



BEFORE THE OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF COLORADO

IN THE MATTER OF THE PROMULGATION AND)	CAUSE NO. 1
ESTABLISHMENT OF FIELD RULES TO GOVERN)	
OPERATIONS IN CERTAIN LANDS WITHIN AND)	DOCKET NO. 1407-GA-02
ADJACENT TO THE CITY OF BRIGHTON, ADAMS)	
COUNTY, COLORADO)	ORDER NO. 1-189

REPORT OF THE COMMISSION

The Colorado Oil and Gas Conservation Commission ("Commission") heard this matter on July 28, 2014, at a public hearing at the Weld County Administration Building Events Center 1150 "O" Street, Greeley, Colorado, 80631 upon application for an Order to establish a system of requirements and best management practices ("BMPs") to protect the Public Water System ("PWS") within and adjacent to the City of Brighton ("Brighton") ("Brighton PWS") located in Adams County, Colorado.

FINDINGS

The Commission finds as follows:

1. Commission Staff ("Staff") is an interested party in the subject matter of the above-referenced hearing.
2. Due notice of the time, place, and purpose of the hearing has been given in all respects as required by law.
3. The Commission has jurisdiction over the subject-matter contained in said notice, and of the parties interested therein, and jurisdiction to promulgate the hereinafter prescribed Order pursuant to the Oil and Gas Conservation Act.
4. Commission Rule 317B provides a regulatory framework for protecting the Brighton PWS; however, this Rule is limited in scope.
5. Brighton obtains between 70% and 100% of its municipal water supply from two networks of shallow groundwater wells known as the Beebe Draw Wells and the South Platte Wells (collectively, "PWS Wells").
 - a) The Beebe Draw Wells are comprised of four groundwater wells which are classified by the Colorado Department of Public Health and Environment ("CDPHE") as groundwater under the direct influence of surface water ("GUI"). These wells are completed in the Beebe Draw alluvium at depths of no more than 80 feet below ground surface ("BGS") and static ground water elevations are between 15 and 20 feet BGS. The Beebe Draw Wells have a decreed right to pump at rates up to 2,000 gallons per minute ("GPM") each.
 - b) The South Platte Wells are comprised of seven groundwater wells which are completed in the alluvial aquifer of the South Platte River but, with one exception, are not classified as GUI wells. These wells are completed at depths of no more than 85

feet BGS and static groundwater elevations are no deeper than 50 feet BGS. The South Platte Wells pump at rates up to 1,500 GPM, depending on the well.

6. Brighton is responsible for providing a safe and reliable water supply to its 34,000 citizens, as well as commercial and industrial customers. Water from the PWS Wells is treated at one (1) of two (2) water treatment facilities prior to distribution to Brighton's customers. Although Brighton has an additional supply of water from an adjacent water provider, this supplemental supply is insufficient on its own to meet the needs of the Brighton's customers; accordingly, the PWS Wells are the primary water source for Brighton.

7. The following components of the Brighton PWS relevant to this Order are integral to the Brighton PWS:

- a) The PWS Wells;
- b) The Ken Mitchell Lakes and Barr Lake (collectively "Lakes"), which store water as part of the Brighton PWS system; and
- c) Specified segments of the South Platte River and of certain streams and ditches, including but not limited to Second Creek, Third Creek, Fulton Ditch and Lateral, Brighton Ditch and Lateral, and Brian Canal (collectively, the "River, Stream, and Ditch Segments"). The relevant River, Stream, and Ditch Segments are indicated on the map entitled Brighton PWS Management Map, Commission Order No. 1-XXX ("Brighton PWS Map") attached hereto as Exhibit A.

8. Based on the facts noted in paragraphs 5, 6, and 7 above, and following consultation with Brighton, CDPHE, and oil and gas Operators with lease holdings proximate to the Brighton PWS ("Brighton Operators"), Staff found a unique set of circumstances associated with the Brighton PWS: a high percentage of Brighton PWS is obtained from shallow groundwater wells; the groundwater wells are or may be under the direct influence of certain surface water; and the Lakes and specified River, Stream, and Ditch Segments are essential to Brighton's PWS.

Based on this unique set of circumstances, Staff determined certain requirements and BMPs are warranted for New Oil and Gas Locations proximate to the Brighton PWS to eliminate, minimize, or mitigate potential significant adverse impacts associated with Oil and Gas Operations

9. Based on the foregoing, Staff requests the Commission to enter an Order establishing:

- a) **A Brighton PWS Exception Zone** ("Exception Zone"), in which no new Oil and Gas Location will be constructed unless the Operator obtains a Rule 502.b. variance. The Brighton PWS Exception Zone is defined as:
 - i. The area within a 500 foot radius circle measured from each PWS Well's center point; and
 - ii. The area within 300 feet on each side of the River, Stream, and Ditch Segments, and the area within 300 feet around the

perimeter of the Lakes, measured from the ordinary high water mark of each River, Stream, or Ditch Segment or Lake.

The Exception Zone around the Lakes and the River, Stream, and Ditch Segments is depicted on the Brighton PWS Map. To protect the precise location of the PWS Wells from public disclosure as required by Federal Law, the Exception Zone around the PWS wells is not shown on the Brighton PWS Map. Operators proposing to build a new Oil and Gas Location within the Groundwater Sampling Zone around the PWS Wells (describe in section 9.b., below) should consult with the Commission regarding the exact area of the Exception Zone around the PWS Wells.

- b) **A Brighton PWS Groundwater Sampling Zone** ("Groundwater Sampling Zone), defined as:
 - i. The area within a 2,640 foot radius circle measured from each PWS Well's center point; and
 - ii. The area between 301 and 500 feet on each side of the River, Stream, and Ditch Segments and the area between 301 and 500 feet around the perimeter of the Lakes, measured from the ordinary high water mark of each River, Stream, or Ditch Segment or Lake. This Groundwater Sampling Zone shall not be applied to lands based solely on proximity to the Fulton Ditch or Lateral, the Brighton Ditch or Lateral, or the Brian Canal.

- c) **A Brighton PWS BMP Buffer Zone** ("BMP Buffer Zone"), defined as:
 - i. The area within a 2,640 foot radius circle measured from each PWS Well's center point (co-extensive with the Groundwater Sampling Zone around the PWS Wells); and
 - ii. The area within 2,640 feet on each side of the River, Stream, and Ditch Segments, and the area within 2,640 feet around the perimeter of the Lakes, measured from the ordinary high water mark of each River, Stream, or Ditch Segment or Lake.

10. This Order shall only apply to Drilling, Completion, Production, and Storage ("DCPS") Operations and Non-Exempt Linear Features as defined in Commission Rule 317B.a. at New Oil and Gas Locations proposed within the Exception Zone, Groundwater Sampling Zone, and BMP Buffer Zone described in paragraph 9. Requirements for New Oil and Gas Locations proposed within the Exception Zone, Groundwater Sampling Zone, or BMP Buffer Zone are set forth in the proposed Order, below.

11. On July 28, 2014, Staff, in consultation with Brighton, CDPHE, and Brighton Operators, initiated a request for an Order to establish requirements and BMPs for DCPS Operations at New Oil and Gas Locations in proximity to the Brighton PWS.

12. Brighton Operators were notified regarding this proposed Order concerning protection of the Brighton PWS by the Commission, negotiated the terms of the proposed Order

in good faith with the Commission, Brighton and CDPHE, and agree to the material terms of this proposed Order No 1-189 as applied only to the Brighton PWS.

ORDER

IT IS HEREBY ORDERED the following shall apply to DCPS Operations at New Oil and Gas Locations for the protection of the Brighton PWS:

1. **Buffer Zones.**

The following buffer zones are hereby established around specified features of the Brighton PWS:

- a) A **Brighton PWS Exception Zone** ("Exception Zone"), in which no new Oil and Gas Location will be constructed unless the Operator obtains a Rule 502.b. variance. The Brighton PWS Exception Zone is defined as:
 - i. The area within a 500 foot radius circle measured from each PWS Well's center point; and
 - ii. The area within 300 feet on each side of the River, Stream, and Ditch Segments, and the area within 300 feet around the perimeter of the Lakes, measured from the ordinary high water mark of each River, Stream, or Ditch Segment or Lake.

- b) A **Brighton PWS Groundwater Sampling Zone** ("Groundwater Sampling Zone), defined as:
 - i. The area within a 2,640 foot radius circle measured from each PWS Well's center point; and
 - ii. The area between 301 and 500 feet on each side of the River, Stream, and Ditch Segments and the area between 301 and 500 feet around the perimeter of the Lakes, measured from the ordinary high water mark of each River, Stream, or Ditch Segment or Lake. This Groundwater Sampling Zone shall not be applied to lands based solely on proximity to the Fulton Ditch or Lateral, the Brighton Ditch or Lateral, or the Brian Canal.

- c) A **Brighton PWS BMP Buffer Zone** ("BMP Buffer Zone"), defined as:
 - i. The area within a 2,640 foot radius circle measured from each PWS Well's center point (co-extensive with the Groundwater Sampling Zone around the PWS Wells); and
 - ii. The area within 2,640 feet on each side of the River, Stream, and Ditch Segments, and the area within 2,640 feet around the

perimeter of the Lakes, measured from the ordinary high water mark of each River, Stream, or Ditch Segment or Lake.

EXHIBIT A, entitled "Brighton PWS Management Map, Commission Order No. 1-189" depicts the Exception Zone, Groundwater Monitoring Zone and BMP Buffer Zone and is incorporated into this Order. An Operator proposing to locate a New Oil and Gas Location within the Groundwater Sampling Zone shall consult with the Commission regarding the exact Exception Zone boundaries.

2. Requirements for DCPS Operations Conducted at New Oil and Gas Locations in the Exception Zone.

DCPS Operations are prohibited within the Exception Zone unless a variance is granted pursuant to Rule 502.b and consultation with the CDPHE occurs. Furthermore, a Form 2 or Form 2A with appropriate Conditions of Approval ("COA") and/or BMPs must be approved, or the operation is covered in an approved Comprehensive Drilling Plan pursuant to Commission Rule 216.

In determining appropriate COAs or BMPs for such operations, the Director shall consider the extent to which the COAs or BMPs are required to prevent adverse impacts to the Brighton PWS.

- a) The Director shall grant a variance if the Operator demonstrates that site-specific BMPs and operating procedures will result in substantially equivalent protection of drinking water quality as in the Groundwater Sampling Zone and BMP Buffer Zone at the proposed Location. Any DCPS Operation at a New Oil and Gas Location within the Exception Zone will be required to comply, at a minimum, with requirements for the BMP Buffer Zone; and
- b) Either:
 - i. Conducting the DCPS Operation outside the Exception Zone would pose a greater risk to public health, safety, or welfare, including the environment and wildlife resources, such as may be the case where conducting the DCPS Operations outside the Exception Zone would require construction in steep or erosion-prone terrain or result in greater surface disturbance due to an inability to use infrastructure already constructed such as roads, well sites, or pipelines; or
 - ii. Conducting DCPS Operations beyond the Exception Zone is technically infeasible and prevents the Operator from exercising its mineral rights.
- c) A variance within the Exception Zone will require a groundwater sampling point or dedicated monitoring well to be installed between the proposed Oil and Gas Facility and the closest PWS Well, Lake, or River or Stream Segment as applicable, including pre- and post-drilling/completions sampling consistent with Paragraph 4 below.

3. Requirements for DCPS Operations at New Oil and Gas Locations within the BMP Buffer Zone.

The following shall be required for all DCPS Operations at New Oil and Gas Locations within the BMP Buffer Zone:

- (1) Pitless drilling systems;
- (2) Flowback and stimulation fluids shall be contained within tanks that are placed on a well pad or in an area with downgradient perimeter berming;
- (3) Berms or other containment devices shall be constructed around crude oil, condensate, and produced water storage tanks as follows:
 - a. Secondary containment shall be sized to contain a minimum of 150% of the volume of the largest primary containment vessel within the secondary containment area.
 - b. Containment berms shall be constructed of steel rings, designed and installed to prevent leakage and resist degradation from erosion or routine operation.
 - c. Secondary containment areas for tanks shall be constructed with a synthetic or engineered liner that contains all primary containment vessels and flowlines and is mechanically connected to the steel ring to prevent leakage.
 - d. Tertiary containment, such as an earthen site berm, is required around the downgradient and side-gradient portions of Production Facilities, including process vessels.
- (4) Production Facilities will be installed with automated fluid level monitoring, capable of alerting the Operator if a sudden change in fluid level or upset condition occurs. Additionally, wells will be equipped with remote shut-in capability.
- (5) All loadlines shall be bullplugged or capped.
- (6) Notification to the Brighton Public Works Department prior to commencement of new surface disturbing activities at the site; and
- (7) An emergency spill response program that includes employee training, safety, and maintenance provisions and current contact information for Brighton. The emergency response plan shall specify when notifications to Brighton shall be made and must be prepared in consultation with Brighton.

In the event of a spill or release, the Operator shall immediately implement the emergency response procedures in the above-described emergency response program.

If a spill or release results in significant adverse impacts or threatens such impacts to a portion of the Brighton PWS, the Operator shall notify Brighton immediately following discovery of the release in addition to reporting in accordance with Rule 906.b.

4. Groundwater Sampling Zone

An Operator will conduct the following groundwater sampling regime at any New Oil and Gas Location within the Groundwater Sampling Zone, in addition to groundwater monitoring required by Commission Rule 318A.e.(4):

- a. Initial baseline samples and subsequent monitoring samples shall be collected as follows from the following Available Water Sources, up to a maximum of four (4), within a one-half (1/2) mile radius of the proposed New Oil and Gas Location:
 - i. Only Available Water Sources, as defined in Commission 100-Series Rules, completed within the alluvial aquifer shall be considered for sampling.
 - ii. No more than one (1) Available Water Source selected for sampling may be located a greater distance from the PWS Well or River, Stream or Ditch Segment or Lake than the proposed Oil and Gas Location, as measured to the farthest point on the Oil and Gas Location.
 - iii. Provided good faith effort is made to obtain access to a Water Source for sampling, lack of Available Water Source shall not be grounds for permit denial by the Commission.
- b. As an alternative to the program described in 4.a., Operators may propose the following to satisfy initial and subsequent groundwater monitoring requirements:
 - i. Prior to spud, the Operator shall select a sample site at or near the edge of the New Oil and Gas Location, on the side nearest the Brighton PWS. The selected sample site shall be identified to the Commission on the Form 2A for a proposed New Oil and Gas Location and shall be recorded upon establishment per Commission Rule 215.
 - ii. The Operator shall contract a third party to utilize direct push technology, hollow stem auger, or other equivalent method in accordance with an established Standard Operating Procedure ("SOP") to install and log a temporary monitoring and observation hole. The temporary monitoring and observation hole shall be noticed, installed, and subsequently abandoned in accordance with applicable Colorado Division of Water Resources rules, regulations, and policies.
 - iii. The temporary monitoring and observation hole shall be advanced a minimum of five feet (5') into alluvial groundwater or to refusal, whichever is first. If refusal is encountered prior to groundwater, at least one (1) subsequent attempt must be made to advance to groundwater.
 - iv. Depending on the lithologic characteristics of the boring, a temporary monitoring point (such as with one-inch (1") slotted PVC) may be completed or the sample point may be left open for the purposes of collecting a groundwater sample.
 - v. Following sample point development, if possible, a water sample will be collected from the sample point in accordance with standard environmental sampling practices, with proper chain-of-custody maintained.
 - vi. Each subsequent sampling event (described in paragraph 4.c. below) shall be conducted within five feet (5') of the previous.
 - vii. If no water sample can be obtained from the boring, or refusal is encountered before groundwater is encountered, the Operator shall inform the Commission and propose an alternative method for sample collection or request a variance from this requirement. Provided good faith effort is made,

failure to obtain access to a groundwater sample will not be grounds for permit denial by the Commission.

- c. Initial sampling shall be conducted within twelve (12) months prior to spud of the first well on a well site Oil and Gas Location, preferably as near as possible to the first spud date, and may occur after the Oil and Gas Location has been constructed, but must occur prior to the first production to an Oil and Gas Location where no wells are present. One (1) subsequent sampling event shall be conducted between six (6) and twelve (12) months, and a second subsequent sampling event shall be conducted between sixty (60) and seventy-two (72) months following completion of the Well, Dedicated Injection Well, or the last Well on a Multi-Well Site, or the date of first production to a Production Facility Location.
- d. Sampling and analysis shall be conducted in conformance with an accepted industry standard as described in Rule 910.b.(2). Sampling and analysis conducted in conformance with the Commission Model Sampling and Analysis Plan, as posted on the Commission website, shall be deemed to satisfy the requirements of this subsection. Upon request, an Operator shall provide its sampling protocol to the Director and/or Brighton.
- e. The initial baseline testing described in this section shall include pH, specific conductance, total dissolved solids (TDS), dissolved gases (methane, ethane, propane), alkalinity (total bicarbonate and carbonate as CaCO₃), major anions (bromide, chloride, fluoride, sulfate, nitrate and nitrite as N, phosphorus), major cations (calcium, iron, magnesium, manganese, potassium, sodium), other elements (barium, boron, selenium and strontium), presence of bacteria (iron related, sulfate reducing, slime forming), total petroleum hydrocarbons (TPH) and BTEX compounds (benzene, toluene, ethylbenzene and xylenes). Field observations such as odor, water color, sediment, bubbles, and effervescence shall also be documented.
- f. Subsequent sampling shall include total dissolved solids (TDS), dissolved gases (methane, ethane, propane), major anions (bromide, chloride, sulfate, and fluoride), major cations (potassium, sodium, magnesium, and calcium), alkalinity (total bicarbonate and carbonate as CaCO₃), BTEX compounds (benzene, toluene, ethylbenzene and xylenes), and TPH.
- g. If free gas or a dissolved methane concentration greater than 1.0 milligram per liter (mg/l) is detected in a water sample, gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen – ¹²C, ¹³C, ¹H and 2H) shall be performed to determine gas type.
- h. The Operator shall notify the Director, Brighton, and the surface owner within twenty-four (24) hours if methane is detected at or above 10 mg/l; the test results indicate thermogenic or a mixture of thermogenic and biogenic gas; the methane concentration increases by more than 5.0 mg/l between sampling periods; or BTEX compounds or TPH are detected in a water sample.
- i. Copies of all final laboratory analytical results shall be provided to the Director, Brighton, and the water well owner or landowner within three (3) months of collecting the samples. The analytical results, the surveyed sample Water Source locations,

and the field observations shall be submitted to the Director in an electronic data deliverable format.

- j. An Operator may elect to install one or more groundwater monitoring wells to satisfy, in full or in part, the requirements of this Order, but installation of monitoring wells is not required under this Order. If a monitoring well is installed, it shall be installed in such a manner to prevent contaminant migration from the ground surface to the shallow alluvial aquifers for the life of the well.
- k. The sampling results obtained to satisfy the requirements of this Order, including any changes in the constituents or concentrations of constituents present in the samples, shall not create a presumption of liability, fault, or causation against the owner or Operator of an Oil and Gas Location who conducted the sampling, or on whose behalf sampling was conducted by a third-party. The weight and admissibility of any such sampling results in a legal proceeding shall be determined by the presiding body according to applicable administrative, civil, or evidentiary rules.

5. Consultation.

- a. Where a discrepancy between the Zones as described above and the attached Brighton PWS Management Map exists, the Operator shall request a consultation with Brighton and Staff to determine the applicability of this Order.
- b. Operators will make diligent efforts to avoid locating new Oil and Gas Facilities within 300 feet of the Brighton Lateral or the Fulton Ditch from the point of diversion to the Ken Mitchell Lakes downstream to the point of diversion to the South Platte River. If a new Oil and Gas Location is proposed in that area, the Operator will consult with the Director regarding site-specific BMPs and Operating practices in addition to those required for the BMP Buffer Zone that may be required to avoid potential significant adverse impacts to the ditches or South Platte River.

IT IS FURTHER ORDERED:

- 1. The provisions contained in the above Order shall become effective immediately.
- 2. The Commission expressly reserves its right, after notice and hearing, to alter, amend or repeal any and/or all of the above Orders.
- 3. This Order has been developed to address a unique set of circumstances arising in and adjacent to Brighton, Colorado and shall not be construed as a template for application elsewhere in the State. COGCC considers the need for orders or variances on a fact-specific basis.
- 4. Nothing in this Order shall alter, impair, or negate the authority of Brighton to regulate land use related to Oil and Gas Operations, so long as such local regulation is not preempted by Oil and Gas Act or regulations promulgated thereunder.
- 5. Nothing in this Order shall be construed to alter the intent, scope, language, or basis and purpose of Rule 317B or Rule 609.
- 6. Under the State Administrative Procedure Act the Commission considers this

Order to be final agency action for purposes of judicial review within 35 days after the date this Order is mailed by the Commission.

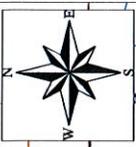
7. An application for reconsideration by the Commission of this Order is not required prior to the filing for judicial review.

ENTERED this 31st day of July, 2014, as of July 28, 2014.

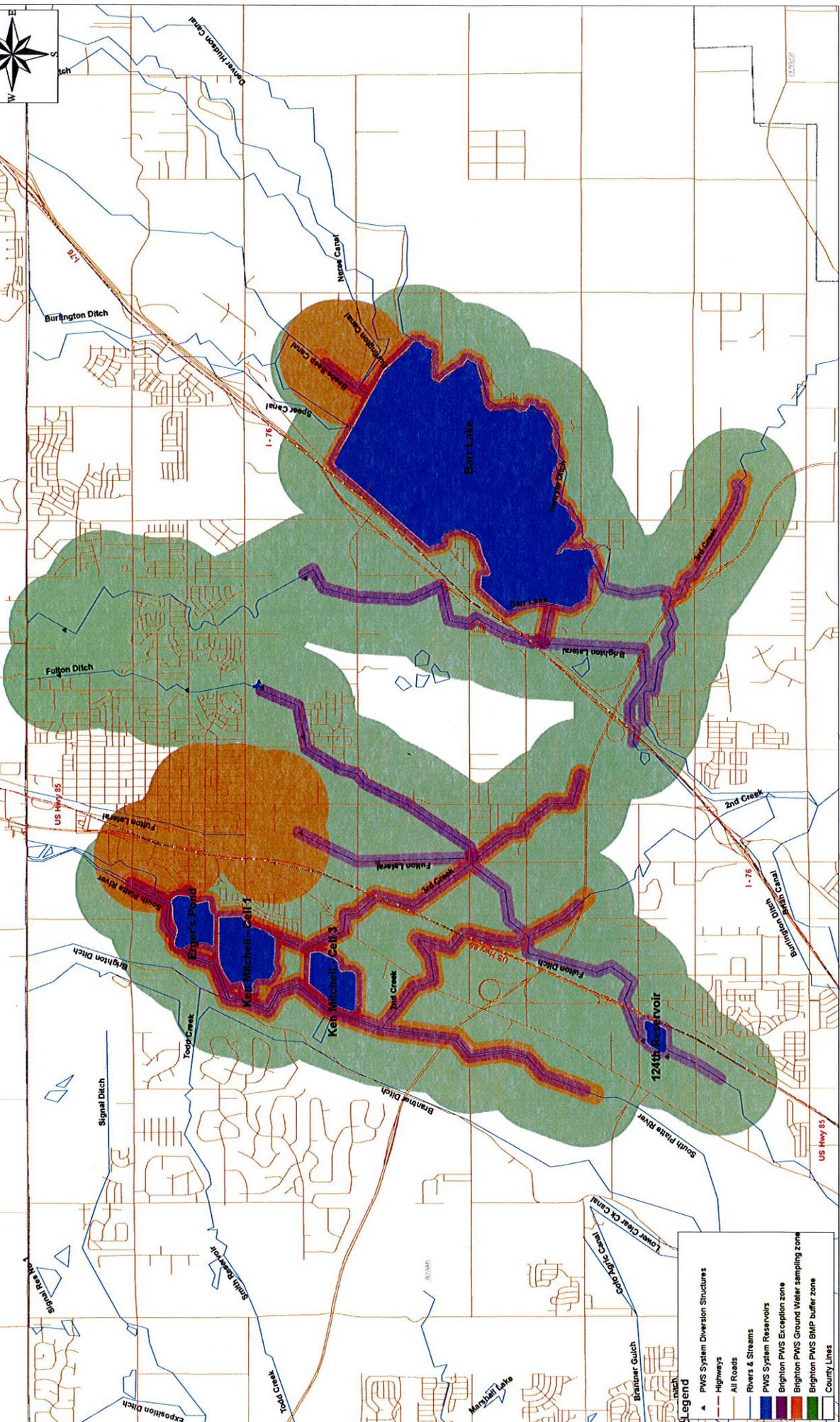
OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF COLORADO



By _____
Robert J. Frick, Secretary



Brighton PWS Management Map, Commission Order No. 1-189



Legend

- ▲ PWS System Diversion Structures
- Highways
- All Roads
- Rivers & Streams
- PWS System Reservoirs
- Brighton PWS Exception zone
- Brighton PWS Ground Water sampling zone
- Brighton PWS BMP buffer zone
- County Lines



