US Environmental Protection Agency Region 10
Underground Injection Control Program

AQUIFER EXEMPTION RECORD OF DECISION

Summary of Action: This Record of Decision (ROD) documents the United States Environmental Protection Agency's (EPA's) decision to approve the request for an aquifer exemption (AE) for the Willow Sands (Sands 3-6) within Fault Block E. This decision has been made under the authority of the Safe Drinking Water Act (SDWA) Underground Injection Control (UIC) program.

Under the authority of SDWA and the UIC regulations, EPA is approving SROG's request to exempt the portion of the Willow Sands as described herein from status as an Underground Source of Drinking Water (USDW) under to the SDWA. This decision is based on guidance and regulations, including those set by Title 40 of the Code of Federal Regulations (CFR) § 146.4.

Operator: Snake River Oil and Gas, LLC (SROG)

Date of AE Request: SROG submitted this AE request on March 4, 2020. SROG submitted additional information on August 21, 2020.

Exemption Criteria: The portion of the Willow Sands aquifer being exempted does not currently serve as a source of drinking water, and cannot now and will not in the future serve as a source of drinking water because it is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical. The aquifer is also so contaminated that it would be economically or technologically impractical to render that water fit for human consumption. *See*, 40 CFR §§ 146.4(a), (b)(2), and (b)(3).

Substantial or Non-Substantial Program Revision: Non-Substantial. The EPA determined that this is a non-substantial program revision since it is associated with a Class II disposal well and does not pose a statewide impact.

Project Name and Description: This action occurs at the Willow Oil and Gas Field. The aquifer being exempted has been identified as the prospective injection interval for a Class II Disposal well.

Well/Project Permit Number: This AE is associated with a Class II Disposal permit issued by EPA under a separate action. SROG has submitted a Class II Disposal Well permit application for a single well, named DJS 2-14. The American Petroleum Institute (API) number for this well is 11-075-20-023. The assigned permit number for this activity is ID-2D001-A.

County: Payette **State:** Idaho

Well Class/Type: Class II Disposal

Description of AE

Aquifer to be Exempted: EPA is approving the request for exemption of a portion of the Lower Chalk Hills Formation. This AE zone is a three-dimensional shape occuring approximately 5,000 feet (ft.) below ground. Boundaries are summarized on this page and further described in this document.

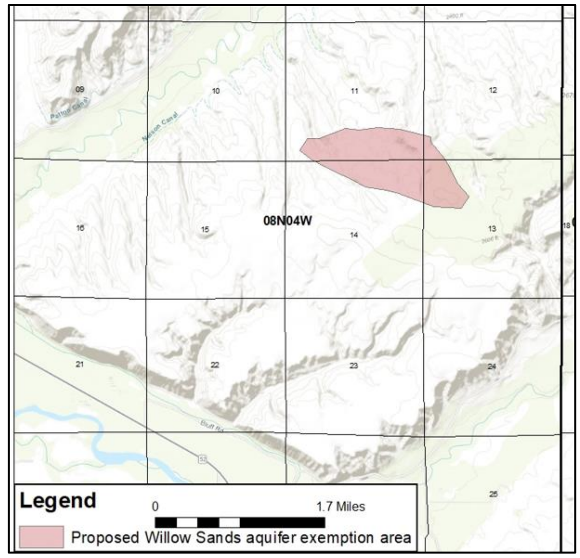

Figure 1 – The AE Area is approximately 269 acres in size, located to the east of Little Willow Creek and to the north of the Payette River. Payette Co., Idaho.

Areal Extent of AE: The surface projection of the AE zone is shown in Figure 1. The size of the AE is approximately 269 acres. The boundaries of this AE zone are determined by geologic structure occuring at the depth of the AE. This area overlaps Sections 11-14 of Township 8 North, Range 4 West.

Vertical Extent of AE: The aquifer being exempted is contained within Claystone 2/3 and Claystone 6/7. It is intersected by DJS 2-14 between 4,908 and 5,500 ft. True Vertical Depth (TVD). Section I.E., *Vertical Confinement*, provides additional information.

Summary of Aquifer Characteristics	
Formation	Willow Sands 3-6 within the Lower Chalk Hills Formation.
Lithology	Sands interbedded with claystones.
Water Salinity	1,540 mg/L Total Dissolved Solids.
Depth	Approximately 4,430 ft. below ground at the shallowest point. Intersected by DJS 2-14 at 4,908 ft.
Thickness	592 ft.
Porosity and Permeability	Estimated Porosity is 30 - 32%, and estimated permeability is 300 millidarcies.
Current Use	No current use. The Willow Sands elsewhere in Willow Field are targeted for hydrocarbon production.

Decision

Based on a review of the entire record, including all written and oral comments submitted to EPA during its public comment process, EPA finds that the exemption criteria at 40 CFR §§ 146.4(a), (b)(2), and (b)(3) have been met, and EPA approves the AE request as a non-substantial program revision.

Date: November 3, 2022

MATHEW MARTINSON

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I. Background Information

On March 4, 2020, EPA received a request from SROG to exempt a portion of an aquifer from status as a USDW. SROG's request is limited to Sands 3-6 of the Willow Sands. The aquifer portion is further limited to Block E, a bounded reservoir formed by intersection of faults. This zone is located at approximately 4,630 ft. below ground at its shallowest point.

This exemption request has been made in support of an application to convert an existing well, DJS 2-14, into a Class II disposal well. DJS 2-14 would inject fluids produced associated with natural gas and gas condensate production. Class II wells inject fluids (which are brought to the surface in connection with conventional oil or natural gas production and may be commingled with waste waters from gas plants) which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection (*See*, 40 CFR § 144.6, Classification of Wells). Since the injection interval for DJS 2-14 meets the definition of a USDW, injection may not take place unless the aquifer to be impacted is first exempted from status as a USDW.

Federal regulations define an aquifer as a geologic formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring. Pursuant to 40 CFR § 146.4, an aquifer or a portion thereof which meets the criteria for a USDW under § 146.3 may be determined under § 144.7 of this chapter to be an exempted aquifer. Based on review of the operator's request, EPA has determined that this request meets the requirements for an exemption. The portion of the Willow Sands aquifer being exempted does not currently serve as a source of drinking water. EPA determined that it cannot now, and will not in the future, serve as a source of drinking water because it is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical. EPA also considered that this aquifer is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical [*See*, 40 CFR §§ 146.4(a), (b)(2), and (b)(3)]. EPA reached this decision after reviewing information provided by SROG along with additional relevant information. This decision is based on an evaluation of the local hydrogeologic and geologic conditions, the current uses of groundwater in this region, plausible future trends regarding water use by the nearby communities, level of contamination in the aquifer, and the economic feasibility of providing this water for human consumption.

A. Surface Description

The AE zone described herein is a group of geologic strata located at the Willow Field in Payette County, Idaho. Throughout this document, the terms "AE boundary" or "exemption boundary" refers to the two-dimensional lateral extent of the AE projected to the surface. These terms are generally used when discussing the size of the boundary. "AE zone or "exemption zone" refers to the three-dimensional shape of the aquifer portion as it occurs in the subsurface. These terms are used when discussing hydrogeologic and geologic characteristics of the AE.

The exemption boundary is located entirely within Payette County, Idaho and includes an area of approximately 269 acres. This area overlaps Sections 11-14 of Township 8 North, Range 4 West as described by the Public Land Survey System. The injection well DJS 2-14 is located at Latitude: 44.03867, Longitude: -116.78333.

The exemption boundary is located along the northern slope of the Payette River Valley within the most northwesterly portion of the Western Snake River Plain. The surface topography here is dominated by rolling hills and steep bluffs. Primary uses of the land in this area include low-density residential housing, ranching, cattle grazing, and oil and gas production activities. Sandy, alkaline, lacustrine deposits are found at the surface, catering to the growth of shrub- and grass-dominating vegetation described as saltbush–greasewood and sagebrush steppe (USGS Collab.). See Figure 2.

Figure 2 – Willow Field and surrounding landscape. This photograph is pointed to the southeast. Visible are the proposed injection well (DJS 2-14), along with two production wells (ML1-11 and 2-10) and the Little Willow Facility.

Land use types transition to semi-rural/suburban and, in some parts, agricultural, when moving to the south of the exemption boundary and along the Payette River. Little Willow Creek is located approximately $1^1/_4$ miles to the west of the exemption boundary at its nearest point. This creek gives name to the nearby natural gas production facility (i.e., Little Willow Facility). This creek flows from the northeast to the southwest where it meets the Payette River at approximately $2^1/_2$ miles from the exemption boundary at its nearest point. Low-density residential housing is located along the valley formed by this creek, where groundwater is the primary source of drinking water. Wells generally withdraw from depths of approximately 100-200 ft. Below Ground Surface (BGS). Primary drinking water sources for this region are discussed in Part III.

There are three cities located within ten miles of the AE boundary: New Plymouth, Idaho (approximately $4^{3}/_{4}$ miles south); Fruitland, Idaho (approx.. $6^{1}/_{4}$ miles west-southwest); and Payette, Idaho (approx.. 7 miles west-northwest). Payette has the largest population of these cities, though Fruitland has experienced the fastest population growth in the past ten years. The population of the entire county, in which all three of these cities are found, is approximately 25,400.

B. Regional Geology and AE Boundary

The regional geology across Payette County falls into two separate regimes; the northern portion, which is characterized by thick volcanic deposits, and the central/southwestern portion, which is characterized by extensive lacustrine and fluvial sedimentary deposits. For the remainder of this document, references to the "Snake-Payette River Basin," or "Payette River Basin," or general claims regarding the geology in "Payette County" will refer to the geology found in the central and southern part of Payette County. Land type and geology in this portion of the County is representative of the surface area around the exemption boundary and the geology composing the exemption zone, respectively.

The geologic sequence found at the site of the exemption is known based on correlation with reports from previously completed wells. Soils and shallow geologic layers have been characterized from the construction of drinking water wells, and deeper geologic intervals have been identified from previously drilled hydrocarbon exploration and development wells. From shallowest to deepest, the order of geologic intervals at the location of the AE are: 1) an unconsolidated gravel/shallow alluvium formation (in some areas called the Pierce Gulch Formation), 2) the Glenns Ferry Formation, 3) the Chalk Hills Formation (Upper and Lower parts). The Willow Sands is considered a member of the Lower Chalk Hills Formation.

Surficial formations at Willow Field and nearby Little Willow Creek area named either the Pierce Gulch Formation or shallow alluvium, based on location. The Pierce Gulch Formation is the upper-most geologic unit for areas across the Willow Field where the surface elevation is at least 2,400 ft. above sea level. At lower elevations, shallow alluvial deposits are the upper-most unit. This deposit is approximately 250 ft. thick at the location of DJS 2-14. Surficial deposits are sand or sand/gravel type and contain an aquifer system that serves as a primary drinking water source for private wells in the Payette River Basin.

The Chalk Hills and Glenns Ferry Formations are located below these shallow sediments and are components of the Idaho Group; a sedimentary basin of Miocene-Pliocene era created by fluvial and lacustrine deposition of sandstone and claystone. The Chalk Hills Formation (including the Willow Sands) was formed by the deposition of sand, muds, and intercalated volcanics. This formation deformed by tilting and faulting as the Chalk Hills lake system refilled and transgressed. Concurrent volcanic activity resulted in basalt and ash intervals throughout portions of the Chalk Hills Formation. The second episode of deposition into what is known as "Lake Idaho" resulted in formation of the Glenns Ferry Formation (Wood, 2004). The top of the Glenns

Ferry Formation eroded prior to the deposition of quaternary alluvium and outwash from the erosion of the adjacent uplands. Identification of the Chalk Hills and Glenns Ferry Formations can be difficult because of the interbedded and sometimes discontinuous nature of deposition, but, overall, the Payette River Basin is underlain by over 4,000 ft. of lacustrine and fluvial deposits of mostly clay, sand, and gravel. Total basin sedimentary and igneous fill above bedrock may be greater than 4.4 miles (Mitchell, 1981).

The geologic structure of the Willow Field is characterized by a network of faults forming a roughly elliptically shaped structure about three miles long in a northwest-southeast axis, and two miles wide in a southwest-northeast direction. It is composed of interbedded sands and claystones. Faulting in the Willow Field causes segmentation of the Willow Sands, effectively forming compartmentalized blocks. During the exploration of this field, the naming convention "A-E" was chosen to name these blocks. See Figure 3 for diagrams of these zones. Blocks A – D are the target for production of hydrocarbons out of the Lower Chalk Hills Formation. DJS 2-14 was constructed into Fault Block E as an exploratory well that proved to be non-commercial. It is now identified as the injection interval for disposal of produced fluids via Class II fluid disposal.

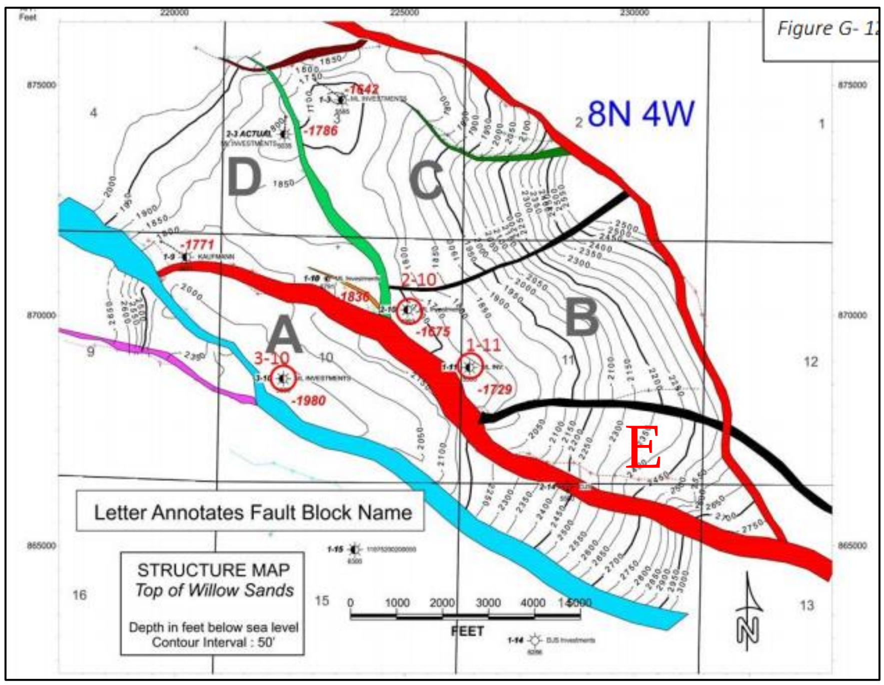

Figure 3 - Structure Map of the Willow Sands Across Willow Field. This diagram provides depth contours of the top of the Willow Sands in contact with the claystone component of the overlying Chalk Hills Formation. Values indicate subsea depth, rather than depth below ground. Red, black, blue, and green ribbons represent fault lines. The lettered zones are considered the fault blocks, segmenting the field into discrete zones. Wells ML 1-11. ML 2-10, ML 3-10 are circled in red. The AE zone is the entire Block E situated directly south of Block B and northeast of Block A. DJS 2-14 is located on the southwestern edge of Block E.

C. Vertical Confinement

This AE request is limited to the Lower Chalk Hills Formation at Willow Field, further defined by the boundary to Block E. The boundaries of this three-dimensional zone can be described by vertical and lateral terms. The vertical extent of the AE zone is described by stratigraphic markers, including formations that serve as confining intervals that would prevent the movement of fluids outside of a designated injection zone. The applicant has identified primary upper and lower confining zones. The applicant has also identified redundant confining zone.

The AE zone is limited to only the portion of the aquifers found within Willow Sands 3-6, between Claystone 2/3 and Claystone 6/7 and contained within Block E, as displayed in Figure 4. This zone is intersected by well DJS 2-14 from 4,908 ft. to 5,500 ft. TVD. Permeability of this zone is approximately 300 millidarcies (mD), and porosity is approximately 30%. Since the exemption zone follows geologic strata that dip from northwest to southeast, the depth to the exemption zone varies depending on location within Block E. At the shallowest point of the AE is found near the northwest corner of Block E, where the top of Sand 3 occurs at 4,630 ft. TVD. The deepest possible occurrence of the exemption zone is found in the southeastern corner of Fault Block E, where the bottom of Sand 6 is at a depth of approximately 6,200 ft. TVD. Thickness of the AE zone is approximately 600 ft.

The primary upward barrier to fluid movement is a claystone interval named Claystone 2/3. DJS 2-14 passes through Claystone 2/3 between depths 4,860 ft. to 4,908 ft. TVD. Claystone 2/3 is also encountered by nearby wells within the Willow Field, demonstrating lateral continuity. Permeability estimates made by processed petrophysical logging data of Claystone 2/3 indicate permeabilities to be between 0.0002 and 0.0007 mD. Lab-derived permeability (0.01-.04 mD) and porosity values (between 10.3% to 14.6%) were taken from cores sampled from claystone within the Willow Sands at 4,300 ft. to 4,360 ft. TVD during the drilling of DJS 2-14. Claystone units at the location of DJS 2-14 exhibit low permeability; this indicates a lower ability for water to move through rock and is a quality needed for a geologic unit to act as a competent confining zone.

SROG identified a redundant confining zone above Claystone 2/3 that further separates the AE zone from shallow USDWs. Above Claystone 2/3 is a massive block of claystone interrupted by a basalt sill and shallower USDWs. This massive claystone block is composed of the Chalk Hills Formation from approximately 4,910 ft. to 2,380 ft. TVD and the Glenns Ferry Formation from approximately 2,380 ft. TVD to 250 ft. TVD in well DJS 2-14[1].

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[1] Depth values for the Chalk Hills and Glenns Ferry Formation may differ across the AE area, and the values presented here are taken from interpretation of geophysical logging results on the DJS 2-14 wellbore.

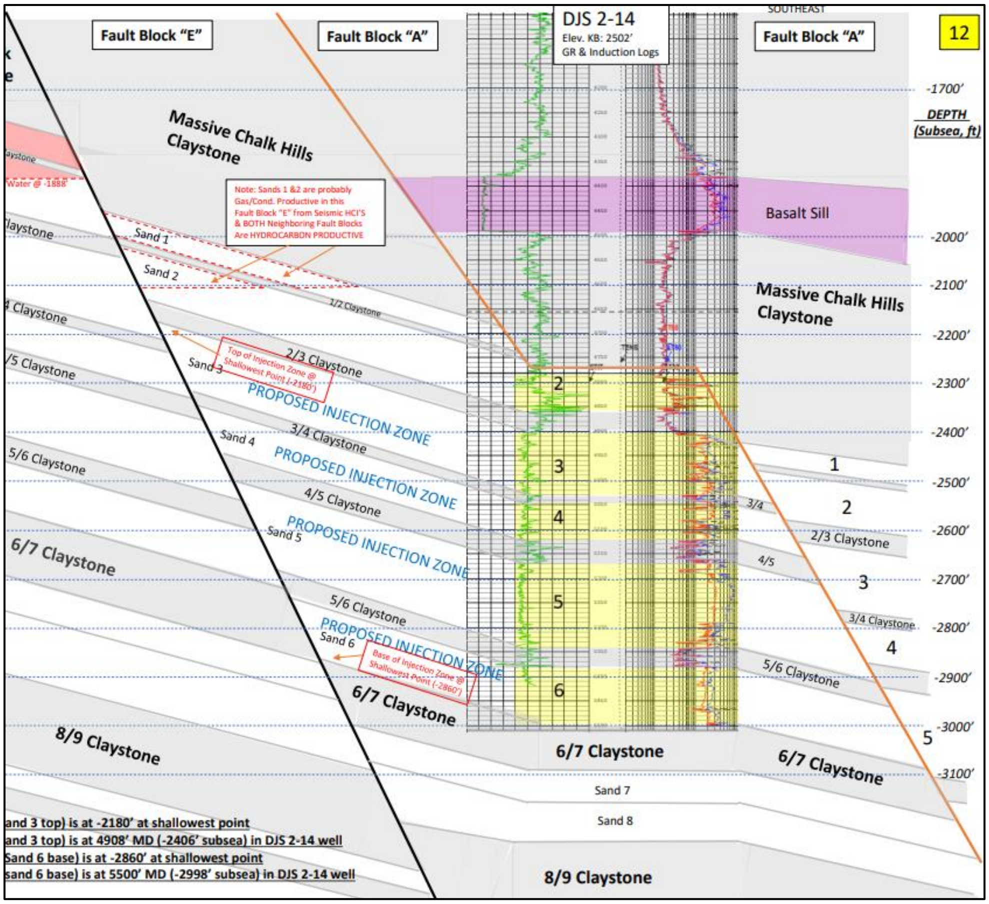

Figure 4 - Identification of the AE zone and upper and lower confining zones. Claystone 2/3 is identified as the upper confining interval. Claystone 6/7 is defined as the lower confining interval. Sands labeled 3-6 are identified as the injection zone and AE zone.

Geophysical logs performed on nearby wells ML 3-10, Kauffman 1-9, ML 1-10, ML 2-10, and ML 1-11 provide evidence of the continuity and thickness of both the upper confining interval and the redundant confining interval.

The impermeable characteristic of the upper confining interval is also demonstrated by hydrocarbon accumulation. At the Willow Field, the Willow Sands is the target interval for hydrocarbon production. In 2019, SROG reported that six wells within the Willow Field produced hydrocarbons from the Chalk Hills Formation: DJS 1-15, ML 2-10, ML 1-11, ML 1-3, ML 2-3, and ML 2-10 (IOGCC, 2019). Historically, the field has produced over 11.6 billion cubic ft. of natural gas, 438,000 barrels of condensate and oil, and 17 million gallons of natural gas liquids. In Block A, directly adjacent to Block E, well ML 3-10 has produced hydrocarbons from Sands 1 and 2. ML 1-11, drilled into Fault Block B, also displays evidence of hydrocarbon accumulation in Sands 1 and 2. Sands 1 and 2 lie directly under the base of the massive claystone block identified as a redundant upper confining interval. The fact that natural gas is trapped by fault structures supports the determination that the claystone portion of the lower Chalk Hills prevents upward movement of fluids.

The primary lower barrier to downward fluid movement has been identified as Claystone 6/7. Based on correlation with nearby wellbores, this interval occurs at a depth of approximately 5,500 ft. TVD, beyond the depth of the DJS 2-14 wellbore. Claystone 6/7 is an approximately 130 ft. claystone located across the Willow Field, present in every well drilled deep enough to investigate the interval.

D. Lateral Confinement

The Willow Sands contains USDWs within the exemption zone (Block E) and outside of the exemption zone. Naturally occuring faults separate the exemption zone from surrounding portions of the Willow Sands. Fault location and characteristics were considered by EPA for two reasons: 1) the fault block forms the boundary of the AE, and 2) SROG identified faults that would serve as barriers to fluid movement, protecting adjacent USDWs from endangerment.

There are numerous small faults formed during the time of sedimentation (i.e., syndepositional, or growth faults) found across Willow Field. These faults die out in the upward direction by the Upper Chalk Hills and are relatively short (0.5 – 3 miles) in length. Faulting across this field has created a network of fault blocks, together forming an elliptically shaped structure about 3 miles long and 2 miles wide along a northwest-southeast axis. By convention, these blocks have been named alphabetically, e.g., “Block A” though “Block E.” (Figure 3, page 8). DJS 2-14 is located within Block E. Impermeable layers within or along fault planes can serve as barriers to fluid movement, effectively creating lateral fault boundaries. SROG has submitted evidence showing that these faults are impermeable. A summary of the principal evidence regarding fault confinement is provided, below:

1. Reservoir pressure data from the Willow Sands suggest that faults isolate Blocks at a field-wide level. This is demonstrated by comparing pressure versus time data for wells drilled into Blocks A and B of the Willow Sands. Two wells drilled into Block B of the Willow Sands, ML 1-11, and ML 2-10, began production in August 2015. In the following months, net fluid withdrawal from this zone created a downward trending bottomhole pressure in both wells. Twenty-eight months after construction of ML 1-11 and ML 2-10, ML 3-10 was drilled into Block A. Initial shut-in tubing pressure in ML 3-10 was at original formation pressure, approximately .43 psi/ft., an indication that fluid withdrawal from Block B did not result in fluid movement from Block A. Net fluid withdrawals from Block A resulted in reduced bottomhole pressures in Block A, but across a significantly different pressure-versus-time profile as compared with Block B. These data are supportive of fault sealing between Blocks A and B. The fault between Block A and B continues to form the southwestern barrier to Block E, separating Blocks A and E. This information supports the theory of non-permeable flow across the southwestern fault. This information alone does not prove that this fault is impermeable across its entire length or across all sands within the approved injection zone; rather, it provides localized data indicating likelihood of sealing character.

   Other pressure versus time data across the field provide support of fault sealing at a regional level. SROG compared downhole pressure data across other Blocks, providing additional assurance that faults with different orientations, and at different locations across the field, exhibit sealing capacity. For instance, fluid production trends from Blocks B and C demonstrate evidence of fault sealing across east-west trending faults, such as the one that forms the northern boundary to Block E. This information alone is not sufficient evidence to conclude fault containment but is supportive of the notion.

2. Hydrocarbon accumulation and vertical offset of hydrocarbon/water contact points in Blocks other than Block E indicates that geologic structure effectively inhibits fluid movement. Hydrocarbons are trapped against fault and claystone traps between Blocks A and B. The presence of hydrocarbons in commercially relevant volumes against these traps indicates impermeability across a geologic timescale. The hydrocarbon/water contact point, where the oil and gas contact water, a denser fluid, is approximately 200 ft. lower with respect to sea-level in ML 3-10 than wells in Block B. Trapping occurs across faults where sand-sand juxtaposition would otherwise be present, indicating that hydrocarbon trapping cannot be solely attributed to a facies change. Hydrocarbon trapping and offset hydocarbon/water contacts points provide additional evidence of fault containment.

3. Two distinct geologic processes seen in geologic outcrops in southwestern Idaho explain the formation of sealing faults. Clay smear, a process in which clay from the wall rock is incorporated in a fault zone, and silica cementation, a process by which percolation of geothermal water precipitates silica in voids of the sands, are geomechanical and geochemical processes affecting fault sealing properties. These two processes, individually or together along the same fault, explain the impermeable nature of the faults at Willow Field. SROG provided examples of cementation for the Chalk Hills on the western flank of the Western Snake River Plain (about 25 -30 miles southwest of the project site), in the Marsing area (about 40 miles south of the project site), and the Boise area (about 40 miles from the project site on the eastern margin of the WSRP) where faults are exposed at the surface. The occurrence of numerous claystone/sandstone transitions within the Willow Sands increases the likelihood of clay smear. Regional geothermal activity increases the likelihood of silica cementation.

4. Subsurface imaging identified syndepositional faults at Willow Field, and historic seismic records indicate a lack of seismicity in the project area. This supports the conclusion that the faults are inactive and have not deformed since time of formation.

This evidence demonstrates that the portions of the Willow Sands identified for exemption are laterally confined from USDWs. As further assurance that injection will not result in fluid movement between fault blocks, EPA is requiring conditions in Permit ID-2D001-A meant to demonstrate that faults near the injection well behave as barriers. The Permittee is required to prepare and submit annual Boundary Effects Analysis Reports, providing EPA opportunities to confirm fault confinement on an ongoing basis.

E. Hydrogeology and Groundwater Flow

Groundwater occurs throughout the Payette River Basin, both in shallow and deeper geologic intervals. The shallowest aquifer found at the location of the AE is characterized as either shallow alluvium or Pierce Gulch Sand, depending on location within the Basin. Surficial aquifer systems are the primary source of drinking water for private well owners in the area. This shallow sand is encountered by DJS 2-14 from to surface to 250 ft. TVD. Wells that access this hydrologic unit generally do so at depths of between 150-300 ft. below ground. Groundwater flow within these units is towards to Payette and Snake Rivers, as is movement of fluids from deeper, confined aquifers (Parliman, 1986). From the location of the exemption zone, this corresponds to a south-southwesterly groundwater flow direction towards the Payette River, though no groundwater flow is expected within Block E of the Willow Sands due to reservoir confinement.

Across the Idaho Group (i.e., Glenns Ferry and Chalk Hills Formations), regional flow systems have residence times ranging from hundreds to tens of thousands of years (SPF Water Engineering, LLC, 2016). Movement into and out of Block E is not expected based on geological structure of the Block. Fault Block E is bound laterally by three faults and vertically by claystone strata providing barriers to fluid movement. The formation fluids in the Willow Sands are slightly-to-moderately saline. Thirteen water samples taken from various wells drilled into the Willow Sands were analyzed for TDS. One of these samples was taken from well DJS 2-14, which contained a TDS level of 1,540 mg/l. The average TDS value from all samples taken across the Willow Field from the Willow Sands was 3,109 mg/l TDS. Removing one sample with an anomalously high TDS value, possibly caused by drill fluid contamination, the average level of TDS within the Willow Sands was found to be 2,036 mg/l. This aquifer meets the criteria of a USDW since it contains a quantity of water sufficient to supply a public water system and contains fewer than 10,000 mg/L TDS (40 CFR § 144.3).

EPA considered whether hydrothermal fluid circulation would impact fluid movement into or out of Block E based on the presence of hydrothermal activity in southwestern Idaho. For example, the Christensen A-1 geothermal exploration well approximately 16 miles to the north of the AE boundary displays evidence of fluid movement caused by hydrothermal circulation. Columbia River Basalt, found at the location of the A-1 well, was identified as a possible conduit for groundwater movement from deeper geothermal sources. This differs from the extensive sedimentary sequences found at in the central and southern portions of Payette County, including those specific lithologies at the location of the exemption request, where shallow basalt flows are not found. Previous studies affirm the understanding that there is no localized upward fluid movement driven by hydrothermal circulation at the site of the exemption (Mitchell, 1981).

F. Aquifer Designation under State Law

This section provides background information on a governmental action taken by Idaho regarding the aquifer found within the Willow Sands. On March 26, 2018, the Idaho Department of Environmental Quality (IDEQ) determined that the injection zone for the DJS 2-14 well could not be considered an "aquifer"[2] pursuant to section 007.12 of the Idaho Groundwater Quality Rule (IDAPA 58.01.11), because it is not "capable of yielding economically significant quantities of water to wells and springs." In Idaho, only EPA has the authority to exempt aquifers

[2] EPA defines an aquifer as a geologic formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring (*See*, 40 CFR 144.3).

associated with Class II permits from status as USDWs. Appropriate state designations are relevant insofar as they concern separate designations under state law.

IDEQ did determine that the water in the injection zone does qualify as *groundwater* under section 007.16 of the Idaho Groundwater Quality Rule since it is considered, "[a]ny water of the state which occurs beneath the surface of the earth in a saturated geological formation of rock or soil." This section of Idaho law allows discharges to groundwater only under certain circumstances, including when such discharge is authorized by permit. EPA prepared a Class II permit that would allow injection into this aquifer (*See*, EPA Region 10 Permit ID-2D001-A).

II. Summary of Non-Substantial Decision

Pursuant to 40 CFR § 146.4, an aquifer or a portion thereof which meets the criteria for a USDW under § 146.3 may be determined under § 144.7 of this chapter to be an "exempted aquifer." The portion of the Willow Sands under review does not currently serve as a source of drinking water and cannot now, and will not in the future, serve as a source of drinking water. This following two sections document EPA's evaluation under 40 CFR §§ 146.4(a), (b)(2), and (b)(3).

This process requires EPA to determine whether the AE is a major or minor (i.e. substantial or non-substantial) exemption. The process is discussed in a Federal Register Notice Preamble at 48 Fed. Reg. 40098, 40108 (September 2, 1983); also, 49 Fed. Reg. 20138, 20143 (May 11, 1984).

EPA has determined this AE is a minor exemption. This AE is associated with the issuance of a site-specific UIC Class II permit action and is not associated with a statewide action that would have broad effects on water use across Idaho. EPA also considered the following facts when making this determination: the portion of the aquifer being exempted is confined by faults that separate injected fluids from other portions of the USDW; the aquifer portion is located within a field, and at a depth, where commercially-viable quantities of hydrocarbons are found; injection approved by the permit does not allow injection of 3rd party fluids; no hazardous waste would be injected under the conditions of the permit; and there are no instances of drinking water wells constructed to the depth of the Willow Sands in Payette County, Idaho. The decision to treat this AE as a minor exemption is also consistent with the corresponding state program revision process[3].

[3] *Guidance 34 - EPA's Guidance for Review and Approval of State Underground Injection Control (UIC) Programs and Revisions to Approved State Programs*.

III. Current Water Supply (40 CFR § 146.4(a))

This section provides information concerning EPA's review of the current sources of drinking water near the site of the AE to determine whether the AE meets the criteria at 40 CFR § 146.4 (a): "it does not currently serve as a source of drinking water." Groundwater within the Payette River Basin supplies drinking water for both public and private well owners. EPA considered whether either private or public sources access this aquifer.

EPA determined that the portion of the aquifer being exempted is not currently serving as a source of drinking water, nor are there any hydrologic connections between the portion of the Willow Sands being exempted and aquifers currently serving as drinking water sources. This determination has been made based on an evaluation of water well records and geologic information.

A. Private Water Wells

EPA guidance stipulates that applicants requesting an AE should ensure that there are no drinking water wells within a minimum of a ¼-mile of the AE boundary. The applicant, SROG, conducted a search for drinking water wells within a 24 square mile area (equal to 15,360 acres) extending at least ¼-mile beyond the AE boundary. Within this "Search Area," SROG identified all drinking water wells using the "Find A Well" online database published by the Idaho Department of Water Resources[4]. EPA recreated this search and confirmed that SROG provided a complete list of all water wells located within the previously described Search Area. See Figure 5 for a visualization of wells near the AE boundary:

[4] Idaho Department of Water Resources, Find a Well Map, https://idwr.idaho.gov/wells/find-a-well-map/

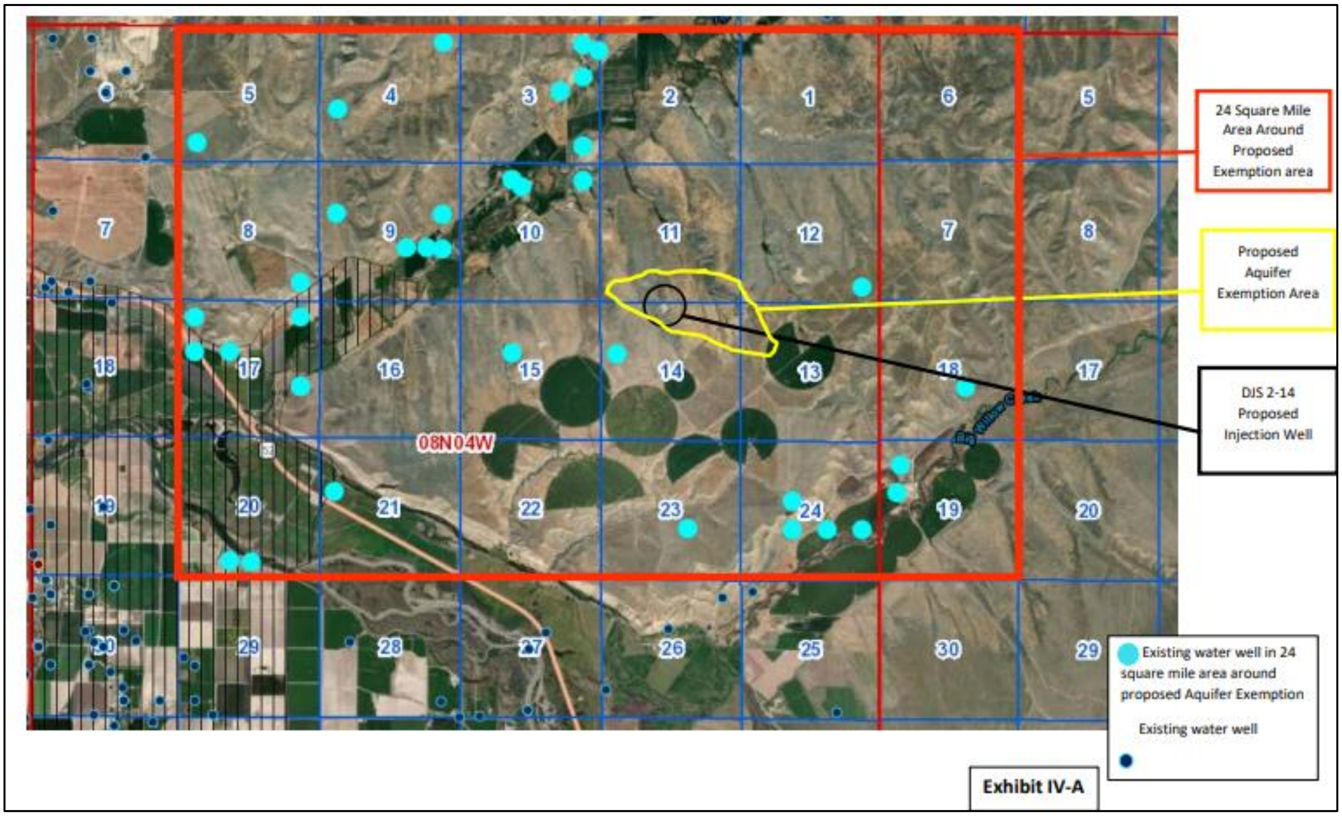

Figure 5 - Map showing the areal extent of the AE boundary (in yellow) and all wells within a 24 square mile (15,360 acres) search area around the AE boundary. The AE covers approximately 269 acres. Existing water wells found within the search area are shown in light-blue. The dark-blue lines designate 1x1 mile sections in the Public Land Survey System. Data provided by applicant, from IDWR's well search database.

No wells occur within the AE boundary. Thirty-seven groundwater supply wells occur outside of the AE boundary but within this Search Area, all of which access hydrologic units much shallower than the Willow Sands. Of these wells, 28 are domestic wells (including wells identified as domestic, domestic and irrigation, domestic - single residence, and domestic - replacement); 2 are irrigation wells; 4 are stock wells; 1 is a cathodic protection well; 1 dry well; and 1 well is listed with an unknown use. Within the entire Search Area there are four water wells deeper than 250 ft., none of which are deeper than 415 ft. All four of these wells are located over one mile from the boundary of the AE. As discussed in the section above, ***Vertical Confinement***, there are multiple competent confining intervals between the Willow Sands and shallower hydrologic units, such as those accessed for drinking water within the Search Area. As discussed in the section ***Lateral Confinement,*** above, faults are expected to confine injected fluids to the Block E reservoir. All water supply wells are separated vertically from the top of the AE zone by more than 3,000 ft. of rock, predominantly claystone.

EPA reviewed state records to determine if geothermal exploration wells exist in the Search Area to account for the possibility that abandoned deep wells may have been converted to water wells after failing to demonstrate commercial viability. IDWR's Geothermal Resources webtool identifies one geothermal well inside the Search Area. It is in the NE ¼ of Section 16 of Township 8 North, Range 4 West, approximately 1.7 miles south-southwest of the closet point on the AE boundary.[5] The depth of the well is 975 ft. A 1981 geothermal study across southwestern Idaho identified a geothermal well approximately 2.6 miles to the east of the nearest point along the AE boundary, located in the northeast corner of Section 16 of Township 8 North, Range 3 West (Mitchell, 1981). This well is drilled to a depth of approximately 1,450 ft. TVD and the lithology was described as "clay."

EPA reviewed the Search Area established by SROG for other oil and gas exploratory wellbores that could have been converted to water use wells after proving to be non-viable as hydrocarbon production wells. Data from the Idaho Geologic Survey and Idaho Department of Lands identify oil and gas wells within and around the Little Willow Drainage (including wellbores outside the Search Area). All wells were identified as either shut-in gas wells, active hydrocarbon producing wells, plugged and abandoned hydrocarbon wells, or otherwise plugged and abandoned wells (IDL, 2020). None have been converted to water supply wells.

B. Public Water Systems

Shallow aquifer systems are the primary source of drinking water in Payette County for both private and public supplies. In 2015, public water supply in Payette County withdrew 1.53 million gallons per day (MGPD) of groundwater. EPA surveyed PWS records along the Snake River-Payette River Basin using the State of Idaho's Source Water Assessment and Protection tool.[6] No PWSs exist within the Search Area defined in the prior section. The nearest PWSs to the AE boundary are listed in Table 1.

Table 1 -List of PWSs near the AE zone. Listed distance is between the PWS site and the nearest border of the AE.

PWS Number	Name	Distance (Mi.)	Direction
ID3140174	Simplot Potato	2.4	SE
ID3380037	Payette River Hunt and Fish Club, Well #1	4.1	S
ID3380028	Seneca Foods Inc, Well #1	4.8	SW
ID3380028	Seneca Foods Inc, Well #2	4.85	SW
ID3380008	City of New Plymouth, Well #5	5	SSW
ID3380008	City of New Plymouth, Well #6	5	SSW

EPA concludes that the portions of the Willow Sands identified for exemption do not currently serve as a source of drinking water. Additionally, no drinking water wells have been drilled into

[5] IDWR Geothermal Resources. https://maps.idwr.idaho.gov/map/geothermal

[6] Idaho's Source Water Assessment and Protection Tool. https://mapcase.deq.idaho.gov/swa/default.html?SRCID=A0003823. Accessed on October 30, 2020.

the Willow Sands within a Search Area extending beyond the boundary of the exemption request. There are no known or suspected routes of fluid movement into or between Fault Block E and surrounding portions of the Willow Sands. Therefore, the EPA has determined that the portions of the aquifer identified for exemption meet the criteria at 40 CFR § 146.4(a).

IV. Future Use (40 CFR § 146.4(b))

An applicant for an AE must show that an aquifer or aquifer portion sought for exemption cannot and will not be used as a drinking water source in the future. Pursuant to 40 CFR § 146.4(b), there are four ways this may be demonstrated [*See*, 40 CFR 146.4(b), (1)-(4)], any one of which must be satisfied. EPA has evaluated SROG's claims under 40 CFR § 146.4(b)(2) and (b)(3) that the aquifer portion within Willow Sands 3-6 contained to Block E "…cannot now and will not in the future serve as a source of drinking water because… [i]t is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical" [*See*, 40 CFR § 146.4(b)(2)] and "…is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical" [*See*, 40 CFR § 146.4(b)(3)]. The following factors were considered in reaching this decision: aquifer depth, productivity and contamination, and alternative water sources.

The estimated cost of producing water from the Willow Sands and transporting it to nearby population centers is too high to be considered a realistic future source of drinking water. This determination is based on several factors, including a review of current water use in Payette River Basin, future water demand scenarios, and an estimated cost comparison of accessing water within Fault Block E of the Willow Sands and other sources. EPA relied upon agency-issued guidance to evaluate this request, including *Guidance for Review and Approval of State UIC Programs and Revisions to Approved State Programs*,[7] and *Enhancing Coordination and Communication with States on Review and Approval of AE Requests Under SDWA.*[8]

A. Cost of Accessing the Willow Sands

This section summarizes an estimated cost evaluation of accessing the Willow Sands for drinking water supply and is intended to demonstrate the relative cost of accessing an aquifer at this depth and location. This includes summarizing the cost of accessing the Willow Sands as detailed by SROG and comparing this estimated cost with actual costs of water sources used by nearby cities. In summary, Sands 3-6 within Block E of the Willow Sand are an economically impractical drinking water source based on volumetric limitation of the reservoir, reservoir depth, water quality of the aquifer, and the distance from the field to the nearest population centers.

An aquifer's potential to serve as a drinking water source includes an evaluation of water productivity. Reservoir characteristics of the Willow Sands 3-6 within Block E limit the available quantity of water, impacting the viability of this aquifer portion to serve as a long-term drinking water source. SROG estimates that 25 million barrels (approximately 3,220 acre-ft.) out of an estimated 115 million total barrels of water (approximately 15,000 acre-ft.) would be recoverable from within Fault Block E. This is based on water lift limitation due to gas

[7] Guidance for Review and Approval of State Underground Injection (UIC) Programs and Revisions to Approved State Programs, Groundwater Protection Guidance #34.

[8] Enhancing Coordination and Communication with States on Review and Approval of AE Requests Under SDWA.

interference and loss of water productivity. To put this in perspective, if one assumes that this reservoir would produce 5,000 barrels, or 210,000 gallons per day, the well system would have an expected life of approximately 13.7 years. A supply of this volume would serve a population of approximately 1,600 people assuming each person consumed 134 gallons per day (GPD), the average per capita consumption rate for this region (USGS, 2015). This is approximately the population of New Plymouth, Idaho. Serving a larger customer base would decrease the lifespan of the source. The quantity of water available at this location and projected lifespan of the project are factored into cost estimates contained in this section.

SROG performed a cost estimate of extracting, transporting, and treating the water within Fault Block E for public supply. Primary expenses for producing untreated water from the Willow Sands include well construction, pipeline construction, and ongoing operational and maintenance costs. SROG estimated that the construction of a 5,300 foot well, electrical connections, pipelines, pumping equipment, and all associated expenses would cost approximately $13,270,750. Significant capital outlays include drilling costs, installation of an electronic submersible pump and associated components, installation of electrical service, pipeline installation, and transfer pumps and controls. After initial construction, monthly operational costs were estimated at $41,500 per month, with the highest expense estimated to be the electrical power costs. SROG estimated that an additional $250,000 would be spent every three years, on average, for miscellaneous repairs and maintenance. Based on these cost estimates and a total expected recovery of 25,000,000 barrels, the unit cost of water would be approximately $20.23/1,000 gallons, or $0.0203/gallon. This does not include the cost of extensive water treatment that would be required prior to delivering this water to market.

EPA Region 10 reviewed the water chemistry data from a sample taken on October 22, 2014, from the injection zone. The Willow Sands aquifer would require several different treatment processes to make it both compliant with regulations and aesthetically acceptable for potential domestic use. Hydrocarbon contamination, such as benzene, was found in multiple water samples taken from the Willow Sands at levels above the Maximum Contaminant Level (MCL). Wells from which samples tested in exceedance of the MCL for benzene were: DJS 2-14 (1.5 mg/L), DJS 1-15 (3.0 mg/L), Kauffman 1-9 (2.1 mg/L), ML 1-3 (.7 mg/L), ML 1-11 (8.9 mg/L), ML 2-3 (1.65 mg/L), ML 2-10 (4.28 mg/L), ML 3-10 (2.21 mg/L). For reference, the MCL for benzene is 0.005 mg/L. Based on the DJS 2-14 sample, the formation fluids in Fault Block E may contain benzene at a level 300 times the MCL. Toluene and ethylbenzene are found at levels above their respective MCLs, too.

Other water quality concerns would necessitate treatment processes to render this water usable for drinking water purposes. The water sample taken from DJS 2-14 tested at 6.88 mg/l for Fluoride while the MCL is 4.0 mg/l. For this source of water to be compliant, the fluoride would need to be removed. Lab analyses performed on these samples did not screen for all possible contaminants, so it is possible that additional exceedances of MCLs would exist.

In addition to the enforceable water characteristics, the Willow Sands water contains substances that would make it problematic in domestic applications. The most significant is the level of iron. Iron levels are 25 times the EPA secondary (non-regulatory) standard. Typically, iron is viewed as a nuisance or aesthetic concern, but at the levels present in the tested water, the water would have to be treated. Without treatment, a myriad of issues would arise in piping systems and with home appliances. Additionally, such levels would almost certainly involve unfavorable taste and odor concerns. Manganese levels are also elevated, at 0.128 mg/l, which is about 2.5 times the EPA secondary standard, but below the lifetime health advisory level of 0.300 mg/l[9]. Design of a water treatment plant for the removal of iron and manganese has a high lifecycle cost (considering both construction cost and operational costs). Generally, due to the high lifecycle cost, water utilities will invest in searching for other water sources before installing a dedicated treatment process for removing iron and manganese – particularly when iron levels are as high as they are with this source.

Additionally, the Willow Sands water has a relatively high alkalinity and an associated pH of 8.8. The pH is over the EPA secondary standard of 8.5, and while this would not be a compliance concern, it would likely be an aesthetic concern. Most water utilities would attempt to treat the water to adjust pH to 8.5 or less, further increasing the cost for the use of the Willow Sands water as a source.

Water taken from the Willow Sands would require treatment prior to reaching the end consumer. A water treatment plant utilizing the Willow Sands aquifer would require multiple unit treatment processes, and such a facility would be expensive to construct and operate. This would be a significant challenge for a small water utility with limited financial resources and ability to make use of the economies of scale available to cities with a larger customer base.

To consider the estimated cost of treating this water, SROG contacted twelve companies requesting a conceptual water treatment plan and cost estimate, though only two were willing to provide preliminary cost estimates based on the nature of the project and relatively small size of the hypothetical plant. The lowest-cost proposal received by SROG would include an oil-water media filter, an electrocoagulation treater, followed by two stages of filtration, and finally processing with a reverse-osmosis unit. Total capital costs from this estimate were $1.5 million, and operating costs were estimated at $295,000/month. Per unit costs are then found to be $47.77/1000 gallons or $0.0477/gallon.

As stated above, the unit cost to access the Willow Sands and deliver water to market—without considering water treatment— is approximately $0.0203/gallon. Adding the cost of water treatment ($0.0477/gallon), the total unit cost would be approximately $0.0680/gallon.

The cost of developing the Willow Sands as a drinking water source was then compared with the current, actual costs of water available to customers in nearby cities. Fruitland currently charges its end-users approximately $0.0054/gallon according to the City's website[10]. By the same

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[9] Manganese has cognitive developmental effects on children, and because of this recognition, in 2004, EPA established both and acute and chronic advisory levels. Reference EPA publication EPA-822-R-04-003.

[10] https://www.fruitland.org/?SEC=09918810-C121-4C8A-B511-1DBB8F0E3538#:~:text=Monthly%20water%20rate%20is%20%2440.00,no%20water%20usage%20is%20%2472.00. Assuming a $40.00 base fee, marginal fee of $1.55/1000 gallons, 2.6 average household residents, and 134 GPD usage rate.

method, New Plymouth, Idaho, charges end users $0.0053/gallon[11] and the City of Payette charges $0.0031/ gallon[12]. The estimated per-gallon costs of producing and delivering treated drinking water from Fault Block E is approximately 12.6, 12.8, and 21.9 times greater than the actual costs in Fruitland, New Plymouth, and Payette, respectively.

To provide additional context to the relative cost of accessing the Willow Sands, EPA compared the estimated cost of producing water from the Willow Sands against the cost of drinking water across the state. In 2017, a survey was sent to all members of the Association of Idaho Cities requesting the cost of 5,000 gallons of drinking water to an end-user. Amongst responses from all cities, regardless of population, the average cost per-gallon was 13.3 times less expensive than the estimated cost of providing drinking water from Fault Block E; $0.0051/gallon versus $0.068/gallon, respectively (Cities, 2017).

These cost comparisons are both estimated and simplified, made to compare the relative costs of developing a USDW that is not actually planned for use. Cost comparisons have not incorporated amortization costs for the hypothetical Willow Sands well source, which, if included, would likely increase the total cost, and subsequently increase the relative cost in comparison with existing sources. Ongoing costs, such as power, overhead, and maintenance costs, are difficult to estimate especially considering the limited water availability of the Willow Sands Block E. Lastly, it does not consider whether it would be a sound investment to develop a water system with limited water availability. As discussed above, approximately 25 million barrels of water are available from this reservoir.

EPA contacted local cities to learn whether the Willow Sands has ever been considered as a future drinking water source. Of the three cities contacted by EPA (Fruitland, New Plymouth, City of Payette), none expressed that the Willow Sands was being considered as a future water source. There is also no indication that extremely deep groundwater sources (i.e., over 4,000 ft. deep) have ever been considered by local PWSs for drinking water needs in the Payette River Basin. A report from 1986 stated that “only the uppermost portion of the sediments is important with respect to groundwater development within the Payette County study area” (Deick & Ralston, 1986).

EPA considered whether nearby cities in more populous areas of Idaho have accessed aquifers as deep as the Willow Sands. Areas in the Treasure Valley that experience much greater water demand than the Payette Basin primarily access groundwater from depths of less than 1,000 ft., even though sedimentary horizons extend to depths of over 6,000 ft. (SPF Water Engineering, LLC, 2016). In a 1981 report, Wood and Anderson theorize that drilling costs “may limit exploitation of” geologic units deeper than 1,500 ft. below ground in the Western Snake River

[11] https://npidaho.com/documents/54/Water__Sewer__Garbage_Rates.pdf Assuming a $37.20 base fee, marginal fee of $1.75/1,000 gallons, 2.6 average household residents, and 134 GPD usage rate.

[12] https://www.cityofpayette.com/?SEC=2C7B73EC-6162-4ACD-8F16-0230B1152EAE Assuming a $6.87 base fee, marginal fee of $02.45/1000 gallons 2.6 average household residents, and 134 GPD usage rate.

Plain, a statement referring to the Nampa-Caldwell and adjacent areas which share similar geologic setting as the Payette River Valley (Mitchell, 1981).

Considering limited water availability and the costs of accessing Block E of the Willow Sands, accessing this aquifer as a drinking water source is economically impractical.

B. Considering Alternative Sources

This section provides information on population change and water demand in Payette County. It then discusses alternative water resources that could be targeted for drinking water supply prior to the Willow Sands, Block E. The population of Payette County, though growing, remains small, and water usage is not expected to increase dramatically in the coming decades. Were an unforeseen event to occur resulting in a need to acquire drinking water from new sources, Block E of the Willow Sands would not be a viable economic choice in comparison with alternative untapped sources.

Based on data from the U.S. Census Bureau (The Bureau), population in Payette County has grown in the previous decade, though, at a rate less than the entirely of Idaho[13]. A 2015 study by the USGS demonstrated that while Idaho has seen a population growth since 1990, total water withdrawals have remained steady or have even declined slightly (USGS, 2015). Similar conclusions were made in the Treasure Valley Domestic, Commercial, Municipal, and Industrial (DCMI) Water-Demand Projection report, prepared for the Idaho Department of Water Resources and Idaho Water Resource Board. The study area from the DCMI report included Canyon and Ada counties, which share geologies, geographies, weather, and culture with nearby Payette County. The DCMI report forecasts future water demand in Treasure Valley until the year 2065. This report indicates that the per capita water use is expected to decline slightly, while population is expected to increase. The net result is a modest (5%) increase in water demand for those counties in the study. This conclusion considers: population growth and changes in residential density; projected temperature increases leading to higher rates of evapotranspiration, precipitation decreases, and higher temperatures during the summer months; water conservation tactics, such as public education; installation of low-water-use fixtures, appliances, and landscaping; and pricing structures that discourage excessive water use.

No known water supply and demand forecasts have been prepared for the Payette River Basin, so to gather additional information on the current and future water needs for population centers nearest the AE boundary, EPA conducted outreach with local water resource departments. This occurred for the three cities closest to the injection well (Fruitland, New Plymouth, and the City of Payette) to understand PWS water source type and whether any future source expansion is planned. These cities, and their primary drinking water sources, are all located between 4-7 miles of the AE boundary. None of the PWSs discussed in this section extract water from the same

[13] U.S. Census Bureau. https://www.census.gov/programs-surveys/popest/data/data-sets.html. Accessed November 2020.

hydrologic unit as the Willow Sands or from any units that are hydrologically connected to Block E of the Willow Sands.

The City of Fruitland currently relies on the Payette River for primary water supply. Seven groundwater wells are maintained as an emergency/contingency source, all drawing from between 60-100 ft. BGS. The City has previously investigated the use of deeper water sources (i.e., 500-800 ft.), but abandoned those wells due to cost issues. Fruitland has made large capital investments in their current surface water system which is thought to sustain water quantity needs indefinitely based on expected population growth numbers[14]. A feasibility study from 2007 considered how the greater-Fruitland area would supply domestic water needs in the event of a large population increase (an increase that would be equivalent to a tripling of Fruitland's population). Based on a consideration of capital, operational, and maintenance costs, the study determined that the best source of water for the projected new development would be an expansion of the existing Fruitland water system, rather than considering deeper groundwater resources (Pharmer Engineering, LLC, 2007).

The City of New Plymouth uses a three well system to supply all public water needs and maintains a fourth well for contingency purposes. All four of these wells are shallower than 126 ft. BGS. Current wells produce enough water for the city's needs based on conversations with City employees. Staff for the City informed EPA that additional supply was not currently needed[15].

The City of Payette relies on six active groundwater wells and two inactive wells to meet primary municipal needs. The aquifers that feed these wells are found at depths ranging from approximately 130 to 270 ft. BGS. Payette previously explored the idea of producing from aquifers approximately 500 ft. BGS but found that both water availability and quality decreased with depth[16].

Under unforeseen circumstances, it is possible that supplemental water resources may be needed in the future. In this scenario, less expensive and more easily accessible water sources would be targeted before the Willow Sands, Block E. First, expansion of shallow groundwater resources—nearly ubiquitous across the Payette River Basin—and surface water from the Payette River could be further developed. Second, deeper aquifers (>500 ft. BGS), though, shallower than the Willow Sands, may become economically viable, but those zones shallower than the Willow Sands and closer than the site of well DJS 2-14 would be far less expensive alternatives due to inherent drilling and piping costs. For example, at the location of DJS 2-14 a sand aquifer found between 1,350 and 1,420 ft. BGS is easier to access and contains fewer TDS than the Willow Sands. Finally, if expansion into deep freshwater (i.e., <3,000 TDS) aquifers such as the Willow Sands were ever to occur, water resource planners would consider the available quantity and quality of groundwater in the target aquifer. This would include identifying deep sand intervals

[14] Phone Conversations with staff employed by the City of Fruitland on November 5, 2018 and January 12, 2021.

[15] Phone Conversation with staff employed by the City of New Plymouth, November 6, 2018

[16] Phone Conversation with staff employed by the City of Payette, September 9, 2021

elsewhere in the Western Snake River Plain containing reservoirs that are not limited in volume by geologic structure and negatively impacted by residual contamination.

V. Effective Date

The AE will become effective on the same day Permit ID-2D001-A becomes effective. An AE is a final agency action that may be challenged under Section 1448(a)(2) of the SDWA (42 USC300j-7(a)(2)). The statute of limitations for the right of appeal regarding any determination made related to the AE described above is controlled by 40 CFR § 23.7 in concert with SDWA Section 1448(a)(2).

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