Application Part III

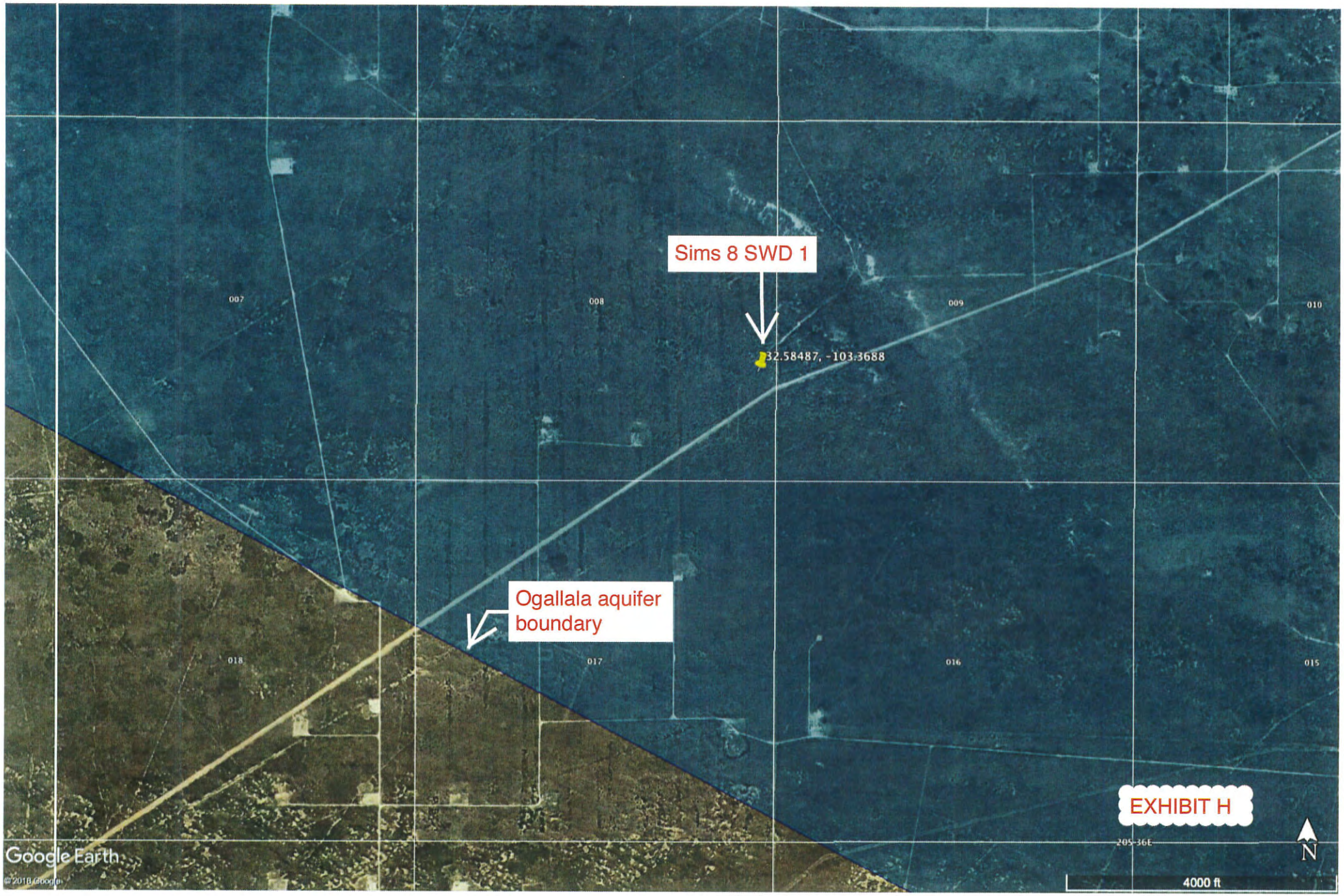
Sims 8 SWD 1
32.58487, -103.3688
Ogallala aquifer boundary
007
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EXHIBIT H
205-36E
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4000 ft
Google Earth

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EXHIBIT I

Seismic Risk Assessment

Solaris Water Midstream, LLC

Sims 8 SWD #1

Section 8, Township 20 South, Range 36 East

Lea County, New Mexico

Cory Walk

Cory Walk

B.S., M.S.

Geologist

Permits West Inc.

June 11, 2019

EXHIBIT I

GENERAL INFORMATION

Sims 8 SWD #1 is located in the SE 1/4, section 8, T20S, R36E, about 6 miles southwest of Monument, NM in the Permian Basin. Solaris Water Midstream, LLC proposes the injection zone to be within the Devonian formation through an open hole from 12,005'-13,730' below ground surface. This report assesses any potential concerns relating to induced seismicity along deep penetrating Precambrian faults or the connection between the injection zone and known underground potable water sources.

SEISMIC RISK ASSESSMENT

Historical Seismicity

Searching the USGS earthquake catalog resulted in no (0) earthquakes above a magnitude 2.5 within 6 miles (9.7 km) of the proposed deep disposal site since 1970 (Fig 1). According to this dataset, the nearest historical earthquake occurred in 2001 about 22 miles (~35 km) south and had a magnitude of 3.3.

Basement Faults and Subsurface Conditions

A structure contour map (Fig. 1) of the Precambrian basement shows the Williams #1 is approximately 1.0 mile from the nearest basement-penetrating fault inferred by Ewing (1990). **Basic information about these faults based on GIS data from Ruppel et al. (2009) is listed in Table 1.**

Snee and Zoback (2018) state, "S_{Hmax} rotates significantly across the Northwest Shelf as well, from ~north–south in northwest Eddy County to ~east-southeast–west-northwest in northern Lea and Yoakum counties." Around the Sims 8 SWD #1 site, Snee and Zoback indicate a **S_{Hmax} direction of N060°E and an A_φ of 0.65, indicating a normal and strike-slip faulting stress regime**.

Induced seismicity is a growing concern of deep SWD wells. Relatively new software developed by the Stanford Center for Induced and Triggered Seismicity allows for the probabilistic screening of deeply penetrating faults near the proposed injection zone (Walsh et al., 2016; Walsh et al., 2017). This software uses parameters such as stress orientations, fault strike/dip, injection rates, fault friction coefficients, etc. to estimate the potential for fault slip. Using the best available data as input parameters (Table 2), the Fault Slip Potential (FSP) models suggest the fault with the highest risk is fault 14 (Fig 2; Table 1). Fault 14 has a six (0.06) percent chance of slip through the year 2039. **This model also suggests a pore pressure increase of 13.5 psi on fault 14 (Fig. 3; Table 1) due to the proposed SWD well.** A pressure increase of 1600 psi on this fault would result in a 100% probability of fault slip while an increase of 500 psi results in a 50% probability of fault slip.

GROUNDWATER SOURCES

Three principal aquifers are used for potable groundwater in Lea County; these geologic units include the Triassic Santa Rosa formation, Tertiary Ogallala formation, and Quaternary alluvium. Nicholson and Clebsch (1961) state, "Potable ground water is not available below the Permian and Triassic unconformity but, because this boundary is not easily defined, the top of the Rustler anhydrite formation is regarded as the effective lower limit of 'potable' ground water." Around the Sims 8 SWD

EXHIBIT I

#1, the top of a thick anhydrite unit interpreted to represent the Rustler Formation lies at a depth of ~1705 feet bgs.

STRATIGRAPHY

Thick permeability barriers exist above (Woodford shale; 170 ft thick) and below (Simpson Group; 650 ft thick) the targeted Devonian injection zone (Plate 2, Comer et al., 1991; Fig. 8, Frenzel et al., 1988). Well data indicates ~10,300 ft of rock separating the top of the Devonian from the previously stated lower limit of potable water at the top of the Rustler anhydrite formation.

CONCLUDING STATEMENT

Geologic data evaluated around the Sims 8 SWD #1 well show no potential structural or stratigraphic connection between the Devonian injection zone and any subsurface potable water sources. Based on Fault Slip Potential modeling there is a 6% probability (0.06) of inducing seismic activity along nearby deeply penetrating Precambrian faults.

EXHIBIT I

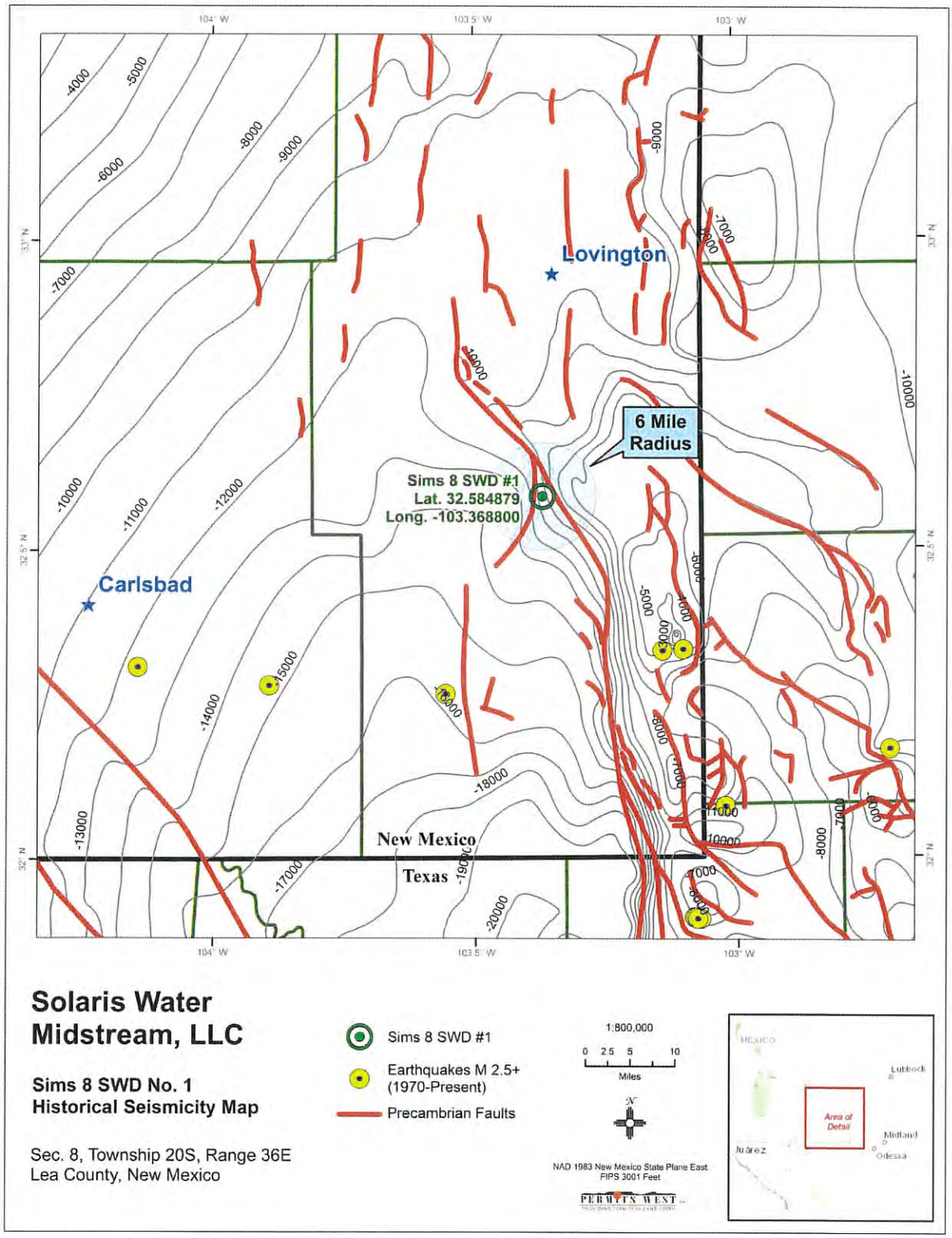

Figure 1. Structural contour map of the Precambrian basement in feet below sea level. Red lines represent the locations of Precambrian basement-penetrating faults (Ewing et al., 1990). The Sims 8 SWD #1 well lies ~1.0 mile East of the closest deeply penetrating fault and 22 miles from the closest historic earthquake.

EXHIBIT I

Table 1: Nearby Basement Fault Information

ID	Distance from Williams #1 (mi)	Strike (°)	Dip (°)	FSP	Pore Pressure change after 20 years (psi)
Fault 7	4.0	137	70	0.00	6
Fault 8	1.3	150	70	0.00	17
Fault 14	2.5	34	70	0.06	13
Fault 15	1.0	359	70	0.00	34

Table 2: Fault Slip Potential model input parameters

Faults	Value	Notes
Friction Coefficient	0.58	Ikari et al. (2011)
Dip Angle (deg)	70	Snee and Zoback (2018)
Stress		
Vertical stress gradient (psi/ft)	1.1	Hurd and Zoback (2012)
Max Horizontal Stress Direction (deg)	60	Snee and Zoback (2018)
Depth for calculations (ft)	13700	Proposed injection zone
Initial Reservoir Pressure Gradient (psi/ft)	0.7	calculated from mud wt (ppg) used in drilling at these depths
A Phi Parameter	0.65	Snee and Zoback (2018)
Reference Friction Coefficient	0.58	Ikari et al. (2011)
Hydrology		
Aquifer thickness (ft)	1500	Proposed injection zone
Porosity (%)	4	
Permeability (mD)	150	
Injection Rate (bbl/day)	40000	Maximum proposed injection rate

EXHIBIT I

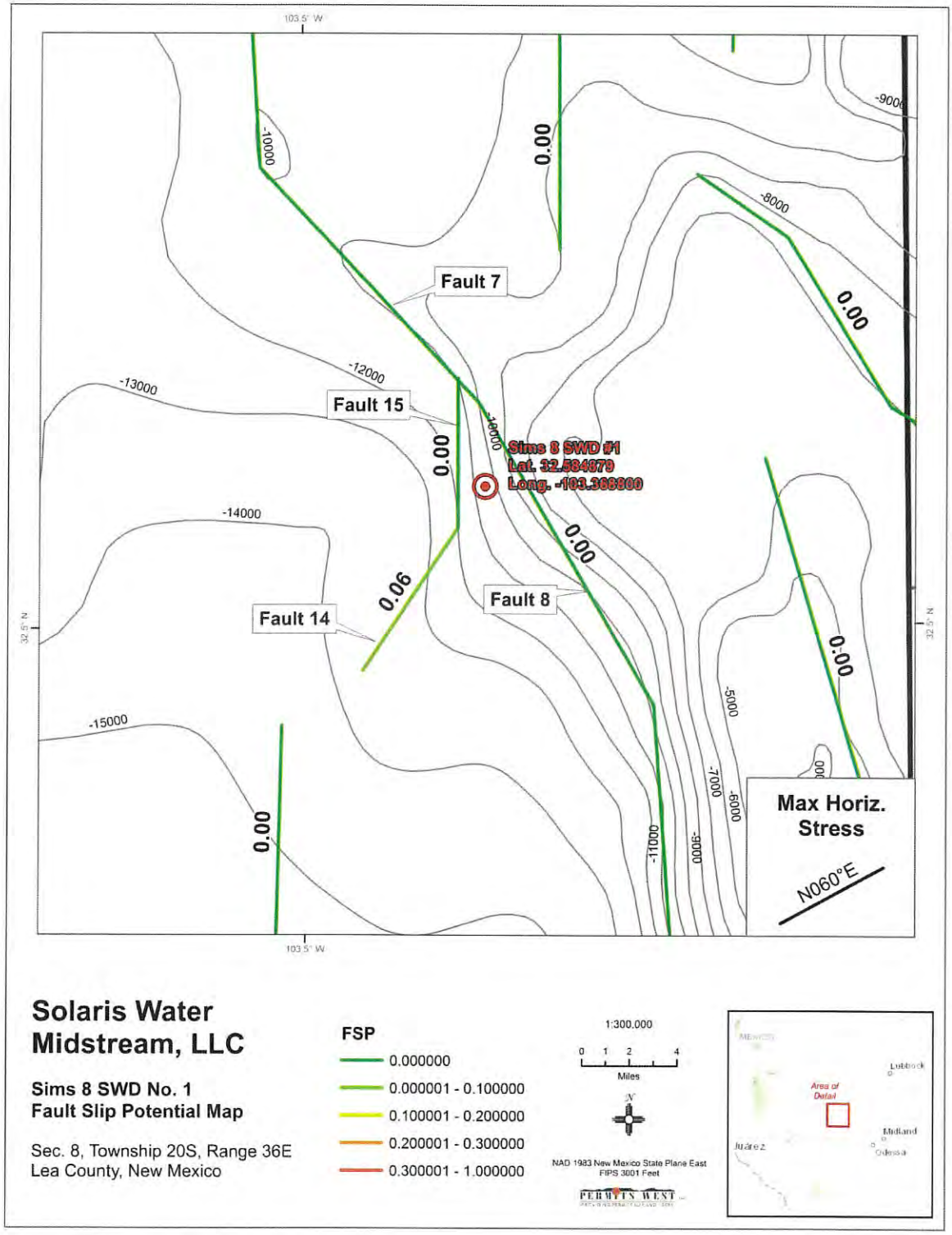

Figure 2. Detail Precambrian fault map of Sims 8 SWD #1 area as mapped by Ewing (1990). Faults are colored based on probability of fault slip as modeled using Fault Slip Potential software (Walsh and Zoback, 2016). Labeled values represent the calculated fault slip potential using the parameters indicated in Table 1. Contours show the top of the Precambrian basement in feet below sea level.

EXHIBIT I

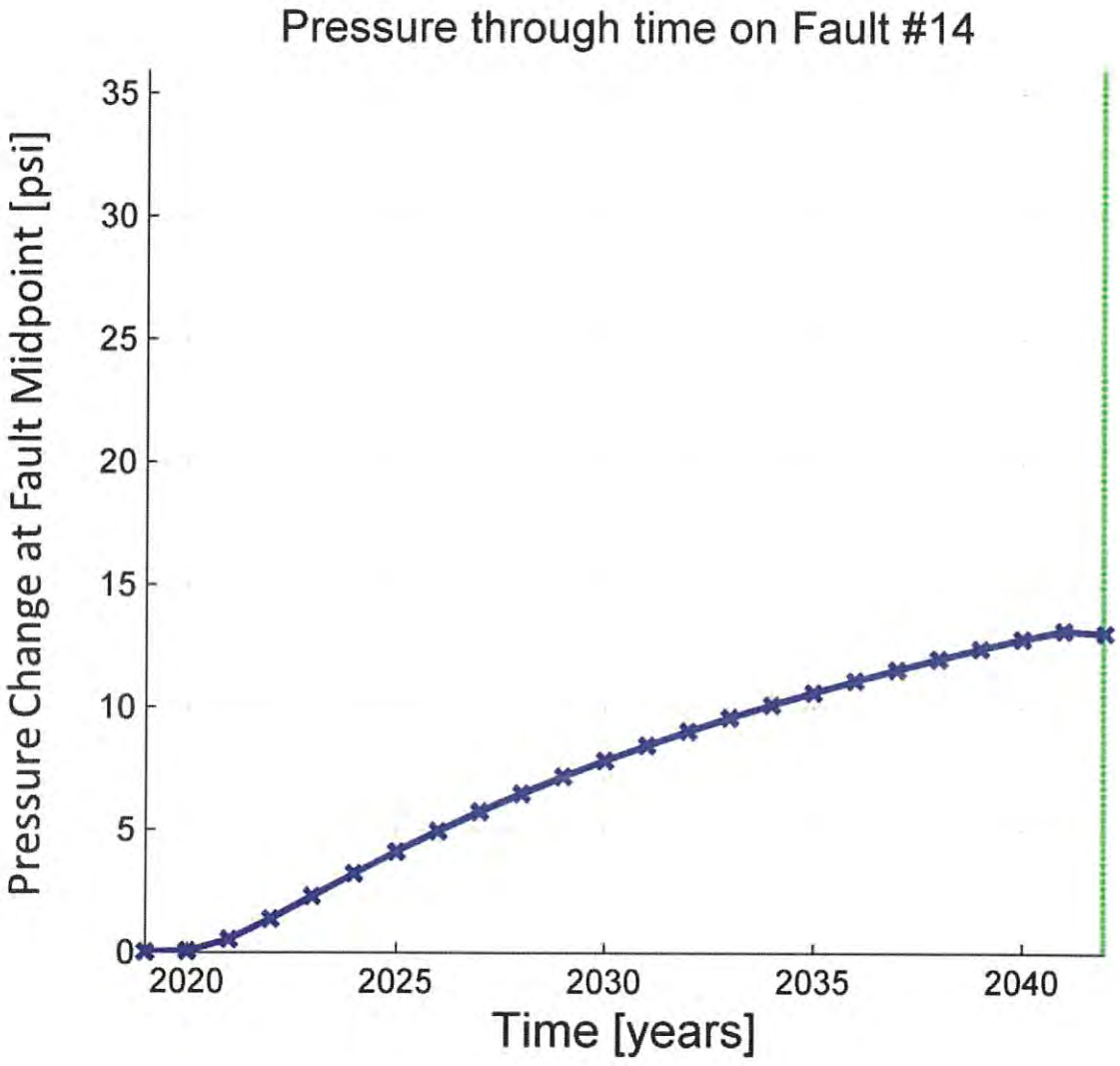

Figure 3. A scatter plot showing the modeled change of pore pressure on fault #14 through time, as a response to the proposed SWD well.

EXHIBIT I

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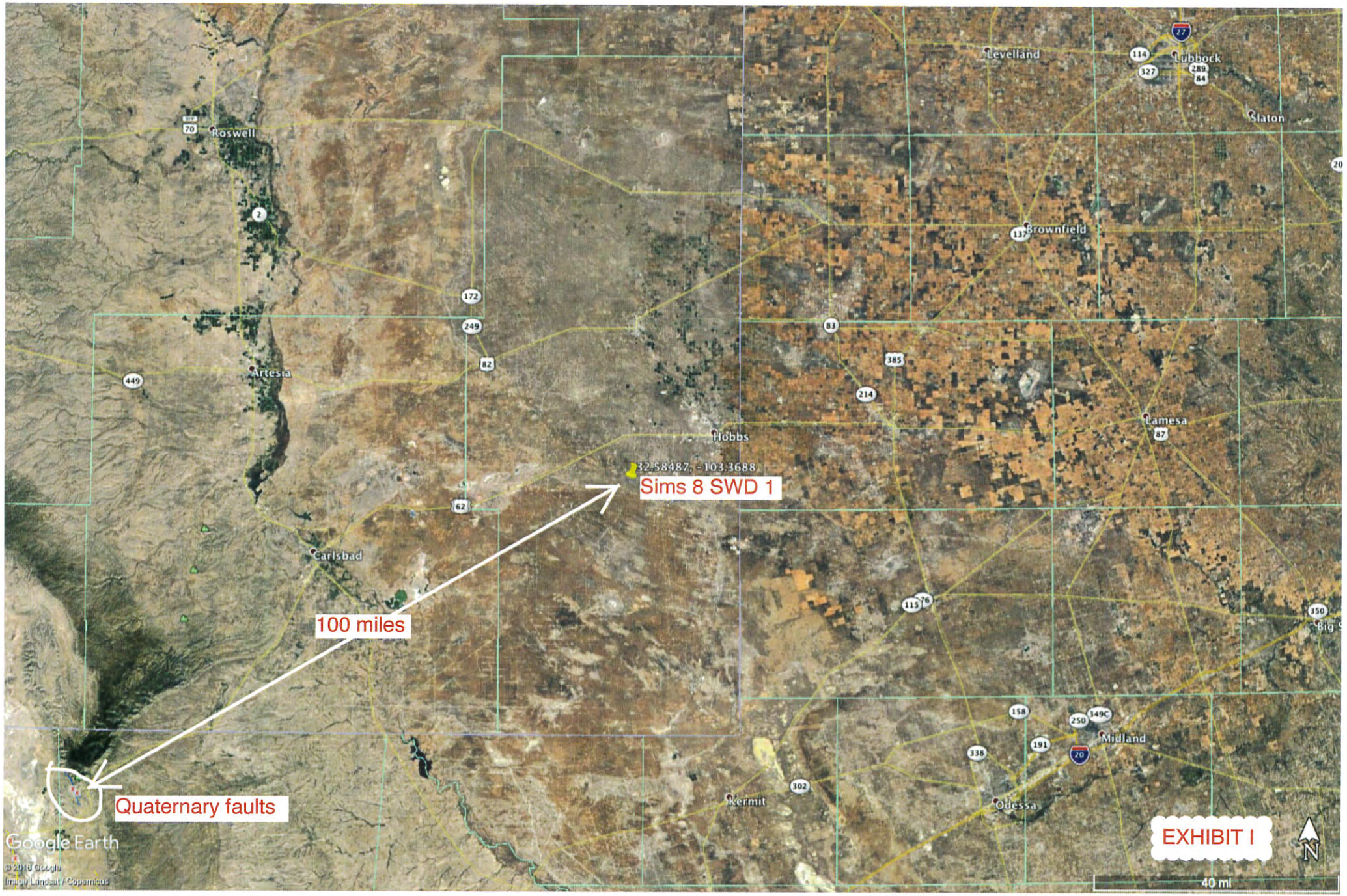
Levelland
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Sims 8 SWD 1
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Odessa
Quaternary faults
Google Earth
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Image Landsat / Copernicus
EXHIBIT I
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EXHIBIT J

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
April 18, 2019
and ending with the issue dated
April 18, 2019.

Publisher

Sworn and subscribed to before me this
18th day of April 2019.

Business Manager

My commission expires
January 29, 2023
(Seal)

OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of New Mexico
My Commission Expires 1-29-23

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGALS

LEGAL NOTICE
APRIL 18, 2019

Solaris Water Midstream, LLC is applying to drill the Sims 8 SWD 1 well as a saltwater disposal well. The well is staked at 1600' FSL & 275' FEL, Sec. 8, T. 20 S., R. 36 E., Lea County, NM. This is 6 miles southwest of Monument, NM. It will inject water into the Devonian formation from 12,005' to 13,730'. Maximum disposal pressure = 2401 psi. Maximum disposal rate = 40,000 bwpd. Interested parties must file objections or requests for hearing with the NM Oil Conservation Division, 1220 South Saint Francis Dr., Santa Fe, NM 87505 within 15 days. Additional information can be obtained by contacting: Brian Wood, Permits West, Inc., 37 Verano Loop, Santa Fe, NM 87508. Phone number is (505) 466-8120.
#34033

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BRIAN WOOD
PERMITS WEST
37 VERANO LOOP
SANTA FE, NM 87508

PERMITS WEST, INC.
PROVIDING PERMITS for LAND USERS
37 Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

EXHIBIT K

June 12, 2019

Pearl Valley Limited Partnership
PO Box 1046
Eunice NM 88231

Solaris Water Midstrem, LLC is applying (see attached application) to drill its Sims 8 SWD 1 well as a saltwater disposal well (SWD). As required by NM Oil Conservation Division (NMOCD) Rules, I am notifying you of the following proposed SWD. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Sims 8 SWD 1 TD = 13,730'
Proposed Disposal Zone: Devonian & Silurian from 12,005' to 13,730'
Where: 1600' FSL & 275' FEL Sec. 8, T. 20 S., R. 36 E., Lea County, NM
Approximate Location: 6 air miles southwest of Monument, NM
Applicant Name: Solaris Water Midstrem, LLC (432) 203-9020
Applicant's Address: 907 Tradewinds Blvd., Suite B, Midland, TX 79706

Submittal Information: Application for a saltwater disposal well will be filed with the NMOCD. If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. NMOCD address is 1220 South St. Francis Dr., Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

Brian Wood