

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

January 22, 1969

Mr. George D. Riggs
Box 116
Carlsbad, New Mexico 88220

Dear Mr. Riggs:

Enclosed herewith please find Administrative Order No. SWD-95 for your Welch-Federal Well No. 5 located in Unit R of Section 5, Township 21 South, Range 27 East, NMPM, Eddy County, New Mexico, to permit the injection of salt water for disposal purposes into the Yates formation at approximately 525 feet to approximately 550 feet through tubing with a packer set in the open hole immediately above the injection zone.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og

cc: Oil Conservation Commission - Artesia
Oil & Gas Engineering Committee - Hobbs

C
O
P
Y

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

January 15, 1964

Mr. J. W. ...

...

...

... of the ...

...

...

...

THE APPLICATION OF GEORGE D. RIGGS
FOR A SALT WATER DISPOSAL WELL.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION COMMISSION

Under the provisions of Rule 701 (C) George D. Riggs, made application to the New Mexico Oil Conservation Commission on January 7, 1969, for permission to complete for salt water disposal its Welch-Federal Well No. 5 located in Unit R of Section 5, Township 21 South, Range 27 East, NMPM, Eddy County, New Mexico.

The Secretary-Director finds:

1. That application has been duly filed under the provisions of Rule 701 (C) of the Commission Rules and Regulations;
2. That satisfactory information has been provided that all offset operators, surface owners, and the New Mexico State Engineer Office have been duly notified; and
3. That the applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 (C) will be met.
4. That no objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED:

That the applicant herein, George D. Riggs, is hereby authorized to complete its Welch-Federal Well No. 5 located in Unit R of Section 5, Township 21 South, Range 27 East, NMPM, Eddy County, New Mexico, in such a manner as to permit the injection of salt water for disposal purposes into the Yates formation at approximately 525 feet to approximately 550 feet through tubing with a packer set in the open hole immediately above the injection zone.

PROVIDED HOWEVER, That the disposal of water into the above described well is restricted to waters that have no higher chloride content than the produced waters from the Cedars Hills Pool.

IT IS FURTHER ORDERED:

That jurisdiction of this cause is hereby retained by the Commission for such further order or orders as may seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of applicant to comply with any requirement of this order after notice and hearing, the Commission may terminate the authority hereby granted in the interest of conservation. That applicant shall submit monthly reports of the disposal operation in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

APPROVED at Santa Fe, New Mexico, on this 22nd day of January, 1969.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

A. L. PORTER, Jr.
Secretary-Director

SEAL

Let $f(x)$ be a function defined on the interval $[a, b]$. We consider the Riemann sum approximation of the definite integral $\int_a^b f(x) dx$.

$$S_n = \sum_{k=1}^n f(\xi_k) \Delta x_k$$

where $\Delta x_k = x_k - x_{k-1}$ and $\xi_k \in [x_{k-1}, x_k]$. The limit of the Riemann sum as $n \rightarrow \infty$ and $\max \Delta x_k \rightarrow 0$ is the definite integral:

$$\int_a^b f(x) dx = \lim_{n \rightarrow \infty} S_n$$

provided the limit exists. The function $f(x)$ is said to be Riemann integrable on $[a, b]$ if this limit exists.

$$\int_a^b f(x) dx = F(b) - F(a)$$

where $F(x)$ is an antiderivative of $f(x)$. This is the Fundamental Theorem of Calculus.

(*) The definite integral $\int_a^b f(x) dx$ is a number.

Properties of the definite integral: linearity, additivity, and monotonicity.

$$\int_a^b (cf(x) + g(x)) dx = c \int_a^b f(x) dx + \int_a^b g(x) dx$$

where c is a constant. The integral of a sum is the sum of the integrals.

Let $f(x) \geq g(x)$ on $[a, b]$. Then $\int_a^b f(x) dx \geq \int_a^b g(x) dx$.

The integral is additive over adjacent intervals: $\int_a^b f(x) dx = \int_a^c f(x) dx + \int_c^b f(x) dx$.

Let $f(x) \geq 0$ on $[a, b]$. Then $\int_a^b f(x) dx \geq 0$.

$$\int_a^b f(x) dx = - \int_b^a f(x) dx$$

The integral of a function over an interval is the negative of the integral over the reverse interval.

Let $f(x)$ be continuous on $[a, b]$. Then $f(x)$ is Riemann integrable on $[a, b]$.

The Riemann sum approximation converges to the definite integral as the number of subintervals increases.

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n f(\xi_k) \Delta x_k = \int_a^b f(x) dx$$

provided $\max \Delta x_k \rightarrow 0$. This is the definition of the definite integral.

$$\int_a^b f(x) dx = \lim_{n \rightarrow \infty} \sum_{k=1}^n f(\xi_k) \Delta x_k$$

The definite integral is a linear functional on the space of Riemann integrable functions.