

Notice of Exemption

Appendix E

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044
County Clerk
County of: Siskiyou
311 Fourth Street, Room 201
Yreka CA 96097

From: (Public Agency): Environmental Health Division
806 South Main Street
Yreka CA 96097

(Address)

FILED

Siskiyou County

FEB 07 2024

LAURA BYNUM, CLERK

BY: [Signature] Deputy Clerk

Project Title: Water Well Permit #23088

Project Applicant: Diane P McKoen Living Trust

Project Location - Specific:
18412 O'Keefe Road, Tulelake, CA 96134 (APN: 001-110-230)

Project Location - City: Tulelake Project Location - County: Siskiyou

Description of Nature, Purpose and Beneficiaries of Project:
Approval of an agricultural production well.

Name of Public Agency Approving Project: Siskiyou County Community Development

Name of Person or Agency Carrying Out Project: Environmental Health Division

Exempt Status: (check one):

- Ministerial (Sec. 21080(b)(1); 15268);
Declared Emergency (Sec. 21080(b)(3); 15269(a));
Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
[X] Categorical Exemption. State type and section number: 15061(b)(3)
Statutory Exemptions. State code number:

Reasons why project is exempt:
See attachment.

Lead Agency Contact Person: Rick Dean Area Code/Telephone/Extension: 530-841-2100

If filed by applicant:

- 1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? [X] Yes [] No

Signature: [Signature] Date: 2/20/2024 Title: Director

[X] Signed by Lead Agency [] Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR:

Reason why project is exempt:

The study produced by Lawrence and Associates indicates that the operation of the new well at the proposed location will not induce subsidence or interfere with production or function of existing nearby wells. County staff has determined that the well does not pose any threat to human health, safety, or the environment. Per the Tulelake Irrigation District (TID), this well is also consistent with the Groundwater Sustainability Plan for the Tulelake Basin. See study for additional details.

Tulelake Irrigation District

P. O. Box 699 * 2717 Havlina Road * Tulelake, CA 96134
Phone: 530-667-2249 * Fax: 530-667-4228 * Email: tid@cot.net

*Brad C. Kirby, Manager
Kraig D. Beasty, Asst. Mgr.
Angie M. King, Fin & Off. Admin.
John F. Crawford, President
Gary A. Wright, V. President
Edgar J. Staunton, Director
Scott M. Seus, Director
Walter V. Woodhouse, Director*

November 15, 2023

Mr. Mike McKoen
Diane P. McKoen Living Trust
18412 O'Keefe Rd
Tulelake, CA 96134

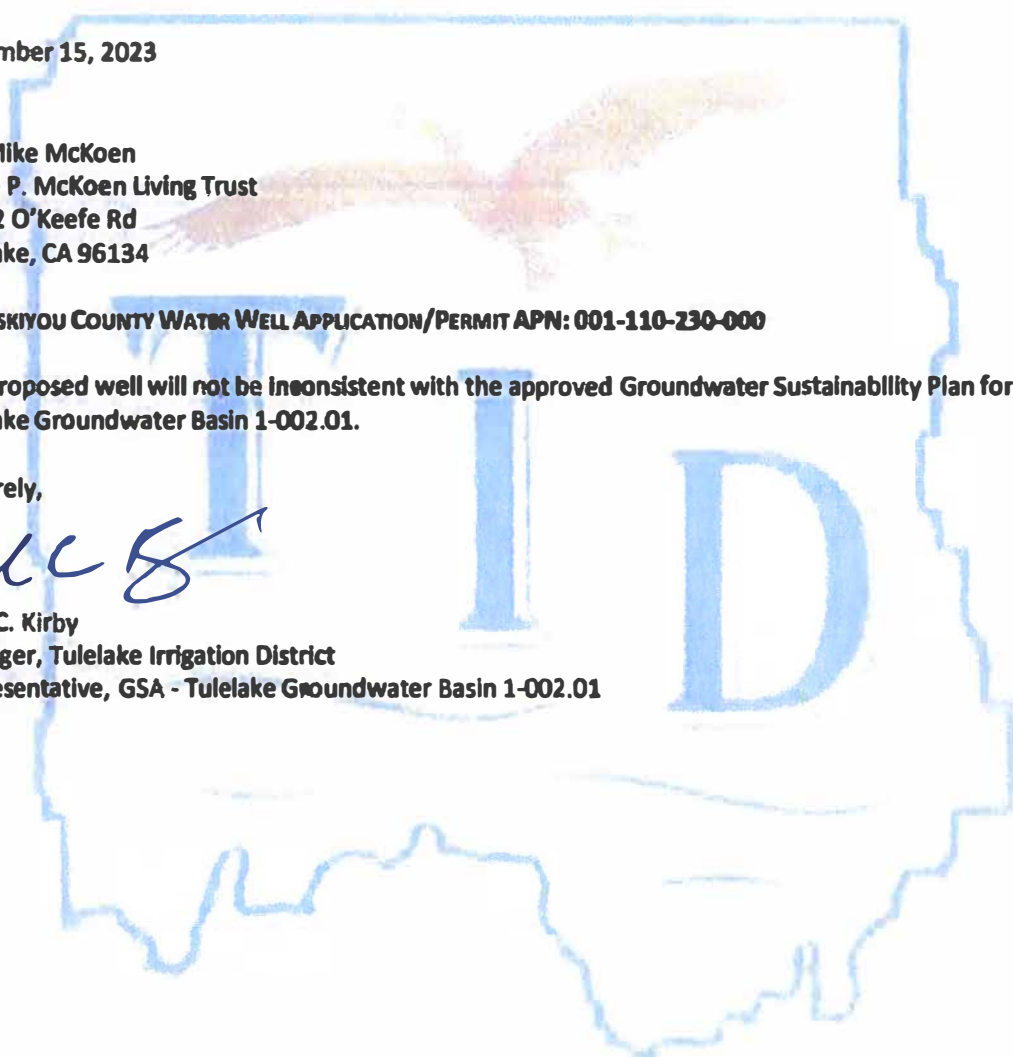
RE: SISKIYOU COUNTY WATER WELL APPLICATION/PERMIT APN: 001-110-230-000

The proposed well will not be inconsistent with the approved Groundwater Sustainability Plan for the Tulelake Groundwater Basin 1-002.01.

Sincerely,



**Brad C. Kirby
Manager, Tulelake Irrigation District
Representative, GSA - Tulelake Groundwater Basin 1-002.01**





November 3, 2023

023054.00

Mr. Kyle Knutson
MBK Engineers
455 University Avenue, Suite 100
Sacramento, CA 95825

Dear Mr. Knutson:

SUBJECT: EVALUATION OF POTENTIAL INTERFERENCE & SUBSIDENCE IMPACTS FROM PROPOSED PRODUCTION WELL, SISKIYOU COUNTY, CALIFORNIA

This letter presents Lawrence & Associates (L&A) evaluation of potential impacts from operation of a proposed production well near Tulelake, Siskiyou County, California, (**Text Figure 1**). Siskiyou County requires such an analysis per the State of California's *Executive Order N-7-22 (Order)*. The relevant section of the Order is as follows:

9. To protect health, safety, and the environment during this drought emergency, a county, city, or other public agency shall not:

a. Approve a permit for a new groundwater well or for alteration of an existing well in a basin subject to the Sustainable Groundwater Management Act and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well is proposed to be located that groundwater extraction by the proposed well would not be inconsistent with any sustainable groundwater management program established in any applicable Groundwater Sustainability Plan adopted by that Groundwater Sustainability Agency and would not decrease the likelihood of achieving a sustainability goal for the basin covered by such a plan; or

b. Issue a permit for a new groundwater well or for alteration of an existing well without first determining that extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells, and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure. This paragraph shall not apply to permits for wells that will provide less than two acre-feet per year of groundwater for individual domestic users, or that will exclusively provide groundwater to public water supply systems as defined in section 116275 of the Health and Safety Code.

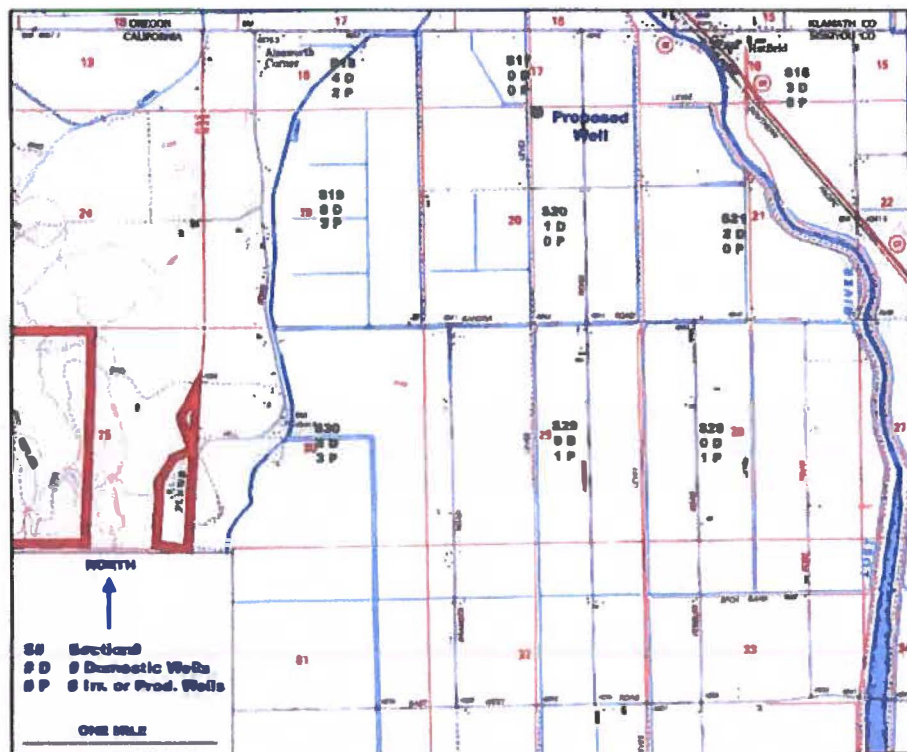
SUMMARY

The proposed well will be an irrigation well. Per the well permit, daily pumpage will be approximately 1,000,000 gallons per day (gpd) at a pumping rate of 3,000 to 6,000 gallons per minute (gpm), for six months per year. Assuming an average pumping rate of 4,500 gpm would indicate a pumping duration of approximately four hours per day. Averaged over the entire pumping period of six months, the pumping rate would equate to 694 gpm, 24 hours per day.

During daily pumping, at approximately 250 feet from the new well, the interference is predicted to be approximately two feet, decreasing to zero within 500 feet. During the entire irrigation season, at approximately 1,000 feet from the new well, the interference is predicted to be 2.5 feet, decreasing to 1.5 feet at one mile. Assuming static water levels of approximately 30 to 100 feet bgs (based on DWR well logs) and well depths of at least 1,500 feet (wells that are comparable to the proposed well depth), interference of 2 feet or less on a minimum 1,000-foot water column would represent less than 0.5% of the water column.

Therefore, operation of a new production well at the proposed location, completed at a similar depth to other deeper wells in the vicinity and operated at an average of 694 gpm, for a period of six months per year, would not cause an adverse interference impact on vicinity wells. Neither will pumping of the new well induce subsidence.

**TEXT FIGURE 1
LOCATION MAP & WELLS OF RECORD**



DISCUSSION

PUMPING RATE

As presented in the well permit application provided by MBK Engineers, the proposed well will pump approximately 1,000,000 gpd at a pumping rate of 3,000 to 6,000 gpm, for six months per year. Assuming an average pumping rate of 4,500 gpm would indicate a pumping duration of approximately four hours per day. Averaged over the entire pumping period of six months, the pumping rate would equate to 694 gpm, 24-hours per day (this value will be used to estimate long-term impacts). **Table 1** summarizes these calculations.

TABLE 1. SUMMARY OF PROPOSED PUMPING RATE

Units	Daily Actual	Daily Averaged
Gallons Per day	1,000,000	1,000,000
Gallons Per Minute	4,500	694
Hours/Day	3.7	24
Days/Week	7	7
Months/Year	6	6
Gallons/Season	168,000,000	168,000,000
Acre-Feet/Season	516	516

AQUIFER CHARACTERISTICS

To estimate interference impacts from a pumping well it is necessary to know the transmissivity and storage coefficient of the aquifer. These parameters can be estimated from existing wells that have data for pumping rate and drawdown. There are at least 35 wells of record in the vicinity, although only a few have sufficient information from which to infer aquifer characteristics. Fortunately, there are three wells relatively close to the proposed well site (within one mile), in Township 48 North, Range 4 East, Sections 16 and 18 (the proposed well is along the border of Sections 17 and 20).

Tulelake Irrigation District (TID) Wells #2 and #3 are in Sections 16 and 18, respectively. Their depths are 1,550 (Well #2) and 1,710 (Well #3) feet below ground surface (bgs). They are screened below 1,250 feet and produce water from fractured volcanic deposits (lava flows). Static water levels at completion were approximately 35 feet bgs. Well #2 was tested at 10,500 gpm for 21 hours and showed 62.3 feet of drawdown. Well #3 was tested at 8,000 gpm for 32 hours and showed 98.5 feet of drawdown.

Another well in Section 18 is at 18100 Stateline Road and is 1,990 feet deep. It is slotted below 1,550 feet. It was tested at 4,000 gpm for 12 hours and showed 35 feet of drawdown.

Table 2 shows the estimated transmissivity of the aquifer at the locations of these three wells.¹ To estimate the storage coefficient, we used the estimated transmissivity in the Theis equation, adjusting the storage coefficient until the calculated drawdown roughly matched the observed drawdown. Table 1 shows the calculation.

TABLE 2. CALCULATION OF AQUIFER COEFFICIENTS FROM EXISTING WELLS

Parameter	Units	TID #2, Section 16	TID #3, Section 18	18100 Stateline, Section 18
Transmissivity, T (estimated from log)	gpd/foot	253,012	121,803	171,429
Storage coefficient, S (estimated)	unitless	0.100	0.100	0.100
Discharge, Q	gpm	10,500	8,000	4,000
Length of pumping period	days	0.9	1.3	0.5
Distance from center of well	r, ft	0.5	0.5	0.5
Storage coefficient	S, di'less	0.100	0.100	0.100
Transmissivity	T, gpd/ft	253,012	121,803	171,429
$u = [1.87r^2S/Tt]$	u	2.10E-07	2.88E-07	5.45E-07
Well function of u	W(u)	14.80	14.48	13.84
Drawdown, theoretical = $[s1=114.6QW(u)/T]$	s1, ft	70.37	109.02	37.02
Well efficiency	eff., percent	1.00	1.00	1.00
Calculated drawdown	s2, ft	70.4	109.0	37.0
Observed drawdown	ft	62.3	98.5	35.0
ERROR in any column indicates that the calculation is out of range; that is, the calculation indicates that there would be no effect at that distance.				

INTERFERENCE IMPACTS

Operation of a well could cause interference with vicinity wells completed at similar depths. Interference is the decrease in water level in a well caused by the pumping of a neighboring well. Different pumping rates yield different amounts of interference (for the same pumping period, a high pumping rate causes more interference than a low rate at any given distance).

To evaluate the potential interference, a pumping rate must be used in conjunction with the aquifer coefficients of transmissivity and storativity to calculate drawdown at various distances using the Theis equation. Table 3 shows these calculations for two scenarios – the daily

¹ Transmissivity calculated by multiplying specific capacity by 1,500 (for confined aquifers), per Driscoll, 1986, *Groundwater and Wells*, Appendix 16.D, p.1021.

pumping (4,500 gpm for 4 hours) and the seasonal pumping which accounts for weekends and the portion of each day that pumping does not occur. (694 gpm for six months).

During daily pumping, at approximately 250 feet from the new well, the interference is predicted to be approximately 2 to 2.5 feet, decreasing to zero within 500 feet. During the entire irrigation season, at approximately 1,000 feet from the new well, the interference is predicted to be 3.5 feet, decreasing to just under 2 feet at one mile.

Assuming static water levels of approximately 30 to 100 feet bgs (based on DWR well logs) and well depths of at least 1,500 feet (wells that are comparable to the proposed well depth), interference of 2 to 3 feet or less on a minimum 1,000-foot water column would represent less than 0.5% of the water column. This level of interference would not cause adverse effects on neighboring wells.

**TABLE 3
 CALCULATION OF INTERFERENCE – ONE DAY PUMPING**

Parameter	Units	McKoen Well	At 250 Feet	AT 500 Feet
Transmissivity, T (estimated from area wells)	gpd/foot	182,081	182,081	182,081
Storage coefficient, S (estimated from area wells)	unitless	0.100	0.100	0.100
Discharge, Q	gpm	4,500	4,500	4,500
Length of pumping period	days	0.2	0.17	0.17
Distance from center of well	r, ft	0.5	250	500
Storage coefficient	S, di'less	0.100	0.100	0.100
Transmissivity	T, gpd/ft	182,081	182,081	182,081
$u = [1.87r^2S/Tt]$	u	1.54E-06	3.85E-01	1.54E+00
Well function of u	W(u)	12.81	0.80	ERROR
Drawdown, theoretical = $(s1=114.6QW(u)/T)$	s1, ft	36.27	2.26	0.00
Well efficiency	eff., percent	1.00	1.00	1.00
Calculated drawdown	s2, ft	36.3	2.3	0.0

ERROR in any column indicates that the calculation is out of range; that is, the calculation indicates that there would be no effect at that distance.

**TABLE 4
 CALCULATION OF INTERFERENCE – SEASONAL PUMPING**

Parameter	Units	McKoen Well	At 1000 Feet	At 5280 Feet
Transmissivity, T (estimated from area wells)	gpd/foot	182,081	182,081	182,081
Storage coefficient, S (estimated from area wells)	unitless	0.100	0.100	0.100
Discharge, Q	gpm	694	694	694
Length of pumping period	days	4320	4320	4320
Distance from center of well	r, ft	0.5	1,000	5,280
Storage coefficient	S, di'less	0.100	0.100	0.100
Transmissivity	T, gpd/ft	182,081	182,081	182,081
$u = [1.87r^2S/Tt]$	u	5.94E-11	2.38E-04	6.63E-03
Well function of u	W(u)	22.97	7.77	4.45
Drawdown, theoretical = $[s1=114.6QW(u)/T]$	s1, ft	10.03	3.39	1.94
Well efficiency	eff., percent	1.00	1.00	1.00
Calculated drawdown	s2, ft	10.0	3.4	1.9
ERROR in any column indicates that the calculation is out of range; that is, the calculation indicates that there would be no effect at that distance.				

SUBSIDENCE IMPACTS

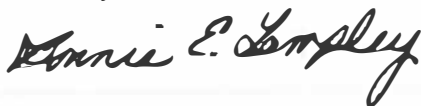
Subsidence from groundwater pumping occurs when an aquifer and/or the surrounding sediments are dewatered (e.g., pumping is greater than recharge). There is no evidence that subsidence is occurring in this area (see map at <https://sgma.water.ca.gov/CalGWLIVE/#subsidence>).

Additionally, according to the Groundwater Sustainability Plan for the Tullake Basin “there has been no noticeable subsidence within the subbasin since at least 2001. Because of this experience, with no known subsidence even during periods of decreasing groundwater levels, it is assumed that there are no soils susceptible to compression within the subbasin.”²

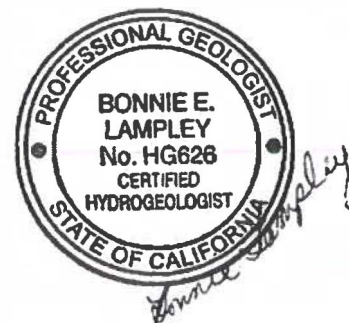
Subsidence attributable to pumping the new well is unlikely to occur in this area.

Please do not hesitate to contact me at (530) 275-4800 or blampley@lwrnc.com if you have any questions regarding this plan.

Sincerely,

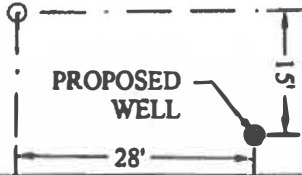


Bonnie E. Lampley
 Principal Hydrogeologist



² MBK Engineers, 2021, Tule Lake Subbasin, Groundwater Sustainability Plan.

EXISTING UTILITY
POLE LOCATION



WELL DETAIL
SCALE 1"=20'

PROPOSED WELL LOCATION,
SEE WELL DETAIL

1,283'

EXISTING AG SHEDS

1,985'

HASKINS ROAD
1,971'

O'KEEFE ROAD

1,094'

205'

MBK
ENGINEERS

455 University Avenue, Suite 100
Sacramento, California 95825

Phone: (916) 456-4400 • Fax: (916) 456-0253

PLOT PLAN
APN 001-110-230
DIANE McKEAN LIVING TRUST
18412 O'KEEFE ROAD
TULE LAKE, CA 96134

SCALE:	1" = 300'
JOB NUMBER:	3516
DRAWN BY:	AR
DATE:	02/16/2023
SHEET:	1 OF 1