



Department of Toxic Substances Control

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February 17, 2015

Ms. Jane Williams, Director
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Certified Mail No. 7014 1200 0001 4195 2654

DENIAL OF APPEAL OF FINAL MODIFIED HAZARDOUS WASTE FACILITY PERMIT FOR EDWARDS AIR FORCE BASE, CALIFORNIA, ENVIRONMENTAL PROTECTION AGENCY ID. NO. CA1570024504

Dear Ms. Williams:

The Department of Toxic Substances Control (DTSC) has reviewed your petition for review (appeal), dated January 21, 2015, of the permit modification decision issued by DTSC on December 19, 2014, for the open burn/open detonation (OB/OD) units at the Explosive Ordnance and Disposal Range located within the Edwards Air Force Base (EAFB).

Enclosed is DTSC's Order to Deny Petition for Review, Docket PAT-FY14/15-04, dated February 17, 2015. DTSC has determined that the appeal does not meet the criteria for granting a review pursuant to California Code of Regulations, title 22, section 66271.18, subdivision (a). This order constitutes DTSC's final permit decision and is effective on the date of this letter's mailing. The stay of the permit decision pursuant to California Code of Regulations, title 22, section 66271.14, subdivision (b)(2) is hereby vacated.

If you have any questions concerning this appeal decision, please contact me at (916) 322-2817 or via Pauline.Batarseh@dtsc.ca.gov or contact Mr. Paul Ruffin at (916) 255-6677 or via Paul.Ruffin@dtsc.ca.gov.

Sincerely,

// original signed by //

Pauline Batarseh
Permit Appeals Officer

Enclosure (1)

cc: See next page.

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1 **II. JURISDICTION**

2 The Department has jurisdiction over hazardous waste facility permits and the
3 Imposition of conditions on such permits pursuant to the California Health and Safety
4 Code sections 25200 et seq. and California Code of Regulations, title 22, section
5 66270.32 and to issue a decision in permit appeals according to California Code of
6 Regulations, title 22, section 66271.18.

7 **III. BACKGROUND**

8 **A. LOCATION AND DESCRIPTION OF THE FACILITY**

9 The location, permit history, and description of the facility are presented in the
10 Permit as follows:

11 **LOCATION**

12 Edwards Air Force Base (AFB) is located east of Rosamond,
13 approximately 60 miles north-northeast of Los Angeles, California, on the
14 western edge of the Mojave Desert. Edwards AFB occupies
15 approximately 310,000 acres of desert in portions of three counties: Kern,
16 Los Angeles, and San Bernardino.

17 Edwards AFB Main Base is situated on the western edge of Rogers Dry
18 Lake, which is centrally located on Edwards AFB. The Hazardous Waste
19 Support Facility (HWSF) is located on the north side of the Main Base,
20 approximately 5 miles south of the northern boundary, and contains one
21 (1) hazardous waste management unit (unit) designated as Building 4916.
The HWSF address is 446 North Rosamond Boulevard. The latitude and
longitude are N34° 56' 38.79" W117° 53' 46.13".

22 The Precision Impact Range Area (PIRA) covers a large portion of the
23 eastern part of the base. The Explosive Ordnance Disposal (EOD) Range
24 is located in the southwest corner of the PIRA, approximately one-third
25 (1/3) mile north of the Kern County border with Los Angeles County, and
26 contains two (2) units designated as Open Burn (OB) and Open
27 Detonation (OD). The GPS coordinates of the centerpoint of the EOD
28 Range are Latitude 34° 49.728' N, Longitude 117° 48.063' W.

The legal boundaries of the units are shown on the detailed topographic
maps and site plans provided in Appendix C.

PERMIT HISTORY

1
2 The original storage pennit was issued to Edwards AFB on June 30, 1995
3 and was effective for a period of ten (10) years. It expired on
4 June 30, 2005. The permit renewal effective on November 7, 2005
5 authorized continued operations, for the period specified, based upon the
6 provisions of the current Part A and Part B Applications, and the
7 information and conditions contained in this permit. Modifications to this
8 Permit or the Operation Plans identified in Part III.1. are allowed as per
9 22 CCR sections 66270.41 or 66271.42. All modifications made to this
10 Permit and/or Operation Plans are listed and described in Attachment B to
11 this Pennit.

DESCRIPTION

12 The Edwards AFB's HWSF is surrounded by a chain-link and barbed-wire
13 fenced area of approximately 2.8 acres (300 feet x 400 feet) on Edwards
14 AFB property, outside of which are paved and unpaved areas. This
15 HWSF serves as a central point for the collection of a full range of
16 hazardous wastes (acids, caustics, batteries, oxidizers, solvents, plastics,
17 resins, etc.), generated base-wide. Building 4916 is used for hazardous
18 waste (HW) storage and includes 4000 sq. ft. of enclosed HW storage.
19 South of Building 4916, there are 3,100 sq. ft. of HW storage area
20 consisting of three covered bays (4916A, 4916B, and 4916C). Hazardous
21 waste is stored in 55-gallon drums and other Department of
22 Transportation-approved containers. Containers are grouped in two
23 separate storage areas inside Building 4916 according to compatibility.
24 Each is equipped with its own secondary containment with an impervious
25 floor sloped to subsurface collection sumps in each area. There is a third
26 containment area located in the center of the building which is used for
27 drum loading and unloading activities. The HWSF has a maximum
28 hazardous waste storage capacity of 40,480 gallons.

29 This hazardous waste management unit also includes the asphalt paved
30 loading and waste consolidation area, the asphalt driveway and pavement
31 area inside the gate, the front secondary containment area in front of
32 Building 4916, the concrete walkways adjacent to Building 4916, Building
33 4917, an open shed in the northwest corner of the site (20 feet by 76 feet),
34 a concrete pad on the northern end of the site, and Building 4922. (See
35 Figure BB-1 of the Hazardous Waste Support Facility Permit Application
36 document.)

37 Building 4917 is used to store miscellaneous inert supplies, such as empty
38 drums, packing materials, etc. Empty drums are stored in two other
39 areas: the open shed in the northwest corner and the concrete pad on the
40 northern end of the site. The outdoor HW storage areas are curbed to

1 provide a barrier from stormwater run-on to HW storage areas and to
2 prevent potential spills from entering stormwater runoff.

3 Building 4922 is an administrative field office.

4 All containers are placed primarily on pallets, and the secondary
5 containment systems for all areas are constructed of concrete and sealed
6 with a chemical-resistant epoxy sealer.

7 The EOD Range is a 700 foot by 1400 foot rectangular area surrounded
8 by 8-foot high chain-link fences that are topped with three strands of
9 barbed wire. The barbed wire and the chain-link fence together have an
10 effective height of 9 feet. The EOD Range is approached using one of two
11 graded dirt roads that intersect near the EOD Range. Access to and from
12 the EOD Range itself occurs via Photo Resolution Road through a single
13 gate located on the south end of the facility. There is an additional locked
14 gate on the north end that is to be used only as an emergency exit during
15 treatment operations. OB/OD activities are conducted on the ground.
16 There are two large, flat, cleared areas for the OB/OD operations. The
17 cleared areas each have a 300-foot radius and are maintained free of
18 vegetation. The OD Unit is north of the OB Unit and farthest from Photo
19 Resolution Road to provide extra separation distance from the road. The
20 OD Unit is accessed through the OB Unit area. A steel storage building
21 used to store miscellaneous equipment is located at the south end of the
22 EOD Range. An 8-foot tall earth barrier located within the OB Unit
23 provides additional protection to the building and areas immediately south
24 of the OB Unit from any thrown propellant. Five monitoring wells were
25 installed around the perimeter of the EOD Range. There are no other
26 engineering preparations or materials of construction associated with the
27 units. The area surrounding the units, within and outside the fence line, is
28 empty, open desert land.

A minimum distance from the EOD Range has been established as a
"buffer zone" to protect base personnel from potential hazards. This
distance varies, but a minimum of 2500 feet for treatment of 500 lbs. of
explosives to a minimum of 5,000 feet for a maximum treatment of 2,000
lb. of explosives are required.

OB and OD events are set up by placing the waste items in the
approximate center of the OB or OD Unit on the ground. The actual
physical arrangement is dictated by the configuration of the items to be
treated. Operations are conducted so that they occur only during
acceptable meteorological conditions.

1 **B. PERMIT MODIFICATION DECISION**

2 On May 22, 2012, DTSC issued a technical completeness determination for the
3 Class 3 permit modification application submitted by Edwards AFB for the OB/OD units.
4 DTSC issued a public notice for a public comment period for the draft permit
5 modification and draft Environmental Impact Report (EIR) from August 13, 2013, to
6 October 14, 2013, and held a public hearing on September 17, 2013. On
7 March 7, 2014, DTSC issued a final decision on the permit modification, but withdrew
8 the permit decision on May 7, 2014, after it was determined that certain persons and
9 organizations were not notified of the public comment period. An appeal of the permit
10 decision was filed by Mr. Phillip Chandler on April 7, 2014. On May 7, 2014, the
11 Department's Permit Appeal Officer¹ responded to Mr. Chandler that the appeal was
12 timely, but the withdrawal of the permit decision moots the appeal and that a formal
13 review of the appeal would not be conducted.

14 DTSC held a second public comment period from July 22, 2014, through
15 September 19, 2014, and a second public hearing was held on August 27, 2014. DTSC
16 prepared a Response to Comments, dated December 19, 2014, that responded to the
17 comments received during both public comment periods. On December 19, 2014, the
18 Department issued a Notice of Final Hazardous Waste Facility Permit Modification
19 Decision and established a period, ending on January 22, 2015, for filing a request for
20 review of the decision under California Code of Regulations, title 22, section 66271.18.

21 **C. PERMIT APPEAL PROCESS**

22 Pursuant to California Code of Regulations, title 22, section 66271.18,
23 subdivision (a), the period for filing a petition for review (appeal) of the Edwards AFB
24 permit modification decision ended on January 22, 2015. A petition for review was
25 submitted by Ms. Jane Williams (Petitioner) on January 21, 2015. On
26 January 26, 2015, the Permit Appeals Officer issued a letter to Mr. Herbert Roraback,

27
28 ¹ Ms. Pauline Batarseh, Chief, Policy Implementation and Support Branch, Hazardous Waste
Management Program.

1 Chief, Environmental Quality Section, of Edwards AFB, stating that pursuant to
2 California Code of Regulations, title 22, section 66271.14, subdivision (b)(2), the permit
3 decision has been stayed until the Department has completed review of the petition and
4 determined which, if any, of the issues raised in the petition meet the criteria set forth in
5 California Code of Regulations, title 22, section 66271.18 for granting review.

6 **IV. STANDARD OF REVIEW**

7 California Code of Regulations, title 22, section 66271.18, subdivision (a),
8 provides that any person who filed comments, or participated in the public hearing, on a
9 draft permit decision, during the public comment period for the draft permit decision,
10 may petition the Department to review any condition of the final permit decision to the
11 extent that the issues raised in the petition for review were also raised during the public
12 comment period for the draft permit decision, including the public hearing. In addition,
13 any person who did not file comments or participate in the public hearing on the draft
14 permit may petition the Department for review of the final permit decision, but only with
15 respect to those changes in the final permit decision from the draft permit decision.

16 California Code of Regulations, title 22, section 66271.18, subdivision (a), also
17 provides, in pertinent part, that:

18
19 The petition shall include a statement of the reasons supporting that
20 review, including a demonstration that any issues being raised were raised
21 during the public comment period (including any public hearing) to the
22 extent required by these regulations and when appropriate, a showing that
23 the condition in question is based on:

- 24 (1) a finding of fact or conclusion of law which is clearly erroneous, or
 - 25 (2) an exercise of discretion or an important policy consideration which
26 the Department should, in its discretion, review.
- 27
28

1 California Code of Regulations, title 22, section 66271.12, specifies the extent to
2 which issues are required to be raised during the public comment period for a draft
3 permit decision. Specifically, this section states that:

4 All persons, including applicants, who believe any condition of a draft
5 permit is inappropriate or that the Department's tentative decision to deny
6 an application or prepare a draft permit is inappropriate, must raise all
7 reasonably ascertainable issues and submit all reasonably available
8 arguments and factual grounds supporting their position.

9 Because Petitioner submitted comments on the draft permit decision during the
10 public comment period, she has standing to petition for review of any issues raised
11 during the public comment period for the draft permit decision, as well as any issues
12 that pertain to changes from the draft to the final permit decision.

13 To the extent that the petition for review raises issues that relate to the EIR; the
14 California Environmental Quality Act (CEQA) provides a separate judicial appeal
15 process to resolve disputes concerning compliance with CEQA. The permit appeal
16 process is not the proper forum to raise CEQA issues, as the regulation governing
17 permit appeals provides that petitions for review may request review of permit
18 conditions only. Therefore, any appeal comments that pertain to CEQA will not be
19 addressed.

20 **V. FINDINGS**

21 The Department has reviewed the appeal and hereby responds to the arguments
22 and comments presented in the appeal. The Petitioner's appeal comments and the
23 Department's responses are set forth below. The Department has determined that
24 none of the appeal comments filed by Petitioner meet the criteria for granting review
25 pursuant to the California Code of Regulations, title 22, section 66271.18, subdivision
26 (a). The following terms used throughout this order are defined as follows:

- 27 1. "permit comment" refers to a comment submitted on the draft permit
28 during the review period;

- 1 2. "response to comment" refers to DTSC's Office of Permitting's response to
2 a "permit comment" issued with the final permit decision; and,
3 3. "appeal comment" refers to one of the five (5) issues from the petition for
4 review as identified by the Department based on common subject matter
5 and as numbered in this "Order to Deny Petition for Review." All of the
6 substantive text from the petition for review has been placed into one of
7 the appeal comments.

8 **APPEAL COMMENT 1: Petition for Review, pages 1 and 2**

9
10 As you know, the Resource Conservation and Recovery Act was passed
11 by Congress in 1976. The Environmental Protection Agency has passed
12 various implementing regulations since then. The operating language on
13 open burning/open detonation of hazardous waste which are waste
14 explosives are contained in Title 40, Section 266.382.

15 **Title 40 Section 266.382**

16 "Open burning of hazardous waste is prohibited except for the open
17 burning and detonation of waste explosives. Waste explosives include
18 waste which has the potential to detonate and bulk military propellants
19 which cannot safely be disposed of *through other modes of treatment.*"
20 *emphasis added.*

21 As you can see, from the plain language of the regulation, the open
22 burning/detonation of hazardous waste explosives would be prohibited
23 under the statute if safer modes of treatment were available. Moreover, in
24 the preamble to the rule in 1980, the EPA states:

25 "Although not proposed as an interim status standard (under RCRA) a ban
26 on open burning of hazardous wastes was contained in the General
27 Facility Standards of the proposed regulation. This requirement has been
28 incorporated into the interim status standards for thermal treatment
because the potential human health hazards associated with the practice
dictate that open burning be ended now. Comments received on the
proposed standard centered around the military's need to dispose of
explosives in the open. The Agency agrees that open burning and open
detonation are currently the only alternatives for disposal of most
munitions, and thus a modified and more detailed version of the proposed
variance for waste explosives has been retained in the final rules." 45 Fed.
Reg. at 33,217

1 Over the past 15 years, the Department of Defense Explosives Safety
2 Board (DDESB) has certified a number of technologies as safe for the
3 destruction of hazardous wastes which are explosive. Those technologies
4 are now in use by the Department of Defense and the private sector for
5 the destruction of explosive hazardous waste. Some of these
6 technologies were part of a joint technology assessment project which
7 included the Department of Defense, the Environmental Protection
8 Agency, the states affected by our nation's chemical weapons stockpile,
9 and citizens from those states, (the Assembled Chemical Weapons
10 Assessment Program or ACWA). Some of these technologies have been
11 developed by other countries facing the challenge of destroying older
12 stockpiles of munitions in Europe and Asia.

13 It is time to recognize that the exclusion adopted by the EPA in 1980 for
14 the open burning/detonation of waste explosives is no longer relevant.
15 Alternatives, which are much safer, and in some cases less expensive,
16 clearly exist. These alternative technologies are already hard at work: on
17 Navy aircraft carriers, in the nation's chemical weapons demilitarization
18 program, and in the conventional weapons destruction program.

19 These technologies are the fruits of our intellectual endowment and our
20 country's strong commitment to safeguarding both the health of our
21 nation's residents and the viability of our natural resources. It is time that
22 we embrace the benefits of our all our hard work and adopt the use of
23 these advanced treatment technologies for the disposal of our nation's
24 military wastes.

25 We are in the process of compiling a list of all of the advanced treatment
26 technologies approved by the Department of Defense Explosive Safety
27 Board (DDESB). We are aware of five technologies currently which have
28 been issued DDESB certificates and RCRA permits by various states:
29 Dynasafe owned by a German conglomerate, DAVINCH owned by Kobe
30 Steel, Controlled Detonation Chambers owned by CH2M Hill and UXB,
31 Super Critical Water Oxidation owned by General Atomics in San Diego,
32 CA and Hydrolysis, which, to our knowledge, is primarily owned and
33 operated the by the US Army.

Technology	States Pennitted to Operate In (tentatively)
Super Critical Water Oxidation	Louisiana, Kentucky, Illinois, Utah
Dynasafe	Utah and Kentucky
DAVINCH	Kentucky
Controlled Detonation Chamber	Utah, California, Kentucky, Maryland
Hydrolysis	Illinois, Maryland

We believe that these technologies would all be available for use to destroy hazardous wastes generated at Edwards Air Force base which are now destined for open burning/open detonation. Since all of these technologies have certificates to operate from the Department of Defense to destroy the exact kinds of waste being generated at Edwards, it is simply not defensible for the Air Force to say that these technologies are not available.

Response: The Petitioner raises an issue that DTSC should not issue a permit for the OB/OD units because alternative technologies are available. The issue was raised during the public comment period in comments identified as Comments #6, #7, and #8 in DTSC's Response to Comments. Petitioner's comments and DTSC's responses are copied here.

COMMENT #6

Because of the concerns about emissions from OB/OD facilities our members were instrumental in getting the Donovan Blast Chamber to come to California to detonate munitions at the Santa Susana Laboratory. We helped organize and host a Symposium on Alternatives to OB/OD with then director of DTSC, Ed Lowry, which DTSC staff were involved in planning and attending. We actively supported the permitting of the Donovan Blast Chamber through the Department of Defense Explosives Safety Board approval process. Subsequently to being permitted to destroy munitions, the Donovan Blast Chamber patents were sold to CH2M Hill and renamed the Controlled Detonation Chamber (Chamber).

Ironically, in Section 2.1.1 of the DEIR the document says "the DOD will explore alternatives to OB/OD for the treatment of these wastes, when and if they become available." (page 2-2) However, the Controlled Blast

1 Chamber has been in use in California for over a decade. It has been
2 used at Fort Hunter Liggett, Mare Island, and Camp Roberts, as well as
3 at the Santa Susana site. The Chamber has also been used at the Camp
4 Navajo in Arizona, at the Massachusetts Military Reservation in
5 Massachusetts, and at the Redstone Arsenal in Alabama. The Chamber
6 has been used safely in numerous campaigns to destroy propellants and
7 energetics, it can be sized to fit the needs of Edwards AFB, and it is
8 approved for use by the DOD Explosives Safety Board. (see Current
9 Status of Transportable Controlled Detonation Chambers Offered by
10 CH2M Hill presented at the National Defense Industrial Association Global
11 Demilitarization Symposium and Exhibition in Reno, Nevada, May 14-17,
12 2007.)

13 The Controlled Detonation Chamber meets the DOD TMS-1300 standard,
14 the ASTM Impulse Loaded Code Case, and standards set by the
15 American Welding Society and the American Institute of Steel
16 Construction.

17 DTSC RESPONSE

18 The commenter suggests that a Controlled Detonation Chamber (CDC)
19 could be used as an alternative to treat waste munitions at Edwards
20 instead of using OB/OD due to concerns from emissions.

21 In regards to public concerns from OB/OD emissions, DTSC required
22 Edwards to complete an HRA that has shown that the risk of cancer and
23 non-cancer health effects from the emissions generated from the
24 maximum amount of waste they are requesting authorization to treat
25 would be well below the acceptable threshold.

26 The CDC was discussed in Appendix E of the DEIR. CDCs have been
27 successfully used in the past to treat munitions. However, because of the
28 cost to operate a CDC, low volume of Edwards waste streams, and low
29 risk resulting from OB/OD treatment (as determined in the HRA), it was
30 determined that the use of a CDC would not substantially lessen any
31 potential environmental impacts resulting from the OB/OD treatment
32 operations at Edwards.

33 COMMENT #7

34 Moreover, the Department of Defense has looked at other ways to
35 mitigate the impacts of OB/OD facilities as well as the impacts of munition
36 range activities. These alternatives were not disclosed, addressed, or
37 examined in the DEIR. They include using soil treatments to help
38 immobilize the munition constituents. (In Place Soil Treatments for
39 Prevention of Explosives Contamination, ER-200434, SERDP/ESTCP).

1 DOD has also looked at the deactivation of energetics with reuse. (Safe
2 Deactivation of Energetic materials and Use of By-products as Epoxy
3 Curing Agents, SERDP project CP-1070, November 2001). Lime has
4 been used to slow or stop the movement of energetics and metals through
5 the soil in an effort to stop groundwater contamination from occurring at
6 ranges and OB/OD sites. (Open Burn/Open Detonation Area Management
7 Using Lime for Explosives Transformation and Metals Immobilization,
8 October 2011, ER-200742, ESTCP). DCAP does not endorse any of
9 these technologies, but mentions them here to underscore the inadequacy
10 of the alternatives analysis in the DEIR.

11 DTSC RESPONSE

12 The commenter cites technologies alternative to OB/OD that she feels
13 were left out of the DEIR and states that therefore the alternatives analysis
14 in the DEIR is inadequate.

15 Two of the alternatives mentioned (In Place Soil Treatments for
16 Prevention of Explosives Contamination and Open Burn/Open Detonation
17 Area Management Using Lime for Explosives Transformation and Metals
18 Immobilization) appear to address technologies that are used for soil
19 remediation or mitigation. Remediating soils is not the purpose of the draft
20 permit or DEIR; therefore it would not be appropriate to analyze these
21 alternatives. The DEIR addresses alternatives to treatment of waste
22 Propellant, Explosives, and Pyrotechnics (PEP) and PEP contaminated
23 laboratory waste by OB/OD on pages 7-1 through 7-9.

24 The deactivation of energetic materials using organic amines and reusing
25 the by-products as epoxy curing agents was disclosed and addressed in
26 Appendix E of the DEIR.

27 COMMENT #8

28 The author served as a member of the Nonstockpile Chemical Material
Command Core Group, a group of experts advising the DOD about the
challenges of OB/OD as a treatment for the destruction of chemical
warfare agent. As part of this effort, the DOD created the Explosive
Destruction System using a hydrolysis technology. This same technology
was just used to destroy the chemical weapon components found in Syria.
It has been used successfully at a number of chemical weapons sites
across the country including Spring Valley in Washington DC, and at the
Anniston Army Depot, to name a few. As part of our longstanding effort to
stop the combustion of military munitions, our executive director served as
an advisor to the Chemical Weapons Working Group, a key group working
to end the incineration of our nation's chemical weapons program. The
DOD, states, and affected communities formed a federal advisory group to

1 look at alternatives to the incineration of our nation's chemical stockpiles.
2 Super Critical Water Oxidization (SCWO) became one of the technologies
3 of choice and recently three SCWO units were manufactured in (ironically)
4 San Diego, California and shipped to Kentucky. These SCWO units will
5 be used to demilitarize the chemical warfare agents which are
6 energetically configured at the Bluegrass Army Depot near Berea,
7 Kentucky. I see no mention of the SCWO technology being used to
8 demilitarize the wastes being generated at Edwards AFB despite it being
9 effectively used by both the Navy and the Army to destroy munitions. (see
10 the work of the Chemical Weapons Working Group at cwwg.org)

7 DTSC RESPONSE

8 The commenter states that a SCWO unit, which is being used to
9 demilitarize chemical warfare agents, was not discussed by DTSC and is
10 an effective alternative to OB/OD at Edwards.

11 The draft permit does not allow chemical or biological warfare agents to be
12 treated by OB/OD. The RCRA Part B/Subpart X Permit Application for the
13 Explosive Ordnance Disposal Range at Edwards Air Force Base Edwards
14 AFB (Permit Application) states that Edwards "does not handle biological,
15 chemical or nuclear munitions. The munitions used at Edwards AFB are
16 in support of the following activities:

- 15 • Aircraft RDT&E operations;
- 16 • Warehoused munitions identified by the MSA inspection schedule
17 tracking program, which stores information about the life cycle of each
18 munitions lot and identifies munitions items with an expired life cycle;
19 and
- 20 • Miscellaneous munition shipments from foreign armed forces used in
21 RDT&E operations at Edwards AFB in support of multinational
22 programs and foreign military sales."

22 The SCWO technology is discussed in Appendix E of the DEIR as one of
23 the alternative treatment technologies to OB/OD. The main issue with the
24 technology, other than higher cost, comes from the fact that the waste
25 propellants generated at Edwards are mainly in solid form and are in
26 relatively small quantities. The treatment would require additional
27 handling of the waste to make slurry, which could result in additional
28 impacts.

1 The Permit has two similar unit specific special conditions in Part IV for the
2 Explosive Ordnance Disposal Range Open Detonation (OD) Unit and the Explosive
3 Ordnance Disposal Range Open Burn (OB) Unit which require reports on the status of
4 alternative technologies.

5
6 8. One year after the effective date of addition of the OD unit to the
7 Permit, and every two years thereafter, the Permittee shall submit a report
8 for DTSC's approval on the status of alternative technologies to OD that
9 are appropriate for use at the Facility. The report shall include a
10 certification that the information is the best and most current information
11 available to the Permittee. This condition shall be met in accordance with
12 Part V. Special Condition 5.

13
14 8. One year after the effective date of addition of the OB unit to the
15 Permit, and every two years thereafter, the Permittee shall submit a report
16 for DTSC's approval on the status of alternative technologies to OB that
17 are appropriate for use at the Facility. The report shall include a
18 certification that the information is the best and most current information
19 available to the Permittee. This condition shall be met in accordance with
20 Part V Special Condition 5.

21
22 Appeal Comment 1 does not request a review of a condition of the Permit, nor
23 does it identify a change from the draft to the final permit; therefore the Permit Appeals
24 Officer finds that the Petitioner has failed to meet the burden set forth in the California
25 Code of Regulations, title 22, section 66271.18(a) that a review of Appeal Comment 1
26 should be granted, therefore review of Appeal Comment 1 is denied.

27
28 By way of comment, the Permit Appeals Officer notes that the Petitioner in
Appeal Comment 1 does no more than reiterate that alternative technologies are
available, recites alternatives that were considered in the draft EIR (see Table 5.1,
Appendix E); and indicates that they are in the process of compiling a list of advanced
treatment technologies; while providing examples of some technologies that have
allegedly been approved by the Department of Defense. The Petitioner in Appeal
Comment 1 does not allege that DTSC's exercise of discretion or factual review of

1 available alternatives in this permitting decision is improper based upon the
2 consideration of the alternatives presented in Appendix E of the draft EIR

3 **APPEAL COMMENT 2:** Petition for Review, page 3, paragraph 1

4
5 It should be noted that the Health Risk Assessment done on the OB/OD
6 facility at Edwards AFB would not conform to the new health risk
7 assessment policies issued by the Office of Environmental Health Hazard
8 Assessment. If the DTSC continues in its permitting of this facility, at the
9 very least, the emissions inventories should be updated and re-run in the
10 HARP model which the OEHHA recently updated and maintains.

11 **Response:** The Petitioner raised as an appeal that the Health Risk Assessment
12 (HRA) was not performed according to the latest models from the Office of
13 Environmental Health Hazard Assessment (OEHHA).

14 The Permit Appeals Officer denies review of Appeal Comment 2 because the
15 Petitioner has failed to meet the burden to establish that a review of this appeal
16 comment should be granted pursuant to the criteria set forth in California Code of
17 Regulations, title 22, section 66271.18, subdivision (a). The Permit Appeals Officer
18 finds that during the public comment period, Petitioner did not raise the issue that the
19 HRA was not performed according to the latest OEHHA model; nor does the Petitioner's
20 Statement of Reasons supply such information. Appeal Comment 2 does not request a
21 review of a condition of the Permit, nor does it identify a change from the draft to the
22 final permit.

23 By way of comment, the Permit Appeals Officer notes that a health risk
24 assessment is required for permitting the miscellaneous unit, but that the use of the
25 OEHHA HRA Guidelines or HARP software is not mandated by regulation. They are
26 required for the Air Toxics "Hot Spots" program, but can also be used for health risk
27 assessments used in other programs (e.g., facility permitting). See
28 <http://www.arb.ca.gov/ab2588/riskassess.htm>.

1 The Edwards OB/OD health risk assessment used the 2003 OEHHA Guidelines
2 plus other OEHHA and USEPA risk assessment documents. The update for the 2003
3 OEHHA Guidance is under review (November 2014) and is a draft document. See
4 http://www.oehha.ca.gov/air/hot_spots/Sept2014HotSpotsRags_SRP.html.

5 **APPEAL COMMENT 3:** Petition for Review, page 3, paragraphs 2 to 5

6
7 Our earlier comments regarding how the state can say that an adequate
8 risk assessment was performed without knowing what the constituents of
9 the waste being burned are, was responded to by stating: "The DIER
10 does not go into detail with this information because its purpose is to
11 disclose impacts to the environment from the treatment of the waste by
12 OB/OD. Therefore, the emissions or contaminants of concern that are
13 generated from the treatment of the waste are the focal point. Not the
14 chemical makeup of the wastes on their own." How can you know what is
15 being emitted without knowing what is in the waste?

16
17 Moreover, at 4.2.1.5 in Appendix B of the Health Risk Assessment it
18 states that "...no assumptions were made in regards to estimating
19 possible emissions of uncombusted constituents from and PEP (waste
20 explosives) categories." One of the premier critiques of OB/OD is that it
21 does not combust all the waste, and destruction efficiencies of 80% are
22 often referenced in the literature. This is precisely why groundwater
23 contamination has occurred so often at OB/OD facilities....what ends up
24 in groundwater is waste that was clearly not combusted. Why then, does
25 the risk assessment make no estimate of the amounts of uncombusted
26 chemicals that will be going into the air? This oversight understates risks
27 from the operation of the OB/OD facility.

28
29 There are also estimates of dioxin and furan emissions from only 4 PEPS
30 of 18 and 3 PEPS of 18, but it is possible that all 18 of the categories of
31 PEPS (waste explosives) would produce dioxins and furans and possibly
32 other products of incomplete combustion. This also greatly understates
33 the risk from the operation.

34
35 It is clear from the numerous tests that DOD has run on the emissions
36 from OB/OD that the DOD does not know what is being emitted from
37 these units....that uncertainty is greatly increased when you do not know
38 what the constituents of the waste. The DTSC continues to state that the
39 HRA ran over 140 chemicals of concern. There are over 80,000
40 chemicals in commercial production in this country, and over 3500
41 chemicals produced at more than a million pounds per year. We are not
42 placated that the HRA ran 140 of these. The HRA needs to be run with

1 the chemicals that are actually in the waste or emitted from burning the
2 waste.

3 **Response:** The Petitioner raises as an appeal comment that air emissions from
4 the OB/OD are not evaluated properly based on the constituents of the waste material
5 undergoing the OB/OD process because the makeup of the PEP is not fully known and
6 that combustion of the PEP material is incomplete.

7 The issue was raised during the public comment period in comments identified
8 as Comments #12, #15, #16, and #25 In DTSC's Response to Comments. Petitioner's
9 comments and DTSC's responses are copied here

10 **COMMENT #12**

11 "The hazardous waste treated at the EOD Range consists almost entirely
12 of nonstandard items." DEIR, page 7-6

13 "Ninety percent of the reactive waste comes from the AFRL, it is not
14 possible to characterize it." DEIR Page 7-3

15 In the DEIR, it states that the majority of the munitions to be
16 burned/detonated at the facility are experimental energetics generated
17 from the labs at Edwards AFB. From the information presented in the
18 DEIR it is not possible to know what is in the materials being burned,
19 therefore it is impossible to know what will be emitted into the air, soil, and
20 water.

21 **DTSC RESPONSE**

22 The commenter states that it is not clear in the DEIR what the energetics
23 generated from Edwards' labs are made of and therefore DTSC does not
24 fully know what is being emitted from the OB/OD operation.

25 The first statement quoted by the commenter from page 7-6 in the DEIR is
26 taken from a section that discusses offsite treatment and disposal as one
27 of the alternatives to onsite OB/OD. Referring to the hazardous wastes to
28 be treated by OB/OD as "non-standard items" is simply saying that there
are difficulties when trying to fit the hazardous wastes into the standard
classification guidelines used by the Department of Transportation.

Page 7-3 from the DEIR states the following:

1 "Because over 90 percent of Edwards' reactive hazardous waste
2 comes from the AFRL facilities, it is not possible to classify the
3 waste for transportation on public roads."

4 Having classification issues associated with transporting the hazardous
5 waste does not mean it is impossible to know what is in the material being
6 treated by OB/OD. The make-up of the waste energetic propellants
7 generated by the Air Force Research Lab (AFRL) is known and described
8 in Edwards' Permit Application. They contain ammonium
9 perchlorate/nitrate oxidizers, aluminum powder fuel, poly organic binding
10 agents, iron oxide powders, and epoxy curing agents. The Permit
11 Application states "the chemical makeup of the different formulations
12 within a propellant type does not vary significantly. The variations in
13 different propellant formulations are usually a matter of physical
14 parameters such as particle grain size or small variations in constituent
15 quantities." Edwards also uses a batch sheet form in their labs to provide
16 the chemical ingredients used in the propellants. Edwards provides an
17 example of this form in their Permit Application. The form "describes the
18 ingredient list used by AFRL personnel to mix the propellant and provides
19 chemical analysis data that can be used to determine the appropriate
20 treatment method for the waste propellant material."

21 The DEIR does not go into detail with this information because its purpose
22 is to disclose impacts to the environment from the treatment of hazardous
23 waste by OB/OD. Therefore, the emissions or contaminants of concern
24 that are generated from the treatment of the waste are the focal point. Not
25 the chemical makeup of the wastes on their own.

26 COMMENT #15

27 Conclusion:

28 Department of Defense policy requires all military ranges to be operated in
ways that ensure their long-term viability to meet the national defense
missions while protecting human health and the environment. These
policies further require the DOD to respond to a release or substantial
threat of a release of munitions constituents to off range areas. (DOD
Directive 4715.11, www.dtic.mil/whs/directives/corres/pdf/471511p.pdf).
There are many constituents which can travel through the air and subsoils
contaminating groundwater and air. From the DEIR, Edwards AFB states
that it does not know the constituents that are the waste it is producing.
Why then would the state give permission for those unknown constituents
to be released into the air, soil, and water of the state?

1 **DTSC RESPONSE**

2 The commenter states that the constituents of the waste treated by
3 OB/OD are unknown and questions how the State could authorize the
4 treatment.

5 The commenters' reference to the DOD policy is noted. The chemical
6 ingredients used in propellants generated at Edwards are known. Please
7 see response to comment #12.

8 The HRA evaluated the exposure risk of approximately 140 COCs that
9 may result from an OB/OD event. Please see response to comment #9.

10 **COMMENT #16**

11 It is not lawful for the state to give permission to release pollutants which
12 are unknown into the environment. The health risk assessment performed
13 for this permit is clearly inadequate when it states that the emissions from
14 the proposed activity would not harm human health or the environment
15 when the proponent of the project cannot tell us what is being released by
16 the activity.

17 **DTSC RESPONSE**

18 The commenter again states that the pollutants released by the OB/OD
19 activities are unknown and it is therefore unlawful for the State to
20 authorize treatment by OB/OD.

21 The HRA evaluated the exposure risk of approximately 140 contaminants
22 of concern (COCs) and determined that the risk of cancer and non-cancer
23 health effects from the OB/OD activities would be well below the
24 acceptable threshold. Please see response to comment #9.

25 **COMMENT #25**

26 DTSC fails to honor in the C3PM, that Title 22 CCR §66264.704(a) states
27 that DTSC " ... will specify in the facility permit the hazardous constituents
28 to which the environmental protection standard of §66264.702 applies."
DTSC has not done this properly. It further states that "Constituents
specified in the permit will be limited to constituents reasonably expected
to be in or derived from waste contained in a regulated unit." Clearly the
waste that is to be contained in the C3PM unit is the waste it is being
permitted for. Emissions from single point in time, given all of the
authorized waste codes, are not acceptable. I petition that DTSC revise
the permit to meet the requirements of title 22, CCR, §66264 and specify
the hazardous constituents under for the environmental protection

1 standard Title 22 CCR §66264.704(a) of the authorized waste constituents
2 and their daughter products.

3 DTSC RESPONSE

4 The commenter states that DTSC does not properly include all waste
5 constituents from OB/OD operations in the draft permit and requests that it
6 be revised to do so.

7 Again, the environmental protection standard for a miscellaneous unit is
8 set forth in 22 CCR, Chapter 14, Article 16, §66264.601 and there is no
9 requirement to follow the standards for a regulated unit under Title 22
10 CCR §66264.704(a). However, hazardous waste constituents to be
11 monitored from OB/OD events will be included in the DTSC approved
12 environmental program as required in the draft permit. DTSC has the
13 authority under 22 CCR, Chapter 20, Article 3, §66270.33 to specify in the
14 permit a schedule of compliance leading to compliance with the statutes
15 and regulations.

16 Appeal Comment 3 does not request a review of a condition of the Permit, nor
17 does it identify a change from the draft to the final permit. The Petitioner in Appeal
18 Comment 3 does no more than make a general allegation that the identity and amount
19 of chemicals emitted to the air have not been properly characterized. The HRA in
20 section 4.2.1.5 states that destruction of Propellant, Explosives, and Pyrotechnics
21 (PEPs) through the OB/OD process is 99.999% complete. The Petitioner indicates that
22 figure may be 80% as referenced in literature, but provides no references or how the
23 literature examples may be similar or different based upon the proposed process and
24 PEPS. Additionally, while section 7.2 of the HRA provides a rationale for the selection
25 of COC's and 140 COCs were selected for testing, the Petitioners merely states more
26 than 140 COCs need to be analyzed for emissions. The Petitioner in Appeal Comment
27 3 does not allege that DTSC's exercise of discretion in this permitting decision is
28 improper based upon the consideration of HRA sections 4.2.1.5 and 7.2.

For the reasons listed above, the Permit Appeals Officer finds that the Petitioner
has failed to meet the burden set forth in the California Code of Regulations, title 22,

1 section 66271.18(a) that a review of Appeal Comment 3 should be granted, therefore
2 review of Appeal Comment 3 is denied.

3 **APPEAL COMMENT 4:** Petition for Review, page 3, paragraph 6 to page 4,
4 paragraph 2

5
6 The technical report reviewing the applicability of alternatives in the
Appendix of the DEIR states:

7
8 Staff members at AFRL indicated that AFRL traditionally burns up to
9 approximately 15–30 lbs/month of the waste propellant are generated
10 from current R&D facilities, while the remainder are larger propellant items
11 removed from storage at AFRL. Along with the waste propellant, inert
12 items such as gloves, paper towels, and the Velostat™ bags used to
store the waste are considered reactive waste and are treated in the OB
unit. The waste streams evaluated in this report are the approximately
30 lb/month of waste PEP and associated PEP-contaminated waste.

13
14 From this description it would appear that the vast majority of hazardous
15 waste destined to be open burned at Edwards AFB has been accumulated
and is being stored. There is a prohibition of such activity in RCRA,
16 hazardous waste is not to be stored over 90 days without special waivers.
If such waivers were granted, they should have been publicly noticed.
17 The storage of hazardous propellant cannot go on indefinitely, there
18 certainly must be a plan to dispose of this waste or to recycle it. I do not
see reference to this in the permit or in the DEIR.

19
20 **Response:** The issue raised relates to the allowed storage time periods for
21 hazardous waste at the site, whether waivers for any required time periods were
22 granted, and whether if any waivers were granted were they public noticed.

23 The Permit Appeals Officer denies review of Appeal Comment 4 because it does
24 not request a review of a condition of the Permit, nor does it identify a change from the
25 draft to the final permit. The issue does not appear to have been timely raised during
26 the public comment period for the draft permit according to the requirements of
27 California Code of Regulations, title 22, section 66271.12 and section 66271.18,
28 subdivision (a).

