

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date September 24, 2013
 FROM: Groundwater Section Mike Zwart
 SUBJECT: Application G- 17680 Reviewer's Name Mike Zwart
 Supersedes review of _____ Date of Review(s) _____

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525. Department staff review ground water applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation.**

A. GENERAL INFORMATION: Applicant's Name: Barlow Oaks, LLC County: Clackamas

A1. Applicant(s) seek(s) 1.105 cfs from two well(s) in the Willamette Basin,
Pudding River subbasin Quad Map: Yoder

A2. Proposed use Nursery (44.2acres) Seasonality: Year Round

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

| Well | Logid | Applicant's Well # | Proposed Aquifer* | Proposed Rate(cfs) | Location (T/R-S QQ-Q) | Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36 |
|------|------------|--------------------|-------------------|--------------------|-----------------------|--|
| 1 | CLAC 56756 | 1 | Alluvium | 1.105 | 5S/1E-18 NW-NE | 400' S, 2125' W fr NE cor S 18 |
| 2 | CLAC 2555 | 2 | Alluvium | 1.105 | 5S/1E-18 SW-NE | 40' N, 2820' E fr W 1/4 cor S 18 |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |

* Alluvium, CRB, Bedrock

| Well | Well Elev ft msl | First Water ft bls | SWL ft bls | SWL Date | Well Depth (ft) | Seal Interval (ft) | Casing Intervals (ft) | Liner Intervals (ft) | Perforations Or Screens (ft) | Well Yield (gpm) | Draw Down (ft) | Test Type |
|------|------------------|--------------------|------------|------------|-----------------|--------------------|-----------------------|----------------------|------------------------------|------------------|----------------|-----------|
| 1 | 181 | 56 | 34 | 10/02/2000 | 103 | 0-24 | 0-103 | None | 58-98 | 60 | | Air |
| 2 | 170 | 3 | Flows | 02/23/2012 | 426 | ? | 0426 | None | 18-195 | 130 | 110 | Pmp |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Use data from application for proposed wells.

A4. **Comments: The two wells may not be able to produce the quantity of water desired here. Well #2 was deepened (CLAC 2556). The original log is silent as to whether a surface seal was provided. The deepening log reports that a surface seal was not provided. See additional comments at D3.**

A5. **Provisions of the Willamette** Basin rules relative to the development, classification and/or management of ground water hydraulically connected to surface water are, or are not, activated by this application. (Not all basin rules contain such provisions.)

Comments: _____

A6. Well(s) # _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction. Name of administrative area: _____
 Comments: _____

C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

| Well | Aquifer or Proposed Aquifer | Confined | Unconfined |
|------|--|-------------------------------------|--------------------------|
| 1,2 | Interbedded sand, gravel, silt and clay, likely the Willamette aquifer | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> |

Basis for aquifer confinement evaluation: The Willamette aquifer is locally confined below the Willamette Silt (see Amy Kim memo dated 07/26/2004).

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

| Well | SW # | Surface Water Name | GW Elev ft msl | SW Elev ft msl | Distance (ft) | Hydraulically Connected? | | | Potential for Subst. Interfer. Assumed? | |
|------|------|--------------------|----------------|----------------|---------------|-------------------------------------|--------------------------|--------------------------|---|-------------------------------------|
| | | | | | | YES | NO | ASSUMED | YES | NO |
| 1 | 1 | Rock Creek | 147± | 115 | 2200 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2 | 1 | Rock Creek | 173± | 116 | 4300 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Basis for aquifer hydraulic connection evaluation: The relatively shallow water-bearing zones and the head relationship suggest that groundwater discharges to the local reaches of the creeks.

Water Availability Basin the well(s) are located within: Pudding R > Molalla R ab Mill Cr (151).

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% natural flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked box indicates the well is assumed to have the potential to cause PSI.

| Well | SW # | Well < ¼ mile? | Qw > 5 cfs? | Instream Water Right ID | Instream Water Right Q (cfs) | Qw > 1% ISWR? | 80% Natural Flow (cfs) | Qw > 1% of 80% Natural Flow? | Interference @ 30 days (%) | Potential for Subst. Interfer. Assumed? |
|------|------|--------------------------|--------------------------|-------------------------|------------------------------|-------------------------------------|------------------------|-------------------------------------|----------------------------|---|
| 1 | 1 | <input type="checkbox"/> | <input type="checkbox"/> | 151 | 36.0 | <input checked="" type="checkbox"/> | 67.3 | <input checked="" type="checkbox"/> | <25% | <input checked="" type="checkbox"/> |
| 2 | 1 | <input type="checkbox"/> | <input type="checkbox"/> | 151 | 36.0 | <input checked="" type="checkbox"/> | 67.3 | <input checked="" type="checkbox"/> | <25% | <input checked="" type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

| | SW # | Qw > 5 cfs? | Instream Water Right ID | Instream Water Right Q (cfs) | Qw > 1% ISWR? | 80% Natural Flow (cfs) | Qw > 1% of 80% Natural Flow? | Interference @ 30 days (%) | Potential for Subst. Interfer. Assumed? |
|--|------|--------------------------|-------------------------|------------------------------|--------------------------|------------------------|------------------------------|----------------------------|---|
| | | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> | | <input type="checkbox"/> | | <input type="checkbox"/> |

Comments: _____

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

| Non-Distributed Wells | | | | | | | | | | | | | |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Well | SW# | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| | | % | % | % | % | % | % | % | % | % | % | % | % |
| Well Q as CFS | | | | | | | | | | | | | |
| Interference CFS | | | | | | | | | | | | | |
| Distributed Wells | | | | | | | | | | | | | |
| Well | SW# | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| | | % | % | % | % | % | % | % | % | % | % | % | % |
| Well Q as CFS | | | | | | | | | | | | | |
| Interference CFS | | | | | | | | | | | | | |
| | | % | % | % | % | % | % | % | % | % | % | % | % |
| Well Q as CFS | | | | | | | | | | | | | |
| Interference CFS | | | | | | | | | | | | | |
| | | % | % | % | % | % | % | % | % | % | % | % | % |
| Well Q as CFS | | | | | | | | | | | | | |
| Interference CFS | | | | | | | | | | | | | |
| | | % | % | % | % | % | % | % | % | % | % | % | % |
| Well Q as CFS | | | | | | | | | | | | | |
| Interference CFS | | | | | | | | | | | | | |
| | | % | % | % | % | % | % | % | % | % | % | % | % |
| Well Q as CFS | | | | | | | | | | | | | |
| Interference CFS | | | | | | | | | | | | | |
| (A) = Total Interf. | | | | | | | | | | | | | |
| (B) = 80 % Nat. Q | | | | | | | | | | | | | |
| (C) = 1 % Nat. Q | | | | | | | | | | | | | |
| (D) = (A) > (C) | | | | | | | | | | | | | |
| (E) = (A / B) x 100 | | % | % | % | % | % | % | % | % | % | % | % | % |

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: _____

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

C5. **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or ground water use under this permit can be regulated if it is found to substantially interfere with surface water:
i. The permit should contain condition #(s) _____;
ii. The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions The finding of PSI above may be reversed if the proposed rate is reduced to less than 0.36 cfs. This rate may be more in line with the combined production rates of the wells.**

References Used: Gannett, Marshall W., and Caldwell, Rodney R., 1998, Geologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington: U. S. Geological Survey Professional Paper 1424-A, 32p, 8 plates.

Conlon and others, 2005, Ground-water hydrology of the Willamette Basin, Oregon: U.S Geological Survey Scientific Investigations Report 2005-5168.

Woodward and others, 1998, Hydrogeologic framework of the Willamette lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B,

Nearby well logs and recent reviews.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: 2 Logid: CLAC 2555

D2. **THE WELL does not appear to meet current well construction standards based upon:**

- a. review of the well log;
- b. field inspection by _____;
- c. report of CWRE _____;
- d. other: (specify) _____

D3. **THE WELL construction deficiency or other comment is described as follows: The original well log does not indicate if a surface seal was provided. The log for the deepening reports that a surface seal was not provided. It is therefore not clear whether the well meets current construction standards.**

D4. Route to the Well Construction and Compliance Section for a review of existing well construction.

Water Availability Tables

Water Availability Analysis Detailed Reports

PUDDING R > MOLALLA R - AB MILL CR
WILLAMETTE BASIN

Water Availability as of 9/24/2013

Watershed ID #: 151
Date: 9/24/2013

Exceedance Level:
Time: 2:44 PM

| | | | |
|--------------------------------|-------------------------------|----------------------------|--------------|
| Water Availability Calculation | Consumptive Uses and Storages | Instream Flow Requirements | Reservations |
| Water Rights | Watershed Characteristics | | |

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

| Month | Natural Stream Flow | Consumptive Uses and Storages | Expected Stream Flow | Reserved Stream Flow | Instream Flow Requirement | Net Water Available |
|-------|------------------------|----------------------------------|-------------------------|-------------------------|------------------------------|------------------------|
| JAN | 1,040.00 | 72.50 | 968.00 | 0.00 | 36.00 | 932.00 |
| FEB | 1,180.00 | 70.30 | 1,110.00 | 0.00 | 36.00 | 1,070.00 |
| MAR | 1,010.00 | 46.70 | 963.00 | 0.00 | 36.00 | 927.00 |
| APR | 787.00 | 41.90 | 745.00 | 0.00 | 36.00 | 709.00 |
| MAY | 425.00 | 52.70 | 372.00 | 0.00 | 36.00 | 336.00 |
| JUN | 224.00 | 72.90 | 151.00 | 0.00 | 36.00 | 115.00 |
| JUL | 109.00 | 113.00 | -4.04 | 0.00 | 36.00 | -40.00 |
| AUG | 71.00 | 93.30 | -22.30 | 0.00 | 36.00 | -58.30 |
| SEP | 67.30 | 54.50 | 12.80 | 0.00 | 36.00 | -23.20 |
| OCT | 91.60 | 14.00 | 77.60 | 0.00 | 36.00 | 41.60 |
| NOV | 363.00 | 38.70 | 324.00 | 0.00 | 36.00 | 288.00 |
| DEC | 957.00 | 71.90 | 885.00 | 0.00 | 36.00 | 849.00 |
| ANN | 706,000.00 | 44,900.00 | 661,000.00 | 0.00 | 26,100.00 | 637,000.00 |

Download Data ([Text - Formatted](#), [Text - Tab Delimited](#), [Excel](#))

Interoffice Memo

Date: 7/26/04

To: File

From: Amy Kim

RE: Permit Amendment 9545

The applicant is seeking to add a well to an existing groundwater right in T5S, R1E, sec 18 in the Willamette aquifer, a several hundred feet thick sequence of lenticular fine to coarse grained sediments. The overlying 50-60 feet thick Willamette Silt unit confines the aquifer. In the area of the well, the top of the Willamette aquifer includes 30-50 feet of productive sand and gravel with clay lenses. Below, it consists of over 200 feet of silt and clay with interbeds of productive sand and gravel. Because the sediments beneath the Willamette silt are confined, pumping effects will extend over a large area but be relatively small in any given area. A conservative estimate of impacts, based on pumping of the well at the full rate for the entire season, suggests a maximum drawdown interference of 15 feet in nearby wells. The attached Theis drawdown model was calculated to show effects on the nearest well approximately 340 feet away. The model assumes a transmissivity of 10,000 to 50,000 gpd/foot (based on a conservative aquifer thickness of 40 feet and a hydraulic conductivity of 50 ft/day) and a storativity of 0.0001. This estimate represents a worst-case scenario since the additional POA is being requested as a supplemental source. The POA requested is a state observation well, and has seasonal fluctuations of 20-25 feet with water levels near land surface. Most wells in the area are over 100 feet deep. Efficiently constructed wells in the area that fully penetrate the aquifer should be able to accommodate 15 feet of additional seasonal drawdown. Therefore, it is unlikely that injury to an existing water right will occur from use of the additional well.

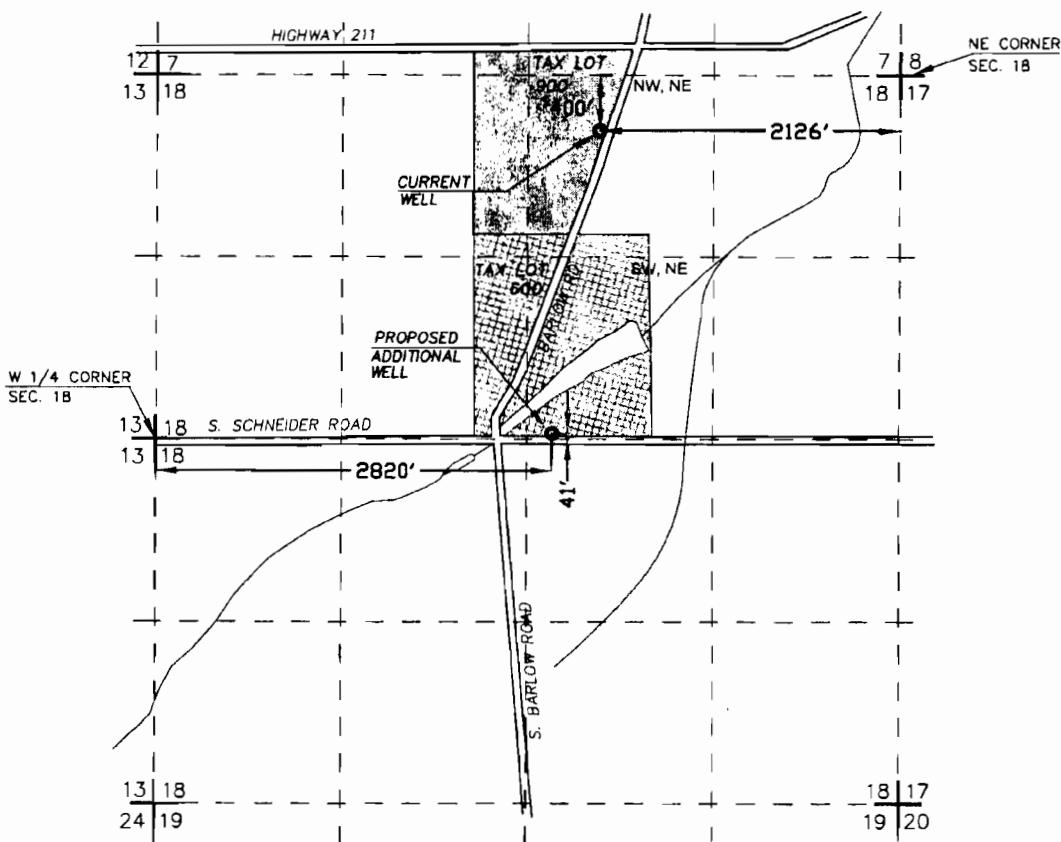
Amy Kim

Groundwater

SECTIONS 7 & 18 T5S R1E W.M.

CLACKAMAS COUNTY, OREGON

RECEIVED
 SEP 08 2004
 WATER RESOURCES DEPT
 SALEM, OREGON



LEGEND

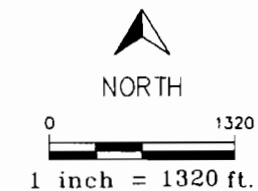


PERMIT G-13833



CERTIFICATE 27929

NOTE:
 PERMIT AMENDMENT REQUESTS
 AN ADDITIONAL POINT OF
 APPROPRIATION (WELL).



THE PREPARATION OF THIS MAP WAS FOR
 THE PURPOSE OF IDENTIFYING THE LOCATION
 OF THE WATER RIGHTS AND HAS NO INTENT
 TO PROVIDE DIMENSIONS OR LOCATIONS OF
 PROPERTY OWNERSHIP LINES.

PREPARED FOR:

DEVIN COOPER
 WILLAMETTE NURSERIES
 25571 S. BARLOW RD.
 CANBY, OREGON 97013



Planners
 Engineers
 Surveyors

20085 N.W. TAMASBOURNE DR.
 HILLSBORO, OREGON 97124
 PHONE: (503) 656-4242
 FAX: (503) 645-5500
 www.lcdesign.com

DRAWING TITLE:

PERMIT AMENDMENT
 MAP
 GROUNDWATER USE PERMIT
 G-13833

JOB NO.

3073

DRAWING NO.

1
 of 1



Oregon Water Resources Department hydrograph for CLAC 2555 (5.00S / 1.00E - 18ACC)

| | |
|--|--|
| Oregon Water Resources Department (OWRD) Well Location | 5.00S/1.00E-18ACC |
| OWRD Logid | CLAC 2555 |
| OWRD Well Tag (Well ID) | ---- |
| OWRD State Observation Well Number | 65 |
| Total well depth (feet below land surface) | 435 |
| Land surface elevation (feet above mean sea level) | 170 |
| Primary use of well | IRRIGATION |
| Primary aquifer system | Quaternary-Late Tertiary Sediment Aquifers |

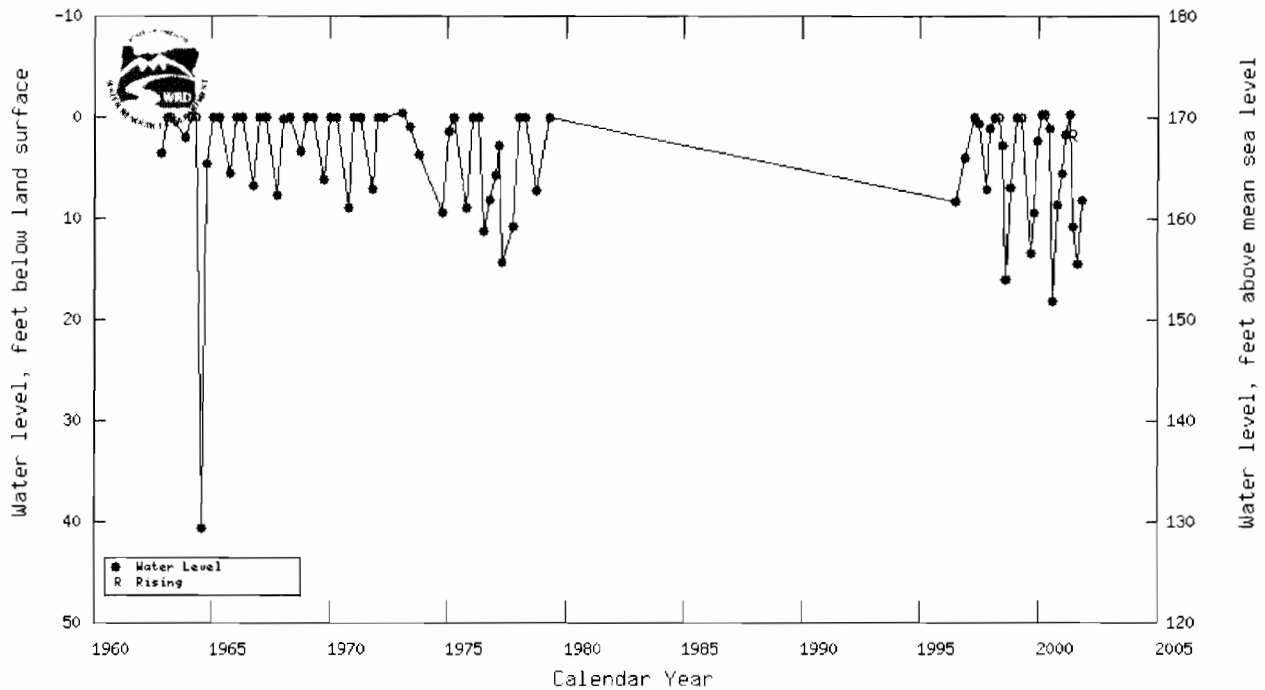
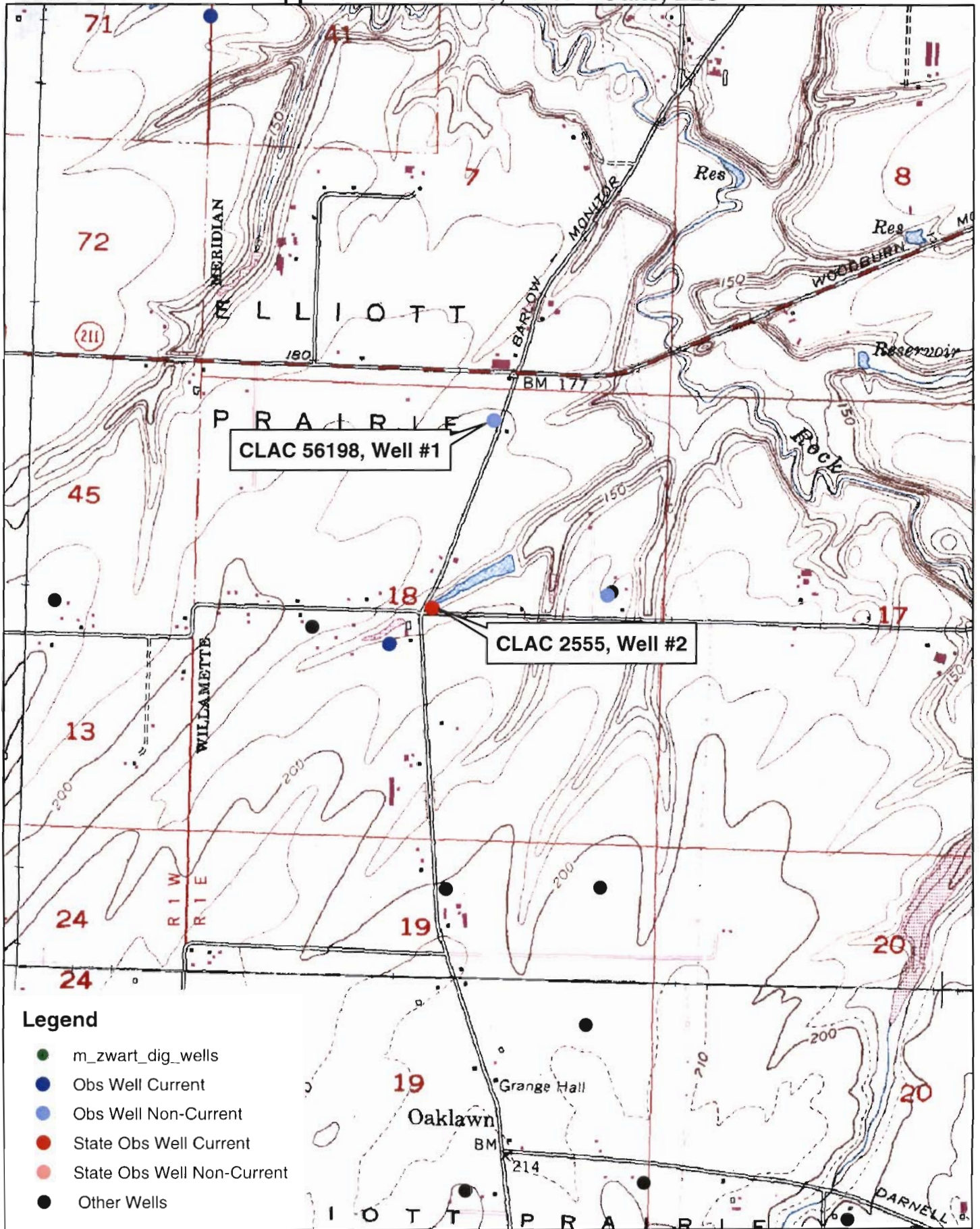


Table showing water-level data for CLAC 2555

Application G-17680, Barlow Oaks, LLC



Legend

- m_zwart_dig_wells
- Obs Well Current
- Obs Well Non-Current
- State Obs Well Current
- State Obs Well Non-Current
- Other Wells



0 0.5 1 Miles