STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES 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 9955 (DE NOVO)
Order No. R-9485-A

APPLICATION OF SUNCO TRUCKING WATER
DISPOSAL FOR A PERMIT TO CONSTRUCT AND
OPERATE A COMMERCIAL WASTEWATER EVAPORATION
POND, SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on June 12, 1991, at Santa Fe, New Mexico, before the Oil Conservation Commission, hereinafter referred to as the "Commission."

NOW, on this 19th day of July, 1991, 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) Sunco Trucking Water Disposal Company ("Applicant") seeks an order for a permit pursuant to Rule 711 of the Oil Conservation Division's ("Division") Rules and Regulations to construct a commercial surface disposal facility to dispose of "nonhazardous" wastewater resulting from oil and gas drilling and production operations.

(3) Said facility is to be located in the SW/4 NW/4 (Unit E) of Section 2, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico.

(4) On June 13, 15, and 22, 1990, the Division held a hearing of Case 9955 for a permit for Applicant to construct and operate a commercial wastewater evaporation pond.

(5) On April 2, 1991 the Division entered Order No. R-9485 approving such permit under certain conditions.

(6) Harold and Doris Horner ("Protestor") are owners of land near the proposed facility and protested the granting of the permit and requested this De Novo hearing.

(7) The entire record of the Examiner hearing was entered into the Commission hearing record.

(8) Protestor objected to the proposed facility because of the possibility that hydrogen sulfide gas could be generated and that the contamination of ground water could occur. Protestor was also concerned that the Division did not require submission of certified engineering plans for the operational system prior to permit approval.

(9) The Division presented an expert witness who testified that hydrogen sulfide build-up could be prevented by supplying sufficient oxygen to the pond to maintain a residual oxygen level of at least 0.5 parts per million (ppm). The witness testified that performance criteria, not design criteria, should be ordered, to allow for flexibility of technology and site specific requirements. The design of the facility was characterized as utilizing the best currently available affordable technology to prevent the formation or release of hydrogen sulfide gas.

(10) If the facility is constructed with a double synthetic lining and adequate leak detection on a properly constructed base, and if a proper leak response program which will require prompt detection and repair is maintained, it is highly unlikely that fluids will contact the soil with no danger of contacting fresh water sources.

(11) Applicant's witness testified that wastewater delivered to the facility can be tested and treated in a closed system if hydrogen sulfide is found to be present. This treatment must be carried to completion in the truck to prevent introduction of the gas into the pond.

(12) Protestor appeared at the hearing through Counsel and cross-examined Applicant's witness and the OCD witness, but did not present any direct evidence to support their position that the facility could not be permitted without creating an unreasonable risk of contaminating fresh water supplies or presenting a danger to human health and the environment.

(13) The findings and order of the Division are well founded upon all the evidence before the Commission and should be adopted by the Commission subject to modifications ordered herein.

IT IS THEREFORE ORDERED THAT:

(1) Division Order No. R-9485 is hereby affirmed and adopted as the order of the Commission with the exception of the changes ordered below:

(2) Decretory Paragraph No. (1) of said order be and the same is hereby amended to read in its entirety as follows:

> "The applicant, Sunco Trucking Water Disposal Company, is hereby authorized to construct and operate a commercial surface wastewater disposal facility at a site in the SW/4 NW/4 (Unit E), Section 2, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico, for the purpose of collection, disposal, evaporation or storage of produced water, completion fluids and other non-hazardous oil field related waste, subject to the permit conditions.
>
> PROVIDED HOWEVER THAT, the proposed disposal facility shall be constructed and operated in accordance with the permit conditions attached hereto as Exhibit "A" (herein amended) which are incorporated herein and made a part of this order, and in accordance with such additional conditions and requirements as may be directed by the Division Director from time to time, and shall be operated and maintained in such a manner as to preclude spills and fires, and to protect surface waters, ground waters, human health, livestock and the environment.
>
> PROVIDED FURTHER THAT, Protestor is afforded the opportunity to review and comment on all engineering designs for the aeration, circulation and enhanced evaporation spray systems. The period for Protestor's review and comments shall not exceed ten working days from the receipt of the designs; such review and comments shall be certified by a registered professional engineer."

(3) Decretory Paragraph No. (3) be and the same is hereby amended to read in its entirety as follows:

> "(3) Engineering designs for aeration systems shall be certified by a registered professional engineer and submitted to and approved by the Director prior to construction."

(4) Decretory Paragraph No. (4) be and the same is hereby amended to read in its entirety as follows:

"(4) Engineering designs for the enhanced evaporation spray systems shall be certified by a registered professional engineer and submitted to and approved by the Director prior to construction."

(5) Decretory Paragraph (6) be and the same is hereby amended to read in its entirety as follows:

"(6) As-built drawings, certified by a registered professional engineer, shall be submitted to and approved by the Director prior to initiating operations."

(6) Decretory Paragraph No. (7) be and the same is hereby amended to read in its entirety as follows:

"(7) The Director of the Division shall be authorized to administratively grant, pursuant to Rule 711, approval for the expansion or modification of the proposed disposal facility."

(7) Decretory Paragraph (12) be and the same is hereby amended to read in its entirety as follows:

"(12) Each aeration system shall be designed such that the oxygen requirements and residuals can be provided without the use of any additional system."

(8) Decretory Paragraph No. (13) be and the same is hereby amended to read in its entirety as follows:

"(13) Each aeration system shall be designed to allow for expansion if the actual oxygen demand exceeds the oxygen demand used in the design calculations."

(9) Decretory Paragraph No. (15) be and the same is hereby amended to read in its entirety as follows:

"(15) The Division shall have the authority to administratively change any condition of this permit to protect fresh water, human health and the environment. Applicant may request a hearing upon any change which materially affects the operation of the facility, unless the change is a response to an emergency situation impacting human health and the environment."

(10) A new Exhibit "A" as attached hereto and incorporated herein is adopted and substituted for the Exhibit "A" attached to Order No. R-9485. The revised Exhibit "A" shall include the following changes:

a. Exhibit "A" Section VII.B.2.a. is amended to read:

The ponds shall have a minimum freeboard of eighteen (18) inches. If overtopping occurs at any time, the freeboard shall be increased to prevent a reoccurrence.

b. Exhibit "A" Section VII.B.2.d. is amended to read:

An aeration system shall be constructed to prevent anaerobic conditions from forming in a pond. Such system shall be able to provide sufficient oxygen in the pond to maintain a residual oxygen concentration of 0.5 parts per million (ppm) at one foot off the pit bottom without the use of any other system. The system shall be designed to permit expansion if actual oxygen demand exceeds the oxygen demand used in design calculations. Such plans and specifications, certified by a registered professional engineer, must be submitted to the Division for approval prior to actual construction.

c. Exhibit "A" Section VII.B.2.e. is amended to read:

Upon completion of construction, "as-built" completion diagrams of the ponds and aeration systems certified by a registered professional engineer shall be submitted and approved by the Director prior to operation.

d. Exhibit "A" Section VIII.B is amended to read:

If a leak is determined to exist in the primary liner, the operator will immediately undertake the following contingency measures under the direction of the OCD:

e. Exhibit "A" Section VIII.B.5. is amended to read:

Additional measures may be required by the OCD.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JAMI BAILEY, Member

WILLIAM W. WEISS, Member

WILLIAM J. LEMAY, Chairman and Secretary

SEAL

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NEW MEXICO OIL CONSERVATION DIVISION

CASE 9955 De Novo, ORDER R-9485-A
Exhibit A

SURFACE DISPOSAL FACILITY PERMIT
INITIAL CONDITIONS FOR APPROVAL
SUNCO TRUCKING WATER DISPOSAL COMPANY

I. Type of Operation

The major purpose of the facility shall be to dispose of salt water produced in connection with the production of oil and gas by evaporating such water in open pits using enhanced evaporation techniques as necessary and under those conditions which make such use safe.

Water shall be tested for hydrogen sulfide (H_2S) and treated, if necessary, in a closed system prior to introduction into a pond. Ponds shall be properly aerated to maintain oxygen levels as required by this permit. Contingency plans have been developed for H_2S buildup and for leaks as set forth herein.

II. Operator

The owner of the facility is:

Sunco Trucking Water Disposal Company
708 South Tucker Ave.
Farmington, NM 87401

III. Location of Disposal Pit

The facility shall be located at a site in the SW/4 NW/4 (Unit E), Section 2, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico. Said facility shall be constructed in accordance with the site plan submitted to the Division at hearing subject to any modifications directed or approved by the Division.

IV. Expansion Request

This is an application for a new facility to be constructed upon issuance of this permit.

V. Land Ownership

The land upon which the facility is to be constructed is owned in fee by Sunco Trucking Water Disposal Company.

VI. Storage/Disposal Facilities Description

A. The facility shall accept for disposal produced water, completion fluids and non-hazardous oilfield related waste for disposal.

B. Fluids shall be received in an open skim tank, subject to the requirements for treatment set forth herein. Oil and other hydrocarbons shall be skimmed off and placed in closed storage tanks until sold. Treated and skimmed water shall be placed in open, synthetically double lined ponds with approved leak detection system for evaporation. The skim tank, oil storage tanks and ponds are to be located as shown on the site plan submitted at the hearing, subject to any modifications or changes required or approved by the Division.

VII. Engineering Design

A. The subject facility shall be constructed in accordance with the engineering designs presented at the hearing as applicant's exhibits no. 1, 2A, 2B, 3, 4 & 6 and in accordance with the following conditions and requirements set forth herein.

B. General Construction Requirements

1. Location

This approval is for the specific site and location identified. The location of any pit or pond shall not be changed from the submitted site plan without specific authorization from the Division.

2. Design and Construction

a. The ponds shall have a minimum freeboard of eighteen (18) inches. If overtopping occurs at any time, the freeboard shall be increased to prevent a

reoccurrence. Liner markings or some other device shall be installed to accurately measure freeboard.

b. The pond shall be constructed so that the inside grade of the levee is no steeper than 2:1. Levees shall have an outside grade no steeper than 3:1.

c. The top of the levees shall be level and shall be at least eighteen inches (18") wide.

d. An aeration system shall be constructed to prevent anaerobic conditions from forming in a pond. Such system shall be able to provide sufficient oxygen in the pond to maintain a residual oxygen concentration of 0.5 parts per million (ppm) at one foot of the bottom of the pit without the use of any spray system. The system shall be designed to permit expansion if actual oxygen demand exceeds the oxygen demand used in design calculations. Such plans and specifications, certified by a registered professional engineer, must be submitted to the Division for approval prior to actual construction.

e. Upon completion of construction "as-built" completion diagrams of the ponds and aeration systems certified by a registered professional engineer shall be submitted and approved by the Director prior to commencement of operation.

3. Synthetically Lined Evaporation Ponds

a. Materials -- Synthetic materials used for lining the evaporation ponds shall be impermeable flexible HDPE membrane as submitted in applicant's hearing exhibit no. 1, and no substitution of different material shall be made without prior approval of the Division.

b. Leak Detection System

(1) A leak detection system of an approved design shall be installed between the primary and secondary liner. The Aztec district office of the Division shall be notified at least 48 hours in advance of the scheduled installation of the primary liner to afford the opportunity for a

Division representative to inspect the leak detection system.

(2) A network of slotted or perforated drainage pipes shall be installed between the primary and secondary liners. The main collector pipes shall be not less than four (4) inch diameter and the laterals shall be not less than two (2) inch diameter pipe. The network shall be of sufficient density so that no point in the pond bed is more than twenty feet (20') from such drainage pipe or lateral thereof. The material placed between the pipes and laterals shall be sufficiently permeable to allow transport of the fluids to the drainage pipe. The slope for all drainage lines and laterals shall be at least six inches (6") per fifty feet (50'). The slope of the pond bed shall also conform to these values to assure fluid flow towards the leak detection system. The drainage pipe shall convey any fluids to a corrosion-proof sump located outside the perimeter of the pond.

c. Preparation of Pond Bed for Installation of Liners

(1) The bed of the pond and inside grade of the levee shall be smooth and compacted, free of holes, rocks, stumps, clods, or any other debris which may rupture the liner. If necessary to prevent rocks from damaging the liner, the pond bed shall be covered with a compacted layer of sand or other suitable materials.

(2) A trench shall be excavated on the top of the levee the entire perimeter of the pond for the purpose of anchoring flexible liners. This trench shall be located a minimum of nine inches (9") from the slope break and shall be a minimum of twelve inches (12") deep.

(3) The liner shall rest smoothly on the pond bed and the inner face of the levees, and shall be of sufficient size to extend down to the bottom of the anchor trench and come back out a minimum of two inches (2") from the trench on the side furthest from the pond. Wrinkles or folds shall

be placed at each corner of the pond in accordance with manufacturer's specifications to allow for contraction and expansion of the membrane due to temperature variations.

(4) The liners shall be properly vented in accordance with the design submitted as Applicant's Exhibit 2B.

(5) An anchor of used pipe or other similar material shall be placed over the liner in the anchor trench and the trench back-filled. The anchor trench shall extend the entire perimeter of the pond.

(6) The sand, gravel or geotextile membranae layers placed on top of the secondary liner shall be done in such a manner that the risk of tearing the liner is minimized.

(7) At any point of discharge into the pond(s), no fluid force shall be directed toward the liner.

4. Spray Evaporation Systems

a. Sprayer systems shall be included to enhance natural evaporation.

b. Engineering designs for the sprayer system must be submitted for approval prior to installation. An anemometer with automatic shutdown systems shall be installed which will automatically deactivate the spray systems when wind-born spray drift can be carried outside the confines of the ponds.

c. Spray systems shall be operated such that all spray remains within the confines of the lined portion of the ponds. The spray system shall be operated only when an attendant is on duty at the facility.

5. Skimmer Tanks

a. Required Use
Skimmer tanks shall be used to separate any oil from the water prior to allowing the water to discharge into the evaporation pond.

b. Design Criteria

The skimmer tank shall be designed to allow for oil/water separation only; oil shall be removed in a timely manner and stored in tanks. Per Division General Rule 310, oil shall not be stored or retained in earthen reservoirs or in open receptacles.

(1) The material of construction and/or design shall provide for corrosion resistance.

(2) Siphons or other suitable means shall be employed to draw water from oil/water interface for transfer to the evaporation pond. The siphon shall be located as far as possible from the inlet to the skimmer tank.

(3) The skimmer tank shall at all times be kept free of appreciable oil buildup to prevent oil flow into the evaporation pond.

6. Fences, Signs and Netting

a. A fence shall be constructed and maintained in good condition around the facility perimeter. Adequate space will be provided between the fence and levees for passage of maintenance vehicles. The fence shall be constructed so as to prevent livestock and people from entering the facility area. Fences shall not be constructed on levees.

b. A sign not less than 12" x 24" with lettering of not less than two inches (2") shall be posted in a conspicuous place on the fence surrounding the facility. The sign shall be maintained in legible condition and shall identify the operator of the disposal system, the location of the facility by quarter-quarter section,

township, and range; and emergency telephone numbers.

c. To protect migratory birds, all tanks exceeding 16 feet in diameter, and exposed pits and ponds shall be screened, netted or covered. Upon written application by the operator, an exception to screening, netting or covering of a facility may be granted by the district supervisor upon a showing that an alternative method will protect migratory birds or that the facility is not hazardous to migratory birds.

VIII. Spill/Leak Prevention and Reporting Procedures (Contingency Plan)

A. Leak detection system sumps shall be inspected daily, and records of such inspections shall be made and retained and kept on file at the facility for OCD inspection at any time. If fluids are found in the sump the following steps will be immediately undertaken:

1. The operator shall notify the Division Aztec District Office within twenty-four (24) hours;

2. the fluids will be sampled and analyzed to determine the source; and

3. the fluids will be immediately and continuously removed from the sump. Such fluids may be returned to the pond.

B. If a leak is determined to exist in the primary liner, the operator will immediately undertake the following contingency measures under the dircetion of the OCD:

1. Introduction of fluids into the pond will cease.

2. Enhanced evaporation will commence, provided atmosphere conditions are such that the spray systems can be operated in accordance with the provisions of this permit.

3. Fluids will be removed from the pond utilizing evaporation and transportation to another authorized facility, until the fluid level is below the location of the leak in the liner.

4. The liner will be repaired and tested and the leak detection system will be completely drained before resuming introduction of fluids into the pond.

5. Any additional measures required by the OCD.

IX. Operation and Maintenance

A. **Requirements for receipt of fluid.**

1. Disposal at this facility shall occur only when an attendant is on duty. The facility shall be secured when no attendant is present.

2. No produced water shall be received at the facility unless the transporter has a valid Form C-133 (Authorization to Move Produced Water) on file with the Division.

3. Only liquids that are non-hazardous by U.S. Environmental Protection Agency under Resource Conservation Recovery Act (RCRA) Subtitle C exemption or by characteristic testing will be accepted at the facility. Liquids and solids from operations not currently exempt under RCRA Subtitle C will be tested for appropriate hazardous constituents prior to disposal.

4. All liquids accepted for disposal shall be tested for hydrogen sulfide concentrations. All liquids with measurable hydrogen sulfide concentrations shall be treated in a closed system prior to introduction of liquids to any open tank or pond. The treatment reaction shall be driven to completion to eliminate all measurable hydrogen sulfide.

5. The operator shall keep and make available for inspection records for each calendar month on the source, location, volume and type of waste (produced water, spent acids, completion fluids, drilling mud, etc.), analysis for hazardous constituents (if required), date of disposal, and hauling company that disposes of fluids or material in the facility. Records of H_2S measurements and treatment volumes shall be maintained in the same manner. Such records shall be maintained for a period of two (2) years from the date of disposal.

6. The operator shall file forms C-117-A, C-118, and C-120-A as required by OCD rules.

7. Fluids shall not be accepted if introduction of the fluid will cause the pond freeboard to be less than that approved herein.

B. **Pond Maintenance.**

1. Outside walls of all levees shall be maintained in such a manner to prevent erosion. Inspections of the outside walls of the levees shall be made weekly and after any rainfall of consequence.

2. No oil shall be allowed in the pond(s).

C. **General Operational Requirements.**

1. Operating personnel shall be trained in the operation, calibration, maintenance and safety requirements of all test equipment used at the facility.

2. At least 1000 gallons of a treatment chemical shall be stored on-site and shall not be retained for a period in excess of the manufacturer's stated shelf life. Expired chemicals may be disposed of in the pond.

3. Prior to disposal, any accumulated sludge generated in the disposal facility shall be analyzed for composition and disposal pursuant to requirements determined by the OCD.

4. If any of the required systems become inoperative, the Aztec district office of the Division will be notified immediately.

X. Closure Plan

A. When the facility is to be closed, the operator shall provide for removal of all fluids and/or wastes, back-filling, grading and mounding of pits, cleanup of any contaminated soils. Wastes shall be disposed of in accordance with statutes, rules and regulations in effect at the time of closure.

B. OCD shall be notified when operation of the facility is discontinued for a period in excess of six months or when the facility is to be dismantled.

XI. Flood Protection

A. The facility will be constructed such that there will be no storm water runoff from the boundaries of the facility.

B. The operator will immediately notify the Aztec district office of the Division of any flooding or washouts.

XII. H_2S Prevention and Contingency Plan

A. In order to prevent development of harmful concentrations of hydrogen sulfide, the following procedures shall be followed:

1. Daily tests shall be conducted and records made and maintained of the pH in each pond, and if the pH falls below 7.0, remedial steps shall be taken immediately to raise the pH.

2. Weekly tests shall be conducted and records made and retained at the facility of the dissolved sulfide concentrations in the ponds.

3. Tests shall be conducted, and records made and retained at the facility of such tests, to determine the dissolved oxygen levels in each pond:

a. Tests shall be conducted at the beginning and end of each day, or at least twice per 24-hour period.

b. The sample for each test shall be taken one foot from the bottom of the pond.

c. The location of each test shall vary around the pond.

d. If any test shows a dissolved residual oxygen level of less than 0.5 ppm, immediate steps shall be undertaken to raise the oxygen level to at least 0.5 ppm, which measures may include adding bleach or increased aeration.

B. In order to prevent any harm by hydrogen sulfide gas, Tests of ambient H_2S levels shall be conducted, and records made and retained. Such tests shall be made at varying locations around the berm of the pond and shall be conducted twice per day. The wind speed and direction shall be recorded in conjunction with each test.

1. If an H_2S reading of 0.1 ppm or greater is obtained:

   a. A second reading shall be taken on the downwind berm within one hour;

   b. The dissolved oxygen and dissolved sulfide levels of the pond shall be tested immediately and the need for immediate treatment determined;

   c. Tests for H_2S levels shall be made at the fence line, downwind from the problem pond.

2. If two consecutive H_2S readings of 0.1 ppm or greater are obtained:

   a. The operator shall notify the Aztec office of the OCD immediately;

   b. The operator shall commence hourly monitoring on a 24-hour basis;

   c. The operator will obtain daily analysis of dissolved sulfides in the pond.

3. If an H_2S reading of 10.0 ppm or greater at the facility fence line is obtained:

   a. The operator will immediately notify the OCD and the following public safety agencies:

      - State Police
      - County Sheriff
      - County Fire Marshall;

   b. The operator will initiate notification of all persons residing within one-half ($\frac{1}{2}$) mile of the fence line and assist public safety officials with evacuation as requested.

XIII. Additional Information

The operator shall notify the Division of any additional information change in conditions which may be relevant to this permit

XIV. Certification

Sunco Trucking Water Disposal Company, by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. Sunco Trucking Water Disposal Company further acknowledges that this permit shall not become effective until Bond satisfactory to the Division is posted and that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Accepted:

SUNCO TRUCKING WATER DISPOSAL COMPANY

by_____
Title