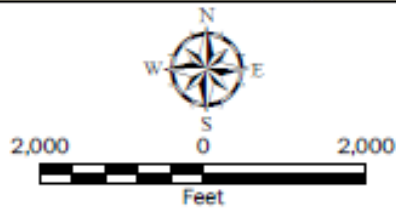
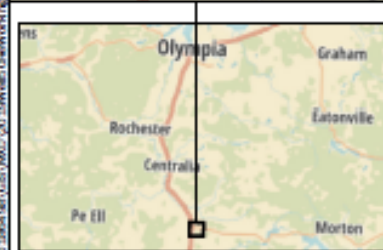
A U.S. Geological Survey (USGS) topographic map and detailed location map of the Project is shown in figure 1.

## **2.0 PROJECT PURPOSE AND NEED**

Puget Sound states the purpose of the Project would be to increase operational efficiency and provide a backup gas recycle well when maintenance is required on its Well SU-63. Gas recycling allows Puget Sound to recover natural gas that has migrated from Zone 2 to Zone 1. Well SU-50 is not material to Jackson Prairie meeting its contractual obligations from Zone 2; and would not materially affect Jackson Prairie's operation of Zone 2, which is the basis of Jackson Prairie's gas storage service. Puget Sound states, recompleting Well SU-50 from Zone 2 to Zone 1 would allow Jackson Prairie to more efficiently manage its current operations and would not impact service to its customers.

Under section 7(c) of the NGA, the Commission determines whether facilities are in the public convenience and necessity and, if so, grants a Certificate of Public Convenience and Necessity to construct and operate them. The Commission bases its decisions on both economic issues, including need, and environmental impacts.

## Figure 1 Project Site Map



**Notes:**

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2018

Projection: NAD 1983 UTM Zone 10N

<b>Vicinity Map</b>	
Well No. 50 2019 Re-Working Lewis County, Washington	
<b>GEOENGINEERS</b>	<b>Figure 1</b>

### **3.0 SCOPE OF THIS ENVIRONMENTAL ASSESSMENT**

The topics addressed in this EA include geology, soils, groundwater, surface waters, wetlands, fisheries, wildlife, vegetation, species of special concern, land use, recreation, visual impacts, cultural resources, air quality, noise, reliability and safety, cumulative impacts, and alternatives. This EA describes the affected environment as it currently exists and the environmental consequences of the Project and compares the Project's potential impact with that of various alternatives. This EA also presents our recommended mitigation measures.

As the lead federal agency for the Project, FERC is required to comply with section 7 of the Endangered Species Act, as amended, and section 106 of the National Historic Preservation Act. These statutes have been considered in the preparation of this EA. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing permits for all or part of the Project. Permits, approvals, and consultations for the Project are discussed in section A.9.0 of this EA.

### **4.0 PUBLIC REVIEW AND COMMENT**

On January 6, 2020 the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Jackson Prairie Storage Project and Request for Comments on Environmental Issues* (NOI). The NOI was sent to affected landowners; federal agencies; Native American tribes; other interested parties; and local libraries and newspapers. Comments were requested from the public on specific concerns about the Project or environmental issues that should be considered during the preparation of the EA. The Commission did not receive any comments.

### **5.0 LAND REQUIREMENTS**

Well SU-50 is on an existing 0.3-acre gravel pad. Puget Sound is not modifying or expanding the existing well pad in connection with the Project. There are no additional land requirements, including no new or increased workspace or access roads, due to this Project, as such, there would be no ground disturbance.

### **6.0 CONSTRUCTION SCHEDULE**

Puget Sound anticipates mobilizing within 24 months from receipt of the Certificate of Public Convenience and Necessity. Puget Sound estimates work to be completed within a 5 day time period from the start of construct. Puget Sound plans to do the work in a window between March and June to utilize lower reservoir pressures.



## 7.0 CONSTRUCTION AND OPERATION PROCEDURES

Puget Sound would design, construct, test, operate, and maintain the proposed facilities to conform with or exceed federal, state, and local requirements, including the U.S. Department of Transportation's (DOT) Minimum Safety Standards in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*, and 18 CFR 380.15, *Siting and Maintenance Requirements*.

During construction and restoration of the Project, Puget Sound would implement the applicable measures contained in the following plans, in addition to other federal, state, and local permit requirements:

- FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan);<sup>3</sup>
- FERC's *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures);<sup>4</sup>
- Spill Prevention Control and Countermeasures Plan (SPCC Plan);
- Plan for the Unanticipated Discovery of Historic Properties and Human Remains During Construction; and
- Temporary Erosion and Sedimentation Control Plan.

FERC's Plan and Procedures are baseline construction and mitigation measures developed to minimize the potential environmental impacts of construction on upland areas, wetlands, and waterbodies. Puget Sound does not propose any modifications to FERC's Plan and Procedures.

Puget Sound would employ an environmental inspector (EI) to oversee and document environmental compliance. All Project-related construction personnel would be informed of the EI's authority and would receive job-appropriate environmental training prior to commencement of work on the Project. Depending on the progress of the construction, additional EIs may be added as necessary.

All the proposed facilities are on level surface that would not require grading or leveling. Proposed facilities would be operated and maintained in compliance with DOT requirements. Procedures would include periodic inspection of wells, pipelines, and maintenance of well pads. The existing access roads and turnabouts would be maintained outside of the graveled wellhead and associated equipment.

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<sup>3</sup> The FERC Plan can be viewed on the FERC website <http://www.ferc.gov/industries/gas/enviro/plan.pdf>.

<sup>4</sup> The FERC Procedures can be viewed on the FERC website <https://www.ferc.gov/industries/gas/enviro/procedures.pdf>.

## 8.0 NON-JURISDICTIONAL FACILITIES

Under Section 7 of the NGA, the Commission is required to consider, as part of the decision to approve facilities under its jurisdiction, all factors bearing on the public interest. Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These “non-jurisdictional” facilities may be integral to the need for the proposed facilities, such as a power plant at the end of a jurisdictional pipeline, or they may be minor, non-integral components of the facilities under the Commission’s jurisdiction.

No non-jurisdictional facilities were identified for this Project.

## 9.0 PERMITS AND CONSULTATIONS

Puget Sound has pre-existing federal, state, and local permits for the Project in place. The only outstanding federal permit necessary for this Project to proceed would be the FERC Certificate of Public Convenience and Necessity. Table 1 lists all applicable permits for this Project.

<b>Table 1</b>		
<b>Anticipated Environmental Permits, Reviews, and Consultations for the Project</b>		
<b>Agency</b>	<b>Permit/Approval/Consultations</b>	<b>Status</b>
<b>FEDERAL</b>		
Federal Energy Regulatory Commission	Abbreviated Application for Amendment to Certificate of Public Convenience and Necessity Authorization Issued in Docket No. CP06-465-000 under Section 7 of the Natural Gas Act to Recomplete Well SU-50	Application filed November 15, 2019
U.S. Fish and Wildlife Service	Section 7 of the Endangered Species Act; the Migratory Bird Treaty Act; and the Fish and Wildlife Coordination Act (16 USC 661 et seq.)	No effect determination. No further consultation necessary under Section 7.
<b>WASHINGTON STATE</b>		
State of Washington Department of Ecology	National Pollutant Discharge Elimination System General Permit For Discharges From Hydrostatic Testing Of Tanks And Pipelines 3800-PM-BCW0173 (PAG-10)	NPDES Permit No. WA0040827 reissued effective as of October 1, 2019.
	Industrial Stormwater General Permit	Permit No. WAR011983 reissued effective as of January 1, 2020.
Washington State Historic Preservation Office	Section 106 of the National Historic Preservation Act review.	No potential effect on historic properties as no ground disturbance is anticipated. Original consultation for Jackson Prairie Facility occurred August 20, 2013. No further consultation necessary under section 106.

## **B. ENVIRONMENTAL ANALYSIS**

The following sections discuss the Project's potential direct and indirect impacts on environmental resources. When considering the environmental consequences of the Project, the duration and significance of any potential impacts are described below according to the following four levels: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately. Short-term impacts could continue for up to three years following construction. Long-term impacts would require more than three years to recover, but eventually would recover to pre-construction conditions. Permanent impacts are defined as activities that modify resources to the extent that they may not return to pre-construction conditions during the life of the Project, such as with the construction of an aboveground facility. An impact would be considered significant if it would result in a substantial adverse change in the physical environment. Our analysis also addresses direct and indirect effects collectively by resource.

In the following sections, we address direct and indirect effects collectively, by resource. Given that the Project involves only subsurface activities at an existing well (downhole modification and hydrostatic testing), with no new disturbance, the following resources are either not present or would not be affected by the Project's activities and are not discussed further:

- geology;
- surface waters, wetlands;
- vegetation, wildlife, and fisheries;
- recreation, scenic places; and
- socioeconomics.

In addition, we do not anticipate geologic hazards, such as seismicity, land subsidence, landslides, or volcanism to impact construction or operation of the Project.

We conclude the follow resources would not be adversely affected by the proposed action, as discussed further below.

- groundwater resources;
- threatened and endangered species;
- cultural resources;
- land use, visual resources;
- air quality and noise;
- alternatives; and
- cumulative impacts.

The analysis contained in this EA is based upon Puget Sound’s application and supplemental filings and our experience with the construction and operation of natural gas infrastructure. However, if the Project is approved and proceeds to the construction phase, it is not uncommon for a project proponent to require modifications (e.g., minor changes in workspace configurations). These changes are often identified by a company once on-the-ground implementation work is initiated. Any Project modifications would be subject to review and approval from FERC’s Director of the Office of Energy Projects (OEP) and any other permitting/authorizing agencies with jurisdiction.

## **1.0 GROUNDWATER RESOURCES**

The Project area is underlain by the Pleistocene-age Logan Hill formation, which is underlain by rocks of Tertiary age—generally sandstone interbedded with shale, siltstone, and coal. The Logan Hill formation is comprised of a heterogeneous mixture of gravel and sand and minor amounts of silt and clay, and averages 150 feet in thickness (Weigle and Foxworthy, 1962). Groundwater yield from the Tertiary-age rocks is small in comparison to the overlying Logan Hill formation. Consequently, most water supply wells drilled in the Project vicinity are within the Logan Hill formation and are generally less than 200 feet deep (Lewis County, 2013; Weigle and Foxworthy, 1962). Comparatively, the depth to the shallowest natural gas saline-aquifer reservoir (Zone 1), is approximately 1,384 feet. As discussed in section A.1.0, the existing production and surficial casing above Zone 1 would not be modified during the recompletion work on Well SU-50. Puget Sound performed integrity surveys (pressure testing and casing inspection logs) in March 2019 that confirmed absence of damage or anomalies in the well casing.

The U.S. Environmental Protection Agency (EPA) oversees the Sole Source Aquifer Protection Program that is designed to protect aquifers that supply at least 50 percent or more of the drinking water for its service area, and for which there are no reasonably available alternative drinking water sources, should the aquifer become contaminated. The Project would not overlie a EPA sole source aquifer (EPA, 2019). The Project is also not within a Lewis County Category I critical aquifer recharge area<sup>5</sup> (Lewis County, 2011). Further, Puget Sound did not identify private or municipal water supply wells or springs within 150 feet of the proposed work areas (Washington State Department of Ecology, 2020). The nearest known water supply well is 1,400 feet from the Project work area.

The Project would primarily use saltwater produced from the gas storage aquifer to make up workover fluids. Specifically, 2,730 gallons of saltwater would be mixed with additives to set a “pill” (temporary plug) on the bottom of the hole to inhibit the

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<sup>5</sup> 10-year time of travel area for a public water system or within a known area of susceptible groundwater supplies (Lewis County Code, Chapter 17, Article VI)

formation from taking in well fluid. Additives would be for viscosity and fluid weight control and would include hydroxyethyl cellulose polymer, starch, chlorinating granules, and salt. Additionally, up to 21,000 gallons of saltwater may be consumed during the workover to balance the formation pressure and as needed for additional well control during workover activities.

Freshwater for Project activities would be obtained from water supply wells that are part of Puget Sound's existing domestic water system, approximately 2,550 feet from the Project workspace. Hydrostatic testing of Well SU-50 after recompletion would require less than 1,000 gallons of fresh water. Puget Sound may also utilize up to 1,260 gallons of fresh water for dust suppression purposes.

All fluid handling would be confined to steel storage and or operational tanks on location or at another nearby location. All used fluid, including hydrostatic test water, would be collected and analyzed for disposal procedures. The Project would not impact operational water use of the Jackson Prairie Storage facility.

Groundwater contamination could occur from accidental spills of fuels, solvents, lubricants, and other materials used during Project construction. Puget Sound would implement the measures outlined in its SPCC Plan to minimize the potential for spills, as well as ensure that spills are properly contained and remediated.

Based on the nature of Project activities involving downhole well recompletion work only at an existing well; no modifications to the existing surface and production casing protecting the surficial aquifers; Puget Sound's measures for fluids management and spill containment and disposal; and an absence of nearby sole-source aquifers, Lewis County Critical Recharge area, and potable water supply wells, we conclude that there would be no significant impacts on groundwater resources.

## **2.0 THREATENED AND ENDANGERED SPECIES**

On September 20, 2019, and September 27, 2019, Puget Sound obtained a list of state listed and federally listed threatened and endangered species and critical habitats in the Project action area from the Washington Department of Fish and Wildlife, the National Oceanic and Atmospheric Association Fisheries, and the U.S. Fish and Wildlife Service Information for Planning and Consultation. Puget Sound identified six federally threatened species (marbled murrelet, streaked horned lark, yellow-billed cuckoo, bull trout, golden paintbrush, and kincaid's lupine), one federally proposed endangered species (gray wolf), and one federally proposed threatened species (North American wolverine). Given that the Project is limited to subsurface activities at an existing well (downhole modification and hydrostatic testing), and no ground disturbance is proposed for this Project, we have determined that the Project would have a *no effect* determination on federally listed species, and no further consultation under section 7 of the Endangered Species Act is required.

Puget Sound identified twenty-three state-listed species in which Lewis County supports potential habitat. However, no suitable habitat is present within the Project footprint for state listed species. Thus, we conclude the Project would not adversely impact state listed species.

### **3.0 CULTURAL RESOURCES**

On August 20, 2013, Puget Sound received concurrence for the original Jackson Prairie Storage Facility Project from the Washington State Historic Preservation Office. The proposed Project would not involve any new construction or ground disturbance, as all of the proposed work would take place at the existing Well SU-50 pad. Therefore, the Project does not have the potential to affect historic properties.

### **4.0 LAND USE**

The entire Project area would consist of industrial land. Construction of all Project facilities would occur on the existing 0.3-acre Well SU-50 gravel pad within Puget Sound's existing Jackson Prairie Storage Yard. Puget Sound does not propose any new permanent workspaces or access roads for the Project.

The Project would not occur within 50 feet of residences. The nearest residence from Project work areas would be about 1,400 feet. The Project is not proposed within coastal zone management areas and there are no natural, recreational, or scenic sites within 0.25 mile of Project workspaces.

#### Visual Resources

The well site is in a lower area of a forested region. The nearest line of sight area is Highway 12, a major east west highway in Washington State (660 feet north from the Project). View of the work area would be intermittent to traffic on Highway 12. The view from the nearest residence (1,362 feet) is obscured by surface terrain and trees. Construction of the Project would result in temporary visual impacts, including increased numbers of personnel, and presence of additional equipment and materials. These impacts would cease following the completion of construction and successful restoration in accordance with our Plan. Given the temporary nature of construction (about 5 days) and limited space (0.3 acre) required for the Project, we conclude that impacts on visual resources would be temporary and not significant.

### **5.0 AIR QUALITY**

Construction of the Project would cause a temporary reduction in local ambient air quality due to fugitive dust and emissions generated by construction equipment. This temporary impact would occur only in the immediate vicinity of the construction activities. There are no operational emissions associated with the Project.

## 5.1. EXISTING ENVIRONMENT

Ambient air quality is protected by federal and state regulations. Under the Clean Air Act (CAA) and its amendments, the EPA has established National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), lead, nitrogen dioxides, (NO<sub>2</sub>) ozone, particulate matter less than 10 microns (PM<sub>10</sub>), particulate matter less than 2.5 microns (PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>).<sup>6</sup> These standards incorporate short-term (hourly or daily) levels and long-term (annual) levels to address acute and chronic exposures to the pollutants, as appropriate. The NAAQS include primary standards, which are designed to protect human health, including the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS also include secondary standards designed to protect public welfare, including economic interests, visibility, vegetation, animal species, and other concerns not related to human health. NAAQS are presented in table 2.

Air quality control regions (AQCR) are areas established by the EPA and local agencies for air quality planning purposes, in which State Implementation Plans describe how the NAAQS would be achieved and maintained. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or smaller portion within an AQCR (such as a county), is designated based on compliance with the NAAQS, as attainment, unclassifiable, maintenance, or nonattainment, on a pollutant by-pollutant basis. Areas in compliance or below the NAAQS are designated as attainment, while areas not in compliance or above the NAAQS are designated as nonattainment. Areas previously designated as nonattainment that have since demonstrated compliance with the NAAQS are designated as maintenance for that pollutant. Maintenance areas may be subject to more stringent regulatory requirements to ensure continued attainment of the NAAQS. Areas that lack sufficient data to determine attainment status are designated unclassifiable and treated as attainment areas. The Project is in Lewis County, Washington, which is designated as in attainment/unclassifiable for all criteria pollutants.

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<sup>6</sup> The current NAAQS are listed on EPA's website at <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

Table 2 National Ambient Air Quality Standards				
Pollutant	Averaging Period	Standards		
		Primary	Secondary	
Sulfur dioxide (SO <sub>2</sub> )	1-hour <sup>l,m</sup>	75 ppb 196 µg/m <sup>3</sup>	0.5 ppm	
	3-hour <sup>b</sup>	--	1300 µg/m <sup>3</sup>	
	Annual <sup>a,m</sup>		0.03 ppm 80 µg/m <sup>3</sup>	--
		24-hour <sup>b,m</sup>	0.14 ppm	--
	PM <sub>10</sub>	24-hour <sup>d</sup>	365 µg/m <sup>3</sup> 150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
PM <sub>2.5</sub> (2012 Standard)	Annual <sup>e</sup>	12.0 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>	
PM <sub>2.5</sub> (2006 Standard)	24-hour <sup>f</sup>	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>	
Nitrogen Dioxide (NO <sub>2</sub> )	Annual <sup>a</sup>	0.053 ppm (53 ppb)	0.053 ppm (53 ppb)	
	1-hour <sup>c</sup>	100 µg/m <sup>3</sup> 100 ppb	100 µg/m <sup>3</sup> --	
Carbon Monoxide (CO)	8-hour <sup>b</sup>	188 µg/m <sup>3</sup> 9 ppm	--	
	1-hour <sup>b</sup>	10,000 µg/m <sup>3</sup> 35 ppm	-- 40,000 µg/m <sup>3</sup>	
Ozone (2008 Standard)	8-hour <sup>g,h</sup>	0.075 ppm	0.075 ppm	
Ozone (2015 Standard)	8-Hour <sup>i</sup>	0.070 ppm	0.070 ppm	
Ozone (O <sub>3</sub> )	1-hour <sup>j,k</sup>	0.12 ppm	0.12 ppm	
Lead (Pb)	Rolling 3-month <sup>a</sup>	0.15 µg/m <sup>3</sup>	0.15 µg/m <sup>3</sup>	

a. Not to be exceeded  
b. Not to be exceeded more than once per year  
c. Compliance based on 3-year average of the 98<sup>th</sup> percentile of the daily maximum 1-hour average at each monitor within an area  
d. Not to be exceeded more than once per year on average over 3 years  
e. Compliance based on 3-year average of weighted annual mean PM<sub>2.5</sub> concentrations at community-oriented monitors  
f. Compliance based on 3-year average of 98<sup>th</sup> percentile of 24-hour concentrations at each population-oriented monitor within an area  
g. Compliance based on 3-year average of fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area  
h. The 2008 8-hour ozone standard would remain in effect until one year after an area is designated for the 2015 8-hour ozone standard, which corresponds with January 16, 2019 based upon attainment designations for the 2015 ozone standard issued on January 16, 2018  
i. Permit applications that have not met EPA's grandfathering criteria would have to demonstrate that the proposed project does not cause or contribute to a violation of any revised ozone standards that are in effect when the permit is issued, including the 2015 revised standards  
j. Maximum 1-hour daily average not to be exceeded more than one day per calendar year on average  
k. The 1-hour ozone standard has been revoked in all areas in which Project activities would occur  
l. Compliance based on 3-year average of 99<sup>th</sup> percentile of the daily maximum 1-hour average at each monitor within an area  
m. The 24-hour and annual average primary standards for SO<sub>2</sub> have been revoked.  
ppm = parts per million by volume; ppb = parts per billion by volume.  
µg/m<sup>3</sup> = micrograms per cubic meter.



Greenhouse gases (GHG) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHGs under the CAA. The primary GHGs that would be emitted by the Project are carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide. During construction of the Project, these GHGs would be emitted from the majority of construction equipment.

Emissions of GHGs are typically quantified and regulated in units of carbon dioxide equivalents. Carbon dioxide equivalent takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO<sub>2</sub>. Thus, CO<sub>2</sub> has a GWP of 1, methane has a GWP of 25, and nitrous oxide has a GWP of 298.

## **5.2. REGULATORY REQUIREMENTS**

The provisions of the CAA that may be applicable to the Project are discussed below.

### *5.2.1. Prevention of Significant Deterioration and Nonattainment New Source Review*

The Prevention of Significant Deterioration and Nonattainment New Source Review air permit programs are designed to protect air quality when air pollutant emissions are increased either through the construction of new major stationary sources or major modifications to existing stationary sources. The Project would result in *de minimus* emissions from construction activities due to the limited time frame (5 days). There are no operational emissions associated with the Project.

### *5.2.2. Title V Permitting*

Title V is an operating air permit program run by each state for each facility that is considered a "major source." The Project would not yield operational emissions and therefore does not apply to the Project.

### *5.2.3. New Source Performance Standards*

The EPA promulgates New Source Performance Standards (NSPS) for new, modified, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology for stationary source types or categories. NSPS also establishes fuel, monitoring, notification, reporting, and recordkeeping requirements. The Project would not have operational emissions, therefore these standards would not apply to the Project.

#### 5.2.4. General Conformity

The EPA promulgated the General Conformity Rule to implement the conformity provision of Title I, Section 176(c)(1) of CAA. Section 176(c)(1) requires that the federal government not engage, support, or provide financial assistance for licensing or permitting, or approve any activity not conforming to, an approved CAA implementation plan.

The General Conformity Rule is codified in 40 CFR 51, Subpart W and Part 93, Subpart B, *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*. A conformity determination must be conducted by the lead federal agency if a federal action's construction and operational activities is likely to result in generating direct and indirect emissions that would exceed the conformity threshold (*de minimis*) levels of the pollutant(s) for which an air basin is in nonattainment or maintenance. According to the conformity regulations, emissions from sources that are subject to any Nonattainment New Source Review or Prevention of Significant Deterioration permitting/licensing (major or minor) are exempt and are deemed to have conformed.

The General Conformity Rule was developed to ensure that federal actions in nonattainment and maintenance areas do not impede states' attainment of the NAAQS.

As noted earlier, the Project facilities would be constructed and operated within counties in attainment for all criteria pollutants, therefore, a General Conformity Determination would not be required.

### 5.3. STATE AIR QUALITY REGULATIONS

There are no state or local regulations that apply to the Project.

### 5.4. CONSTRUCTION EMISSIONS IMPACTS AND MITIGATION

Construction of the Project would result in short-term increases in emissions of some pollutants from the use of fossil fuel-fired equipment and the generation of fugitive dust due to earthmoving activities over the 5 day construction period. Some temporary indirect emissions, attributable to construction workers commuting to and from work sites during construction and from on-road and off-road construction vehicle traffic, could also occur. Large equipment and other mobile equipment are sources of combustion-related emissions, including criteria pollutants (i.e., nitrogen oxides, CO, volatile organic compounds, SO<sub>2</sub>, and PM<sub>10</sub>).

Construction activities, such as driving on unpaved roads, would also result in the temporary generation of fugitive dust. The amount of dust generated would be a function

of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic and types, and roadway characteristics. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity. Once the construction activity in an area is completed, the fugitive dust and emissions would subside.

Emissions associated with construction of the Project would be minimal and short term. During construction activities, it is anticipated that approximately 3 borehole volumes would be vented, yielding approximately 62 thousand cubic feet of natural gas.

Construction emissions would be minor and would result in short-term, localized impacts in the immediate vicinity of construction work areas. As the scope of construction and the duration of activities is so limited, we conclude that air quality impacts from Project construction would be temporary and would not result in a significant impact on local or regional air quality.

## **5.5. OPERATIONAL EMISSIONS IMPACTS AND MITIGATION**

There are no operational emission impacts associated with the Project.

### *Conclusion*

The Project would yield minimal construction emissions and no operational emissions. Therefore, we conclude the Project would result in temporary and not significant impacts on air quality in the Project area.

## **6.0 NOISE**

Noise is generally defined as sound with intensity greater than the ambient or background sound pressure level. Construction of the Project would affect overall noise levels in the Project area. The magnitude and frequency of environmental noise may vary considerably over the course of the day, throughout the week, and across seasons, in part due to changing weather conditions and the effects of seasonal vegetative cover. Two measures that relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level ( $L_{eq}$ ) and day-night sound level ( $L_{dn}$ ). The  $L_{eq}$  is an A-weighted sound level containing the same energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The  $L_{dn}$  takes into account the duration and time the noise is encountered. Specifically, the  $L_{dn}$  is the  $L_{eq}$  plus a 10 decibels on the A-weighted scale (dBA) penalty added to account for people's greater sensitivity to nighttime sound levels (typically considered between the hours of 10:00 pm and 7:00 am). The A-weighted scale is used to assess noise impacts because human hearing is less sensitive to low and high frequencies than mid-range

frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise (Bies and Hansen, 1988).

## **6.1. FEDERAL NOISE REGULATIONS**

Construction of the Project would affect the local noise environment in the Project area. The ambient sound level of a region, which is defined by the total noise generated within the specific environment, is usually comprised of sounds emanating from both natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week, in part due to changing weather conditions and the impacts of seasonal vegetative cover.

The EPA published its *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Two measurements used by some federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the  $L_{eq}$  and  $L_{dn}$ . The A-weighted scale (dBA) is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24-hour period and controls the environmental sound level, the  $L_{dn}$  is approximately 6.4 dB above the measured  $L_{eq}$ .

The EPA has indicated that an  $L_{dn}$  of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the proposed Project at noise sensitive areas (NSAs), such as residences, schools, or hospitals.

### *6.1.1. State and Local Noise Regulations*

There are no state or local noise ordinances that apply to the Project.

## **6.2. AMBIENT NOISE CONDITIONS**

The two closest residences are north of Highway 12 and are approximately 1,400 feet to 1,890 feet from the worksite, with traffic noise being the predominate noise source. The nearest residence to the south is 2,200 feet.

## **6.3. CONSTRUCTION NOISE IMPACTS AND MITIGATION**

Noise would be generated during Project construction activities on an intermittent basis throughout the 5 days of construction. Construction activities would occur during

daytime hours of 7:00 am to 7:00 pm and are not expected to result in significant noise impacts on nearby NSAs.

#### **6.4. OPERATION NOISE IMPACTS AND MITIGATION**

There would be no operational noise associated with the Project.

##### *Conclusion*

Due to the temporary nature of construction activities, short duration, and with no operational noise sources, we conclude that the Project would have a temporary and not significant impact on noise quality.

#### **7.0 RELIABILITY AND SAFETY**

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The Project facilities must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. For example, Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues, prescribes the minimum standards for operating and maintaining pipeline facilities, and incorporates emergency shutdowns and safety equipment. Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency.

The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials.

Puget Sound would provide appropriate training to local emergency service personnel before the facilities are placed in service.

The Project is intended to increase efficiency and provide a backup well if needed during maintenance activities to ensure safe operation. We conclude that the Project would not represent an increase in risk to the nearby public.

## 8.0 CUMULATIVE IMPACTS

In accordance with NEPA and with FERC policy, we evaluated the potential for cumulative effects of the Project. Cumulative impacts represent the incremental effects of a proposed action when added to other past, present, or reasonably foreseeable future actions, regardless of the agency or party undertaking such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time. The geographic scope used to assess cumulative impacts for each resource are discussed below in table 3.

<b>Resource</b>	<b>Geographic Scope</b>
Geological Resources, Soils, and Ground water	Limits of Project disturbance
Land Use	1 mile
Air Quality	Construction: 0.25 mile Operation: 31.07 miles (50 kilometers)
Noise	Construction: 0.25 mile for general construction activities, 0.5 mile for drilling activities Operation: 1 mile

As discussed in the EA analysis above, the Project involves only subsurface activities at an existing well, with no new aboveground disturbance, thus the following resources are either not present or would not be affected by the Project activities: geology, surface waters, wetlands, vegetation, wildlife, threatened and endangered species, fisheries, cultural resources, recreation, scenic places, socioeconomics, and air quality (operational); therefore, these resources will not be discussed further in this section.

The Project would not adversely impact groundwater, land use, visual resources, air quality (construction), and noise. No other projects were identified within the geographic scope and none are anticipated in the foreseeable future. Consequently, because the Project would not impact the listed resources and there are no other Projects within the geographic scope that would result in additive impacts, no cumulative impacts on resources are anticipated.

## **C. ALTERNATIVES**

In accordance with NEPA and Commission policy, we evaluated alternatives to the Project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no-action alternative, system alternatives, and site alternatives. The evaluation criteria used for developing and reviewing alternatives were:

- ability to meet the Project's stated objective;
- technical and economic feasibility and practicality; and
- significant environmental advantage over the proposed action.

Through environmental comparison and application of our professional judgment, each alternative is considered to a point where it becomes clear if the alternative could or could not meet the three evaluation criteria. To ensure a consistent environmental comparison and to normalize the comparison factors, we generally use desktop sources of information (e.g., publicly available data, geographic information system data, aerial imagery) and assume the same general workspace requirements.

### **1.1. NO-ACTION ALTERNATIVE**

Under the no-action alternative, the proposed facilities would not be constructed, and the environmental impacts, if any, associated with the Project would not occur. However, the no-action alternative would not meet the Project's purpose and need and would not result in efficient operations of Well SU-50 and Zone 1 of the Jackson Prairie Storage facility. Therefore, we have dismissed this alternative as a reasonable alternative to meet the Project objectives.

### **1.2. SYSTEM ALTERNATIVES**

System alternatives are alternatives to the proposed action that would make use of existing, modified, or proposed Project(s) systems to meet the stated objective of the proposed Project. System alternatives involve the transportation of the equivalent volume of natural gas by the modification or expansion of existing pipeline systems or by other new pipeline systems. Because the actions of the Project involve an existing well, no other system alternative would accomplish the purpose and need with less disturbed area. Therefore, this alternative has been removed from further consideration.

### **1.3. SITE ALTERNATIVES**

As discussed in section B above, construction would occur on an existing well within previously disturbed areas. No aboveground impacts are proposed as

recompletion would occur subsurface. Our review of the Project found that environmental impacts, if any, associated with the Project has been minimized.

Based on the limited environmental impact associated with this Project, we did not identify any unresolved resource conflicts that would present a need to examine further alternatives. Additionally, no comments were received regarding resources that would be impacted by the Project. Because the impacts associated with the proposed Project are not significant and we did not receive comments addressing alternatives, we did not evaluate additional alternatives. Therefore, we conclude that the proposed Project is the preferred alternative to meet the Project objectives.



## D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if Puget Sound recompletes and operates Well SU-50 in accordance with its application and supplements, and the staff's recommended mitigation measures below, approval of the Project would not constitute a major action significantly affecting the quality of the human environment. We recommend that the Commission Order contain a finding of no significant impact and include the measures listed below as conditions in any authorization the Commission may issue to Puget Sound.

1. Puget Sound shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Puget Sound must:
  - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
  - b. justify each modification relative to site-specific conditions;
  - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
  - d. receive approval in writing from the Director of the Office of Energy Projects (OEP) **before using that modification.**
  
2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the Project. This authority shall allow:
  - a. the modification of conditions of the Order;
  - b. stop-work authority; and
  - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.
  
3. **Prior to any construction,** Puget Sound shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EA, as supplemented by filed Project plot plans. **As soon as they are available, and before the start of construction**, Puget Sound shall file with the Secretary any revised plot plans for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these plot plans.
5. Puget Sound shall file with the Secretary detailed maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying any facility relocations, staging areas, storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.
6. Puget Sound shall employ at least one EI for the Project. The EI shall be:
  - a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
  - b. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document; and
  - c. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies.
7. Puget Sound must receive written authorization from the Director of OEP **before commencing construction of any Project facilities**. To obtain such authorization, Puget Sound must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
8. **Within 30 days of placing the authorized facilities in service**, Puget Sound shall file an affirmative statement with the Secretary, certified by a senior company official:

- a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
- b. identifying which of the conditions in the Order Puget Sound has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in reports filed with the Secretary, and the reason for noncompliance.

## E. REFERENCES

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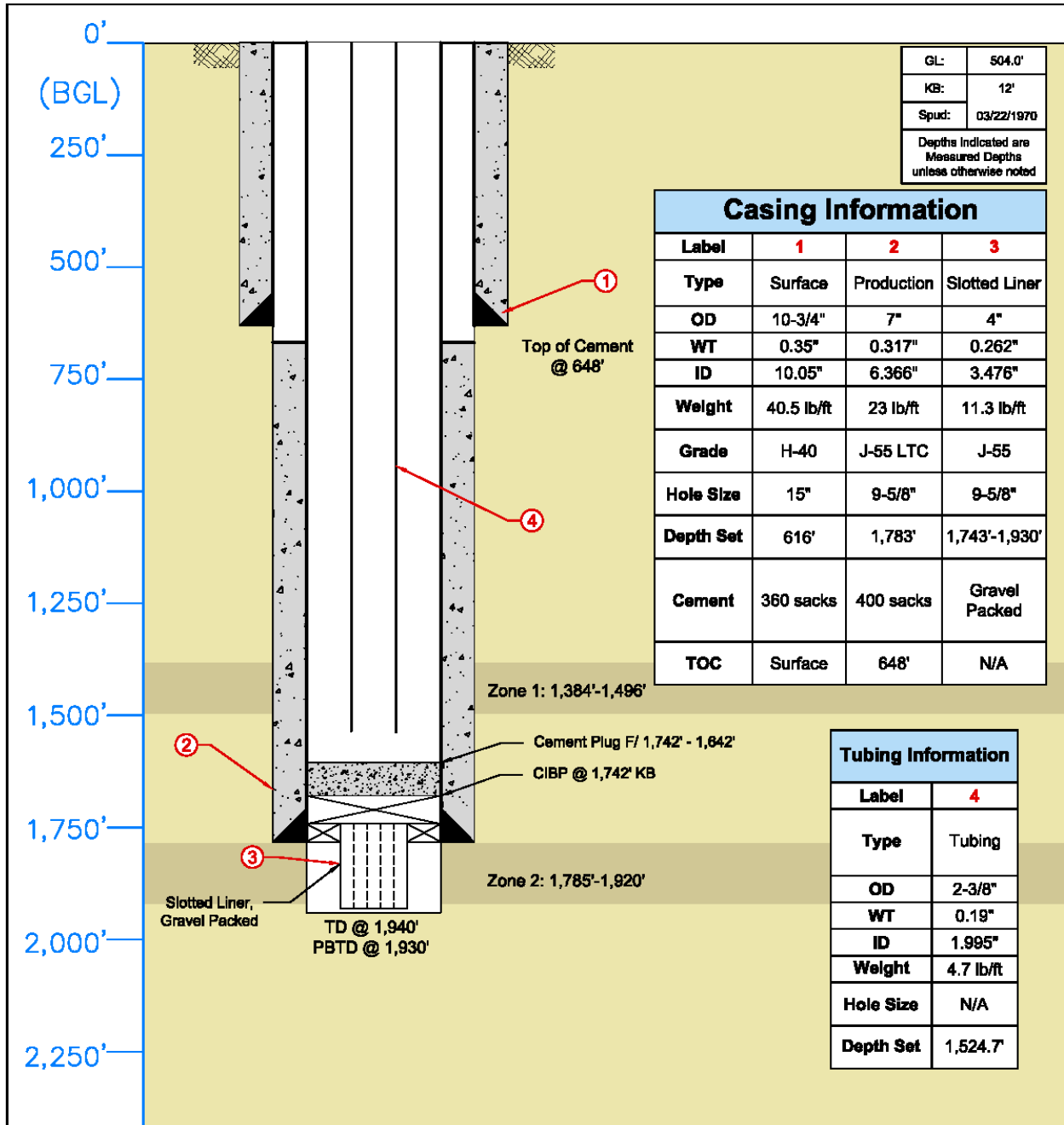
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## Appendix A

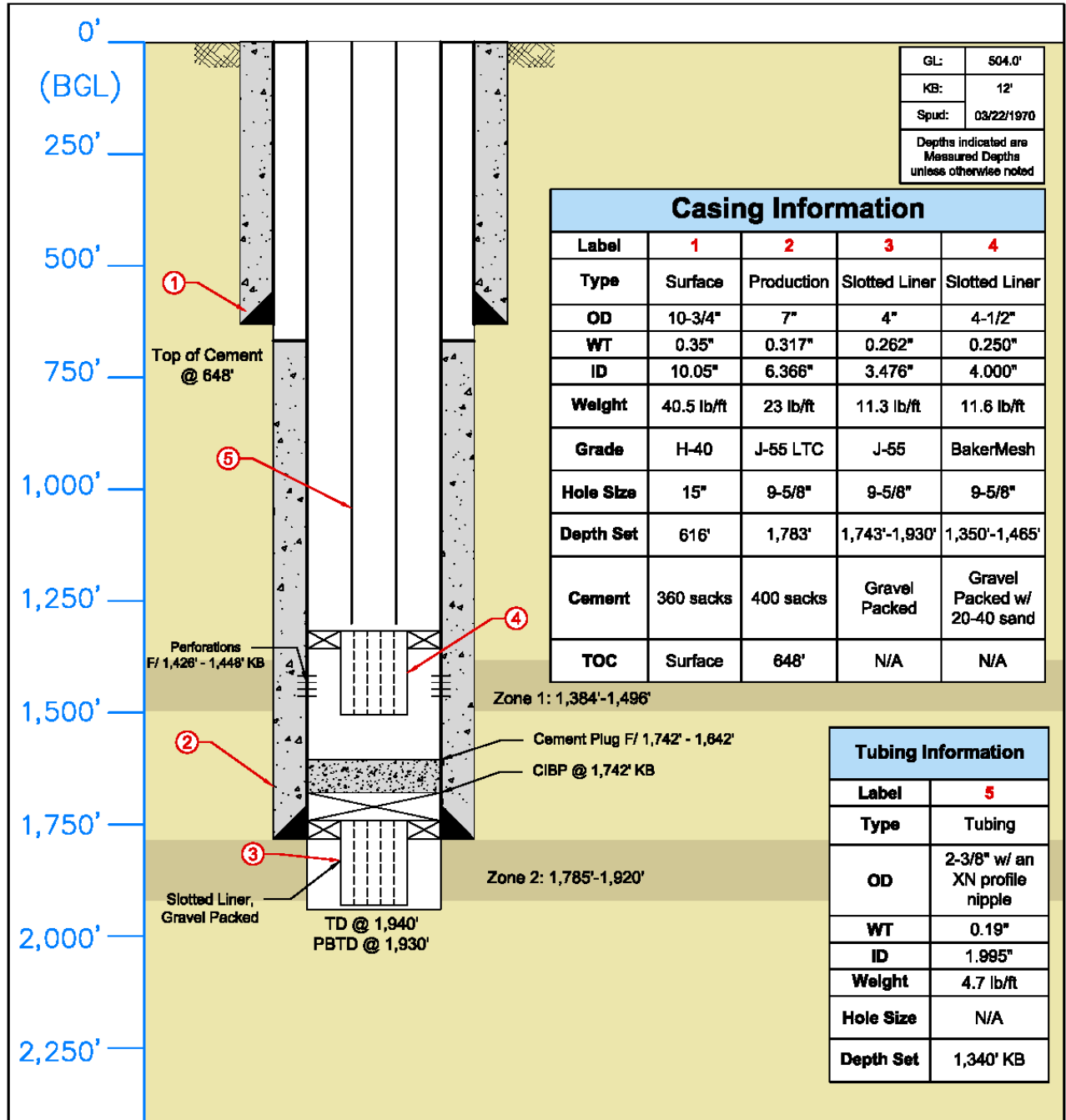
### Current and Proposed Well Schematics for Well SU-50

## Current Schematics for Well SU-50



<div style="text-align: center;"> <h3 style="margin: 0;">LONQUIST</h3> <div style="display: flex; justify-content: center; gap: 5px;"> <span style="background-color: #004a99; color: white; padding: 2px 5px;">FIELD</span> <span style="background-color: #004a99; color: white; padding: 2px 5px;">SERVICE</span> </div> <p style="font-size: small; margin: 0;">AUSTIN WICHITA - HOUSTON CALGARY</p> <p style="font-size: x-small; margin: 0;">Texas License F-8652</p> <p style="font-size: x-small; margin: 0;">12912 Hill Country Blvd, Suite F-200 Austin, Texas 78738 Tel: 512.732.9812 Fax: 512.732.9818</p> </div>	<b>Puget Sound Energy</b>	<b>Storage Unit #50</b>		
	Country: USA	State/Province: Washington	County/Parish: Lewis	
	Location: Chehalls, WA	Site: Jackson Prairie	Status: Zone 2 I/W	
	Survey/STR: S-8 T-12N R-1W	Field: Jackson Prairie	Permit No: 257	
	Well API No: N/A	Project No: F1442	Date: 02/01/2019	
Drawn: C.JG	Reviewed: ETB	Approved: ETB		
Rev No:	Notes:			

## Proposed Schematics for Well SU-50



<b>LONQUIST</b> FIELD SERVICE AUSTIN WICHITA HOUSTON CALGARY	<b>Puget Sound Energy</b>	<b>Storage Unit #50 - Proposed</b>	
	Texas License F-8652	Well API No: N/A	Project No: F1442
12912 Hill Country Blvd, Suite F-200 Austin, Texas 78738 Tel: 512.732.9812 Fax: 512.732.9816	Country: USA	State/Province: Washington	County/Parish: Lewis
	Location: Chehalls, WA	Site: Jackson Prairie	Status: Zone 2 I/W
	Survey/STR: S-8 T-12N R-1W	Field: Jackson Prairie	Permit No: 257
	Drawn: C.JG	Reviewed: ETB	Approved: ETB
	Rev No:	Notes:	