ENSOLUM

SUPPLEMENT TO THE DISCHARGE PERMIT APPLICATION
REVISION 2

Property:
Bravo Dome CO_2 Plant (East)
35.85314º North, -103.29744º West
Union County, New Mexico

June 13, 2023

Prepared for:

OXY USA Inc
Bravo Dome Unit
P.O. Box 27570
Houston, Texas 77227

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1.0 INTRODUCTION

This document provides supplemental information to a discharge permit application for the Bravo Dome CO_2 Plant East (Facility) operated by OXY USA Inc. (OXY) in response to a notice from the New Mexico Oil Conservation Division (NMOCD) stating the Facility is subject to the permitting requirements of Title 20, Chapter 6, Part 2 of the New Mexico Administrative Code (NMAC). There are no intentional discharges to groundwater at the Facility. Instead, this discharge permit application describes the measures in place to prevent potential discharges to groundwater of any water contaminant listed in 20.6.2.3103 NMAC or any toxic pollutant. Existing regulatory and operational programs are discussed in the context of site-specific environmental and operational conditions to verify inadvertent releases of liquids stored and used at the Facility are minimized and contained, waste is managed appropriately, and groundwater resources are protected.

This supplement to the discharge permit relies heavily on the following existing document, which can be make available at the request of NMOCD:

- *OXY Permian Bravo Dome Unit Emergency Action Plan.*
- Material Safety Data Sheets for any non-oil-based chemicals stored at the Facility.

Specific components of the existing plans and policies are referenced in subsequent sections of this document.

2.0 FACILITY DESCRIPTION

The Facility is located approximately within the North Half of the Northwest Quarter (N1/2 NW1/4) of Section 26, Township 19N, Range 34E in Union County (35.85314º North, -103.29744º West) as depicted on **Figure 1**.

The Facility is a carbon dioxide (CO_2) compressor station with a total rated horsepower (HP) of 88,000 foot-pound per second (fps). There are three CO_2 compressors in the Phase I compressor building which are driven by three 6,000 HP electric motors and there are six CO_2 compressors in the Phase II compressor building which are driven by six 8,000 HP electric motors. Phase III added in the third Quarter of 2008 consists of 2–11,000 hp electric driven centrifugal compressors.

2.1 Property, Operator, and Facility Ownership and Contacts

The following list outlines key entities associated with the Facility, OGRID 16696.

Facility Name:
Bravo Dome CO_2 Plant (East)
35.85314º North, -103.29744º West

Landowner:
OXY USA Inc – Bravo Dome Unit
P.O. Box 27570
Houston, Texas 77227

Facility Owner and Operator:
OXY USA Inc
P.O. Box 27570
Houston, Texas 77227

Key Facility Contact:

Cole Wallin
Operations Team Lead
P.O. Box 27570
Houston, Texas 77227
(575) 799-7100
cole_wallin@oxy.com

2.2 Facility Diagrams

Facility maps and diagrams are described below and referenced as attachments or as part of the Draft SPCC Plan:

- A topographic map depicting topography and the location of the Facility relative to nearby environmental receptors (waterways and water wells) is included as **Figure 1**.
- A Site Layout depicting an aerial image of the Facility is included as **Figure 2**.
- A Facility Layout diagram depicting detailed components of the Facility, including locations, contents of all storage containers and process flow-through vessels; storage areas; underground tanks or sumps; and connection pipelines are included as **Figure 3**.

2.3 Fencing

The Facility includes an outer chain-link perimeter fence. The location of the Facility boundaries is depicted on **Figure 3**.

2.4 Process Description

The Bravo Dome Plant is a CO_2 (carbon dioxide) gas compression facility. Water saturated CO_2 gas from the field collection system is fed to the two-phase inlet scrubbers (350 PSIG design pressure) where free water is knocked out of the gas. CO_2 gas from the scrubber goes directly to the compressors where the pressure is increased from 65 -120 PSIG to 1600 - 1800 PSIG, in three stages, with interstage and final cooling to 60 - 120 degrees F. The CO_2 gas is dehydrated after the second stage of compression/cooling by passing the gas through TEG (triethylene glycol) dehydration contactors. The compressed gas then leaves the facility via pipeline.

The Facility utilizes aboveground storage tanks (ASTs), totes, and underground sumps for storage. The locations of these tanks are included on the Facility Diagram in **Figure 3**. Details about tank content, size, and construction are included in **Table 1**. Chemicals, corrosion inhibitors, lubricants and lube oil are stored in totes and 5-gallon buckets temporarily for maintenance on equipment.

2.5 Process Vessels

This Facility utilizes oil-filled manufacturing equipment (i.e. flow-through process vessels) for continuous recovery and/or intermediate storage of liquids generated during the compression of CO_2.

2.6 Secondary Containment

Containment walls constructed of steel are used as secondary containment for large ASTs. For drums and totes, portable containment constructed of plastic/HDPE are used for secondary containment. Bulk storage container installations are constructed so that a means of secondary containment is provided for the entire capacity of the largest container and sufficient freeboard to contain precipitation. Secondary containment areas are sufficiently impervious to contain discharges of oil and other liquids.

2.7 Loading Areas

The majority of the liquids arrive and exit the Facility through pipelines. Trucks may occasionally receive wastewater from tanks or sumps and these activities occur at tank loadouts. Spill control equipment including dedicated catch pans, spill pans, sorbent materials, and/or spill control boom are present to provide spill control truck loading. To prevent premature vehicular departure, the Facility has warning signs in the loading areas. The Facility also requires that truck drivers chock their wheels prior to loading. Drains and outlets on tank trucks and tank cars are checked for leakage before loading/unloading or departure and, if necessary, are tightened, adjusted or replaced.

2.8 Storage Areas

The Facility utilizes indoor storage areas, outdoor storage area, and roll-off boxes to store materials and equipment within the Facility. A storage area includes equipment that has not been in service including valves, piping, fittings, gaskets, and bolts/tools. Any liquids stored in storage areas are stored in plastic or stainless-steel totes/containers and fitted on individual containment structures.

2.9 Pits, Ponds, and Impoundments

There are no pits, ponds, or surface impoundments for liquids storage or waste accumulation at this Facility. There are no ponds, lagoons, or catchment basins for stormwater accumulation.

2.10 Disposal Facilities

The only on-site disposal occurring at the Facility is a permitted Salt Water Disposal (SWD) injection well 1934-261D having API Number: 30-059-20205 (**Appendix G**) is located on the western portion of the Facility (**Figure 3**). SWD 1934-261D is a vertical injection well that is drilled to a depth of 1,730 feet (ft) below ground level (bgl) and produced water is injected into the Glorieta Formation at approximately 1,620 ft to 1,680 ft bgl through 2-3/8-inch tubing set in a packer located at approximately 1,550 ft bgl. The initial effective approval for SWD 1934-261D was on November 1, 1984, and the most recent approval is dated January 1, 2001. The well was spudded on October 18, 1983. The injection well location is depicted on **Figure 3**.

On or about October 21, 2022 an inspection was performed by NMOCD and SWD injection well 1934-261D having API Number: 30-059-20205 was found to be out of compliance (Inspection ID: iSJM2229339575). The compliance issues have been resolved (see Appendix J).

3.0 SITE CHARACTERISTICS

The following sections describe the hydrologic/geologic characteristics in the vicinity of the Facility.

3.1 General Description of Topography, Elevations, and Vegetation Types;

The Facility is located within a portion of the Punta de Agua Surface Water Basin and within the Clayton Declared Groundwater Basin[1]. This area is characterized by nearly level to gently sloping plains with a minimal number of playa depressions and moderately sloping breaks along drainageways. Loamy and sandy soils are generally deep and occur in a mesic soil temperature regime and ustic soil moisture regime bordering on aridic. Current land use is dominantly rangeland with minor cropland. Topsoils are locally and dominantly stabilized with shortgrass species with some tallgrass species and a small amount of forbs and woody plants. Dominant grasses include blue grama, sideoat grama, little bluestem, and alkali sacaton Typical associated forbs included plains blackfoot, curlycup gumweed and dotted gayfeather (as well as numerous other annual and perennial forbs. Yucca, cholla cactus and fourwing saltbush were often present in lesser amounts[2]. These areas are used for oil and gas development, forage production, farming, wildlife habitat, and recreation, while they also provide aesthetics and watershed benefits[3]. The Facility is approximately 4,700 ft above mean sea level (amsl)[4].

3.2 Soil Type

Based on the available site-specific and regional subsurface information, the Facility is underlain by the Spurlock loamy sand on 1 to 5 percent (%) slopes. These surficial soils are classified as well drained, moderately permeable soils that formed by sandy eolian deposits that were derived from sedimentary rock and mixed alluvium. Further classification of these soils indicates that the capacity of the most limiting layer to transmit water is moderately high to high (0.20 to 0.57 inches per hour) and runoff potential is medium[5].

3.3 Surface Water Features

Figure 1 is a topographic map depicting water bodies, streams, and watercourses within a 1-mile radius of the Facility boundary. There are no natural surface bodies of water or seeps within 0.25 miles of the Facility and where drainages exist in interdunal areas, they are ephemeral, discontinuous, dry washes. **Figure 1** applies the following databases for surface water features: National Wetlands Inventory, National Hydrography Dataset, and United States Geological Survey. Ephemeral drainages are located within 0.25 miles and 1 mile of the Facility. These appear as surface drainages and visual inspection has identified no wetland features such as wetland vegetation or standing water. It appears they are topographic depressions that receive surface runoff and temporarily store precipitation for short periods until evaporation occurs. They

[1] New Mexico Office of the State Engineer (NMOSE) – online query November 2022
[2] United States Department of Agriculture, Natural Resources Conservation Service, Ecological Site R077 BY722TX. Online query January 2023
[3] United States Department of Agriculture, Natural Resources Conservation Service, Ecological Site R077 BY722TX. Online query January 2023
[4] United States Department of Agriculture, Natural Resources Conservation Service, Ecological Site R077BY722TX. Online query January 2023
[5]Natural Resources Conservation Services. Web Soil Survey. National Cooperative Soil Survey. Union County, New Mexico. Online query accessed January 2023. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

are mostly dry except during large storm events. The Facility is located approximately 7.4 miles southeast of Laguna Tierra Amatosa, which is the nearest significant watercourse.

3.4 Water Wells

Using information from the New Mexico Water Rights Database from the New Mexico Office of the State Engineer (NMOSE), no water wells exist within 0.25 miles or a 1-mile radius of the Facility. Several water wells exist outside of the 1-mile radius of the Facility boundary and are identified on **Figure 1**. The nearest water well with depth to water information is Point of Diversion (POD) File Number CT-02441-POD1 and is used for livestock watering. The total depth of the well is approximately 180 ft below ground surface (bgs), the static water depth measurement is 72 ft bgs, and is located outside of a 1-mile radius of the Facility boundary.

3.5 Shallowest Aquifer

In this area of New Mexico, groundwater occurs in the Central High Plains Aquifer composed of the Tertiary Ogallala Formation and Cretaceous Dakota Formation. In Union County, wells are completed in the Ogallala and into the Dakota[6]. The Ogallala Aquifer is unconfined and flows east-southeast in response to gravity. The chief source of groundwater in the proximity of the Facility is the Ogallala Aquifer, specifically, the sand and gravel layers near the lower portion of the formation. The Ogallala Aquifer yields adequate quantities of water to domestic and stock wells at nearly all localities. Typical yields 300 to 1,000 gallons per minute (gpm) to wells in thick sections of saturated material in buried bedrock within the eastern portions of Union County[7]. Underlying the Ogallala Formation, Cretaceous Dakota Formation is an important aquifer within Union County and the massive basil unit may yield up to 100 gpm[8]. Regionally, within a 25-mile radius, the average depth to water is 163.2 ft[9]. Water well POD CT-02441-POD, located approximately 1.2 miles northeast of the Facility is the closest well to the Facility and within a 5-mile radius, has a depth to water measurement of 72 ft bgs.

3.6 Geological Characteristics

The Facility is constructed on Tertiary Ogallala Formation and Cretaceous Dakota Formation. The Ogallala formation overlies Triassic rocks. The thickness of the Ogallala ranges from 0 to 400 ft in Union County and maximum thickness of 200 ft in the eastern portion of Union County. An upper caliche layer is identified than ranges from a few feet to 60 ft; this caliche layer is more cemented at the top of the formation than the bottom of the formation. Interbedded layers of fine- to medium grained sand and gravel underly the caliche layer and compose the remaining portion of the formation. The sands and gravels are the primary water bearing strata of the formation[10,11]. The Dakota Sandstone is described as a lenticular to parallel-bedded gray shale, shaly

[6] Northeast New Mexico Regional Water Plan. Prepared for Tucumcari and Northeast New Mexico Regional Water Planning Steering Community. Prepared by Daniel B. Stephens & Associates, Inc. March 2007
[7] Northeast New Mexico Regional Water Plan 2007
[8] Northeast New Mexico Regional Water Plan 2007
[9] NMOSE – online query January 2023
[10] Northeast New Mexico Regional Water Plan 2007
[11] Northeast New Mexico Regional Water Plan. Prepared for New Mexico Interstate Steam Commission Regional Water Planning Program. Prepared September 2016

sandstone, and sandstone. The basal unit is a persistent massive sandstone. The average thickness of the Dakota sandstone is 190 ft[12]. A report by the Northeast Soil and Water Conservation District indicated that the Dakota Formation plays a more important role in the groundwater system than originally thought[13].

3.7 Site Flooding Potential

Annual precipitation of the region in Union County is 15.56 inches. The most likely flood events occur from heavy storms during the summer months of June through September resulting from prolonged heavy rainfall over dry areas and is characterized by peak flows of moderate duration. These summer rain showers and thunderstorms account for more than half of the annual precipitation[14]. Most of this rainfall collects and runs through dry arroyos. Based on Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Most of Union County is not mapped and a NFHL is not available for the Facility and there is not a mapped floodplain within a 1-mile radius. The Facility is located approximately 7.4 miles southeast of Laguna Tierra Amatosa, which is the nearest significant watercourse[15].

3.8 Groundwater Characteristics

Groundwater in this region is sourced from the Ogallala and Dakota Formations for stock and domestic supply at depths near 160 ft bgs. The groundwater in Union County is generally of excellent quality and classified as freshwater with total dissolved solids (TDS) content ranging from 185 to 376 milligrams per liter (mg/l)[16]. It contains less than 50 mg/l sulfate and 20 mg/l of chloride[17].

4.0 POTENTIAL DISCHARGES

There are no intentional discharges at the Facility. The NMOCD has determined inadvertent discharges of liquids or improper disposal of waste solids stored at the Facility have the potential to impact groundwater. The information provided below discusses Facility operations and use or storage of any materials, as requested by NMOCD. Similar procedures for storage and handling are applied to chemicals that are not oil-based.

The ASTs, volume of containers and associated containments, as well as predicted direction of a release should containment fail are included in **Table 1**.

Miscellaneous chemicals that are not always on-site but are included in Safety Data Sheet (SDS) inventory because they are sometimes used for maintenance of equipment. These materials are maintained temporarily at minimal volumes and stored in a shed or closet when present. The SDS for these materials can be provided at the request of the NMOCD.

[12] Northeast New Mexico Regional Water Plan 2007
[13] Northeast New Mexico Regional Water Plan 2016
[14] Northeast New Mexico Regional Water Plan 2016
[15] Flood Insurance Study Northeast New Mexico and Incorporated areas. Prepared by Federal Emergency Management Agency (FEMA) Flood Insurance. Online query accessed January 2023. https://msc.fema.gov/portal/advanceSearch
[16] Northeast New Mexico Regional Water Plan 2007
[17] Northeast New Mexico Regional Water Plan 2007

4.1 Onsite Disposal

The original discharge permit application inadvertently included information pertaining to Salt Water Disposal (SWD) injection well SWD 1934-321A which was incorrect. Oxy has corrected the onsite disposal information to reference the SWD injection well 1934-261D having API Number: 30-059-20205 which is the only on-site disposal occurring at the Facility.

SWD injection well 1934-261D having API Number: 30-059-20205 (**Appendix G**) is located on the western portion of the Facility (**Figure 3**). SWD 1934-261D is a vertical injection well that is drilled to a depth of 1,730 feet (ft) below ground level (bgl) and produced water is injected into the Glorieta Formation at approximately 1,620 ft to 1,680 ft bgl through 2-3/8-inch tubing set in a packer located at approximately 1,550 ft bgl. The initial effective approval for SWD 1934-261D was on November 1, 1984, and the most recent approval is dated January 1, 2001. The well was spudded on October 18, 1983. The injection well location is depicted on **Figure 3**.

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4.1.1 Sanitary Sewage

Sanitary sewage (Permit No. 025933) (**Appendix H**) is a separate system and does not commingle with any process waste generated by the Facility. Sanitary sewage is treated and released into a septic leach field located within the Facility property line. The septic system is located on the Facility Layout in **Figure 3**.

4.2 Off-site Disposal

Liquid and solid waste are collected at the Facility, properly characterized, and transported via an Oxy approved third-party vendor for offsite disposal (see table below). Oxy has established methods of disposal for recovered materials in accordance with applicable legal requirements. The Oxy Field Environmentalist coordinates the disposal of any transported materials.

Waste/Product Stream	Waste Classification	Estimated Volume/YR	Type of Disposal/Recycle	Trucked (by whom)	Disposal Site Name	Disposal Location
Tank Bottom/Produced Water	E&P Exempt	200 bbls	Landfill	SS Kent Trucking/Trinity Oilfield Services	R360	4507 W Carlsbad Hwy Hobbs, NM 88240
Used Oil	Recycle	3,000 gallons	Recycle	Heritage Crystal Clean	Heritage Crystal Clean	2327 N University Ave Lubbock, TX 79415
Tank Bottom/Produced Water	E&P Exempt	200 bbls	Landfill	SS Kent Trucking/Trinity Oilfield Services	Sundance Services	1003 6th St. Eunice, NM 88231
Domestic Trash	Domestic Trash	Weekly	Landfill	Tri State Recycling	Tri State Recycling	727 E. Market St. Texline, TX 79087

4.3 Wastewater

Process wastewater from dehydration and separation consists of produced water with minor hydrocarbon constituents and is stored in ASTs in secondary containment before being injected downhole utilizing the onsite SWD.

4.3.1 Closed Drain System

The Facility operates a closed drain system between process vessels and is also available for use to collect and separate wash water for equipment maintenance on an as-needed basis as well as stormwater before being directed to the ASTs for onsite injection disposal.

4.4 Stormwater Management

Stormwater surface flow is depicted on the Facility Diagram and is generally directed through the Facility to avoid contact with equipment and storage containers/tanks. The facility is located on flat ground with little to no slope. In general, stormwater surface flow travels south/southeast. Stormwater that is not collected in secondary containments is directed away from equipment and storage containers/tanks via site grading to avoid contact and then allowed to evaporate or infiltrate into the ground. Any stormwater collected in secondary containment is directed to sumps associated with each containment and either evaporates or is directed to ASTs for onsite injection disposal. Any stormwater that may collect in depressions or man-made features, is collected by vacuum truck and transported to the ASTs for onsite injection disposal. The Facility has a low potential for undiked drainage at the Facility. The potential undiked drainage would come from truck transfers and would be de minimus in nature and contained onsite. If a situation should require discharge of accumulated rainwater to ground surface, qualified Facility personnel will conduct visual evaluation of the water quality to ensure the release of uncontaminated stormwater only. Facility personnel will record the date, area(s) inspected, and results of the evaluation(s). The accumulated stormwater must be clear and free of color; odor; floating, settled, and suspended solids; foam; and/or oil sheen in order to be authorized for any discharge. Currently, no stormwater collected is discharged.

4.4.1 Storage Tank Bottom Sludge/Sludge

Oils and sludge can accumulate in the bottom of compressor skids, containments, or tanks. Tanks may be periodically taken out of service for integrity inspections and/or service changes. This material is collected as E&P waste via an Oxy approved third-party vendor and disposed of offsite at a nearby disposal facility.

4.4.2 Maintenance Materials

During equipment maintenance, used oils are collected and stored in containers with general secondary containment. Periodically, this material is shipped off-site for recycling or disposal. Various quantities of lubricants, oils, and unused chemicals for operations are stored in various locations throughout the Facility.

4.4.3 Petroleum Hydrocarbon Impacted Soil

Nonhazardous soils that may be impacted with petroleum products are promptly removed and disposed in accordance with local, state or federal disposal requirements. Secondary containment systems are provided to prevent releases.

4.4.4 Miscellaneous Solid Waste

Non-hazardous solid waste is segregated on-site and contained in roll-off boxes that are inventoried and labeled pending removal from the facility according to the waste stream. These include, but are not limited to waste from the office, E&P waste from operations, process filters,

and scrap metal. All are segregated, handled, transported, and disposed of in accordance with local, state, and federal disposal regulations.

4.4.5 Ponds, Lagoons, Catchments

There are no ponds, lagoons, or catchment basins on-Site.

4.4.6 Groundwater Contamination

There is currently no known groundwater contamination associated with the Facility.

4.4.7 Commingled Waste Streams

There are no commingled waste streams at the Facility.

5.0 COLLECTION AND STORAGE SYSTEMS

ASTs and sumps are used throughout the Facility to hold and process wastewater and stormwater which is then directed to the ASTs for onsite injection disposal. Condensate storage tanks are equipped with high level alarms and sumps have visual gauges. Pumps, valves, and piping systems are used throughout the Facility to transfer various liquids among tankage and process vessels.

Lube oil and casing oil are stored in aboveground fixed containers. Current contents and total capacity are listed in **Table 1**. The Facility also receives, stores, and uses a variety of additives and chemicals that are stored in small volumes in totes and other containers. Oil-filled operational equipment and storage containers are used to manage the process flow. The condition of secondary containment and containment pad/liners is inspected and maintained as needed.

Oxy implements a mechanical integrity plan for equipment including tanks. The plan specifies inspection activities designed to assure mechanical integrity of equipment and verify the equipment is fit for service.

5.1 Buried Storage Tanks

The Facility does not have buried storage tanks installed at the site.

5.2 Sumps

Sumps are utilized to collect stormwater. These are connected by drains and pumped on an as-needed basis to the ASTs to be disposed of via the onsite injection well.

5.3 Buried Piping

The facility was constructed around 1984 and has changed ownership multiple times before being acquired and operated by Oxy. Historical documentation related to buried piping specifications is not available. Oxy employs the following best management practices for buried piping installation and maintenance:

- New or replaced buried piping is cathodically protected and is installed with a protective wrapping or coating.

- If a section of buried line is exposed, it is inspected for signs of deterioration and corrective actions are taken as indicated by the magnitude of the damage.
- Integrity and leak testing of buried piping is performed at the time of installation, modification, construction, relocation, and/or replacement.

5.4 Effluent Treatment Facilities

This facility does not have an effluent treatment system.

5.5 Aboveground Valves and Piping

This facility has aboveground piping and valves that are regularly examined during normal facility walk-throughs for general condition and any necessary corrective action items are addressed. Facility walk-throughs are generally conducted on a daily basis for flange joints, expansion joints, piping supports, metal surfaces, catch pans, and valve locks and/or seals.

6.0 INSPECTION, MAINTENANCE, AND REPORTING

Oxy personnel and contractors routinely conduct inspection, maintenance, and repair of all tanks, equipment, instrumentation, valves, piping, and other items necessary for the continued safe operation of the Facility. These activities involve recordkeeping and reporting. Bulk storage containers are inspected monthly. Any malfunctions, improper operations of equipment, evidence of leaks, stains, or discolored soils, etc. are logged and communicated to the Operations Team Leader. Typical inspection forms can be found in **Appendix D**.

The Facility is staffed 24 hours a day, 7 days a week by field operations personnel. The leak detection process consists of a visual examination while performing a daily walk-through of the facility, including tank areas, oil-filled flow through vessels, and transformers. Field operations personnel check the equipment for leaks and proper operation. They examine all aboveground valves and flowline piping. Personnel inspect pumps to verify proper function and check for damage and leakage. They look for accumulation of liquids within the secondary containment and verify the condition and position of valves. The storage tanks are gauged/monitored on a continual basis. All malfunctions, improper operation of equipment, evidence of leakage, stained or discolored soil, etc. are logged and communicated to the Operations Team Leader.

Aboveground piping was designed and installed according to 40 CFR 112.8(d). Facility personnel conduct monthly visual surveillance of pipe sagging, corrosion, abrasion, expansion joints, valve locking mechanisms, catch pans, pipeline supports, and metal surfaces. Problems with containment systems and potential signs of leaks, puddles, corrosion of the liner, holes in the berm, buildup of precipitation or deterioration to the structure are reported to the Operations Team Leader for scheduled immediate repairs.

Oil-filled equipment is designed and constructed according to good engineering practices and industry standards. The compatibility of the oil and container's construction material has been evaluated prior to use. Preventive maintenance based on visual inspections, tests, or evidence of the oil spills and/or problems that may occur can be quickly identified and resolved. Drums, totes, or any additional portable containers on-site, are typically elevated on separate containment pallets without direct contact to the ground which poses a minimal risk of corrosion and allows for all sides of the containers to be inspected. All oil containing drums, totes, or portable tanks are inspected monthly (non-documented) and handled as needed basis.

The waste stream profiles are recorded and documented for regulatory compliance. Annual waste management trainings are conducted by Oxy's personnel that includes a review of operation and maintenance of equipment to prevent discharges; applicable pollution control laws, rules and

regulations; general Facility operations; persons accountable for discharge prevention. Moreover, a review of Oxy's policies and procedures related to spill prevention, cleanup, disposal, reporting, inspections, and routine handling of products will be covered during the training.

7.0 PROPOSED MODIFICATIONS

No modifications of the existing collection, treatment, and/or disposal systems are proposed at this time. However, in the case of Facility expansion or process modification, the Facility will notify NMOCD in writing for modification of this discharge permit. An application and a description of the requested modifications will be included in the written notice.

8.0 SPILL/LEAK PREVENTION AND REPORTING PROCEDURES (CONTINGENCY PLAN FOR RELEASES)

Oxy has implemented an Emergency Response Plan. The Emergency Response Plan describes processes necessary to respond to not only discharges of petroleum products but any release of a water contaminant that could potentially cause harm. A general response will include ensuring all personnel are notified, isolating the source, establishing an appropriate perimeter and control points, assessing the hazard, then implementing appropriate control measures. In the event of a major release, Oxy will work closely with NMOCD to develop a plan for remediation according to 19.15.29 NMAC. For de minimis (less than 5 barrels) releases, the response will generally involve stopping the release (if applicable), use of absorbent materials, collection and containerization of the spill and any contaminated media, and notification of additional response personnel if needed. Chemicals stored on-site that are not oil-based are minimal in volume and unlikely to result in a discharge to groundwater based on the extent, underlying lithology, and short-term identification and response associated with a manned facility.

8.1 Notification Procedures

Notification of discharges in accordance with local, state, and federal requirements will be directed by the Operations Team Leader in accordance with Oxy's Bravo Dome Unit Emergency Action Plan located in **Appendix E**. The Operations Team Leader will provide information regarding the characteristics of the materials and equipment involved and provide access to Oxy resources as requested by responding agencies. The Operations Team Leader will determine if emergency contractors are needed and contact them for assistance. In addition, the Operations Team Leader will perform a site inspection to verify any spill at the facility of a reportable quantity or if any quantity has reached a waterway and will report such spills to the appropriate governmental agency. For all releases, regardless of volume, Oxy will comply with 19.15.29.

9.0 PUBLIC NOTICE

Oxy will provide written notice of the Discharge Permit Application by the following methods per Subsection B of 20.6.2.3108 NMAC.

- One sign measuring at least 2 feet by 3 feet will be displayed at the main entrance to the Facility. The sign will display the public notice in English and Spanish languages and be displayed for 30 days.
- One additional notice will be posted at the Amistad, New Mexico Post Office. The sign will display the public notice in English and Spanish languages and be displayed for 30 days.
- Written notice will be given by mail or electronic mail in English and Spanish to owners of all properties within 1/3-mile distance from the property boundary of the Site.

- A summary of the notice will be given in English and Spanish languages in a display ad at least 3 inches by 4 inches in a newspaper of general circulation (not in a classified or legal advertisement section). The summary of notice will be displayed in the Union County Leader, a newspaper of general circulation in Clayton, New Mexico.

9.1 SCHEDULE

Oxy will issue public notice within 30 days after the NMOCD determines the Discharge Permit application is administratively complete. This includes public notice to the newspapers and mailings to the appropriate surface owners identified for distribution. The newspaper publication will run for 1 business day.

Within 15 days of completion of the public notice requirements, Oxy will submit proof of notice to the NMOCD that includes an affidavit of mailings and a list of property owners, proof of publication in a newspaper, and an affidavit of posting.

9.2 PROPOSED PUBLIC NOTICE

The proposed public notice is presented below and includes the items specified in Subsection F of 20.6.2.3108.

NOTICE OF PUBLICATION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations (20.6.2.3106 of the New Mexico Administrative Code), the following discharge permit application has been submitted to the Director of the New Mexico Oil Conservation Division ("NMOCD"), 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3441:

NMOCD Discharge Permit Number GW-XXX
OXY USA Inc
Bravo Dome CO_2 Plant (East)
35.85314^0 North, -103.29744^0 West
N1/2 NW1/4 of Section 26, Township 19N, Range 34E
Mr. Cole Wallin (575) 799-7100, cole_wallin@oxy.colm

Oxy announces the submittal of an application for potential unintended discharges at the Bravo Dome CO_2 Plant (East) located in Union County, New Mexico (35.85314^0 North, -103.29744^0 West). The Facility is a carbon dioxide (CO_2) compressor station with a total rated horsepower (HP) of 98,000. The Bravo Dome Plant is a CO_2 gas compression facility. Water saturated CO_2 gas from the field collection system is fed to the two-phase inlet scrubbers (350 PSIG design pressure) where free water is knocked out of the gas. The CO_2 gas from the scrubber goes directly to the compressors where the pressure is increased from 65-120 PSIG to 1600-1800 PSIG, in three stages, with interstage and final cooling to 60-120 degrees Fahrenheit (F). The CO_2 gas is dehydrated after the second stage of compression/cooling by passing the gas through triethylene glycol dehydration contactors. The inlet scrubber, all compressor headers and related piping and the compressor suction and discharge scrubbers are sized for 155 MMSCFD capacity. The glycol dehydration and reconcentration equipment is sized for 86 MMSCFD capacity. The compressed gas then leaves the facility via pipeline. The discharge permit includes a description of materials stored and used at the Facility and any waste generated for off-site disposal. The Facility currently does not discharge to the ground surface and does not intend to discharge to the ground surface. In the event any accumulated stormwater that is intended to be discharged must be clear and free of color; odor; floating, settled, and suspended solids; foam; and/or oil sheen in order to be authorized for any discharge. The estimated annual waste disposed of by the Facility includes approximately 400 bbls of tanks bottoms/produced water and approximately 3,000 gallons of used oil. Domestic trash is collected on a weekly basis. Groundwater at the facility is estimated to be less than 160 ft below ground surface and contains total dissolved concentrations (TDS) of approximately

185 to 376 milligrams per liter (mg/l). The discharge permit addresses how liquids and solid waste will be handled, stored, and disposed of, including procedures to prevent an unintended discharge. Response actions and abatement requirements for spills and leaks are addressed.

The NMOCD has determined the application is administratively complete and is in the process of preparing a draft permit. The NMOCD shall post notice on its website and distribute notice of the submittal of the application to affected local, state, federal, tribal, or pueblo government agency, political subdivisions, ditch associations, and land grants as identified by the department, and persons on a general and facility-specific list maintained by the department who have requested notice of discharge permit applications. Interested persons may obtain information, submit comments, and request to be placed on a facility-specific mailing list for future notices. The NMOCD will also accept comments and statements of interest regarding the application and will create a facility-specific mailing list for persons who wish to receive future notices. Prior to ruling on any proposed permit, the Director shall allow a period of at least (30) days after the draft permit is posted, during which time interested persons may submit comments.

Persons interested in obtaining further information, submitting comments, or requesting to be on a facility-specific mailing list for future notices may contact the Oil Conservation Division contact listed below:

Ms. Shelly Wells
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Division
1220 South St. Francis Drive Santa Fe, NM 87505
(505) 469-7520, Shelly.Wells@emnrd.nm.gov

10.0 FACILITY CLOSURE/POST CLOSURE PLAN

Since this discharge permit is for unintended discharges, a closure and post-closure plan must include the entire Facility (see **Appendix F**). The following general procedures and associated tasks listed in **Appendix F** will apply to prevent impacts to groundwater upon cessation of Facility operations:

- Oxy will remove all fluids from ASTs. The liquids and sludges will be contained and disposed of off-site as described above in **Section 4.2**.
- Liquids that are not oil-based will be segregated. Any unused chemicals will be identified and profiled, then handled and disposed of using a third-party waste handler licensed and certified to handle hazardous and non-hazardous waste.
- All ASTs, storage vessels, process equipment, and piping will be dismantled and removed from the Facility. Buried tanks and sumps will be excavated. Disposal of scrap material and equipment will be through recycling or off-site disposal based on appropriate waste profiling.
- If applicable, below-ground piping will be cut at least 3 ft bgs, capped on both ends, and buried in place.
- Any solid waste, such as building materials, concrete, containment metal, liner, and miscellaneous metal or lumber will be recycled or disposed of off-site as solid waste.
- Any releases that were deferred under 19.15.29 NMAC will be addressed under the requirements of Part 29.
- Once all equipment has been removed, Oxy will collect soil samples from each plant process area. Sample locations will be based on operations and designed to identify any residual impacted soil prior to reclamation.
    - Soil samples will be collected from the ground surface and field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. If field screening indicates the samples exceed 100 milligrams/kilogram total petroleum

hydrocarbons (TPH) or 600 mg/kg chloride, a hand auger will be used to advance a borehole in that location. Samples will be collected every foot until field screening indicates residual impacts are absent. If the boreholes are advanced deeper than 4 feet, field screening results will be compared to 2,500 mg/kg TPH and 20,000 mg/kg chloride.

- All soil samples will be placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody procedures to a certified laboratory for analysis of the following chemicals of concern (COCs): BTEX following the United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-motor oil range organics (MRO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.
- Laboratory analytical results will be compared to the requirements of 19.15.29 NMAC and reported, addressed, and closed according to those regulations.

11.0 FINANCIAL ASSURANCE

The estimated costs for closure/post-closure activities are located in **Appendix F.** Once NMOCD approves this plan, Oxy will submit financial assurance to the NMOCD in the amount of the facility's estimated closure and post-closure costs within 30 days of NMOCD's approval. The financial assurance will be provided on NMOCD prescribed forms or forms otherwise acceptable to the NMOCD, payable to the NMOCD.

12.0 GROUND WATER DISCHARGE PERMIT APPLICATION AND PERMIT FEES

Pursuant to 20.6.2.3114 NMAC, a filing fee of $100.00 is being submitted with this application. The appropriate permit fee for a compressor station will be submitted within 30 days of receipt of the approved Discharge Permit.

13.0 CERTIFICATION

Include a certification statement: CERTIFICATION: I hereby certify that the information submitted with this application is true, accurate, and complete to the best of my knowledge and belief.

Printed Name: Chantill Recker

Signature: Chantill Recker

Title: ORCM Environmental Manager

OXY USA Inc
P.O. Box 27570
Houston, Texas 77227

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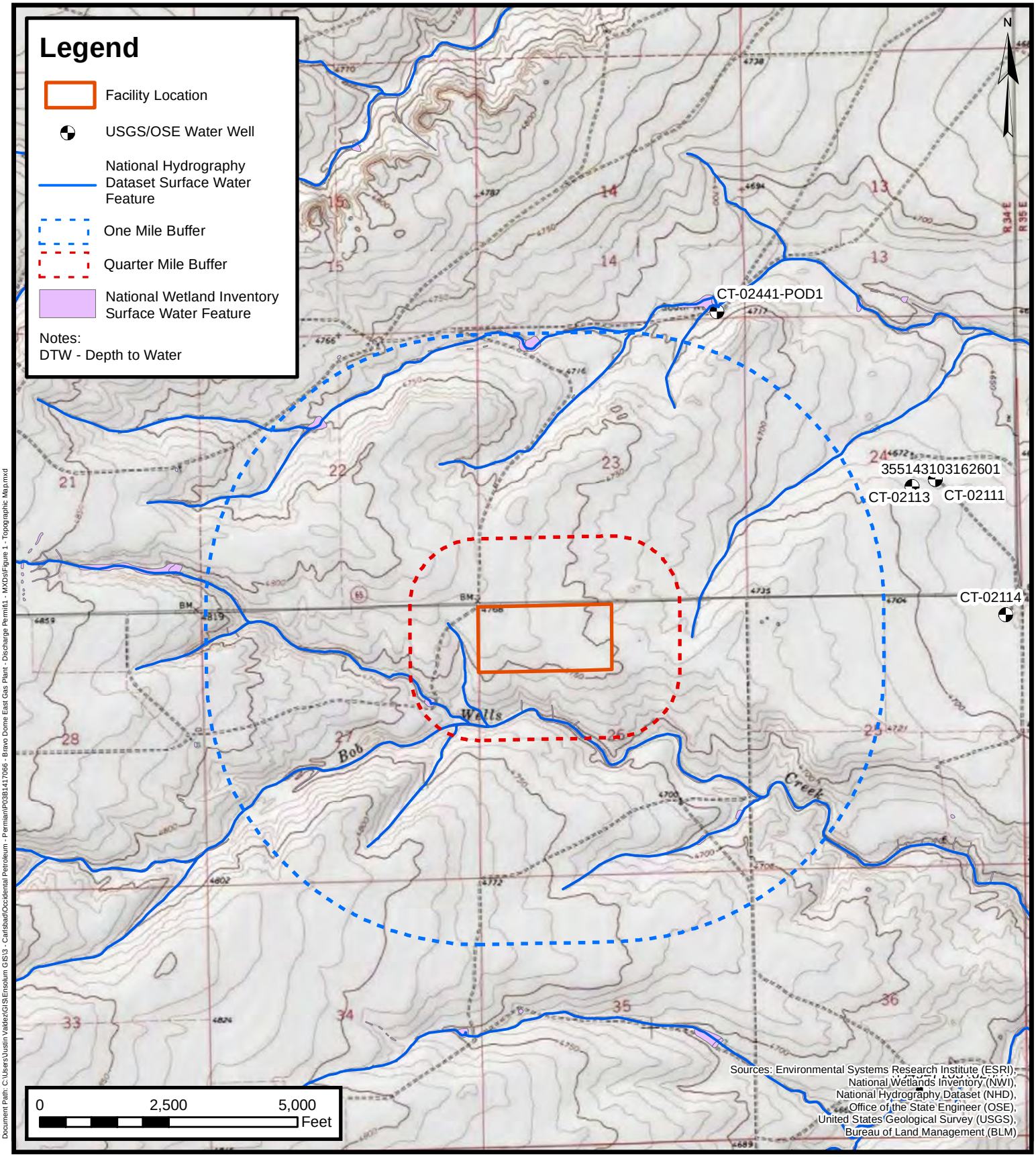
APPENDIX A

Figures



Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\3 - Carlsbad\Occidental Petroleum - Permian\P03B1417066 - Bravo Dome East Gas Plant - Discharge Permit\1 - MXDs\Figure 1 - Topographic Map.mxd

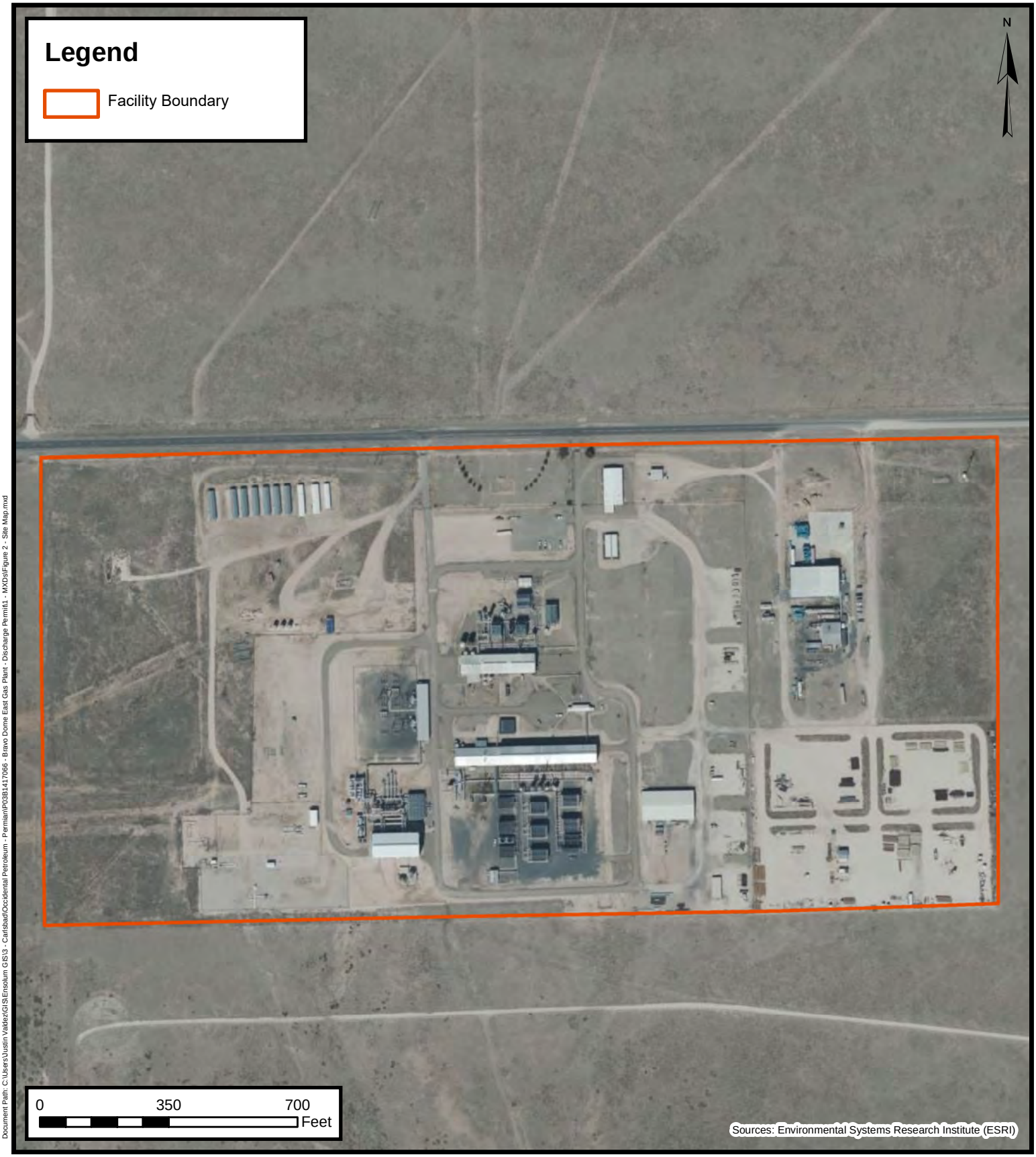
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

Bravo Dome CO_2 Plant (East)
Discharge Permit
OXY USA Inc
35.854236, -103.297907
Union County, New Mexico
Project Number: 03B1417078

FIGURE

1



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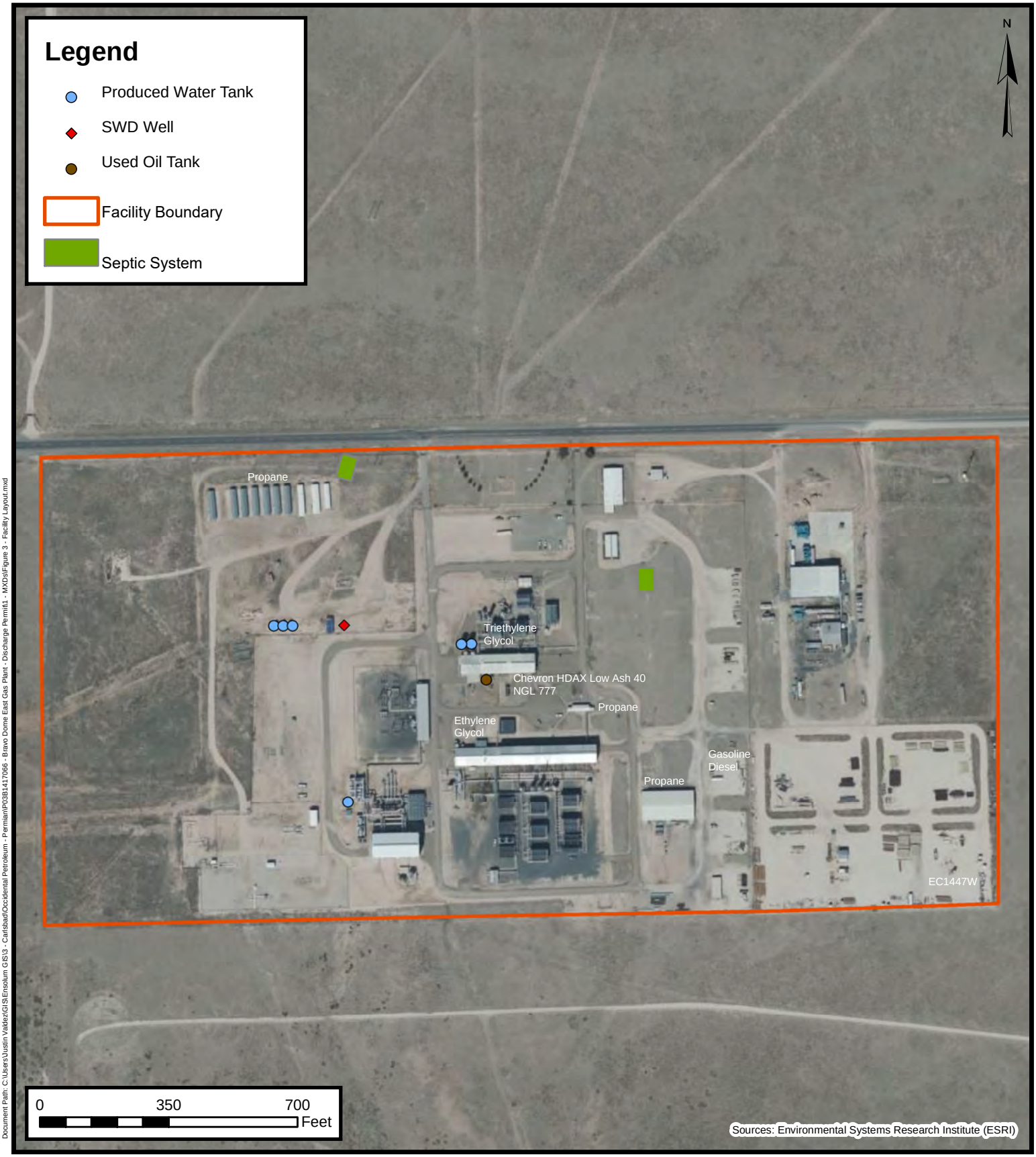
Environmental, Engineering and Hydrogeologic Consultants

Site Map

Bravo Dome CO_2 Plant (East)
Discharge Permit
OXY USA Inc
35.854236, -103.297907
Union County, New Mexico
Project Number: P03B1417078

FIGURE
2



Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\3 - Carlsbad\Occidental Petroleum - Permian\P03B1417066 - Bravo Dome East Gas Plant - Discharge Permit\1 - MXDs\Figure 3 - Facility Layout.mxd

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Environmental, Engineering and Hydrogeologic Consultants

Facility Layout

Bravo Dome CO_2 Plant (East)
Discharge Permit
OXY USA Inc
35.854236, -103.297907
Union County, New Mexico
Project Number: 03B1417078

FIGURE
3

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APPENDIX B

Tables

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TABLE 1
STORAGE TANKS AND CHEMICAL TOTES LOCATED AT THE FACILITY
Bravo Dome CO_2 Plant (East)
USA Inc
Union County, New Mexico

Aboveground Storage Tanks	Quantity	Maximum Capacity (bbls)	Predicted Direction of Flow	Location	Container Type	Storage/Containment
Produced Water	3	500	Southeast	SWD 1934-261D Compressor Area	Fiberglass	Steel Containment/Unlined
Produced Water	2	1,000	Southeast	North Phase I Compressor Building	Steel	Steel Containment/Unlined
Produced Water	1	2,000	Southeast	North Phase II Compressor Building	Steel	Steel Containment/Unlined
Ethylene Glycol (Jacket Water)	1	200	Southeast	North Phase II Compressor Building	Steel	Steel Containment/Unlined
Triethylene Glycol (TEG)	1	240	Southeast	North Phase II Compressor Building	Steel	Steel Containment/Unlined
Lube Oil (Chevron HDAX Low Ash 40)	1	210	Southeast	South Phase I Compressor Building	Steel	Steel Containment/Unlined
Compressor Oil (Chevron HDAX Low Ash 40)	1	210	Southeast	South Phase I Compressor Building	Steel	Steel Containment/Unlined
Used Oil	1	210	Southeast	North Phase II Compressor Building	Steel	Steel Containment/Unlined
Gasoline	1	238	Southeast	Warehouse East	Steel Tank	Steel Double Wall
Totes and Drums	**Quantity**	**Maximum Capacity (gallons)**	**Predicted Direction of Flow**	**Location**	**Container Type**	**Storage/Containment**
Corrossion Inhibitor (EC1447W)	3	1,000	Southeast	Pipeyard Southeast	Plastic	Portable Plastic/HDPE
Lube Oil (NGL 77)	1	2,000	Southeast	South Phase I Compressor Building	Steel	Steel Containment/Unlined
Diesel	2	500	Southeast	Warehouse East	Steel	Steel Containment/Unlined
Propane	1	1,000	N/A	Control Room North	Steel	N/A
Propane	1	500	N/A	Camp Trailer Area	Steel	N/A
Propane	1	250	N/A	Warehouse North	Steel	N/A

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APPENDIX C

Survey Documentation

W.D. BOOK 59
PAGE 245 UNION CO., N.M.,
FILED FOR RECORD
Jan 13 1983 AT 2:15 P.M.
Della Wetzel
Recorder
By: Reta Rae Bays Dep.

WARRANTY DEED

MARIE AVERSA, formerly Marie Ricketson, a single woman dealing in her sole and separate estate, for consideration paid grants to AMOCO PRODUCTION COMPANY, a Delaware corporation, with its principal office at 200 East Randolph Drive, Chicago, Illinois 60601, and with a District Office at 205 E. Bender Blvd., Hobbs, New Mexico 88240, the following described real estate in Union County, New Mexico:

TOWNSHIP-19-NORTH, RANGE-34-EAST, N.M.P.M.
Section 26: North Half of the Northwest Quarter (N½NW¼)

WITH WARRANTY COVENANTS, SUBJECT to prior mineral reservations of record, and highway and utility line easements, AND, there is EXCEPTED from this conveyance and RESERVED to Grantors, their heirs and assigns FOREVER, all of the oil, gas and other minerals in, under or upon such premises which Grantors own, including carbon dioxide gas. This conveyance to remain in effect for so long as the Unit Operating Agreement currently in effect in the Bravo Dome of Union, Harding and Quay Counties remains in effect or so long as any lease within the outer boundaries of the Bravo Dome Unit shall remain in effect which is served by any pipeline connections to any facility located on the premises conveyed hereby, whichever terminates last in point of time; AND after termination of Grantee's operations as above described, then ownership in fee simple shall revert to and vest in Grantor, her heirs or assigns.

WITNESS my hand and seal this 10th day of January, 1983.

Marie Aversa
Marie Aversa

STATE OF California)
(SS
COUNTY OF San Bernardino)

The foregoing instrument was acknowledged before me this 10th day of January, 1983, by MARIE AVERSA, formerly Marie Ricketson, a single woman dealing in her sole and separate estate, who acknowledged that she executed the same as her free act and deed.

WITNESS my hand and seal the day and year last above written.

(SEAL)

Gale Frances Mahoney
Notary Public

My commission expires: May 18, 1984

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APPENDIX D

Typical Inspection Forms

BRAVO DOME GAS PLANT STORAGE TANKS INSPECTION FORM

API-653 & API-12R require that routine visual/external inspections are done on all storage tanks within a facility on a monthly basis. The inspection may be done by operations personnel. Personnel performing this inspection should be knowledgeable of the storage facility operations, the tank, and the characteristics of the product stored. After completion of the form, turn it over to the Maximo personnel so that it can be scanned and attached to the monthly PM. Any follow-up action will be done by an authorized inspector.

			Check if Follow-up Needed						
Tag No.		**Description**	**Leaks**	**Shell Distortion**	**Settlement**	**Corrosion**	**Foundation**	**Paint**	**Comments**
BDPP1PLNT_TK_004	PH 1	TANK, 1ST STG DISCHARGE SCRUBBER OVERFLOW SURGE							
BDPP1PLNT_TK_006	PH 1	TANK, USED OIL							
BDPP1PLNT_TK_V6_1802	PH 1	TANK, SALTWATER STORAGE (W)							
BDPP1PLNT_TK_V8_1403	PH 1	TANK, FRESH WATER STORAGE							
BDPP1PLNT_TK_V8_1802A	PH 1	TANK, SALTWATER STORAGE (E)							
BDPP1PLNT_TK_V8_1803	PH 1	TANK, SKIMMER							
BDPP1PLNT_TK_V8_2805	PH 1	TANK, GLYCOL STORAGE							
BDPP1PLNT_TK_V8_305	PH 1	TANK, CYLINDER LUBE OIL							
BDPP1PLNT_TK_V8_305A	PH 1	TANK, COMPRESSOR CRANKCASE OIL							
BDPP2PLNT_TK_005	PH 2	TANK, 1ST STG DISCHARGE SCRUBBER OVERFLOW SURGE							
BDPP2PLNT_TK_V6_1302	PH 2	TANK, JACKET WATER STORAGE							
BDPP2PLNT_TK_V6_1803	PH 2	TANK, SKIMMER							

Name of Person Performing Inspection:_____ Date of Inspection:_____

Bravo Dome Inspections

To be completed by: Operations

Deadline: Monthly

Status	Inspection Items	Yes/No	Notes
	Compressor station Clean, No hazards		
	Safety Equipment inspected		
	Buildings clean and orderly		
	Safety Signage in place and ledgible		
	Spills		
	Secondary containmentsor berms in good shape		
	No empty barrels		
	Gas leaks		
	Other		

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APPENDIX E

Emergency Action Plan

BRAVO DOME UNIT

EMERGENCY ACTION PLAN

Updated: March 2021

BRAVO DOME UNIT EMERGENCY ACTION PLAN

TABLE OF CONTENTS

PREFACE

An effective and viable Emergency Action Plan is intended to provide prior planning and guidance in responding to emergency incidents. The primary considerations in its development are our employees, the safety of the public, protection of company and public property, and protection of the environment.

Although the plan addresses varied emergencies, which may occur, it recognizes that flexibility and the use of the organization's knowledge and experience is critical to safe resolution of emergency incidents. Response actions outlined in the plan provide a framework, which may be placed into operation without confusion. The actions will promote quick and decisive actions while protecting the safety of personnel and the public.

Every effort has been taken to minimize or eliminate all potentially hazardous situations and to avoid accidents due to equipment failure by the dedicated efforts of our people in maintaining a preventive maintenance program.

HSE representative is responsible for updates and revisions based on input from facility management.

**** Training on the Emergency Action Plan occurs annually unless a change occurs which affects the safety of OXY personnel, or the public. If such a change should occur retraining will happen immediately.***

COMPANY POLICY

GENERAL

Occidental Permian Ltd.'s pledge to the health and safety of employees, the users of our products and the communities in which we operate. We recognize the challenge of fulfilling this pledge while accomplishing our other corporate goals. Each of us shares this responsibility to ensure our long-term success. To achieve our goals, we will:

- Commit to leadership by operating and growing our business in compliance with legal requirements and Oxy's safety, health, environmental and regulatory operating standards.

- Safeguard our employees' health by promoting an accident free workplace, minimizing exposure to hazardous substances, and providing preventive health care systems.

- Promote safe handling, use and disposal of our products by acquiring and communicating information and educating our employees and customers.

- Minimize the environmental impact of our operations by promoting pollution prevention and environmental conservation.

- Anticipate, evaluate and manage risks by maintaining crisis management programs that emphasize prevention and effective emergency preparedness, response and recovery plans.

- Commit to continuous improvement by monitoring compliance with regulations and our internal standards and by striving for performance, which compares favorably with industry leaders.

- Earn the public trust by communicating openly about our policies, programs and performance and advocating sound laws and regulations.

EMERGENCY RESPONSE AND EVACUATION

Activation of Emergency Action Plan

A. Upon notification or discovery by anyone of a potential emergency:

1. Evaluation and notification should be made either by company radios, cellular phones, land lines and the use of the buddy system.
2. Initiate the Emergency Action Plan.
3. Permian EOR Plant employees fall under the Good Samaritan act since their actions would be considered voluntary based on their received training. 75% of our daily employees have completed First Aid, CPR and defibrillator training as required by training center.
4. If the situation requires evacuation of the public, the Contingency Plan should be initiated.

B. The person at the site will notify the Operations Team Leader, or relief who will notify the closest emergency contact. The emergency contacts are listed on the Oxy's Emergency Poster, which is located in the emergency phone list section of this book.

1. The Operations Team Leader or Designee will be responsible for the delegation of assignments relative to notifying all company, contract, and emergency response personnel.

2. The Operations Team Leader or Designee will notify and coordinate deployment of emergency equipment and any additional manpower as the situation dictates.

3. The Operations Team Leader or Designee remains on site until the emergency is over. The Operations Team Leader or Designee ensures repairs have been completed and ensures the operation has returned to normal, before releasing emergency team members.

PERSONNEL RESPONSIBILITIES

A. Company Team Member will be responsible for:

1. Notifying responsible party of incident location.
2. Company personnel will immediately evacuate to the designated mustering areas where they will be accounted for. If they evacuate from the office they will use the written and electric sign-in sheets.
3. Containment, notification, and repair of hazardous conditions as assigned by Operations Team Leader or Designee and only those tasks they have been trained to perform.
4. Assisting civil authorities as requested by Operations Team Leader or Designee.
5. Coordinating with civil authorities and the use of other expertise as needed relative to hazards.

B. Contract Personnel will immediately evacuate to the designated mustering area where they will be accounted for If they evacuate from the office they will use the written and electronic sign-in sheets, 100% Contractors will remain in the area to assist Oxy team members and civil authorities as requested but only when it is safe to do so and when adequate training has been provided.

C. Civil Authorities (Law Enforcement, Fire, and OEMs) will be responsible for:

1. Establishing membership in a Unified Command structure hosted by the Oxy Operations Team Leader or Designee.
2. As directed by the Operations Team Leader or Designee and the Unified Command, control site access by highway and air, re-route traffic outside vicinity of area, and provide escort services for response personnel into the area.
3. Perform all fire and vapor release control activities in coordination with the Unified Command.
4. Initiate public evacuation plans (Contingency Plan) as instructed by the Unit Field Operator.
5. Provide medical assistance as dictated by the situation at hand.

Emergency Response Actions

The following is a description of key personnel responsibilities for incident response.

NOTE: The Operator on Duty has the discretionary authority to initiate a shutdown of the Plant Phases if assessment of the situation indicates an immediate shutdown is necessary.

Plant Team Leader or Designee:

Operations Team Leader or Designee (OTL) will be responsible for all direct contact with the news media and for all other documentation. Primary responsibility is to notify or delegate notifications of all Oxy and contract personnel as well as the civil authorities needed for emergency response to the situation. Additionally, the OTL will direct the actions of all team members on-site and initiate an evacuation as necessary to the designated mustering point. The OTL will determine when an emergency is considered over and operations have returned to normal. The OTL will take a leadership role in establishing a Unified Command with civil authorities, local responders, and community response officials.

OTL or his Designee

The Operations Team Leader or Designee at the time of the emergency, will assist and relieve the OTL in any emergency action responsibilities as directed. The PS will help coordinate tactical decisions with the OTL relative to resolving the incident, and will specialize in activities surrounding operations, local planning, immediate logistics, and establishing safe operations for the community.

Gathering System Responders

The Gathering System Responders (GSR) will shut in the gathering systems if necessary or sections of the gathering system as needed and will assist in evacuating the public within risk areas according to the Contingency Plan.

Other employees:

All non-emergency personnel should proceed to the mustering area and wait for instructions from the OTL.

HSE REPRESENTATIVES:

The local HSE representative's primary responsibility is to notify the appropriate regulatory agencies whenever environmental concerns and regulations dictate. THSEe may involve the New Mexico Oil and Conservation Division and the New Mexico Environmental Department. Additionally, HSE representatives are responsible to provide clean-up directions, requirements for spill remediation, and disposal guidelines.

The HSE Representatives are also responsible for assessing the hazards of the situation, advising the OTL of those hazards and appropriate responses, and ensuring the safety of the response personnel. HSE representatives should coordinate all required regulatory agency and Houston Office notification in the event of serious injury or death. They should assist in acquiring and deploying the appropriate personal protective equipment as needed. After returning to normal operations, they should analyze the outcome of the situation and coordinate the investigation and post-appraisal of the incident. HSE personnel will take the lead in helping the Unified Command establish "hot" and "clean" zones as dictated by the incident. HSE representatives should perform all other duties as requested by the PTL or HSE Manager.

Safe Area

The Bravo Dome Unit Plant Office is in close proximity to the Bravo Dome Field area. Therefore, the location of the Emergency Safe Area will be contingent on the incident. The Safe Area, at the discretion of the Plant Team Leader or Designee, could be located in the office building, or it could be mobile.

In the event that the incident permits the use of the office, the conference room in the office will be the Safe Area during emergencies. This location was chosen because there is access to multiple phone lines, computer hook-ups, a fax machine and information resources. The building is equipped as follows:

1. Each phone line extension has direct intercompany (socon) and outside line capabilities. The lines would be inoperable if there were an electrical power loss. The telephone paging system is also inoperable in the event of a power loss.
2. If the Control Room Base Radio were to be inoperable if there were a power loss. The Emergency power generator would be come on automatically .
3. Computers are available but are inoperable during a power loss.

In the event the office had to be evacuated and a mobile Emergency Command Center is set up, all communications with civil authorities would be conducted via cellular phone. Civil authority personnel will report to the mobile Command Center for further instructions.

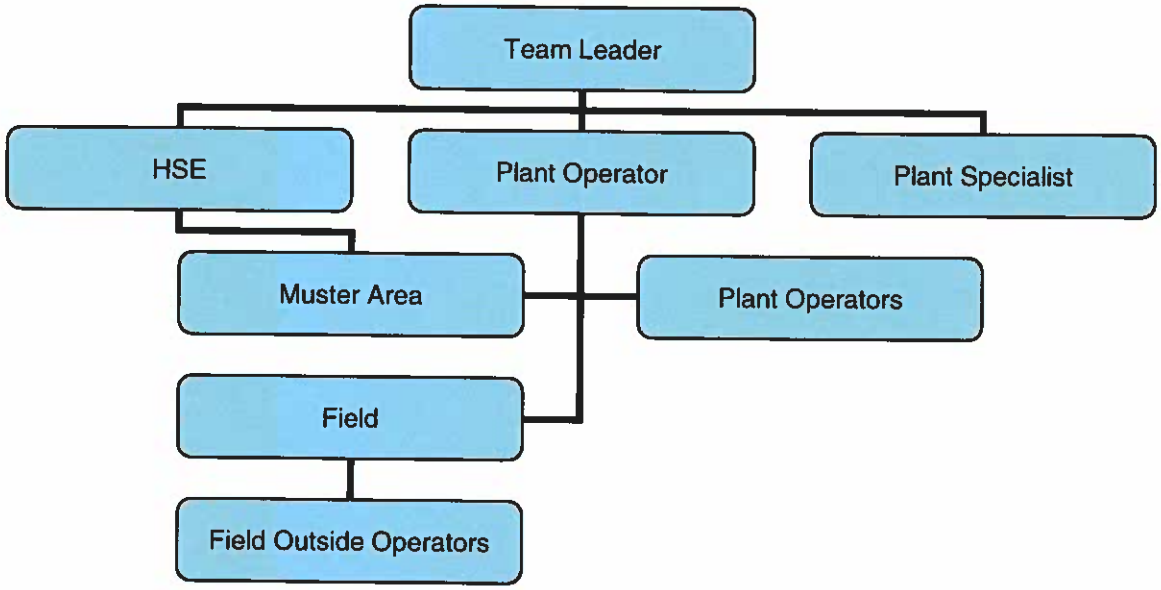
Communications with Oxy Team Members or locations will be conducted with cellular phones.

Bravo Dome Unit Personnel Response Plan

Emergency Response and Evacuation

A. Upon notification or discovery by anyone of a potential emergency situation:
   1. Evaluation and notification should be made.
   2. Ensure that all personnel muster to their proper mustering locations.
   3. Make contact with Oxy personnel at the mustering location and account for all personnel.
   4. Ensure that contact has been made with all Bravo Dome unit Personnel.
   5. In the event that an emergency occurs:
      a) Contact the Plant Team Leader. The Bravo Dome Unit Personnel's responsibility will be to assist in communication.
   6. Control the Air traffic .
   7. Assess the emergency situation and advise the mustering locations. Keep HSE locations informed and updated of the situation.
   8. Initiate the Emergency Action Plan.
   9. Initiate the Rescue and First Aid as the situation dictates.
   10. Contact the Team Leader.
   11. After the emergency is under control, contact your local HSE representative to notify the appropriate regulatory agencies. Emergency Telephone List is located in the EAP book.
   12. Remain Calm and Think. Communicate, Communicate, Communicate.

NOTE: The Bravo Dome Unit Personnel on duty has the discretionary authority to initiate a shutdown of the Plant Phases if assessment of the situation indicates an immediate shutdown is necessary.



HSE
Agency Notifications
Outside Emerg. Services
Safety Issues
SDS
Muster Area Accountability

Plant Operator
Sound Evac. Alarm
Call 911
Contact Mgmt.
Assess situation
Manage Equipment
Communication PS
Account Operation Pers.

Team Leader
Media Relations
Media staging
backup

Muster Area
Account for plant personnel
Set rest area
Restrict access
Furnish personnel
Gather equipment

Field
Block in lines
Traffic control
Notify outside Companies
Public Notification

Plant Operators
Assess and Manage Plant

ALARM SYSTEM

Alarms

Oxygen O2

The O2 alarm consists of a solid tone Siren and a red beacon. This alarm is activated at 18.5% low and 21.5% high O2 in the building atmosphere and sounds only in the affected building. These are located at each Building (Phase 1, 2, & 3)

Phase 3 Shut Down

The Phase 3 Shut Down alarm consists of a two tone Siren and Red Beacon. This alarm will sound anytime the Phase 3 booster shuts down.

Plant Evacuation Alarm

The Plant Evacuation Alarm consists of a two tone siren that will sound over the plant PA system. This alarm will only sound for an evacuation of the plant and is activated by key control in the Plant control room.

TYPES OF EMERGENCIES AND RESPONSE ACTIONS

An emergency response has been developed for each of the following emergencies. It should be understood that this list is not all-inclusive, but the overall plan will assist in addressing similar incidents:

FIRES OR EXPLOSIONS:

A. Fire Fighting Philosophy

It is the policy of Oxy Permian Ltd. that fires will be fought only in their "incipient" stage or "first aid" fire fighting, utilizing hand held fire extinguishers. All Team Members will be given annual training in the use of equipment available for fire fighting and/or fire containment.

The responding fire department will be given primacy when they have received a call from an Oxy representative requesting assistance in controlling a fire on any Oxy property. Their actions will be coordinated with the Incident Commander in the containment and extinguishment of the fire.

B. Emergency Situation

A fire that cannot be immediately extinguished or a potentially large fire hazard should be communicated by activating the Emergency Action Plan.

**Radio priority is then given to Team Members directly involved with the incident.

C. Emergency Response Action

The first priority of each Oxy and contract Team Leader in a major fire situation is to determine the location and condition of personnel. If it is apparent that any personnel are missing or injured, a search and retreval should be initiated. The safety of personnel, and care for the injured, will take precedence over any action taken.

**** It is imperative that all non-Oxy personnel are removed from the plant confines in the quickest, safest manner possible to the mustering area where they will wait for further instructions.**

D. Normal Working Hours

The Team Member discovering a fire must make a notification to the other Bravo Dome Unit Personnel and attempt to put out "incipient" stage fires only. All Team members should report to their appropriate mustering area, to be accounted for and assigned duties. The Operations Team Leader or designee will be responsible for assigning duties including calling the fire department, the appropriate Oxy Team Members, regulatory agencies, and authorizing entry to Plant confines.

E. Night Shifts, Weekends, Holidays

During the abnormal operating hours, there is a minimal amount of Team Members on site. At the end of the working day contact should be made to the Plant Specialist Staff and/or his designee to confirm their safety. If an incipient stage fire is in progress and can be handled by the available Team Members it should be extinguished. If the fire is not manageable, the Team Members discovering the fire should call the fire department and request assistance. Then call the Plant Specialist Staff or one of the Management Members listed on the Emergency Telephone List. All Team Members should evacuate the plant and initiate an emergency shut down if deemed necessary. Permission to enter the plant will be given only by the Plant Specialist Staff and/or his designee.

G. Responsibilities

PMT Leader:

Responsible for overall plant protection.

Plant Specialist Staff:

Responsible for seeing that equipment is in its proper location, conducting drills on the fire training ground, maintaining records, testing and maintenance of equipment. Responsible for coordinating immediate control of the incident.

PERSONAL INJURY OR DEATH

A. After making a call for assistance, prompt and appropriate medical treatment for the victim should be administered. This is the responsibility of all trained individuals. Treatment should be concentrated toward life-threatening conditions: Airway, Breathing, Circulation and Spinal (A, B, C'S).

Do not move the victim unless in a hazardous environment or situation which is in imminent danger to the victim or responders. An ambulance should be summoned for any injury that appears to be serious.

B. Reporting - In the event of a serious injury or death the following procedure is to be followed:

1. Immediately report the accident to the Plant Specialist Staff and HSE Personnel. HSE Personnel will respond to the scene as soon as possible and ensure that appropriate actions have been taken. HSE Personnel will direct the accident investigation and coordinate the appropriate contacts to the Environmental Health & Safety Department and the Claims Attorney. HSE Personnel should also be notified immediately of any serious accident involving contract personnel.
2. If the victim is conscious and able to talk it is preferable to have him or her makes family contacts. Otherwise, it is normally preferable to have

the immediate Team Leader or close work associate make the family contact.

3. The PMT Leader will immediately notify the Oxy Permian Crisis Management Team.

SPILLS

A. Oil and Produced Water and Diesel Spills

In the event of an oil, produced water, or chemical spill, the Team Member discovering it should immediately notify the Operations Team Leader and/or his designee in charge. This person should assess the situation and stop the source of the spill if it may be safely accomplished. The Operations Team Leader and/or his designee should proceed to the spill site and direct control and containment activities. They should assess the need for additional assistance and equipment. Upon assessment, the Operations Team Leader and/or his designee should immediately contact the Team Leader and HES Personnel as appropriate.

B. Chemical Spills

In the event of a chemical spill, the Team Member discovering the spill should contact the appropriate Operations Team Leader. The Team Member discovering the release should not attempt any identification, control or containment without the proper personal protective equipment. Upon proper identification of the chemical, the Operations Team Leader should contact HES Personnel or consult the Safety Data Sheet and/or the DOT Response Guidebook for hazardous characteristics and proper handling procedures.

Chemtrec (800-424-9300) may be contacted with any questions concerning response or chemical hazards.

After proper handling procedures have been identified, control and containment should begin. The Operations Team Leader in charge should proceed to the spill site and direct control and containment activities. Also, determine the need for additional assistance and equipment. Upon assessment, the Operations Team Leader should immediately contact the PMT Leader and HES Personnel.

SPILL RESPONSE CHECKLIST

☐ **Notify appropriate Plant Specialist Staff and/or his designee in charge.**

☐ **Stop source of spill if safe to do so.**

☐ **Plant Specialist Staff and/or his designee directs control and containment.**

☐ **Plant Specialist Staff and/or his designee contacts PMT Leader.**

☐ **Refer to SDS or DOT Response Guidebook for proper handling Procedures.**

DECONTAMINATION

Personnel responding to hazardous substance incidents may become contaminated in a number of ways and by various materials. To any emergency response where contamination of individuals, PPE, tools and equipment or clothing may result, this decontamination procedure should be considered by the operations team leader or designee.

RESPONSIBILITIES

The Operations Team Leader or designee is responsible for the determination of initiating this decontamination procedure in the event of an emergency involving hazardous substances. The Operations Team Leader or Designee will assign responsibility for organizing and running the decontamination station to the appropriately trained personnel.

CONTAMINATION/CONTAMINANTS

Personnel may become contaminated by:

- Contacting vapors, gases, mists or particulate in air
- Being splashed by materials while sampling or opening containers
- Walking through materials or contaminated soil
- Using contaminated tools or equipment

Contaminants to be considered include:

- Caustics
- Acids
- Hydrocarbon Products
- Chemical Additives

METHODS OF DECONTAMINATION

Several methods of decontamination may be employed, depending on the contaminant and material contaminated. These methods include:

- Dilution…Simple flushing with water and/or soap
- Absorption…Absorbing or picking up material with a neutral absorbent
- Chemical Degradation…Altering the chemical structure of the material in order to neutralize it
- Isolation…Isolation of material for future retrieval

DECONTAMINATION PROCEDURE

1. Establish an Entry Point

- The point should be established and clearly marked. It should be located in the contamination reduction zone leading from the Hot Zone.

2. Primary Decontamination

- Remove as much solid and/or liquid material as possible from contaminated personnel by showering…SCBA on!

3. SCBA Removal

- Highly contaminated SCBA should be removed and isolated for complete decontamination later.

4. Removal and isolation of protective clothing.

5. Removal of personal clothing…As Necessary!

6. Decontamination of the body…As Necessary!

7. Drying and providing of clean garments…As Necessary!

8. Medical Evaluation…As Necessary!

9. Transportation…As Necessary!

- Observation, rest, and recovery area. For high-risk contaminants, which require all nine steps, further medical evaluation may be required.

SOLUTIONS

The following are examples that may be used for decontamination of some common materials found in the facility. For specific chemical hazards, refer to the MSDS for that material.

Basic/Caustic Products

1. Concentrate premixed solution: Acetic acid in water.
2. Concentrate solution mixed with 8 liters of water in sprayer.
3. Mixture will be 4.5% solution.
4. Examples of products to use for:
    a. Sodium Hydroxide
    b. Anhydrous Ammonia.
        - Will form Ammonium Hydroxide with water.
    c. Solutions with high Ph

Acidic Products

1. Concentrate premix solution: Sodium Hydroxide in water.
2. Mixture will be .5 M concentration.
3. Concentrate solution mixed with 8 liters of water in sprayer.
4. Examples of products to use for:
    a. Sulfuric Acid
    b. Chlorine
        - Will form HCL with water.
    c. Solutions with low Ph.

Hydrocarbon Products

1. Concentrate premix solution: Industrial soap in water.
2. Concentrate solution mixed with 8 liters of water in sprayer.
3. Examples of products used for:
    a. Gasoline/Naptha products
    b. Aromatics including benzene
    c. Heavy fuel oils

CARBON DIOXIDE (C02) GAS RELEASE

EMERGENCY ACTION PLAN:

This plan covers Occidental Permian LTD. operations involving plant and Their Distribution Systems.

The purpose of this plan is to provide for the logical, efficient and safe action required by Occidental to protect the general public and our Team Members in the event of an accidental release of a potentially hazardous quantity of Carbon Dioxide Gas (C02).

A potentially hazardous volume of C02 is defined as one which could result in a ground level concentration of 5000 PPM or higher where people are known or expected to be. A concentration of 50,000 PPM of C02 is considered to be Immediately Dangerous to Life and Health.

EMERGENCY INCIDENT

1. Initial Leak Detection

   Notify your immediate Operations Team Leader and/or his designee.. Advise of the location and nature of the emergency. Advise of actions you can and will proceed to take. Activate the Emergency action Plan

2. Alert and/or evacuate people within the potentially hazardous area.

   Alert people within the exposure area. In the event a leak causes a potentially hazardous area on a public road, notification must be done by personal contact. It must be done immediately by the Oxy Team Member who discovers or arrives first at the leak site if judge serious enough to require prompt evacuation; otherwise, this notification task shall be assigned by the Operations Team Leader and/or his designee in charge. In the event of a leak that creates a potentially hazardous area, the notifications shall be handled by the Operations Team Leader and/or his designee in charge, or by designee, and shall be made by telephone and/or personal contact, whichever would yield the fastest notifications under the circumstances. If evacuation is deemed prudent, advise the general public and/or assist them in leaving the area without delay, by the fastest route out of the exposure area. The required company and contract personnel and civil authorities will be notified to aid in bringing the situation under control and end the emergency situation.

3. Cordon off the exposure area to prevent entry.

   Place barricades and/or warning signs at all routes into the exposure area, so as to keep people away. If possible, have these barricades manned. Persons manning the barricades must be equipped with carbon dioxide measuring devices or personnel monitors and two-way radios.

4. Stop the escape of Carbon Dioxide (C02).

   Plug the leak or shutoff the sources of gas to the rupture. In some cases! Clamps can be used for temporarily stopping the smaller leaks. For leaks either too large or inconveniently located to stop by clamping, contact Gas Gathering Team Members immediately. The plant and Gas Gathering Team will come to a joint coordinated decision on how to isolate the leak.

5. Complete notifications as required.

   - Contact the appropriate civil authorities for their assistance.
   - Contact hospital and advise them of the situation in order for them to activate their Emergency Action Plan.

6. Return the situation to normal.

   As soon as the complete and permanent stopping of the gas escape is confirmed, begin monitoring evacuated areas for C02 concentration. When the presence of C02 is confirmed' at 300 PPM throughout the evacuated area, allow and/or assist the evacuees in returning to the area. Remove all barricades and warning signs. Advice all parties previously notified the emergency has ended.

POST-EMERGENCY ACTIONS

In the event this plan is ever activated, the following post-emergency actions shall be taken in an effort to reduce the possibility of a recurrence of the type of problem that required its activation, and/or assure that any future activation will be as effective as possible:

1. Clean up, recharge, restock, repair, and/or replace emergency equipment as necessary, and return it to its proper place.

2. Critique all actions. Train or retrain Team Members in emergency procedures, etc., if the need is indicated.

3. Review the factors that caused or allowed the emergency to happen, and if the need indicated, modify operating maintenance, and/or surveillance procedures.

HYDROCARBON VAPOR CLOUD RELEASE (Propane Tank)

Upon discovery of a Hydrocarbon Vapor Cloud release, take immediate safety precautions to protect any company Team Members or others that might be in the area.

The following guidelines should be followed:

1. Determine wind direction.
2. Do not approach a vapor cloud from the downwind direction. Do not drive or walk into the vapor cloud.
3. Evacuate everyone for one mile in each direction and two miles in the downwind direction.
4. Barricade area of exposure.
5. Provide medical assistance if necessary for any victims.
6. Contact civil authorities and advise of potential hazards of the situation and request their assistance if deemed necessary.
7. Contact hospital to alert their staff for possible injuries, and allow them the opportunity to initiate their Emergency Action Plan.
8. Eliminate all sources of ignition that you have safe access to. (Sources such as: engines, electric motors, pilot lights, smoking materials, even a dome light in your vehicle can be a source of ignition.)
9. Maintain contact with Field and/or Pipeline Team Members.
10. Do not attempt to extinguish any fires at the source of the release. Control of the vapor release can be maintained as long as there is a flame. An explosion could result if the fire is extinguished.
11. If the engine of your vehicle stops unexpectedly, do not attempt to start it until you are certain it did not stop due to lack of oxygen.

FIRE OR EXPLOSION CHECK LIST

- ☐ Manually activate Plant Fire Alarm System.
- ☐ Team Member discovering fire gives location and nature of fire.
- ☐ Activate the Emergency Action Plan if deemed necessary.
- ☐ All Team Members, visitors and contract personnel evacuate to the mustering area, are accounted for, and receive assignments.
- ☐ Call hospital and advise them of situation to enable them to activate their emergency action plans in readiness for any injuries that might be incurred.

COMBUSTIBLE GAS RELEASE

1. The Bravo Dome Unit personnel notify plant Team Members via the plant p.a. and/or radio of the location of leak or leak detection based on the available information.
2. Team Members evacuate the affected area.
3. All available OXY Team Members meet at the designated mustering areas.
4. The Initial Response Team (IRT) assembles and is sent into the area to identify and assess the problem with radio communications ONLY under the following conditions:
    a. No more than one monitor is alarming at 10% LEL or less.
    b. The monitor has been in the alarm state for less than 15 minutes.
    c. The LEL percentage is stable and not climbing at a steady rate.
5. If any one of the above conditions is exceeded, no Team Members will enter the area around the monitor that is alarming.
6. Any ignition source equipment in close proximity to the alarming monitor will be shut down remotely if possible.

***** NOTE **** **If the LEL percentage does not drop below 10% after the area is allowed to ventilate, a decision by the PMT Leader or Operations Team Leader and/or his designee. will be made as to how the leak will be isolated.**

7. All Team Members **cannot** enter an area with a monitor alarming at greater than 10% LEL.
8. Team Members will also carry portable combustible gas, oxygen, and CO2 monitors with them into the area.
9. All other Team Members will remain on standby awaiting further instructions regarding operations or logistics.
10. The Operations Team Leader and/or his designee should be the coordinator of Team Members, logistics (tools, etc.) and operations strategy unless relieved by the PMT Leader.
11. Appropriate action will be taken based on the IRT assessment.
12. A post-incident review will be conducted immediately following the situation and discussed among all Team Members with a follow-up note sent out to all Team Members via computer communication.

BRAVO DOME UNIT HELICOPTER LANDING

GPS Office / Plant:

Decimal Degrees

Latitude: 35.858333333333334
Longitude: -103.29277777777777

BOMB THREAT

In the event of a bomb threat, the Team Member receiving the call, on or off site, should try to get as much information as possible from the caller. The Team Member receiving the call should immediately contact the Operations Team Leader and/or his designee in charge and Corporate Security. Evacuation of the plant should be considered at this time. Roadblocks may need to be set up at the plant entrances and road intersections as deemed necessary. The Operations Team Leader or his designee in charge should make all appropriate contacts.

The Operations Team Leader or Designee should:

1. Realize that every bomb threat is serious.
2. Notify Corporate Security.
3. Inform Police/Sheriff's Department.
4. Inform Fire Department.
5. Organize search efforts with the assistance of the local law enforcement agencies. If a bomb is actually located or a bombing does occur the Alcohol, Tobacco & Firearms Commission should be notified. They are qualified to respond to an emergency of this nature.

The Operations Team Leader or Designee should notify Public and Governmental Affairs Department and the high level of management. The Team Leader will work with the media and initiate documentation efforts.

BOMB THREAT CHECKLIST

Date **Name of Company**

Name & Position of Person taking call

Telephone Number call came in on

FILL OUT COMPLETELY IMMEDIATELY AFTER BOMB THREAT

When is the bomb set to explode?	
Where is the bomb located?	
What does the bomb look like?	
What type of bomb is it?	
What will cause the bomb to explode?	
Did the caller place the bomb?	
Why did the caller place the bomb?	
What is the caller's name and address?	
Caller's: Sex____ Age____ Race____	
Length of the call?	

DESCRIPTION OF CALLER'S VOICE (Check all that apply)

☐ **Calm**	☐ **Laughing**	☐ **Lisp**	☐ **Disguised**
☐ **Angry**	☐ **Crying**	☐ **Raspy**	☐ **Accent**
☐ **Excited**	☐ **Normal**	☐ **Deep**	☐ **Deep**
☐ **Slow**	☐ **Distinct**	☐ **Ragged**	☐ **Loud**
☐ **Slurred**	☐ **Clearing**	☐ **Rapid**	☐ **_Nasal**
☐ **Throat**	☐ **Stutter**	☐ **Deep Breathing**	☐ **Familiar**

If voice is familiar, whom did it sound like?

BACKGROUND SOUNDS:

___Street Noises ___House Noises ___Factory Noises ___Machinery

___Crockery ___Motor ___Animal Noises ___Voices

___Office ___PA System ___Music ___Static

Other Noises

_____

THREAT LANGUAGE:

___Well-Spoken ___Foul Language ___Incoherent ___Irrational

___Taped ___Message Read by Threat Maker

COMMENTS & REMARKS (in detailed description):

NATURAL DISASTERS

Tornadoes

If a tornado is sighted, the individual sighting the tornado should notify other persons in the area by radio contact. If the individual has had "spotter" training through the National Weather Service, contact with the County Sheriff's Office should be made to report funnel clouds or tornadoes. Team Members should seek cover in a low-lying area away from power lines (i.e. ditch or culvert). Office Team Members should seek cover in an internal room with no windows. There is a Tornado Shelter located directly south east of the main office building. During nights and weekends Team Members should muster together if time permits. After the tornado has passed, the Operations Team Leader or his designee in charge shall coordinate accounting of all Team Members, evaluate damage assessments and make appropriate notifications. The Emergency Action Plan will remain in effect until safe operation is assured.

Earthquakes

If an earthquake occurs, the Emergency Action Plan should be activated using the best available means. Following accounting of Team Members, the situation shall be evaluated for damage and the appropriate portions of the Emergency Action Plan initiated. The Emergency Action Plan will remain in effect until damage is fully assessed and safe operation is assured.

Extreme Temperatures

The special precautions, which can be taken to prevent the effects of extreme temperatures especially in rural areas where emergency support may be limited, Such precautions may include ensuring the vehicle's fuel tank is full before leaving town, carrying extra clothing and/or blankets in the vehicle, ensuring cell phones have full batteries, carrying 2 – 3 gallons of extra water, carrying some non-perishable food in the vehicle, etc.

Snow

Vehicle Survival Heater

Items Required

- 1 Large Metal Can (30oz fruit can)
- 1 Medium Metal Can (12-14 oz fruit can)
- 1 Roll of Toilet Paper
- 6-12 Bottles of 70-90% Isopropyl Alcohol
- 1 Lighter or a set of Matches

Assembly

- Remove the cardboard center from the toilet paper roll.
- Place the toilet paper roll inside the small can. (leaving no space between can and roll)
- Place the small can inside the larger can.
- Place the large can in an area leaving 18" all around it.
- Pour alcohol over toilet paper allowing it to absorb it.
- Crack the window.
- Place the lighter source against soaked paper until lit.
- Use a metal lid or cover to snuff out flame when needed.

Tips

- 4-6 bottles of rubbing alcohol is sufficient to heat a car for up to 24 hours.
- Two small heaters maybe more efficient than one large heater.
- Turn off heat when warmth temperature has been obtained and re-light it when necessary.
- The heat source can be used for melting snow or ice.
- Heat source can be used to heat up food.
- Snow can be a great insulator but remember to crack a window and find a way to visibly mark your vehicle.

PUBLIC RELATIONS

Oxy recognizes that the news media have a legitimate interest in incidents at Oxy facilities that could affect the public. It is to the company's benefit to cooperate with the news media when incidents occur because these media are our best liaison with the public.

Our objective is to see that all reports of any emergency are factual and represent the company's position fairly and accurately. Cooperation with news media representatives is the most reliable guarantee that this objective will be met.

This can best be accomplished by an effective public relations response to emergencies and oil or chemical spills in the manner outlined in the Oxy Permian Crisis Management Plan (CMP).

All Team Members are instructed to **NOT** make any statement to the media concerning the emergency incident. If a media representative contacts any Team Member, they should refer them to the designated safe area where they should contact the PMT Leader or designated relief for any information concerning the incident.

SUPPORT AND RESOURCE AVAILABILITY

A major incident may exceed the resources available at the site. Additional resources are available through the Oxy Permian Management Response Team (OPMRT) in the following areas:

Administrative	New Ideas
Communications	Press & Media
Engineering	Safety
Environmental	Security
Facility Design	Transportation & Logistics
Human Resources	Well Control
Legal/Claims	

ADDITIONAL TRANSPORTATION AVAILABLE LOCALLY

A limited number of company owned vehicles are available at the Plants. If any additional vehicles are necessary, they can be obtained from a Rental Agency. Prior approval should be obtained from the PMT Leader. Company aircraft will be made available for the transportation of OPMRT and other key Team Members in the event of a major emergency.

TRAINING

The Bravo Dome Unit HSE Specialist or designee will be responsible for updating and review of this plan, with all affected Team Members annually. They will also be responsible for retraining of any significant plan changes.

New employees and employees reassigned to the operations area must receive training on the Emergency Action Plan as part of New Employee Orientation within the first week of assignment. Contract employees who routinely enter work sites will receive a briefing explaining their responsibilities in an emergency situation

All applicable Team Members are currently trained in the following areas necessary for proper execution of the emergency responses for which this plan was developed:

1. Dry chemical fire extinguisher use (annual)
2. Use of portable gas detection equipment (ongoing through permitting system)
3. Proper use of personal protective equipment (ongoing through permitting system)
4. First Aid/CPR Course (with refresher training when required)
5. Hazard Communication (annual)
6. Lockout/Tag out, Confined Space Entry, & Hot Work Permits (annual)
7. Fire Prevention Plan

All Team Members document training with sign-off in attendance.

The following drills will be conducted when deemed necessary by Plant Specialist Staff.

1. Fire
2. CO2 Gas Release
3. Bomb Threat
4. Spill Response
5. Man down/Rescue and Medical Emergency

ENSOLUM

APPENDIX F
Cost of Closure Estimate

COST-TO-CLOSURE (CTC) ESTIMATE
BRAVO DOME CO_2 PLANT (EAST) OPERATIONAL CLOSURE
UNION COUNTY, NEW MEXICO

Date Prepared: 04/17/23
Previous Estimate dated: Original

This Cost to Closure (CTC) estimate is to accrue for probable and estimable expenditures related to:

Closure of the CO_2 plant as required in the discharge permit application prepared in response to a notice from the New Mexico Oil Conservation Division (NMOCD) stating Oxy's CO_2 plants are subject to the permitting requirements of Title 20, Chapter 6, Part 2 of the New Mexico Administrative Code (NMAC). There are no immediate or pending plans for the closure of the CO_2 plant and, therefore, expenditures have been categorically tasked reasonably as listed in Section 10 of Oxy's permit application package prepared in April 2023. Prior to the start of any closure activities, Oxy will need to re-evaluate all costs, contracts, subcontractors and gas plant inventory to appropriately estimate expenditures in an internal addendum to this document. This documnent has been prepared for Oxy and estimates non-Oxy effort as understood by Ensolum.

CHANGES to Scope (from previously accrued estimate):

Original Estimate

This cost estimate includes costs for (DESCRIPTION of proposed activities): *(try to match DESCRIPTION line numbers below to the TASK line numbers on page 2 - below)*

1	Pre-Closure Planning - including administration/project management costs associated with closure strategy development, pre-bid conference calls, bid-walk, gas plant inventory and assessment
2	Pre-Job Planning - following award to all contractors, site walk/pre-job meeting, job plan, health and safety planning, One Call notifications
3	Site decommissioning: Remove all fluids from aboveground storage tanks (ASTs) and sumps.
4	Site decommissioning: Off-site dispoal or recycling of liquids/sludges
5	Site decommissioning: Waste profiling - any unused chemicals will be identified and profiled, then handled and disposed of or recycled using a third-party waste handler licensed and certified to handle hazardous and non-hazardous waste
6	Site decommissioning: Salt water disposal well will be decommissioned according to NMAC 19.15.25 including the removal and disposal of materials from the facility and file appropriate documentation with the NMOCD
7	Site decommissioning: Dismantle ASTs, storage vessels, process equiment, and piping and removed from the facility
8	Site decommissioning: Excavate sumps
9	Site decommissioning: Dispose scrap material and equipment off-site through recycling or based on appropriate waste profiling
10	Site decommissioning: Dispose of solid waste material off-site (buidling materials, concrete, containment metal, line and miscellaneous metal or lumber
11	Collect soil samples from each plant process area to identify any residual impacted soil prior to reclamation
12	Regrade, restore and contour site
13	Provide closure documentation to NMOCD for review

The attached CTC estimate is based on the following ASSUMPTIONS: **(***try to match ASSUMPTION line numbers below to the TASK line numbers on page 2 - below* **)**

1	There are no releases, residual contamination, or impacts to soil, groundwater or surface water at the facility
2	All tankage, piping, instrumentation, and process equipment will be in a condition consistent with recent operations and standard shut-down procedures.
3	Costs for investigation, monitoring or supplemental corrective action related to historic releases are not included herein.
4	Costs do not include asset retirement obligations, legal filing or transfer of deed costs
5	Costs do not include land access agreement fees, lease/right of way agreements, foreiture fees, or similar
6	Costs do not include electrical feed equipment and disconnects
7	Costs do not include daily decommissioning oversight by a third party.
8	The decomissioning subcontractor will direct bill to Oxy but be managed and overseen by a third party.
9	NORM, asbestos containing material, or other hazardous materials are not present at the site to managed for transportation/disposal off-site
10	Cost assumes there will be no equipment sales and all equipment and tankage will be scrapped.
11	Third party costs and subcontractor costs include a 10% and 25% contingeny, respectively, due to the open nature bid of this CTC in 2023
	(insert/delete rows above as needed)

COST-TO-CLOSURE (CTC) ESTIMATE 04/17/23 BRAVO DOME CO2 PLANT (EAST) OPERATIONAL CLOSURE Page 2

	This cost estimate includes: TASK:	Ensolum: (MSA)	Demo Sub: (MSA)	Misc Subs: (MSA)	Misc Subs: (MSA)	Misc Subs (no MSA)	LAB: (no MSA)	SubTOT:	Year(s): (1-4+)
1	Pre-closure planning	$5,000	$2,500					$7,500	1
2	Pre-job planning	$4,000	$2,000					$6,000	1
3	Site decommissioning (ranged average with assumptions)	$26,000	$9,000,000					$9,026,000	1
4	Soil sample collection	$15,000					$9,000	$24,000	1
6	Site closure and regulatory/stakeholder correspondence	$17,000						$17,000	1
7								$0	
	(insert/delete rows above as needed)								
	SubTotals>>>	$67,000	$9,004,500	$0			$9,000	**$9,080,500**	

$9,080,500	**SUBTOTAL CONTRACTED** *(from above)*		
	+ Other Expenditures (list):		
	+ Annual Land/Lease Payments		
$200,000	**+ Third Party Expenses** (est. $2,000/day)	*No. of field days requiring a thirty party=*	**100**
$9,280,500	**TOTAL CONTRACTED**		
$1,392,075	**+ 15% Oxy Contingency**		
$10,672,575	**TOTAL ESTIMATED PROJECT COST**		

ENSOLUM

APPENDIX G
SWD 1934-261D Information

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7869
Order No. R-7358

APPLICATION OF AMOCO PRODUCTION COMPANY
FOR SALT WATER DISPOSAL AND AN UNORTHODOX
LOCATION, UNION COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on May 25, 1983, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 26th day of September, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Amoco Production Company, is the owner and operator of the BDCDGU SE Gas Collection System SWD Well No. 261, to be located 500 feet from the North line and 765.7 feet from the West line of Section 26, Township 19 North, Range 34 East, NMPM, Bravo Dome Carbon Dioxide Gas Unit, Union County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced water into the Glorieta formation, with injection into the perforated interval from approximately 1620 feet to 1680 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer set at approximately 1550 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(5) That the injection well or system should be equipped with a pressure limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 330 psi.

(6) That the Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the Glorieta formation.

(7) That the operator should notify the supervisor of the Santa Fe district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(8) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(9) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amoco Production Company, is hereby authorized to utilize its BDCDGU SE Gas Collection System SWD Well No. 261 to be located 500 feet from the North line and 765.7 feet from the West line of Section 26, Township 19 North, Range 34 East, NMPM, Bravo Dome Carbon Dioxide Gas Unit, Union County, New Mexico, to dispose of produced water into the Glorieta formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 1550 feet, with injection into the perforated interval from approximately 1620 feet to 1680 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pressure limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 330 psi.

(3) That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Glorieta formation.

(4) That the operator shall notify the supervisor of the Santa Fe district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(5) That the operator shall immediately notify the supervisor of the Division's Santa Fe district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(6) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 706 and 1120 of the Division Rules and Regulations.

(7) That 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 DIVISION

JOE D. RAMEY
Director

S E A L

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

CASE NO. 7869
Order No. R-7358-A

APPLICATION OF AMOCO PRODUCTION COMPANY FOR SALT WATER DISPOSAL AND AN UNORTHODOX LOCATION, UNION COUNTY, NEW MEXICO.

NUNC PRO TUNC ORDER

BY THE DIVISION:

It appearing to the Division that Order No. R-7358 dated September 26, 1983, does not correctly state the intended order of the Division,

IT IS THEREFORE ORDERED:

(1) That the hearing date is hereby amended to read "June 8, 1983," and the Division Examiner is hereby amended to read "Michael E. Stogner."

(2) That the corrections set forth in this order be entered nunc pro tunc as of September 26, 1983.

DONE at Santa Fe, New Mexico, on this 5th day of October, 1983.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S E A L

fd/

Amoco Production Company
501 WestLake Park Boulevard
Post Office Box 3092
Houston, Texas 77253-3092

August 8, 1994

Mr. Roy E. Johnson
Geologist & Oil and Gas Inspector
State of New Mexico
Energy, Minerals and Natural Resources Department
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: Produced Water Disposal
BDCDGU SE Gas Collection System SWD Well No. 261
Bravo Dome Carbon Dioxide Gas Unit
Union County, New Mexico

Dear Roy,

First, let me say that we value highly your interest and guidance in Amoco's operations, especially at Bravo Dome CO_2 Gas Unit. We consider this project, from which over 1 trillion cubic feet of CO_2 has been produced in 10 years, as a cooperative effort with the NMOCD.

Second, this letter will address our operation of the captioned well, into which we dispose of produced water under NMOCD Order No. R-7358 dated September 26, 1983. This well, located 500' from the north line and 765.7' from the west line of Section 26, T19N, R34E, Union County, is one of two SWD wells at Bravo Dome. The other one is Well No. 1934-321 in Section 32, T19N, R34E, Union County and was permitted in late 1988.

Order No. R-7358 permits us to dispose of produced water into the Glorieta formation at a maximum pressure of 330 psi through plastic-lined tubing into the perforated interval 1620-1680 feet. My understanding is that we have brought to your attention the fact that there are wastes other than produced water being injected into the SWD Well No. 261.

I have personally researched our files and am assured in saying that our disposal operations are in compliance with Order No. R-7358. Additionally, we have had produced water analyses performed which indicate that components of our produced water, consisting of normal by-products of the gas dehydration and compression process, occur in trace quantities.

I have attached three documents to this letter for your files. One is a copy of Order No. R-7358. The second is a copy of the transcript from the June 8, 1983, hearing. I especially want to refer to the testimony beginning on page 17, line 14. In this testimony, our witness stated that the only water to be injected into the proposed SWD well would be produced water, that being water knocked out of the gas at the initial separation phase and water derived from the glycol dehydration phase on the second stage of compression. Our request, as confirmed to the examiner, was to obtain a permit allowing the disposal of all water discharged from the facility (reference page 19, lines 3-6).

The third attachment is two analyses done for us by TraceAnalysis, Inc., of Lubbock, Texas, using EPA approved methodology. We collected instantaneous samples from the inlet water knockout and the plant facility. Analyses were performed to determine total recoverable petroleum hydrocarbons (TRPHC) and ethylene glycol. For the water coming in from the field, the quantities were less than 0.200 mg/l for TRPHC and less than 5 mg/l for ethylene glycol. These concentrations were reported as thresholds because they are the minimum detection limits for this analytical process. For the produced water derived from the plant facility, the analyses were 36.011 mg/l for TRPHC and still less than 5 mg/l of ethylene glycol.

The produced water being injected into SWD Well No. 261 is a mixture of the "field" produced water and the "plant" produced water. The field produced water contains TRPHC and ethylene glycol in quantities below the detection limits. The plant produced water contains measurable TRPHC and trace concentrations of ethylene glycol. Since the two are mixed in ratios greatly favoring the "field" produced water, the injectant contains TRPHC and ethylene glycol concentrations that are significantly diluted and which can be described as trace quantities.

We believe this demonstrates that we are complying with both the language of the order as well as the intentions stated in the hearing on our application in 1983.

Please take this under advisement and let me know if you need further information. My number is (713) 366-3371.

Yours truly,

Jim Collier
Sr. Petroleum Engineering Associate

Attachments

bcc: Perry Jarrell, Houston
Jerry Adams, Levelland
Mike Starrett, Houston
Lynn Bortka, Houston

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
AMOCO PRODUCTION COMPANY
Attention: Jerry Adams
P. O. Box 2000
Levelland, TX 79336

July 21, 1994
Receiving Date: 06/22/94
Sample Type: Water
Project No: NA
Project Location: Bravo Dome

Analysis Date: 07/08,19/94
Sampling Date: 06/14/94
Sample Condition: Intact
Sample Received by: McD
Project Name: Prod. Water

TA#	FIELD CODE	TRPHC (mg/L)	ETHYLENE GLYCOL (mg/L)
T22734	Plant Water	36.011	<5
QC	Quality Control	171.881	42
Detection Limit		0.2	5
% Precision		---	90
% Extraction Accuracy		104	86
% Instrument Accuracy		105	84

METHODS: EPA 418.1, 8000.
TRPHC SPIKE AND QC: Sample spiked with 21.850 ppm TRPHC and Blank spiked with 103.009 ppm TRPHC.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

7/21/94
DATE

TRACEANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
AMOCO PRODUCTION COMPANY
Attention: Jerry Adams
P. O. Box 2000
Levelland, TX 79336

July 21, 1994
Receiving Date: 06/21/94
Sample Type: Water
Project No: #2
Project Location: Brave Dome

Analysis Date: 07/08,19/94
Sampling Date: 06/21/94
Sample Condition: Intact
Sample Received by: McD
Project Name: Prod. Water

TA#	FIELD CODE	TRPHC (mg/L)	ETHYLENE GLYCOL (mg/L)
T22708	Produced Water	<0.200	<5
QC	Quality Control	171.881	42
Detection Limit		0.200	5
% Precision		---	90
% Extraction Accuracy		103	86
% Instrument Accuracy		105	84

METHODS: EPA 418.1, 8000.
TRPHC SPIKE AND QC: Sample spiked with 21.850 ppm TRPHC and Blank spiked with 163.880 ppm TRPHC.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

7/21/94
DATE

TRACE ANALYSIS, INC.
A Laboratory for Advanced Environmental Research and Analysis

Amoco Production Company (USA)
Houston, Texas

Copy Charlie Jo JKR 10-10-83

HCL
Balake BAN 10/10/83
PBM PBM
SFL
PSS PJS
File: 986.51
cc: WF
Renamed: Bravo Dome SE SWD #1934 261D

October 4, 1983

File: JCA-986.51NM-3304

Re: Application for Salt Water Disposal
and an Unorthodox Location
BDCDGU SE Gas Collection Systems SWD Well No. 261
Bravo Dome Carbon Dioxide Unit
Union County, New Mexico

J. R. Barnett
21.156

Attached is a copy of NMOCD Order No. R-7358 authorizing the subject application as presented in Case No. 7868. Although not specifically mentioned in this order, the unorthodox location portion of this application was dismissed. For further details concerning this dismissal, reference letter to J. C. Allen, dated July 18, 1983, File: JCA-986.51NM-2396. This order contains several provisions which require our strict adherence. The items of particular interest are summarized as follows:

1. Tubing to be utilized will be 2-3/8ths internally plastic coated set in a packer at approximately 1550 feet.

2. Casing tubing annulus will be filled with an inert fluid and said annulus is to be equipped with an approved leak protection device or pressure gauge.

3. The injection system will be equipped with a pressure limiting device, and the wellhead injection pressure will be limited to more than 330 psi. Order does provide for an administrative procedure to increase limiting pressure. Pumps have Pressure Switch set less than 330 PSI

4. The OCD District Supervisor in Santa Fe is to be notified of date and time of disposal equipment installation so that he may inspect same.

J. R. Barnett
October 4, 1983
Page 2

5. The Santa Fe District Supervisor for the OCD shall be notified immediately upon detection of a leak in the subject disposal system.

R. C. Johnson

R. C. Johnson

LS/agd
1039/K

Attachment

cc: L. R. Smith - 4.538
S. J. Okerson - Hobbs, NM
J. D. McElhaney - 21.102

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

September 26, 1983

Mr. Clyde Mote, Attorney
Amoco Production Company
P. O. Box 3092
Houston, Texas 77001

Re: CASE NO. 7869
ORDER NO. R-7358

Applicant:

Amoco Production Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other

Mary Lou, 9-29-83
Please send a copy to J C Allen and the file copy ...

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7869
Order No. R-7358

APPLICATION OF AMOCO PRODUCTION COMPANY FOR SALT WATER DISPOSAL AND AN UNORTHODOX LOCATION, UNION COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on May 25, 1983, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 26th day of September, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Amoco Production Company, is the owner and operator of the EDCDGU SE Gas Collection System SWD Well No. 261, to be located 500 feet from the North line and 765.7 feet from the West line of Section 26, Township 19 North, Range 34 East, NMPM, Bravo Dome Carbon Dioxide Gas Unit, Union County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced water into the Glorieta formation, with injection into the perforated interval from approximately 1620 feet to 1680 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer set at approximately 1550 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(5) That the injection well or system should be equipped with a pressure limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 330 psi.

(6) That the Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the Glorieta formation.

(7) That the operator should notify the supervisor of the Santa Fe district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(8) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(9) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amoco Production Company, is hereby authorized to utilize its BDCDGU SE Gas Collection System SWD Well No. 261 to be located 500 feet from the North line and 765.7 feet from the West line of Section 26, Township 19 North, Range 34 East, NMPM, Bravo Dome Carbon Dioxide Gas Unit, Union County, New Mexico, to dispose of produced water into the Glorieta formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 1550 feet, with injection into the perforated interval from approximately 1620 feet to 1680 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer ;

(2) That the injection well or system shall be equipped with a pressure limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 330 psi.

By pressure switch on pumps

(3) That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Glorieta formation.

(4) That the operator shall notify the supervisor of the Santa Fe district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(5) That the operator shall immediately notify the supervisor of the Division's Santa Fe district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(6) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 706 and 1120 of the Division Rules and Regulations. See Billy's files for monthly reports. JM 5/21/92

(7) That 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 DIVISION

JOE D. RAMEY
Director

S E A L

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
8 June 1983

EXAMINER HEARING

IN THE MATTER OF:

Application of Amoco Production Company for salt water disposal and an unorthodox location, Union County, New Mexico.

CASE 7869

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division:

W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

Clyde Mote, Esq.
Amoco Production Company
Houston, TExas

I N D E X

E X H I B I T S

MR. STOGNER: We'll call next Case Number 7869.

MR. PEARCE: That case is on the application of Amoco Production Company for salt water disposal and an unorthodox location in Union County, New Mexico.

MR. MOTE: Mr. Examiner, I'm Clyde Mote, attorney, who, in association with Bill Carr, represent Amoco Production Company, and we'll have one witness.

MR. PEARCE: Are there other appearances in this matter?

MR. HECKEL: I'd like to -- I'd like to make a brief statement.

MR. PEARCE: Okay. Would you prefer to make that now or at the close of the testimony in this case?

MR. HECKEL: I think at the close will be satisfactory.

MR. PEARCE: Okay, thank you.

(Witness sworn.)

MR. MOTE: Mr. Examiner, Rule 104-B-III of the Regs of this Division provide that if a wildcat well in Union County "may reasonably be presumed to be productive of gas" then a well should be located on 160-acre unit, consisting of a quarter quarter section,

which well shall not be located closer than 660 feet to any outer boundary, or closer than 330 feet from any inner boundary.

Now, the well which is the subject of this application is 500 feet from the northern boundary of the section; however, we do not believe that this would require, this application to be considered an unorthodox location for two reasons: First of all, we don't believe the proposed well will be reasonably presumed to be productiv of gas; therefor, statewide rules would only require a 40-acre location on which the proposed well would be a standard location. Number two, the Bravo Dome CO_2 Unit has been unitized and it is our opinion that an interior well such as this, further than 660 feet from the outer boundary and further than 330 feet from anyl interior line would be at a standard location.

Now, if the Division agrees with us in this interpretation wholly or in part, and determines that an unorthodox well location application is unnecessary, they we'd move to dismiss that portion of our application dealilng with an unorthodox location; however, should the OCD disagree with us in this regard, then we request that this case be readvertised for the June 23rd, 1983, hearing, because the advertised location is incorrect as the east/west description is correctly stated as being 765.7 feet from the west line as compared to the advertised location of 565 feet from the west line of Section 26,

Township 19 North, Range 34 East.

In any event, we wish to proceed with the merits of our application at this time.

MR. STOGNER: Mr. Mote, the non-standard location portion of this case will be dismissed, since it has been the practice in the past byl the New Mexico Oil Conservation Division to dedicate 40-acre spacing to a disposal well, and since this application meets those guidelines for a standard location for a well dedicated 40 acres, the nonstandard location portion of the application will be dismissed; however, in the unlikely event that this case happens to be productive of natueral gas or CO_2, we would expect Amoco then to apply for a nonstandard location for a 160.

MR. MOTE: Okay, good.

LARRY W. SHEPPARD,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. MOTE:

Q Mr. Sheppard, would you please state your name, by whom employed, in what capacity and location?

A My name is Larry W. Sheppard. I'm employed by Amoco Production Company as a Staff Petroleum Engineer. I work in our Houston West Region, Proration Section.

Q Have you previously testified before the Division and are your credentials as an expert in the field of petroleum engineering a matter of public record?

A They are.

Q Are you familiar with the subject matter of this application?

A Yes, sir, I am.

MR. MOTE: Is there any question concerning the witness' qualifications?

MR. STOGNER: He is qualified.

Q You'll be asked to testify concerning certain exhibits. Were these exhibits either prepared by you or under your supervision and direction?

A Yes, sir, they were.

Q All right, I'll ask you to first turn to what has been marked as Amoco's Exhibit Number One, and please identify this exhibit for the record.

A Exhibit Number One is a map which shows the entirety of the unit encompassed by the Bravo Dome Carbon Dioxide Gas Unit.

Q What are the various colored arrows shown on this map for?

A As shown on the legend in the upper lefthand corner of the map, the red arrow depicts our proposed disposal well; the blue arrow depicts the locations from which we obtain fresh water samples in accords with the Commission Form C-108, to provide as evidence in this

case; the green arrow depicts the well from which we obtained a sample of Glorieta water, which will be entered as evidence in this case; and the orange arrow depicts the well from which we obtained a sample of Tubb water, which also will be entered into evidence in this case.

Q All right, would you please locate for the Examiner the approximate location of the AmeriGas Property, please?

A Amerigas property is located to the west of our proposed disposal site and, in fact, is located west of the well in which we have produced water from the Glorieta, that being in Township 19 North, Range 32 East. It is approximately 20 to 25 miles to the west of our proposed disposal site.

Q The AmeriGas property is 20 to 25 miles west, is that correct?

A To the best of my knowledge, that is correct; somewhere in the range.

Q And the Glorieta salt water well is somewhere in between those two locations, is that correct?

A That is correct.

Q All right, if you will, please, turn to what has been marked Amoco's Exhibit Number Two and identify this for the record.

A Exhibit Number Two is a map of the portion of the Bravo Dome Carbon Dioxide Unit in the immediate vicinity of the proposed disposal well.

Q All right, and why do you have a 1/2 mile radius shown on this exhibit?

A This exhibit was prepared in order to fulfill the requirements as set forth in Commission Form C-108, which states that we must show all leases within two miles of the disposal well. It also states that we are to draw a 1/2 mile radius around the proposed disposal well. The area circumcised by that radius is an area of review and that is an area in which any well that has penetrated the proposed disposal horizon will be reviewed.

Q Are there any wells that have penetrated that formation located within the 1/2 mile area?

A No, sir, the nearest well is located in Section 23, and as the Examiner can see, that falls just outside the boundary of the 1/2 mile radius.

Q Just to the north of the proposed location, the northeast of the proposed location, you show a well 1934 251-K. Are you going to discuss this well later on in your testimony?

A Yes, sir. Seeing as how there are no wells in the section where we propose the disposal well, we're going to use 1934 251-K as a type log in order to show the approximate depths at which we expect to encounter the various formations.

Q All right, go to your Exhibit Number Three and identify this exhibit for the record.

A Exhibit Number Three is a copy of the Commission Form C-102, which is the acreage dedication and well location plat. This shows the staked location of the proposed well, that being 500 feet from the north line, 765.7 feet from the west line, Section 26, Township 19 North, Range 34 East. That is in Union County, New Mexico.

Q This constitutes a change from the west line of the position of the well as advertised. Why was this change made?

A The first location that was staked was too far to the west to suit the purposes of Amoco. The well is to be located on our compression facility site and the first location staked was too far removed from that site in order to easily facilitate the disposal of water from that plant.

Q And will this proposed facility site be the subject of a later exhibit in your testimony?

A It will.

Q Turn to your Exhibit Number Four. Would you please identify this for the record?

A Exhibut Number Four is a copy of the Commission Form C-108. This exhibit, with attachments, has already been submitted to the Division; however, we are entering it as a separate exhibit and in order to show that we are complying with the various requirements of this.

Q All right, would you discuss any items

of particular significance on this completed application for the Examiner?

A If the Examiner would turn to the attachment portions of this exhibit, the first attachment is an injection well data sheet in which I have shown both in tabular and schematic form the planned configuration of the injection well, if it is authorized.

As the Examiner can see, both strings of casing, the surface and the long string, will be cemented to surface. The injection will be through plastiac-coated tubing beneath a packer. Inert fluid will be on the back side and the well will be monitored in compliance with all the UIC rules of the Commission as set forth in Rule 701.

Q All right, is there anything else you'd like to discuss with the Examiner?

A On the next page I would like to briefly discuss the information that's required by other sections of the C-108.

First of all, as required by Section 7, is statements concerning the proposed operations. Initially, when this well begins disposing, we anticipate it disposing only between 100 and 150 barrels a day. That's because we'll only have a small portion of the wells on line when we initiate the project; however, once the full scale project is underway, we anticipate average daily injection of around 500 barrels a day. The maximum anticipate injection should never exceed 900 barrels a day. The

system is entirely closed. The average pressure of the injection well we estimate to be approximately 100 psi at the average daily rate; however, we are asking the Commission to grant us a maximum limit of 330 psi. This is in accords with the Commission's criteria that has been historically used of .2 psi per foot of depth, and it has also been justified in previous hearings regarding disposal wells in this area.

The source of the injection water will be from the Tubb formation.

Next I would like to discuss the geology of the proposed disposal horizon and the fresh water sands within the area.

The Glorieta in this area is a fine to coarse grained sandstone, which are composed of clean, semi-round quartz, which are well cemented by calcareous material. The gross thickness of the horizon is approximately 155 feet and the net pay is approximately 60 feet. We anticipate that we'll encounter the top of the Glorieta at 1605 feet and that the mid-point of our perforations will be approximately 1650 feet.

Fresh water sands in the area, the deepest of which is the Morrison Exeter sand, which is of Jurassic age, it has been bound based on areal hydrological and geological studies to have a base of approximately 550 feet, and as we will show on a later exhibit, we believe in this particular area that the base of that sand is approxi-

mately 530 feet.

Next, as required by Section 9 of the C-108, if indeed the Glorieta requires stimulation prior to injection, we anticipate that it would only require a small volume acid job that would be in the range of 1000 gallons and we would utilize 7-1/2 percent hydrochloric acid, and of course, the log for this well will be submitted to the Commission once the well is drilled.

On the next page, as required by the C-108, Section 11, we must obtain water samples from all fresh water wells that are within a mile radius of the proposed disposal well. We have done that. There are two wells on the Amoco property, that being the facility plant site, which are immediately adjacent to the proposed disposal well, and there are two other wells located on the Bolts property (sic). The first well in the northeast quarter of Section 25, and at a depth of approximately 125 feet, and there is a well in the southeast quareter of Section 25 at a depth of approximately 150 feet.

On the last page of this exhibit we have a summary of the water analyses for the Glorieta and the Tubb. The wells from which we obtained these water samples are highlighted on Exhibit Number One, as shown by the arrows.

First of all, the Glorieta water sample shows total dissolved solids of approximately 29,000 parts per million and the Tubb formation shows total dissolved

solids of approximately 45,000 parts per million.

Q Mr Sheppard, is it your testimony that this facility, if permitted by the Division, will be constructed, operated, and monitored in compliance with UIC rules and regulations?

A Yes, sir, it will.

Q Have you examined all available geological and engineering data and find no evidence of open faults or any other hydrological connection between the proposed disposal horizon and any underground source of drinking water?

A Yes, sir, I have, and there is no evidence of such.

Q Has notice by certified mail been given to the surface owners?

A Yes, sir, it has.

Q Do you have evidence of this recipt in your possession if the Examiner wishes to see it?

A I do have.

Q All right, turn to what's been marked as Amoco's Exhibit Number Five and identify tha for the record.

A Exhibit Number Five is a copy of the water analyses from the four fresh water wells within the mile radius of the proposed injection well.

Q Would you please explain what's

shown by this exhibit?

A The exhibit shows a detailed water analysis from the water from each of the four wells. Also, to the righthand portion of the exhibit I show the approximate depth of each well and the location of each well.

The, all four wells show to have good quality water, which is fit for human consumption.

Q All right, and how far from the Glorieta, where the injection is to be had, if this application is granted, how far on a vertical scale is the fresh water sands from this water analysis in feet?

A In excess of 1000 feet vertical separation.

Q All right, go to your Exhibit Number Six and identify this for the record, please.

A Exhibit Number Six a well log from the Bravo Dome Carbon Dioxide Unit Well 1934 231K.

Q All right, and would you please explain what you've shown on this exhibit?

A Marked on the exhibit are the tops of all the major formations which have been identified in the Bravo Dome area. Of particular importance, I'll work from the top to the lower section of the log, you can see that I have the top of the Triassic marked at approximately 530 feet. The top of the Triassic would be the bottom of the Jurassic, which contains the Morrison Exeter sand, which we have already made reference to as being the deepest sand

which has potential for bearing fresh water.

The next top that I would like to mention would be the Glorieta. We have shown it at 1605 feet, and as you can see, the interval between 1620 and 1680 feet has sufficient porosity to facilitate the injection that we are proposing in this well.

Lastly, I'd like to mention the Tubb formation, which we have shown at approximately 2150 feet. The Tubb is the horizon which is productive of CO2. It is also the horizon from which the produced water would originate that would disposed into the Glorieta.

MR. MOTE: With regard to the next exhibit, we only have one copy. We'd like to put it on the wall to discuss it.

Q Mr. Sheppard, you only have one copy of this, but if the Division needs more than one copy we'll be glad to furnish it, will we not?

A Yes, that is correct.

Q All right. If you would, please -- this is -- please identify what is shown by this exhibit.

A This exhibit is an overall plot plan for the first Amoco combination of dehydration and compression facility plant that will be located in the Bravo Dome. The plant will be utilized for the purpose of dehydrating the gas to the point that it can be placed into a transmission line. It will compress it up to line pressure and at which

time it will be placed in a transportation line to be transported to the tertiary oil recovery projects that will utilize it, the CO2.

Q All right, point out the proposed disposal well as it would lay on this subject site.

A The proposed disposal well is just outside the western portion of the main body of the facility plant itself. It is going to be approximately 300 feet outside the fence encompassing the facility site.

Q All right, point out the two fresh water wells which you've either drilled or will drill on the facility site.

A The first fresh water well is within the facility site itself, located approximately in the center of the facility site. The other fresh water well is located on the very far eastern portion of the land on which the facility will be located.

Q And are those two of the wells on which you've shown fresh water samples?

A Yes, sir, those were included in our exhibits shown separately.

Q All right, if you would, just discuss briefly this facility and what you expect it to do.

A On this exhibit the facilities that are currently under construction are shown by the darkened lines. All of the dashed lines are future facilities that

will be installed as we require them. Initially, the only dehydration compression will be for the gas that Amerada is going to take, which we estimate to be approximately 85-million a day. The gas will enter from the north into the facility. It will go to an initial separation phase where most of the produced water will be separated from the gas. The gas will then be brought through three stages of compression. On the compression, all of the prime movers for the compression will be electrically driven. We will have, as I mentioned, three stage compression, 6000 horse-power per compressor, and all of the coolant for those com-pressors, jacket water coolant, will be in a closed system and that coolant water will be cooled by an air to liquid system.

As we come in, the only other water that will be derived from the plant will be on the second stage of our compression we will have a glycol dehydration unit, which will separate the remainder of water from the gas in order to ready it for transmission.

Q Would you say that primarily and almost exclusively, the only water which will be injected into this proposed salt water disposal well is produced water?

A Yes, sir, it will be produced water, either knocked out on the initial separation phase or the glycol dehydration phase on our second stage of compression, and that will make up virtually 100 percent of the water that will be disposed into the proposed injection well, if

so granted.

Q Can you testify, then, that in your opinion as an engineer, that there will actually be no effluent water injected into this well?

A By and large, I guess, if you take the strict definition of effluent water, no, it will virtually all be produced water.

Q All right, now, are you going to test the water coolant from the compressor periodically?

A Yes, sir, we will. As I mentioned, the only water that will be utilized in the compression facility itself, or the operation of those facilities, is jacket water coolant for the compressors, and that will be tested on a regular basis.

Q And where you going to get the fresh water for this coolant?

A That fresh water is really of a small quantity, but the amount that we do need will be obtained from the fresh water wells that we have on our plant site.

Q Have you obtained a permit from the Water Control Commission?

A No, sir, we have not.

Q Is that because in your opinion you don't believe it's effluent?

A Yes, sir, we believe that the Oil Conservation Division, both in their rules and regulations and according to the rules and regulations of the Water

Quality Control Commission has jurisdiction over this matter.

Q And your request is to obtain an order permitting disposal of all water discharged from the facility shown on this exhibit?

A Yes, sir, that is correct.

MR. MOTE: We offer Exhibits One through Seven into evidence.

MR. STOGNER: Exhibits One through Seven will be admitted into evidence.

MR. MOTE: We have no further questions for this witness.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Sheppard, I have a few questions. I'll start with your Exhibit Number Seven there, so you can go sit down over there.

The coolant water that will be coming out of the jacket, what will -- will there be any possible contaminants in that water, and if so, what would they be?

A The only thing that will be contained in that water, it will be fresh water, it will be high

quality because it's going to be used in a jacketing system in the compressor, and so the only, I guess what you could classify contaminant in that water, will be a corrosion inhibitor to inhibit corrosion of the jacket coolant system of the compressor.

Q Do you know what type of corrosion inhibitor that you will be using?

A No, sir, I've not been able to determine that yet. I do not think the decision has been made yet. As soon as I am able to get that decision, I would be more than happy to -- to submit that in separate correspondence to you all.

I can state, though, that as a company policy that we do not use chemicals in our operations in our collant waters, which are potentially hazardous contaminants. We would not be using a chromate type additive to the water.

Q I would appreciate it if you would submit that information when it becomes available.

That's all the questions I have concerning Exhibit Seven. At this time is there any other questions concerning this exhibit before we take it down? If not, I'll have some other questions for Mr. Sheppard.

Mr. Sheppard, to the best of your knowledge, has any CO2 been encountered in the Glorieta within, say, six miles of the proposed salt water disposal well?

A No, sir, if you would make reference to your Exhibit Number One, I've shown on Exhibit Number One a well located in Section 4, Township 19 North, Range 32 East. That well is currently designated as Bravo Dome Carbon Dioxide Unit 1932 041-D, and it is shown by the green arrow on the map. That well was tested in the Glorieta when it was originally drilled. I don't know the specific date, but I believe it was prior to 1974, because in 1974 our company made a study of Glorieta potential within the Bravo Dome Unit, and based on the results of the testing in this well, we determined that there was little or no potential for Glorieta production east of that well or north of the well. The well tested 100 percent water in the Glorieta, and that is -- analysis of that water was presented on our Exhibit Number -- in our Exhibit Number Four.

MR. STOGNER: I have no further questions for Mr. Sheppard. Is there any further questions of this witness?

MR. MOTE: None.

MR. STOGNER: If not, he may be excused.

Mr. Mote, do you have any statement at this time?

MR. MOTE: No, sir.

MR. STOGNER: Mr. Heckel?

MR: HECKEL: AmeriGas leases approximately 75,000 acres in an area that's to the south and west of the Bravo Dome Unit, 65,000 acres of those which are actually outside the limits of the Bravo Dome. 10,000 are within the limits of the Bravo Dome but are not included in the (inaudible).

We had two CO2 plants operating from those wells in the Tubb formation for approximately 20 years.

In 1982 we commissioned H. J. Gruy to do a reserves estimate at the three potential formations in that area, the Tubb, the Glorieta, and the Santa Rosa. In Gruy's study they have determined there was a potential for considerable production of CO2 from the Glorieta zone. The formation changes there and it's my understanding that it's substantially different from the formation in the location of the injection well.

AmeriGas has no objection to the proposal that Amoco and the unit has to make injection at the wellsite that they're proposing, but we would at least like to go on record saying that if injection rates are increased dramatically over the 900 barrels of water a day, or if there are injection wells considered closer to the AmeriGas acreage, that we would like to be a party to a discussion and would like to have the Commission fully explore the potential dangers to the Glorieta zone in the area of our leases.

MR. STOGNER: Thank you, Mr. Heckel. Is there anything further to come before Case Number 7869?

It has come to my attention that the advertisement has already gone out to June 23rd, so this -- therefor, this case will remain open until the June 23rd hearing.

MR. PEARCE: It is our intention when that case is recalled on our docket to take the portion of the case that is still in existence under advisement at that time and to dismiss the nonstandard location portion of this case. I do not suspect that any appearanceis necessary at that time.

MR. MOTE: Okay. Thank you.

MR. PEARCE: One thing further, if I might, Mr. Mote. I noticed that on Amoco's Exhibit Number Three, the copy of Form C-102, that form was filed prior to the determination of the acreage dedication as a 160-acre dedicated unit. I'd request that Amoco file an amended C-102 on this well.

MR. MOTE: All right.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said Transcript of Hearing is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7869, heard by me on January 8 1985.

Michael E. Stogner, Examiner
Oil Conservation Division

ENSOLUM

APPENDIX H
Liquid Waste Permit

PERMIT

TO CONSTRUCT, INSTALL OR MODIFY AN INDIVIDUAL LIQUID WASTE SYSTEM

(Permit is to remain with system)

HEALTH ENVIRONMENT

STATE OF NEW MEXICO
Environmental Improvement Division

EID Permit Number 025933

CID Permit Number *(Required by NMMB)* _____

Application for permit has been received by the Environmental Improvement Division. The liquid waste disposal system as described therein meets the requirements of the Liquid Waste Disposal Regulations. A permit is hereby issued for the installation or modification of the described liquid waste disposal system in the manner specified in the application for permit or variance, and the following additional conditions:

BDCDGU

MAY 2 1983

System Location: Under Board of Homestead and 7½ miles West on 65

☒ ENVIRONMENTALIST
☐ ENGINEER

Thomas Allison
Signature

April 29, 1983
Date

EID 027B Issued 11/79

temp 27

STATE OF NEW MEXICO
Environmental Improvement Division

APPLICATION FOR PERMIT TO CONSTRUCT, INSTALL OR MODIFY AN INDIVIDUAL LIQUID WASTE SYSTEM

(Instructions and Explanations on Reverse Side)

EID USE
EID PERMIT NUMBER: 025933
CID PERMIT NUMBER:

SYSTEM OWNER'S NAME - Last, First and Middle: Amoco Production Co.	HOME PHONE: 374-8384	BUSINESS PHONE: 374-8384
MAILING ADDRESS - Street/P.O. Box, City, State and Zip Code: P.O. Box 606, Clayton, N. Mex 88415		
LOCATION OF SYSTEM - Street address, subdivision block and lot, or directions to site: 4 mi. So. of Amistad on Hwy 18 & 7½ mi. West on S.R. 65		
SYSTEM INSTALLER'S NAME - Last, First and Middle: Durbin, Clifford L.		
INSTALLER'S FIRM: Santa Rosa Plbg & Htg Co.	COUNTY: Union	PHONE: 374-9812
MAILING ADDRESS - Street/P.O. Box, City, State and Zip Code: 1207 So 1st St Clayton, New Mexico 88415		
C.I.D. LICENSE NUMBER: 3066	C.I.D. LICENSE CLASSIFICATION: ☐ MM-1 ☒ MM-98 ☐ MS-1 ☐ MS-3	

I. GENERAL INFORMATION

day worked

Type of Establishment:
☐ Single family residence ☐ Multi-family facility ☐ Seasonal Residence ☐ Other - *specify* ~~Mobile Home~~

Number of bedrooms _____ Other unit basis day worker offices - 20 *employees, patrons, seats, etc.* Number of units 2

II. SITE INFORMATION

Lot size 80 Acres *square feet or acres* Minimum field area available 80 Acres *square feet or acres*

Date Platted: ☑ Pre-November 1, 1973 ☐ Post-November 1, 1973

Water Supply: ☐ Public ☒ Private well ☐ Other - *specify* _____

Soil Depth *(number of feet above bedrock or impervious layer)*: ☑ Greater than 6 feet ☐ Less than 6 feet _____ *number*

Soil Type: ☐ Gravel ☒ Sand ☐ Silt ☐ Clay ☒ Loam

☐ Other - *specify* _____

Has evidence of percolation test been submitted? ☒ Yes ☐ No

Percolation Rate in minutes per inch *(a percolation test is required; see Section 202, Subsection E2, Liquid Waste Disposal Regulations)* 19 1/4

Depth to Seasonal High Water Table *(see Section 209, Liquid Waste Disposal Regulations)*:

☒ Greater than 20 feet ☐ 12 to 20 feet ☐ Less than 12 feet _____ *number*

Ground Slope *(in feet per 100 feet at absorption field site)* 1/100

Flooding Potential: ☒ Less than 1 in 25 years ☐ More than 1 in 25 years

BDCGU MAY 2 1983

III. SYSTEM DESIGN

Type of Treatment System: ☒ Septic tank ☐ Aerobic ☐ Privy

☐ Other - *specify* _____

Liquid waste treatment unit capacity *(in gallons or gallons per day)* 1500 gal CONCRETE

Liquid waste treatment unit manufacturer Big H Const - Clovis, New Mexico

Liquid waste treatment unit certification: ☒ New Mexico Mechanical Bureau ☒ National Sanitation Foundation

System Design Flow in gallons per day *(see Appendix A of Liquid Waste Disposal Regulations)* 300 gpd Plan

085733

EID 027 - Page 2 of 2 *(Instructions and Explanations on Reverse Side)*

Type of disposal system: ☒ Standard trench ☐ Absorption bed

☐ Other - *specify* ______

Field size: Depth 3 feet Square feet of bottom area 300 feet -

Depth of gravel below distribution pipe - in inches ______

Type of liner *(if required)* ______

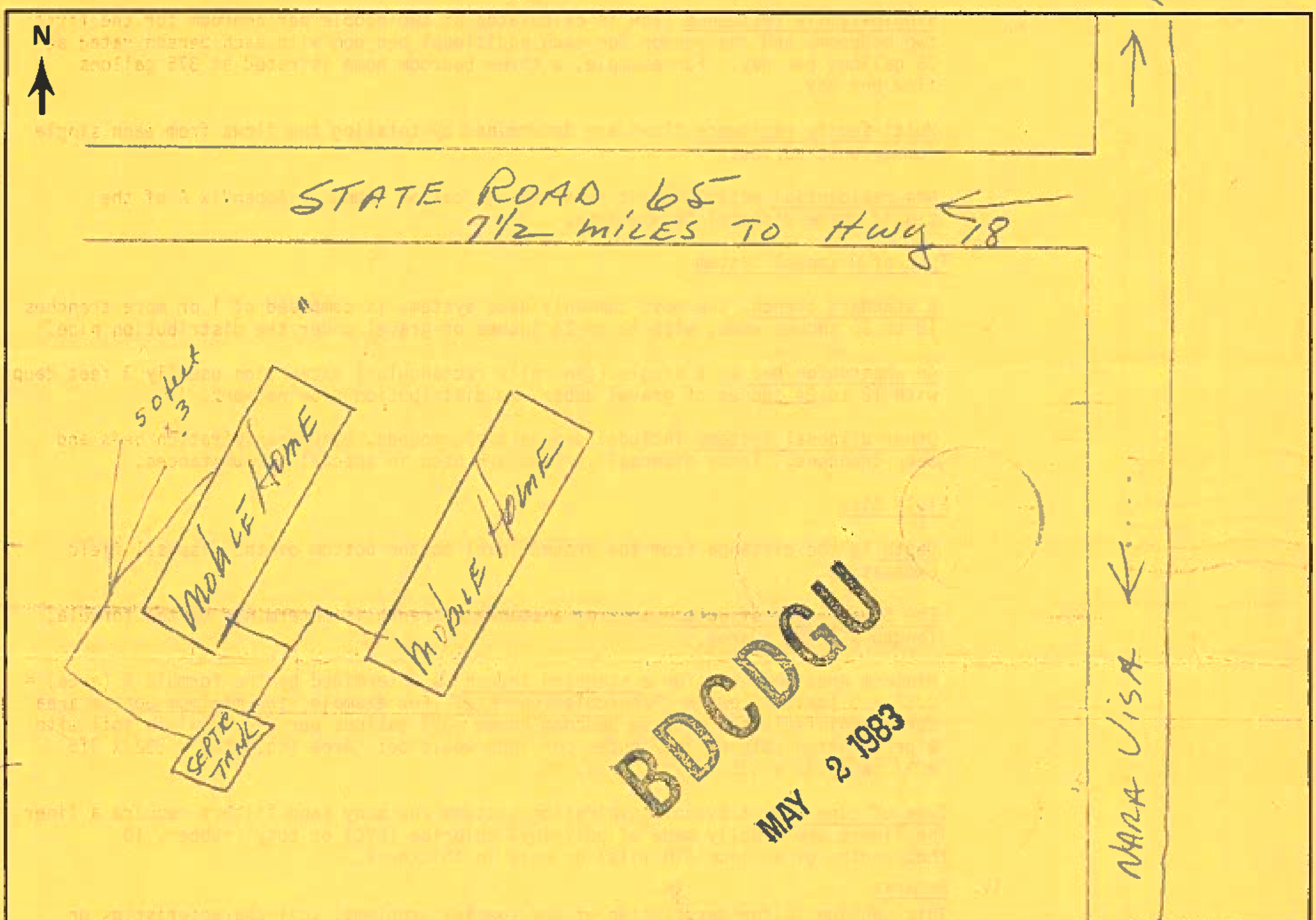
IV. REMARKS: ______

V. PLOT PLAN — Diagram the liquid waste system; include the following landmarks within 200 feet of the system:

a) proposed existing buildings, driveways, water wells, water supply pipes, other liquid waste disposal systems;

b) lakes, reservoirs, streams, arroyos, other water courses, and expected direction of groundwater flow; and

c) property lines and dimensions of the parcel of land where the system is to be located.



VI. APPLICATION

The foregoing information has been submitted to the Environmental Improvement Division as required by Section 102, Subsection B of the Liquid Waste Disposal Regulations adopted by the Environmental Improvement Board. This information is correct and true to the best of my knowledge. I understand that the issuing of the permit does not relieve me from the responsibilities of complying with all applicable provisions of the Liquid Waste Disposal Regulations.

☐ OWNER ☒ CONTRACTOR Clifford L. Dunlap 8 APRIL 83

Signature Date

Amoco Compressor Site Office Bldg.

APPLICATION FOR PERMIT

NM Commerce & Industry Department
Construction Industries Division
Mechanical Bureau
Bataan Memorial Building
Santa Fe, New Mexico 87503

PERMIT 18135[illegible]

OWNER: Dresser Engineering
ADDRESS: Box 646
TOWN / CITY: Clayton, N.Mex.

Residence: Old ☐ New ☐ OCCUPANCY GROUP
Commercial: Old ☐ New ☒

PERMITS AND INSPECTION FEES

13	Each Plumbing Fixture @ $1.00	$ 13.00
1	Each Water Distribution System	$ 1.00
1	Each Building Sewer	$ 2.00
1	Each Septic Tank	$ 3.00
1	Each Water Heater	$ 2.00
	Each Swimming Pool	$
	Each Water Conditioner	$
	Each Evaporative Cooler	$
	Each Vacuum Breaker or Backflow Device	$
	Each Ventilation System	$
	Each Refrigeration System	$
	Each Duct Work System @ $3.00	$
	Each Domestic Hot Water Solar Heating System	$
	Each Solar Space Heating System	$
	Other (Specify)	$

Mercury Test? Yes ☐ No ☐

Yard Line ____ Range
Capped Opening ____ Boiler
Water Heater ____ Central Furnace
Wall Heater ____ Other

Total Gas Units ____ @ $1.00

Minimum Fee for Any Inspection ... $3.00
Re-Inspection for Any Work ... $10.00
Final Inspection/Certificate of Approval ... $5.00 — $5.00
TOTAL $26.00

Applicant of this permit confirms that work performed is in compliance to all applicable New Mexico Laws, Codes, Orders, Rules and Regulations. NOTE: Failure to request a final inspection is in violation of the Construction Industries Licensing Act.

License No. 3066 (Qualifying Party) Clifford Durbin?
Date 18 July 83 Company Santa Rosa Plbg Co.

INSPECTOR'S USE ONLY
Final Inspection
Date .... Inspector ....

PERMIT

TO CONSTRUCT, INSTALL OR MODIFY AN INDIVIDUAL LIQUID WASTE SYSTEM
(Permit is to remain with system)

Thank you

STATE OF NEW MEXICO
HEALTH ENVIRONMENT
Environmental Improvement Division

EID Permit Number 025946 **CID Permit Number** ***(Required by NMMB)*** ____________

Application for permit has been received by the Environmental Improvement Division. The liquid waste disposal system as described therein meets the requirements of the Liquid Waste Disposal Regulations. A permit is hereby issued for the installation or modification of the described liquid waste disposal system in the manner specified in the application for permit or variance, and the following additional conditions:

System Location: [illegible] 7 1/2 miles West on 65

☒ ENVIRONMENTALIST [illegible signature] — *Signature*
☐ ENGINEER — July 29 1983 — *Date*

EID 027B Issued 11/79

ENSOLUM

APPENDIX I
MIT Test Results

From: Stephenson, Scott E
To: Kuehling, Monica, EMNRD
Cc: Bell, Colton A
Subject: BDU 1934-261 API#3005920205 MIT Test
Date: Monday, June 5, 2023 3:21:47 PM
Attachments: image001.png
BDU 1934-261 Chart.pdf
Hughes Chart box calibration #3.pdf
BDU 1934-261 Storm.jpg
Storm during test.jpg
BDU 1934-261 Bottom Bradenhead valve after test.jpg
BDU 1934-261 Bottom valve is Bradenhead.jpg
BDU 1934-261 Chart running.jpg

Good Afternoon Monica,

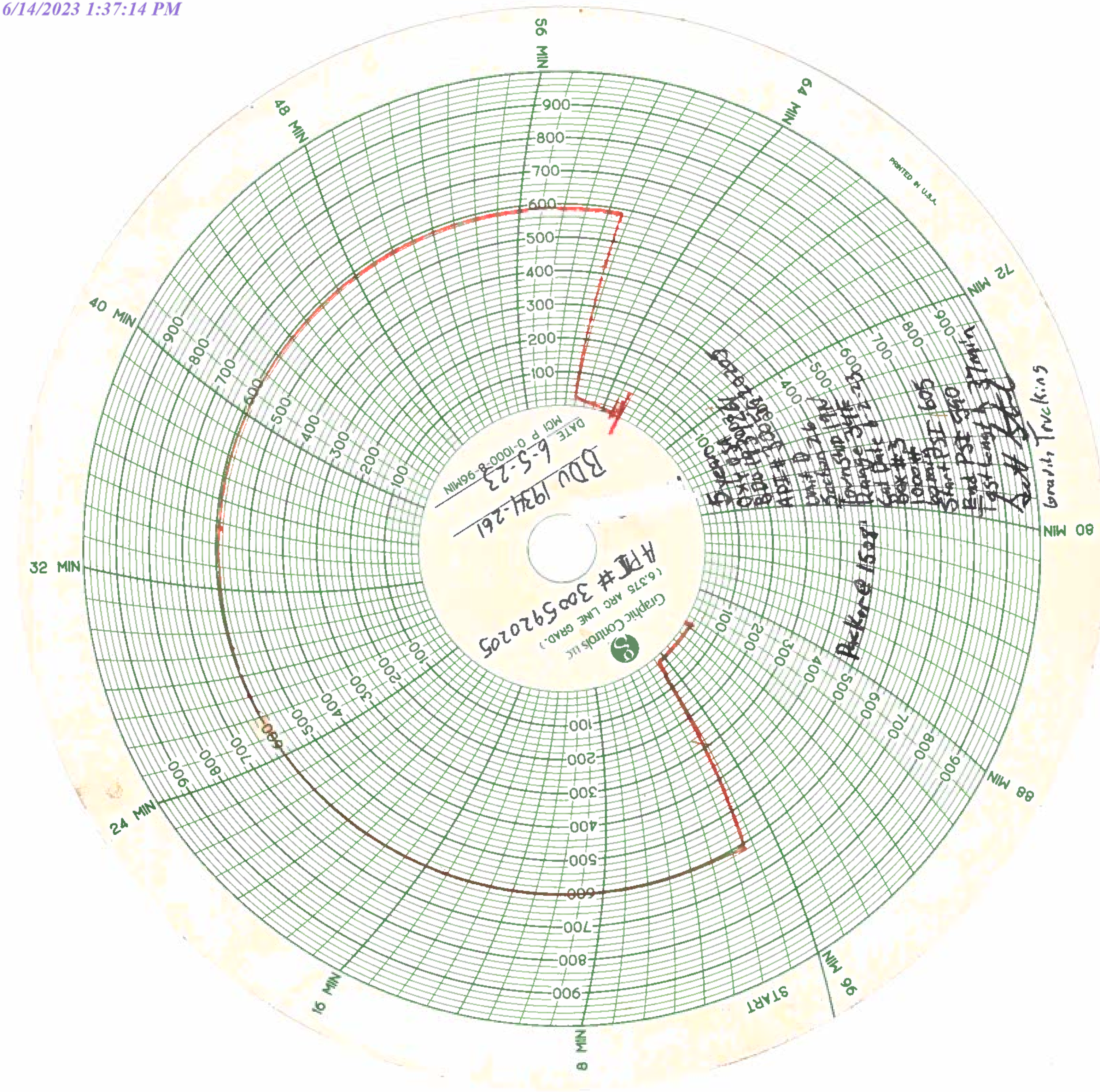
We Preformed the MIT test on BDU 1934-261 today. I have attached the Chart and the pictures you requested.

The Braden head did not have any pressure on it prior to the test and during the test we did not see any type or blow or communication.

If you need anything else from me please let me know.

Thanks

Scott Stephenson
Specialist WO & Compl Sr
ORCM Ops Prod Well Serv N
Cell : 806-470-1039
Office : 806-637-5904



HUGHES METER & SUPPLY CO., INC.

1706 S Slaughter Ave. PO Box 950
Sundown, TX 79372
TEL: 806-229-5811 Fax: 806-229-2001

Calibration Data

Date 4/2/23 Equipment Calibrated #3 8" 1K Chart Box

Dead Weight Tester	Equip. Before Calibration	Equip. After Calibration
100 PSI	PSI	100 PSI
200 PSI	PSI	200 PSI
400 PSI	PSI	400 PSI
600 PSI	PSI	600 PSI
800 PSI	PSI	800 PSI
1000 PSI	PSI	1000 PSI

Remarks

Technician Name Rusty Geisler

Technician Signature Rusty Geisler

ENSOLUM

APPENDIX J
SWD 1934-261D
(API No.30-059-20205)
Compliance Information

From: Maestas, Eric H
To: Prentice, Adrienne (L&C Safety Inc)
Subject: FW: 30-059-20205, Bravo Dome Carbon Dioxide Gas Unit 261

FYI

From: Wilson, Robert K <Robert_Wilson@oxy.com>
Sent: Thursday, January 5, 2023 11:31 AM
To: McFall, Samantha, EMNRD <SamanthaJ.McFall@emnrd.nm.gov>
Cc: Schenkel, Beth V <Beth_Schenkel@oxy.com>; Maestas, Eric H <Eric_Maestas@oxy.com>; Hoffman, Kim <Kim_Hoffman@oxy.com>
Subject: RE: 30-059-20205, Bravo Dome Carbon Dioxide Gas Unit 261

Ms. McFall,

In response to the above referenced NMOCD Violation **(iSJM2229339575)** of missing well signage information, staining under the casing gauge at the wellhead, staining around the flow-back/frac-tanks and missing tank labels, (19.15.16.8; 19.15.29; 19.15.18.16) that were observed during an inspection performed on 10/20/2022 at the **Bravo Dome Carbon Dioxide Gas Unit #261, 30-059-20205**. Please note that the signage issue has been corrected and attached is picture of the new sign that was recently installed. In addition please note that the stain issue under the casing valve and along the frac-tanks was addressed as were the placement of identification labels on the tanks.

If you have any questions or need additional information please contact me.

Thank you,

Robert K Wilson
Regulatory Engineer
Office: 713-985-6991 || 29.105 || Cell: 281-731-8091

From: McFall, Samantha, EMNRD <SamanthaJ.McFall@emnrd.nm.gov>
Sent: Friday, October 21, 2022 12:20 PM
To: Maestas, Eric H <Eric_Maestas@oxy.com>
Subject: [EXTERNAL] 30-059-20205, Bravo Dome Carbon Dioxide Gas Unit 261

Good afternoon,
An inspection was performed on the following well and found a few issues. By Rule

(19.15.16.8, 19.15.29, 19.15.18.16) compliance needs to be achieved within 90 days of the date of this email. When issues are resolved take pictures and send them to me in this email chain, I would greatly appreciate it. Please include API# when sending information regarding wells.

API# 30-059-20205
Issues found: Missing information on sign. Staining under casing gauge. Staining around flow back tanks. No labels on tank
Rule Violation: 19.15.16.8, 19.15.29, 19.15.18.16
Inspection ID: iSJM2229339575

Thank you,

Samantha McFall
Compliance Officer
Oil Conservation Division
Energy, Minerals, & Natural Resources
Cell Phone: (505) 204-5622
Email: samanthaj.mcfall@emnrd.nm.gov

OXY USA, INC.
BDU-1934-261 SWD
API #3005920205
UNIT D, SEC.26-T19N-R34E
500' FNL & 766' FWL
UNION COUNTY, NM
EMERGENCY # 575-374-3000

State of New Mexico
Energy, Minerals and Natural Resources Department

BY ELECTRONIC MAIL ONLY

July 27, 2023

Cole Wallin
OXY USA Inc.
P.O. Box 27570
Houston, TX 77227
Cole_Wallin@oxy.com

RE: **OXY USA Inc. - Notice of an Administratively Complete Discharge Permit Application for Bravo Dome CO_2 Plant**

Dear Mr. Wallin:

The New Mexico Energy, Minerals and Natural Resource Department's Oil Conservation Division (OCD) has reviewed your amended discharge permit application, dated June 13, 2023, for OXY USA Inc. (Oxy), Bravo Dome CO_2 Plant. OCD has determined that the amended discharge permit application is administratively complete.

Given OCD's determination, Oxy must provide public notice within 30 days of receipt of this letter (i.e., August 26, 2023) in accordance with the requirements of 20.6.2.3108(B) NMAC to the general public in the locale of the Plant by each of the methods listed below:

1. Prominently posting a synopsis of the public notice at least 2 feet by 3 feet in size, in English and in Spanish, at the Plant's main entrance and at the Amistad, NM Post Office for 30 days;

2. Providing written notice of the discharge by mail or electronic mail, to owners of record of all properties within a 1/3 mile distance from the boundary of the property where the discharge site is located; if there are no properties other than properties owned by the discharger within a 1/3 mile distance from the boundary of property where the discharge site is located, Oxy shall provide notice to owners of record of the next nearest adjacent properties not owned by the discharger;

3. Providing notice by certified mail, return receipt requested, to the owner of the discharge site if Oxy is not the owner; and

4. Publishing a synopsis of the notice in English and in Spanish, in a display ad at least three inches by four inches ***not*** in the classified or legal advertisements section, in the Union County Leader. Note, the public notice in the application appears to contain an error. The provided longitude should not contain the negative sign. The actual published public notice needs to correct this error.

As per 20.6.2.3108(F) NMAC, the notice must also include the address and phone number within OCD by which interested persons may obtain information, submit comments, and request to be placed on a facility-specific mailing list for future notices and that OCD will accept comments and statements of interest regarding the application and will create a facility-specific mailing list for persons who wish to receive future notices. The proposed public notice needs to replace Shelly Wells with the following OCD contact information:

Leigh Barr – Administrative Permitting Supervisor
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505
(505) 795-1722
LeighP.Barr@emnrd.nm.gov

Within 15-days of completion of the public notice requirements in 20.6.2.3108(B) NMAC, Oxy must submit to the OCD proof of the notice, including affidavit of mailing(s) and the list of property owner(s), proof of publication, and an affidavit of posting, as appropriate.

Also, as part of the discharge permit application, Oxy was required to submit a Closure/Post Closure Plan for OCD approval. OCD has reviewed this plan and hereby approves the Closure/Post Closure Plan. The financial assurance (FA) associated with this plan is $10,672,575. The FA must be on OCD-prescribed forms, or forms otherwise acceptable to the OCD, payable to the OCD. Bond forms can be found at the bottom of OCD's Forms Page located at https://www.emnrd.nm.gov/ocd/ocd-forms/. The FA is due to the OCD within 30-days of email receipt of this letter (i.e., August 26, 2023).

If you have any questions, please do not hesitate to contact me by email or by phone (see above contact information). On behalf of the OCD, I wish to thank you and your staff for your cooperation during this process.

Regards,

Leigh Barr

Leigh Barr
Administrative Permitting Supervisor

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 227510

CONDITIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 227510
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
lbarr	None	7/27/2023