Correspondence

Case No. 12897

2001

Controlled Recovery, Inc.
P.O. Box 388 Hobbs, NM 88241
Phone: (505)393-1079 Fax: (505)393-3615

CRI

To: WAYNE PRICE / NMOCD **From:** KEN MARSH

Fax: 505-476-3462 **Pages:** 2, INCLUDING COVER

Phone: **Date:** 8-8-01

Re: **CC:**

☐ **Urgent** X **For Review** ☐ **Please Comment** **Please Reply** ☐ **Please Recycle**

August 8, 2001

To: Wayne Price
NMOCD

From: Ken Marsh
Controlled Recovery, Inc.

RE: H_2S Proposed Rule

1) Time frame for project is not realistic. Notice for 1st meeting did not allow time for interested parties to be included.

2) Comments due by August 7, 2001 does not give sufficient time to analyze the effects of this proposed rule. There are many difficult and complex issues involved.

The cost of implementing this rule will be a major factor in the budgets of all companies affected. There must be ample time to consider economic factors and liability issues in addition to the tremendous additional requirements of human resources. NMOCD Rule 118 adequately covers H_2S public safety.

NMOCD's authority covers public health and the environment. All other issues in this proposed rule are not applicable. Air quality is the responsibility of NMED.

The Department of Public Safety is the agency with responsibility and authority. Most cities and counties have plans in place to address these issues.

Ross, Stephen

From: Wrotenbery, Lori
Sent: Friday, August 03, 2001 4:27 PM
To: Ross, Stephen
Subject: FW: H2S Proposed Re-write

FYI

From: Deborah Seligman[SMTP:seligman@nmoga.org]
Sent: Friday, August 03, 2001 4:07 PM
To: wrotenbery@state.nm.us
Cc: gallagher@nmoga.org; bgantner@br-inc.com; Rick_Foppiano@oxy.com; WPrice@state.nm.us
Subject: H2S Proposed Re-write

H2Sextltr.pdf


Microsoft Exchange Message

Lori, I'll be in the office on Monday, August 6 next week. ~d~

New Mexico Oil & Gas Association

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03 August 2001

Lori Wrotenbery, Director
NMEMNR Oil Conservation Division
1220 S St. Francis
Santa Fe, New Mexico 87505

RE: OCD *Proposed Draft* Rule Re-Write for Hydrogen Sulfide

Dear Ms. Wrotenbery,

The New Mexico Oil and Gas Association (NMOGA) appreciates being given the opportunity to participate on the OCD Working Committee and to comment on the *proposed draft* hydrogen sulfide rule re-write. We also want to express our concern over the short time schedule allotted for review and industry input.

The *proposed draft* rule was first provided to NMOGA on July 19 for review and comment and the first work group meeting was hastily called for July 26. Due to this short meeting notice, several key members of industry with H_2S expertise were unable to attend that meeting.

Many member companies that have briefly reviewed the *proposed draft* re-write have already expressed serious concerns about a variety of things that have never been seen before in ANY H_2S rule. Concern has also been expressed that the *proposed draft* re-write may conflict with the requirements of Section 112(r) of the Federal Clean Air Act.

This, combined with the deadline of August 7 for industry's initial comment, makes it appear the focus is on deadlines rather than in a rule that is well designed and supported by sound science and reasoning. We would request that OCD reconsider its accelerated time schedule and allow for a more reasonable and flexible time period for industry to work with your staff in arriving at an updated H_2S rule for New Mexico.

First and foremost in our minds is the safety of the public and oil and gas workers when working with H_2S. Based upon comments provided by OCD in the July 26 working group meeting, it was indicated that the rule re-write was needed to put more emphasis on protecting the public, especially in populated areas.

In this regard, NMOGA would appreciate some understanding from the division on past case history of drilling, well servicing, and production operations where H_2S is involved. If, on the other hand, there is no recent or past history of incidents where drilling, well servicing, or production operations has adversely impacted the public or oilfield workers, then we reiterate our request to allow for an orderly and carefully thought out rule re-write.

At this time, NMOGA formally requests that NMOCD allow for a more reasonable time schedule for industry to work with your staff in writing a rule that achieves the objective of protecting the public and oilfield workers. Industry is willing to commit the time and resources to work with your staff in reviewing this rule re-write and would offer that a 3-month process would be more appropriate.

If you have any questions or would like to discuss a timetable for further review of this rule, please feel free to give me a call. We look forward to working with your staff on making the Hydrogen Sulfide rule re-write a quality product.

Sincerely,

Deborah Seligman, Director
Governmental Affairs

cc: Wayne Price, NMOCD
Bob Gallagher, President, NMOGA
Bruce Gantner, Chair, NMOGA Environmental Affairs Committee
Rick Foppiano, Co-Chair, NMOGA Regulatory Affairs Committee
Bill Carr, Co-Chair, NMOGA Regulatory Affairs Committee

Ross, Stephen

From: Wrotenbery, Lori
Sent: Friday, May 18, 2001 5:22 PM
To: Ross, Stephen
Cc: Price, Wayne
Subject: FW: Hydrogen Sulfide Draft Rule

FYI

From: Price, Wayne
Sent: Friday, May 18, 2001 4:11 PM
To: Williams, Chris; Gum, Tim; Chavez, Frank; Johnson, Roy; Ed Martin; Jack Ford; Martyne Kieling; Roger Anderson; Wayne Price; William Olson
Cc: Wrotenbery, Lori
Subject: Hydrogen Sulfide Draft Rule

Please find enclosed a first draft of the new H2S rule. In order to assist you I have included a table of contents for the document. Please review and provide comments. Please do not release this information until Roger and Lori have approved. I hope to have your comments back by May 25, 2001. After that we will then have a work group to fine tune the draft before it goes to the commission.

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H2s.doc

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Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

Purpose: The purpose of this rule is to provide for the protection of the public's safety from the hazards of hydrogen sulfide gas (H_2S) from all oil and gas facilities regulated by the Oil Conservation Division including all leases when drilling, completing, testing, reworking, producing, injecting, gathering, storing, or treating operations, in zones which are known or could reasonably be expected to contain H_2S or any other facility regulated by OCD that has hydrogen sulfide in potentially hazardous volumes such that upon release could constitute a hazard to human life. The requirements and minimum standards of this Rule do not apply where H_2S is presently known not to be present or cannot reasonably be expected to be present in concentrations of 100 parts per million (ppm) or more. The requirements and minimum standards in this Rule do not relieve an operator from compliance with any applicable Federal, State, or local requirement(s) regarding H_2S.

B. **Definitions (specific to this rule)**

(1) Dispersion technique means a mathematical representation of the physical and chemical transportation, dilution, and transformation of H_2S gas emitted into the atmosphere.

(2) Escape rate means that the maximum volume (Q) used as the escape rate in determining the radius of exposure shall be that specified below, as applicable:

(a) For a production facility, the escape rate shall be calculated using the maximum daily rate of gas produced through that facility or the best estimate thereof:

(b) For gas wells, the escape rate shall be calculated by using the current daily absolute openflow rate against atmospheric pressure;

(c) For oil wells, the escape rate shall be calculated by multiplying the producing gas/oil ratio by the maximum daily production rate or best estimate thereof;

(d) For a well being drilled in a developed area, the escape rate may be determined by using the offset wells completed in the interval(s) in question.

(3) Essential personnel mean those on-site personnel directly associated with the operation being conducted and necessary to maintain control of the well.

(4) Exploratory well means any well drilled beyond the known producing limits of a pool.

(5) H_2S Drilling Contingency Plan means a written plan which provides for safety of essential personnel and for maintaining control of the well with regard to H_2S.

(6) Hydrogen Sulfide Gas: need definition of appendix for chemical and physical effects?

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(7) Potentially hazardous volume means a volume of gas of such H_2S concentration that may result in radius of exposure-calculated ambient concentrations of 100 ppm H_2S at any occupied residence, school, church, park, school bus stop, place of business or other area where the public could reasonably be expected to frequent, or 300 ppm H_2S at any Federal, State, County or municipal road or highway, or the 100 ppm radius of exposure is equal to or greater than 3,000 feet.

(8) Production facilities means any wellhead, flowline, piping, treating, or separating equipment, water disposal pits, processing plant or combination thereof prior to the approved measurement point for any lease, communitization agreement, or unit participating area.

(9) Public Contingency Plan means a written plan which provides for the safety of the potentially affected public with regard to H_2S.

(10) Radius of exposure means the calculation resulting from using the following Pasquill-Gifford derived equation, or by such other method(s) as may be approved by the Director:

(a) For determining the 100 ppm radius of exposure where the H_2S concentration in the gas stream is less than 10 percent:

$X = [1.589)(H_2S \text{ concentration})(Q)]^{(0.625)}$ or

(b) For determining the 300 ppm radius of exposure where the H_2S concentration in the gas stream is less than 10 percent:

$X = [(0.4546)(H_2S \text{ concentration})(Q)]^{(0.6258)}$

.4546 is for 500 ppm will be corrected for 300ppm

Where: X= radius of exposure in feet:

H_2S Concentration = decimal equivalent of the mole or volume fractions of H_2S in the gaseous mixture;

Q= maximum volume of gas determined to be available for escape in cubic feet per day (at standard condition of 14.73 psia and 60°F).

(c) For determining the 100 ppm or the 300 ppm radius of exposure in gas streams containing H_2S concentrations of 10 percent or greater, a dispersion technique that takes into account representative wind speed, direction, atmospheric stability, complex terrain, and other dispersion features shall be utilized. Such

techniques may include, but shall not be limited to one of a series of computer models outlined in the Environmental Protection Agency's "Guidelines on Air Quality Models (EPA-450/2-78-027R)."

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(d) multiple H_2S sources (i.e., wells, treatment equipment, flow lines, etc.) are present, the operator may elect to utilize a radius of exposure which covers a larger area than would be calculated using radius of exposure formula for each component part of the drilling/completion/workover/ production system For a well being drilled in an area where insufficient data exits, to calculate a radius of exposure, but where H_2S could reasonably be expected to be present in concentrations in excess of 100 ppm in the gas stream, a 100 ppm radius of exposure equal to 3,000 feet shall be assumed.

(11) Zones known to contain H_2S means geological formations in a field where prior drilling, logging, coring, testing, or producing operations have confirmed that H_2S-bearing zones will be encountered that contain 100 ppm or more of H_2S in the gas stream.

(12) Zones known not to contain H_2S means geological formations, in a field where prior drilling, logging, coring, testing, or producing operations have confirmed the absence of H_2S-bearing zones that contain 100 ppm or more of H_2S in the gas stream.

(13) Zones which can reasonably be expected to contain H_2S means geological formations in the area which have not had prior drilling, but prior drilling to the same formations in similar field(s) within the same geologic basin indicates there is potential for 100 ppm or more of H_2S in the gas stream.

(14) Zones which cannot reasonably be expected to contain H_2S means geological formations in the area which have not had prior drilling, but prior drilling to the same formations in similar field(s) within the same geologic basin indicates there is not a potential for 100 ppm or of H_2S in the gas stream.

C. **Requirements:** The requirements of this rule are the minimum acceptable standards with regard to H_2S operations. The Director may, after consideration of all appropriate factors, require more stringent standards and require corrective actions in a timely manner that he/she determines in order to maintain control of a well, production facility or any other OCD regulated facility in order to prevent waste, provide for public safety, protect public health and the environment.

(1) Public Protection Applicability Criteria For both drilling/completion/workover and production operations, the H_2S radius of exposure shall be

ignition shall be posted on all wells and production facilities subject to this Rule. A Public Contingency Plan shall be required when any of the following conditions apply:

(a) The 100 ppm radius of exposure includes any occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent;

(b) The 300 ppm radius of exposure includes any part of a federal, state, county, or municipal road or highway owned and principally maintained for public use; or

(c) The 100 ppm radius of exposure is equal to or greater than 3,000 feet.

(2) Public Contingency Plan Required. A Public Contingency Plan shall be required if the H_2S radius of exposure meets the applicability criteria listed in section C(1) above. The plan shall provide details of actions to alert and protect the public in the event of a release of a potentially hazardous volume of H_2S. Plans shall be maintained by all operator/owners and be made available during emergencies and shall be submitted to the Director upon request. One plan may be prepared for each well, lease, communitization agreement, unit, or field, at the operator's discretion.

(a) Plan Activation: The Public Contingency Plan shall be activated immediately upon detection of release of a potentially hazardous volume of H_2S or if any member of the public is being subjected to an atmosphere exposure exceeding 30 ppm of hydrogen sulfide or 10 ppm of sulfur dioxide. The plan shall specifically coordinate its activities with the Oil Conservation Division and the New Mexico State Police as required pursuant to the New Mexico Emergency Management Act, NMSA 1978, Section 74-48-1 through 74-4B-14 and the New Mexico Hazardous Material Emergency Response Plan (HMER Plan).

(b) Plan Availability: A copy of the Public Contingency Plan shall be available at the drilling/completion site for such wells and at the facility, field office, or with the pumper, as appropriate, for producing wells, facilities, and during workover operations.

(c) Plan Content: The details of the Public Contingency Plan may vary according to the site specific characteristics (concentration, volume, terrain, etc.) expected to be encountered and the number and proximity of the population potentially at risk. In the areas of high population density or in other special cases, the Director my require more stringent plans to be developed. These may include public education seminars, mass alert systems, and use of sirens, telephone, radio, and television depending on the number of people at risk and

location with respect to any oil and gas well or facility. The Public Contingency Plan shall include the

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information outlined in OCD issued guidelines.

(3) Drilling Application Forms (C-101 APD Forms) and Drilling Contingency Plans; Testing and Radius of Exposure Requirements; Plan Reviews and Release Notification Requirements:

(a) Drilling Application Forms (C-101 APD Forms) and Drilling Contingency Plans:

For proposed drilling operations where formations will be penetrated which have zones known to contain or which could reasonably be expected to contain concentrations of H_2S of 100 ppm in the gas stream, an H_2S Drilling Contingency Plan and if the applicability criteria in section C(1) are met, a Public Contingency Plan as outlined in OCD issued guidelines shall be submitted as part of the Application for Permit to Drill (APD) on form C-101. In cases where multiple filings are being made with a single drilling plan, a single H_2S Drilling Contingency Plan and, if applicable, a single Public Contingency Plan may be submitted for the lease, communitization agreement, unit or field. Failure to submit either the H_2S Drilling Contingency Plan or the Public Contingency Plan when required by this Rule shall result in an incomplete APD. The H_2S Drilling Contingency Plan shall fully describe the manner in which the requirements and minimum standards in section C(4). (Drilling/Completion/Workover Requirements) shall be met and implemented.

(b) Testing and Radius of Exposure Requirements:

(i) Operators shall initially test the H_2S concentration of the gas stream using an OCD approved method foreach well or production facility and shall make the results available to the Director, upon request.

(ii) Within 180 days of the effective date of this rule all operators/owners shall calculate the radius of exposure for each existing production facility having an H_2S concentration of 100 ppm or more in the gas stream, the operator is required to maintain records for each site or field demonstrating the 100 ppm and, if applicable, the 300 ppm radii of exposure for all facilities to determine if the applicability criteria in section C (1) of this Rule are met. Further, if the applicable criteria are met, the operator shall develop and maintain a Public Contingency Plan which meets the requirements of section C(2).

(iii) If operational or production alterations result in a 5% or more increase in the H_2S concentration (i.e., well recompletion, increased GOR's) or the radius of exposure changes, the operator shall modify the plan to reflect the latest changes.

(c) Plan Reviews and Release Notifications Requirements:

(i) H_2S Drilling Contingency Plan(s) or Public Contingency Plan(s) shall be reviewed by the operator on an annual basis and a copy of any necessary revisions shall be submitted to the Director, upon request.

(ii) Any release of a potentially hazardous volume of H_2S or if any member of the public is being subjected to an atmosphere exposure exceeding 30 ppm of hydrogen sulfide or 10 ppm of sulfur dioxide.shall be reported to the Director as soon as practicable, but no later than 2 hours of the release and a full report of the incident shall be submitted to the OCD on a C-141 form within 15 days of the incident

(4) Drilling/Completion/Workover Requirements:

(a) General: Drilling/Completion/Workover operations should be conducted with due consideration and guidance from the American Petroleum Institute (API) publications "Recommended Practice for Oil and Gas Well Servicing and Workover Operations Involving Hydrogen Sulfide" RP-68 and "Recommended Practices for Safe Drilling of Wells Containing Hydrogen Sulfide" RP-49 latest editions; and shall comply at a minimum with the following:

(i) A copy of the H_2S Drilling Contingency Plan shall be available during operations at the wellsite, beginning when the operation is subject to the terms of this Rule (i.e., 3 days or 300 feet of known or probable H_2S zone).

(ii) Initial H_2S training shall be completed and all H_2S related safety equipment shall be installed, tested, and operational when drilling reaches a depth of 300 feet above, or 3 days prior to penetrating (whichever comes first) the first zone containing or reasonably expected to contain H_2S. A specific H_2S Contingency Plan for completion and workover operations will not be required for approval. For completion and workover operations, all required equipment and warning systems shall be operational and training completed prior to commencing operations.

(iii) If H_2S was not anticipated at the time the APD was approved, but is encountered in excess of 100 ppm in the gas stream, the following measures shall be taken:

The operator shall immediately ensure control of the well, suspend drilling

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ignitions (unless detrimental to well control), and obtain materials and safety equipment to bring the operations into compliance with the applicable provisions of this Rule.

The operator shall notify the Director of the event and the mitigating steps that have or are being taken as soon as possible, but no later than the next business day. If said notification is subsequent to actual resumption of drilling operations, the operator, shall notify the Director of the date that drilling was resumed no later than the next business day.

It is the operator's responsibility to ensure that the applicable requirements of this rule have been met prior to the resumption of drilling operations. Drilling operations will not be suspended pending receipt of a written H_2S Drilling Contingency Plan(s) and, if necessary, Public Contingency Plan(s) provided that complete copies of the applicable Plan(s) are filed with the Director for approval within 5 business days following resumption of drilling operations.

(b) Locations:

(i) Where practical, 2 roads shall be established, 1 at each end of the location, or as dictated by prevailing winds and terrain. If an alternate road is not practical, a clearly marked footpath shall be provided to a safe area. The purpose of such an alternate escape route is only to provide a means of egress to a safe area.

(ii) The alternate escape route shall be kept passable at all times.

(iii) For workovers, a secondary means of egress shall be designated.

(c) H_2S Detection and Monitoring Equipment:

(i) Each drilling/completion site shall have an H_2S detection and monitoring system that automatically activates visible and audible alarms when the ambient air concentration of H_2S reaches the threshold limits of 10 and 15 ppm in air, respectively. The sensors shall have a rapid response time and be capable of sensing a minimum of 10 ppm of H_2S in ambient air, with at least 3 sensing points located at the shale shaker, rig floor, and bell nipple for a drilling site and the cellar, rig floor, and circulating tanks or shale shaker for a completion site. The detection system shall be installed, calibrated, tested, and maintained in accordance with the manufacturer's recommendations.

(ii) All tests of the H_2S monitoring system shall be recorded on the driller's log or its equivalent.

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(iii) For workover operations, 1 operational sensing point shall be located as close to the wellbore as practical. Additional sensing points may be necessary for large and/or long-term operations.

(d) Visible Warning System:

(i) Equipment to indicate wind direction at times shall be installed at prominent locations and shall be visible at all times during drilling operations. At least 2 such wind direction indicators (i.e., windsocks, windvanes, pennants with tail streamers, etc.) shall be located at separate elevations (i.e., near ground level, rig floor, and/or treetop height). At least 1 wind direction indicator shall be clearly visible from all principal working areas at all times so that wind direction can be easily determined. For completion/workover operations, 1 wind direction indicator shall suffice, provided it is visible from all principal working areas on the location. In addition, a wind direction indicator at each of the 2 briefing areas shall be provided if the wind direction indicator(s) previously required in this paragraph are not visible from the briefing areas.

(ii) At any time when the terms of this rule are in effect, operational danger or caution sign(s) shall be displayed along all controlled accesses to the site.

(iii) Each sign shall be painted a high visibility red, black and white, or yellow with black lettering.

(iv) The sign(s) shall be legible and large enough to be read by all persons entering the well site and be placed a minimum of 200 feet but no more than 300 feet from the well site and at a location which allows vehicles to turn around at a safe distance prior to reaching the site.

(v) The sign(s) shall read: DANGER - POISON GAS - HYDROGEN SULFIDE and in smaller lettering: Do Not Approach If Red Flag is Flying or equivalent language if approved by the Director. Where appropriate, bilingual or multitilingual danger sign(s) shall be used.

(vi) All sign(s) and, when appropriate, flag(s) shall be visible to all personnel approaching the location under normal lighting and weather conditions.

(vii) When H_2S is detected in excess of 10 ppm at any detection point, red flag(s) shall be displayed.

(e) Warning System Response: When H_2S is detected in excess of 10 ppm at

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any detection point, all non-essential personnel shall be moved to a safe area and essential personnel (i.e., those actions necessary to maintain control of the well) shall wear pressure-demand type protective breathing apparatus. Once evacuation is accomplished, operations may proceed.

(f) General Operating Procedures and Equipment: Drilling/completion/workover operations in H_2S areas shall be subject to the following requirements:

(i) If zones containing in excess of 100 ppm of H_2S gas are encountered while drilling with air, gas, mist, other non-mud circulating mediums for aerated mud, the well shall be killed with a water- or oil-based mud and mud shall be used thereafter as the circulating medium for continued drilling.

(ii) A flare system shall be designed and installed to safely gather and burn H_2S-bearing gas.

(iii) Flare lines shall be located as far from the operating site as feasible and in a manner to compensate for wind changes. The flare line(s) mouth(s) shall be located not less than 150 feet from the wellbore unless other-wise approved by the Director. Flare lines shall be straight unless targeted with running tees.

(iv) The flare system shall be equipped with a suitable and safe means of ignition.

(v) Where noncombustible gas is to be flared, the system shall be provided supplemental fuel to maintain ignition.

(vi) At any well site where SO_2, may be released as a result of flaring of H_2S during drilling, completion, or workover operations, the operator shall make SO_2, portable detection equipment available for checking the SO_2 level in the flare impact area.

(vii) If the flare impact area reaches a sustained ambient threshold level of 2 ppm or greater of SO_2 in air and includes any occupied residence, school, church. park, or place of business, or other area where the public could reasonably be expected to frequent, the Public Protection Plan shall be implemented.

(viii) A remote controlled choke shall be installed for all H_2S drilling and, where feasible, for completion operations. A remote controlled valve may be used in lieu of this requirement for completion operations.

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(ix) Mud-gas separators and rotating heads shall be installed and operational on exploratory wells.

(g). Mud Program:

(i) A pH of 10 or above in a fresh water-base mud system shall be maintained to control corrosion, H_2S gas returns to surface, and minimize sulfide stress cracking and embrittlement unless other formation conditions or mud types justify to the Director a lesser pH level is necessary.

(ii) Drilling mud containing H_2S gas shall be degassed in accordance with API's RP-49,, at an optimum location for the rig configuration. These gases shall be piped into the flare system.

(iii) Sufficient quantities of mud additives shall be maintained on location to scavenge and/or neutralize H_2S where formation pressures are unknown.

(h) Well Testing in an H_2S Environment. Testing shall be performed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately operate the test equipment. Except with prior approval by the Director, the drill-stem testing of H_2S zones shall be conducted only during daylight hours and formation fluids shall not be flowed to the surface (closed chamber only).

(5) Production Requirements:

(a) General: Production operations should be conducted with due consideration and guidance from the American Petroleum Institute (API) publications "Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide" RP-55 latest editions; and shall comply at a minimum with the following:

(i) All existing production facilities which do not currently meet the requirements and minimum standards set forth in this section shall be brought into conformance within 1 year after the effective date of this Rule.

(ii) Production facilities constructed after the effective date of this rule shall be designed, constructed, and operated to meet the requirements and minimum standards set forth in this section. Any variations from the standards or established time frames shall be approved by the Director in accordance with the provisions of Section G (Variances), of this rule. Except for storage tanks, a determination of

The radius of exposure for all production facilities shall be made in the manner prescribed in section B(10) of the Definitions of this Rule.

(iii) At any production facility or storage tank(s) where the sustained ambient H_2S concentration is in excess of 1 ppm at 300 feet from the production facility or storage tank(s) source as measured at ground level under calm (1 mph) conditions and the facility is located within a quarter (1/4) mile of any occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent, the operator may be required to collect or reduce vapors from the system and they shall be sold, beneficially used, reinjected, or flared provided terrain and conditions permit.

(b) Storage Tanks: Storage tanks containing produced fluids and utilized as part of a production operation and operated at or near atmospheric pressure, where the vapor accumulation has an H_2S concentration in excess of 300 ppm in the tank, shall be subject to the following:

(i) No determination of a radius of exposure need be made for storage tanks.

(ii) All stairs/ladders leading to the top of storage tanks shall be chained and/or marked to restrict entry. For any storage, tank(s) which require fencing (Section C(5)(b)vi), a danger sign posted at the gate(s) shall suffice in lieu of this requirement.

(iii) A danger sign shall be posted on or within 50 feet of the storage tank(s) to alert the public of the potential H_2S danger. For any storage tank(s) which require fencing (section C(5)(b)vi.), a danger sign posted at the locked gate(s) shall suffice in lieu of this requirement.

(iv) The sign(s) shall be painted in high visibility red. black, and white. The sign(s) shall read: [redacted]

(v) At least 1 permanent wind direction indicator shall be installed so that wind direction can be easily determined at or approaching the storage tank(s).

(vi) A minimum 5-foot chain-link, strand barbed wire, or comparable type fence and gate(s) that restrict(s) public access shall be required when storage tanks are located within 1/4 mile of or contained inside a city or incorporated limits of a town or within 1/4 mile of an occupied residence, school, church, park, playground, school bus stop, place of business, or where the public could reasonably be expected to frequent.

(vii) Gate(s), as required by section (C(5)(b)vi). shall be locked when unattended by the operator.

(c) Production Facilities: Production facilities containing 100 ppm or more of H_2S in the gas stream shall be subject to the following:

(i) Danger signs as specified in section (C(5)(b)iv) of this Rule shall be posted on or within 50 feet of each production facility to alert the public of the potential H_2S danger. In the event the storage tanks and production facilities are located at the same site. 1 such danger sign shall suffice. Further, for any facilities which require fencing section (C(5)(b)vi). 1 such danger sign at the gate(s) shall suffice in lieu of this requirement.

(ii) Danger signs, as specified in section (C(5)(b)iv) of this rule, shall be required for well flowlines and lease gathering lines that carry H_2S gas. Placement shall be where said lines cross public or lease roads. The signs shall be legible and shall contain sufficient additional information to permit a determination of the owner of the line.

(iii) OCD approved fencing and gate(s). as specified in section (C(5)(b)vi), shall be required when production facilities are located within 1/4 mile of or contained inside a city or incorporated limits of a town or within 1/4 mile of an occupied residence, school, church, park, playground, school bus stop, place of business, or any other area where the public could reasonably be expected to frequent. Flowlines are exempted from this additional fencing requirement.

(iv) Gate(s), as required by section (C(5)(c) iii) shall be locked when unattended by the operator.

(v) Wind direction indicator(s) as specified in section (C(5)(b)v.) of this rule shall be required. In the event the storage tanks and production facilities are located at the same site, 1 such indicator shall suffice. Flowlines are exempt from this requirement.

(vi) All wells, unless produced by artificial lift, shall possess a secondary means of immediate well control through the use of appropriate christmas tree and/or downhole completion equipment. Such equipment shall allow downhole accessibility (reentry) under pressure for permanent well control operations. If the applicability criteria stated in Section (C(1)) of this rule are met, a minimum of 2 master valves shall be installed.

(vii) All equipment shall be chosen with consideration for both the H_2S concentration and anticipated stresses. NACE Standard MR 0175-90 shall be used for metallic equipment selection and, if applicable, adequate protection by chemical inhibition or other such method that controls or limits the corrosive effects of H_2S shall be used.

(viii) Where the 100 ppm radius of exposure for H_2S includes any occupied residence, place of business, school, or other inhabited structure or any area where the public may reasonably be expected to frequent, the operator shall install automatic safety valves or shutdowns at the wellhead, or other appropriate shut-in controls for wells equipped with artificial lift.

(ix) The automatic safety valves or shutdowns, as required by section (C(5)(c)viii) shall be set to activate upon a release of a potentially hazardous volume of H2S.

(x) If the sustained ambient concentration of H_2S or SO_2 from a production facility which is venting or flaring reaches a concentration of H_2S (10ppm) or SO_2 (2ppm), respectively, at any of the following locations, the operator shall modify the production facility as approved by the Director. The locations include any occupied residence, school, church, park. playground, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent.

D. **Personnel Protection and Training:** All operators/owners shall ensure that all personnel will be properly trained in H_2S, contingency procedures and provided with protective equipment as recommended by standard industry practice and that which is required by current federal, state, or local laws and/or regulations. Operators shall maintain records and submit records to the Director upon request.

E. **Metallurgical Equipment:** All equipment that has the potential to be exposed to H_2S shall be suitable for H_2S service. The metallurgical properties of the materials used shall conform to the current National Association of Corrosion Engineers (NACE) Standard MR 0175-90, Material Requirement, Sulfide Stress Cracking Resistant Metallic Material for Oil Field Equipment. Elastomers, packing, and similar inner parts exposed to H_2S shall be resistant at the maximum anticipated temperature of exposure. The manufacturer's verification of design for use in an H_2S environment shall be sufficient verification of suitable service in accordance with this Rule.

F. **Injection Provision:** Injection of fluids containing hydrogen sulfide shall not be allowed under the conditions specified in this provision unless first approved by

the Commission after public hearing.

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

(1) Where injection fluids is a gaseous mixture, or would be a gaseous mixture in the event of a release to the atmosphere, and the 300 ppm radius of exposure includes any occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent or located within a 1/4 mile of or contained inside a city or incorporated limits of a town .

(2) The hydrogen sulfide content of the gas or gaseous mixtures to be injected has been increased by a processing plant operation.

G.. **Variances from Requirements:** An operator/owner may request the Director to approve a variance from any of the requirements prescribed in section (C) or (E) hereof. All such requests shall be submitted in writing to the Director and provide information as to the circumstances which warrant approval of the variance requested and the proposed alternative methods by which the related requirements of minimum standards are to be satisfied. The Director, after considering all relevant factors, may approve the requested variance if it is determined that the proposed alternative meets or exceeds the objectives of the applicable requirements or minimum standards.