

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING CALLED BY
THE OIL CONSERVATION COMMISSION OF NEW
MEXICO FOR THE PURPOSE OF CONSIDERING:

CASE NO. 8781 DE NOVO
Order No. R-8161-A

APPLICATION OF PETRO-THERMO CORPORATION
FOR AN EXCEPTION TO DIVISION ORDER NO. R-3221,
AS AMENDED, AND FOR AUTHORIZATION TO DISPOSE
OF ASSOCIATED WASTE HYDROCARBONS AND OTHER
SOLIDS, OBTAINED IN CONJUNCTION WITH THE
DRILLING AND PRODUCTION OF OIL AND GAS INTO
UNLINED PITS, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 9, 1986, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 20th day of May, 1986, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Petro-Thermo Corporation, seeks an exception to the provisions of Order No. R-3221 to permit the commercial disposal of produced salt water into unlined surface pits and authorization to dispose of associated waste hydrocarbons and other related solids obtained in conjunction with the drilling and production of oil and gas into separate unlined pits all to be located in the SW/4 SE/4 NE/4 of Section 16, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico.

(3) The matter originally came on for hearing at 8 a.m. on December 18, 1985, at Santa Fe, New Mexico, before Oil Conservation Division Examiner Michael E. Stogner and, pursuant to his hearing, Order No. R-8161 was entered on February 13, 1986, granting the application.

(4) On March 4, 1986, application for Hearing De Novo was filed with the Commission by Snyder Ranches, Inc., and Pollution Control Inc.

(5) The matter came on for hearing De Novo on April 10, 1986.

(6) Petro-Thermo Corporation is the operator of a common carrier trucking company which transports produced water and various liquids and solids related to the drilling for and production of oil and gas.

(7) The applicant seeks authority to dispose of such liquids and solids in surface pits to be located at a disposal facility to be constructed in said Section 16.

(8) Said Section 16 is State land subject to the regulation and control of and leasing by the Commissioner of Public Lands.

(9) The applicant has filed for a business lease in said Section 16 for its proposed disposal operation.

(10) Decretory Paragraph No. (3) of Division Order No. R-3221, as amended, prohibits in that area encompassed by Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, the disposal, subject to minor exceptions, of water produced in conjunction with the production of oil or gas, or both, on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any water course, or in any other place or in any manner which would constitute a hazard to any fresh water supplies.

(11) The aforesaid Order No. R-3221 was issued in order to afford reasonable protection against contamination of fresh water supplies designated by the State Engineer through disposal of water produced in conjunction with the production of oil or gas, or both, in unlined surface pits.

(12) The State Engineer has designated all underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids as fresh water supplies to be afforded reasonable protection against contamination; except that said designation does not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination.

(13) The applicant proposes to install and operate an effective system, consisting of separating tanks, up to eleven water disposal pits, eight solids disposal pits, two overflow

pits, and associated skimming equipment for the removal and reclamation of oil and basic sediments from the produced water to be disposed of and a dispersal area to dispose of other solid waste, all in the E/2 NE/4 of said Section 16.

(14) A naturally occurring salt lake (Laguna Plata) is located in the general area including the northern portion of Section 16, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico, and is approximately one quarter mile from the proposed disposal area.

(15) The applicant presented hydrogeologic evidence in this case to demonstrate that:

(a) Triassic redbeds, comprised of the Chinle Shale, Santa Rosa sandstone and the Dewey Lake formation, underlie both Laguna Plata and the proposed water disposal site;

(b) Shales within the Triassic redbeds underlying the proposed waste disposal site and Laguna Plata are virtually impermeable and therefore prevent vertical seepage of the waters from the site and Laguna Plata into sand stringers within the redbeds which may contain fresh water;

(c) The surface of the Triassic redbeds is depressed in the vicinity of the waste disposal site and Laguna Plata, sometimes described as a "collapse feature";

(d) The major flow of surface and subsurface water within the boundaries of the "collapse feature" is toward Laguna Plata;

(e) Seepage from the impoundments at the proposed waste disposal site will infiltrate into the subsurface and migrate toward Laguna Plata;

(f) After the seepage reaches Laguna Plata, practically all of the seepage will evaporate;

(g) The evaporation of Laguna Plata is more than 60 times the highest estimated maximum sustained rate of fluid waste disposal, which should be approximately 30,000 barrels per day;

(h) The concentration of total dissolved solids in the seepage from the impoundments is less than that in the waters of Laguna Plata;

(i) The concentration of total dissolved solids in the waters of Laguna Plata is 335,108 parts per million. There

is no present or reasonably foreseeable beneficial use of the waters of Laguna Plata;

(j) Due to fracturing in this collapse feature, a minor amount of seepage may filtrate through this impermeable layer; however, there are no known sources of potable ground water in sediments underlying the Triassic redbeds at Laguna Plata;

(k) The utilization of the proposed Petro-Thermo Corporation disposal site adjacent to Laguna Plata for the disposal of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds should not constitute a hazard to any fresh water supplies.

(16) Snyder Ranches, Inc. is the owner of federal grazing leases adjacent to the applicant's proposed facility, is an interested party affected by this application, and appeared in opposition to the application.

(17) Pollution Control, Inc. has an approved surface disposal facility located at Laguna Gatuna in Section 18, Township 20 South, Range 32 East, Lea County, New Mexico, approximately four miles from the applicant's requested facility and is also an interested party affected by this application and appeared in opposition to the application.

(18) Snyder Ranches and Pollution Control (protestants) sought dismissal of this case as the applicant had not yet received a business lease from the State of New Mexico on the acreage to be used for disposal and was therefore not an operator, producer, or a person with a property interest and as such is not entitled to initiate a hearing under Division Rule 1203.

(19) While at the time of the hearing, Petro-Thermo had no property interest in said Section 16, other than that held by citizens of the State in State Trust Lands, it did possess other property in the State related to its business and is entitled to a hearing in this case.

(20) Protestants presented hydrogeologic evidence designed to cast doubt on the suitability of the proposed site for the intended disposal operations.

(21) Protestants' geohydrologic testimony questioned the sufficiency of the applicant's case in the following areas:

(a) Within Section 16, the thickness of the alluvial cover ranges from zero feet to 130 feet, but is completely unknown at the proposed site itself.

(b) In the absence of accurate data concerning the thickness and composition of the alluvial cover from the surface to the redbeds, hydrologists are unable to accurately project the direction and rate of subsurface migration of the discharged water.

(c) There is no evidence presented by the applicant which confirms that the rebed surface slopes directly toward Laguna Plata.

(d) In the absence of accurate data about the slope of the redbeds, it is not possible to accurately project that the discharged water will flow only into Laguna Plata and not elsewhere.

(e) Applicant failed to rebut available hydrology reports (Reed-1969) that there would be a westward migration of ground water from Laguna Plata that eventually migrates into Nash Draw and eventually into the Pecos River.

(f) Applicant's opinion that Laguna Plata is a closed depression is not supported by the data and the hydrology study conducted by Hunter (1985) or by Geohydrology Assoc. (1979).

(g) No evidence was presented by applicant to substantiate that the disposal ponds will function properly.

(h) The applicant and its experts are without prior experience in the design, construction, and operation of a surface disposal facility.

(i) Should the facility function as proposed by applicant, the discharge water will cause hydrocarbons to be introduced into Laguna Plata.

(22) The best geohydrologic evidence at the time of the hearing included the existence of a high TDS spring located at the northwest corner of the proposed pit disposal area and the water level elevation data presented on Figure 3 of applicant's Exhibit 9.

(23) Each of the above confirmed the position that fluids infiltrating from the surface will move toward, discharge to and eventually evaporate from, Laguna Plata.

(24) Should dissolved hydrocarbons move in the subsurface toward Laguna Plata, they would be detected at monitor wells north of the pits in time to monitor their progress toward the laguna and permit planning of any necessary corrective action.

(25) Soluble hydrocarbons should rapidly volatilize in the shallow salt lake environment and should pose no risk.

(26) There was no showing that prior experience is necessary to operate the proposed facility.

(27) The Bureau of Land Management appeared in the subject case and presented a statement in opposition to the proposed facility on the following grounds:

(a) the facility could impact a surface salt mining operation in the laguna;

(b) the facility will threaten wildlife use of spring water in the southeastern margin of the laguna;

(c) numerous archaeological sites are located in proximity to the laguna; and,

(d) the Bureau is concerned that the site will be used for disposal of hazardous waste.

(28) No party representing the salt mining company appeared at either the examiner hearing or the De Novo hearing to object to the proposed disposal operation.

(29) It was not demonstrated that the proposed disposal operation would in fact impact wildlife or the springs in the southeastern margin of the laguna.

(30) There was no evidence that the proposed disposal operation would impact archaeological sites on the surrounding federal lands. However, archaeological artifacts are protected by State law on State lands and the operator should post warning signs concerning removal of such artifacts.

(31) Because of the concerns raised about disposal of hazardous wastes, disposal of any fluids or materials at the site by any person other than the applicant should not be permitted during any period the site is unattended.

(32) To further assure that disposed fluids move only toward Laguna Plata, additional monitor wells should be completed to the west of the facility in accordance with a plan approved by the Director of the Division.

(33) The applicant should be authorized to utilize unlined pits as described in Finding Paragraph (2) above, which are within one quarter of a mile from Laguna Plata for the disposal of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds.

(34) The proposed disposal system should be constructed and maintained in accordance with the engineering plat and topographic map presented at the time of the hearing and marked as Petro-Thermo Corporation Exhibit No. 8 for the case and in accordance with such additional conditions and requirements as the Division Director may deem necessary.

(35) The maximum fill level in all of the above-mentioned pits should be limited to a plane three feet below the crest of the dikes surrounding the pits.

(36) Said facility should have adequate fencing, gates, and cattle guards installed and maintained to preclude livestock and unauthorized persons from entering the property.

(37) In order to assure that the Division should have an opportunity to assess the potential for migration of heavy metals, soluble hydrocarbons, or other deleterious materials in the subsurface from the disposal pits to the lake surface, the development of a monitor well and sampling program satisfactory to the Division Director should be required.

(38) The granting of this application should not endanger designated fresh water supplies, and should prevent waste by permitting production of oil associated with large amounts of water.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Petro-Thermo Corporation, is hereby granted an exception to Decretory Paragraph No. (3) of Division Order No. R-3221, as amended, to dispose of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds in unlined pits adjacent to Laguna Plata in the SW/4 SE/4 NE/4 of Section 16, Township 20 South, Range 32 East NMPM, Lea County, New Mexico;

PROVIDED HOWEVER THAT, the disposal facility shall be constructed and maintained in accordance with the engineering plat and topographic map presented at the time of the hearing and marked as Petro-Thermo Corporation Exhibit No. 8;

PROVIDED FURTHER THAT, the facility shall have adequate fencing, gates, and cattle guards installed and maintained to preclude livestock and unauthorized persons from entering the facility;

PROVIDED FURTHER THAT, the applicant shall take the steps necessary to prohibit disposal by any person other than itself at any time the facility is unattended.

PROVIDED FURTHER THAT, the total disposal volume at the facility shall not exceed 30,000 barrels per day and the maximum fill level in each pit at the facility shall not exceed a plane three feet below the crest of the dikes surrounding the pits.

(2) Prior to operation of the disposal facility, the applicant shall submit a revised plan acceptable to the Director of the Oil Conservation Division, for installation and sampling of monitor wells such that the subsurface migration of fluids in a westerly direction may be detected or that the movement of heavy metals, soluble hydrocarbons, or other deleterious materials from the pits to the lake surface may be detected in sufficient time prior to their arrival at the lake surface in order that appropriate action may be taken, if needed.

(3) The Director of the Division may by administrative order rescind the authorization and/or require additional conditions be met if it is determined that such rescission or additional conditions would serve to protect fresh water supplies from contamination, assure the protection of human health and property, and prevent waste.

(4) Jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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Case No. 8781 De Novo
Order No. R-8161-A

DONE at Santa Fe, New Mexico, on the day and year
hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JIM BACA, Member

Ed Kelley
ED KELLEY, Member

R. L. Stamets
R. L. STAMETS,
Chairman and Secretary

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