AN ORDINANCE OF THE COUNTY OF BUTTE CHAPTER 33A - BASIN MANAGEMENT

OBJECTIVES

The Board of Supervisors of the County of Butte ordains as follows:

Section 1. Chapter 33-A is amended to the Butte County Code as follows:

CHAPTER [33A] - BASIN MANAGEMENT OBJECTIVES

This ordinance shall expire on January 31, 2022.

33A-2 - Definitions.

(a) "BMO Alert Stage" means a measurement not achieving a Basin Management Objective.

(b) "Aquifer" means a geologic formation that may store, transmit and yield significant quantities of groundwater.

(c) "Basin Management Objectives (BMO)" means criteria established for acceptable groundwater elevations, groundwater quality and land subsidence of the Butte County groundwater resource under the provisions of this chapter.

(d) "Board" means the Board of Supervisors of Butte County.

(e) "Commission" means the nine (9) person Butte County Water Commission appointed by the Board as defined under Chapter 33.

(f) "County" means the County of Butte.
(g) "District" means any purveyor of water wholly or partly within the boundaries of the County that provides water for agricultural, domestic, municipal or industrial use.

(h) "Department" means the Butte County Department of Water and Resource Conservation.

(i) "Extensometer" means an instrument for measuring land subsidence.

(j) "Groundwater" means all water beneath the surface of the earth below the zone of saturation, but does not include water which flows in known and definite subsurface channels, as set forth in the case of Los Angeles v. Pomeroy (1899) 124 Cal. 597.

(k) "Groundwater Management Plan" means a plan prepared pursuant to the California Groundwater Management Act (commencing with Water Code Section 10750 et seq.).

(l) "Land Subsidence" means the permanent lowering of the ground surface caused by the inelastic consolidation of clay beds in the aquifer system.

(m) "Recharge" means flow to groundwater storage from precipitation, irrigation, infiltration from streams, spreading basins and other sources of water.

(n) "Technical Advisory Committee" (TAC) means the seven (7) person committee nominated by the Water Commission and appointed by the Board as defined under Chapter 33.

(Ord. No. 4034, § 1, 9-13-11)
Basin Management Objectives.

(a) Basin Management Objectives shall be established for:

(1) Groundwater elevation;

(2) Groundwater quality (temperature, pH and electrical conductivity); and

(3) Land subsidence.

(b) BMOs shall be based on criteria utilizing data collected from the monitoring network.

(c) BMO Groundwater Elevation Criteria. One (1) of the following methodologies shall be used to determine the groundwater elevation BMO for wells selected as part of the monitoring network:

(1) Historic Range Method: This method is used to establish two BMOs for each well based on spring and fall data, seventeen (17) respectively.

   i. For wells that have a period of record dating back to at least 1970, the BMO will be based on the historic low groundwater elevation measurement plus twenty (20) percent of the range in measured groundwater elevations, calculated from the first year on record through 2006.

      a. The BMO Alert Stage 1 will be reached for measurements below the BMO.

      b. The BMO Alert Stage 2 will be reached if measurements are below the historic low.
ii. For wells that do not have a period of record dating back to 1970, the BMO will be based on the historic low groundwater elevation measurement taken prior to 2006.
   a. The BMO Alert Stage 1 will be reached for measurements below the BMO.
   b. The BMO Alert Stage 2 will be reached for measurements below the historic low minus the range of measurements for the period of record through 2006.

(2) Specific Depth Method: The BMO will be set at five (5) feet below the average spring groundwater elevation, where the average spring elevation is calculated from the first year on record through 2006.
   i. The BMO Alert Stage 1 will be reached if measurements are below the established BMO for that well.
   ii. The BMO Alert Stage 2 will be reached if BMO Alert Stage 1 continues for a second consecutive year.
   iii. The BMO Alert Stage 3 will be reached if groundwater levels fall ten (10) feet or more below the average spring groundwater elevation established for the well.

(d) BMO Groundwater Quality Criteria.
   (1) The BMO Alert Stage for temperature will be reached when the measurement is more than five (5) degrees Celsius outside of the historic range of measurements.
(2) The BMO Alert Stage for electrical conductivity (EC) will be reached for measurements greater than nine hundred (900) micro-Siemens per centimeter (μS/cm) for drinking water or greater than seven hundred (700)(μS/cm) for agricultural water.

(3) The BMO Alert Stage for pH will be reached for measurements below six and one-half (6.5) or above eight and one-half (8.5).

(e) BMO Land Subsidence Criteria.

(1) Alert Stage 1 will be reached if annual elastic subsidence exceeds the average annual elastic subsidence measured over the period of record of the extensometer.

(2) Alert Stage 2 is reached when the annual elastic subsidence exceeds the maximum recorded elastic subsidence over the period of record for the extensometer.

(3) Alert Stage 3 is reached when inelastic subsidence is detected based on annual measurements taken on March 1.

(Ord. No. 4034, § 1, 9-13-11; Ord. No. 4074, § 1, 1-14-14)

33A-4 - Monitoring BMOs.

(a) Monitoring programs designed to detect changes to groundwater elevations, groundwater quality and land subsidence are the key to proper assignment and evaluation of BMOs.

(b) The monitoring programs shall measure select wells and extensometers to determine changes in groundwater elevation, groundwater quality and land subsidence.
(c) The County shall make available all groundwater monitoring data through the Department website in a timely manner.

(Ord. No. 4034, § 1, 9-13-11)


(a) The monitoring networks used in the development and evaluation of BMOs may include as many of the following as are feasible: selected domestic and irrigation wells from water districts, private owners, municipal and industrial water suppliers and dedicated monitoring wells. Participation in monitoring activities by private landowners shall be on a voluntary basis.

(b) The selection of monitoring wells will be done in consultation with the TAC.

(c) Additional monitoring wells may be installed and monitored as funding allows.

(Ord. No. 4034, § 1, 9-13-11)

33A-6 - Monitoring frequency.

(a) Monitoring Frequency for Groundwater Elevations. At a minimum, groundwater elevations shall be monitored four (4) times during the year: one (1) measurement prior to the irrigation season in March, two (2) measurements during peak groundwater use in July and August, and one (1) measurement following irrigation season in October.
(b) Monitoring Frequency for Groundwater Quality. The frequency of groundwater quality monitoring shall be at a minimum of once a year during peak groundwater use (July or August). The following minimum groundwater quality measurements shall be taken:

(1) Groundwater temperature;

(2) Groundwater pH; and

(3) Groundwater electrical conductivity.

(c) Monitoring Frequency for Land Subsidence. Land subsidence monitoring shall be conducted on a continuous basis through the use of extensometers. Land subsidence may also be monitored by resurveying existing benchmarks.

(Ord. No. 4034, § 1, 9-13-11)

33A-7 - Changes in monitoring.

(a) Changes in Monitoring Frequency. If evaluation of the groundwater elevation, groundwater quality or land subsidence data indicates a need for greater monitoring frequency, the department may make changes to the monitoring schedule, as resources allow.

(b) Changes in Monitoring Network. If evaluation of the groundwater elevation, groundwater quality standards or land subsidence criteria data indicates a need for a greater number of monitoring wells or survey monuments, the Department may make changes to their monitoring network, as resources allow.

(Ord. No. 4034, § 1, 9-13-11)
33A-8 - Monitoring protocol.

(a) All data shall be collected and recorded through methods generally accepted in the applicable scientific field.

(b) The Department shall establish methods for data collection, storage and dissemination. Methods for collecting groundwater elevations, groundwater quality and land subsidence shall follow established quality assurance and quality control guidelines.

(Ord. No. 4034, § 1, 9-13-11)

33A-9 - Review of technical data.

(a) Standard methods for review and analysis of the collected data shall be established by the department in consultation with the TAC.

(b) The TAC shall review, analyze and evaluate BMOs based on spring and fall monitoring data.

(c) If a BMO Alert Stage is reached in one (1) or more wells the TAC will evaluate possible causes and may provide recommendations.

(d) The TAC shall consider all available pertinent hydrologic data, precipitation and other relevant information when reviewing BMOs.

(e) The Department will provide the Water Commission, the Board and the public with the TAC review, analysis and recommendations, if applicable.

(Ord. No. 4034, § 1, 9-13-11)
33A-10 - BMO Alert Stage Response.

In the event that a BMO Alert Stage is reached, the

Department will:

(a) Provide information and outreach to and solicit information
from stakeholders in the affected areas as appropriate.

(b) Assist the TAC in their evaluation.

(Ord. No. 4034, § 1, 9-13-11)

33A-11 - Reporting.

(a) The Department shall disseminate information on BMOs, the
monitoring network, data and analysis to the public and through
the Department website.

(b) The Department shall present BMO monitoring data, TAC analysis
and other pertinent information to the Water Commission and
stakeholders.

(c) The Department shall submit a report to the Board of Supervisors
on the BMO program at their first regular meeting in February.

(Ord. No. 4034, § 1, 9-13-11)

33A-12 - Effective Date and Publication. The Clerk of the Board will
publish the Ordinance codified in this Chapter as required by law.
The Ordinance codified in this Chapter shall take effect thirty (30)
days after final passage.
PASSED AND ADOPTED by the Board of Supervisors of the County of Butte, State of California, on the 25th day of June, 2019, by the following vote:

AYES: Supervisors Connelly, Lucero, Ritter, Teeter, and Chair Lambert

NOES:

ABSENT:

NOT VOTING:

Steve Lambert, Chair
Butte County Board of Supervisors

ATTEST:
SHARI MCCracken, Chief Administrative Officer
and Clerk of the Board

By: Deputy