

Nevada  
Environmental  
Restoration  
Project

DOE/NV--603-ADD



# Addendum to the Closure Report for Corrective Action Unit 342: Area 23 Mercury Fire Training Pit Nevada Test Site, Nevada

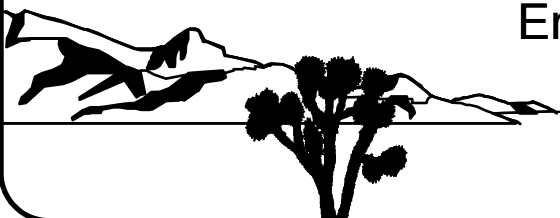
Controlled Copy No.: \_\_\_\_

Revision No.: 0

October 2008

Approved for public release; further dissemination unlimited.

Environmental Restoration  
Project



U.S. Department of Energy  
National Nuclear Security Administration  
Nevada Site Office

UNCONTROLLED When Printed

Available for public sale, in paper, from:

U.S. Department of Commerce  
National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161  
Phone: 800.553.6847  
Fax: 703.605.6900  
Email: [orders@ntis.gov](mailto:orders@ntis.gov)  
Online ordering: <http://www.ntis.gov/ordering.htm>

Available electronically at <http://www.osti.gov/bridge>

Available for a processing fee to U.S. Department of Energy and its contractors,  
in paper, from:

U.S. Department of Energy  
Office of Scientific and Technical Information  
P.O. Box 62  
Oak Ridge, TN 37831-0062  
Phone: 865.576.8401  
Fax: 865.576.5728  
Email: [reports@adonis.osti.gov](mailto:reports@adonis.osti.gov)

*Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.*



**ADDENDUM TO THE CLOSURE REPORT  
FOR CORRECTIVE ACTION UNIT 342:  
AREA 23 MERCURY FIRE TRAINING PIT  
NEVADA TEST SITE, NEVADA**

U.S. Department of Energy  
National Nuclear Security Administration  
Nevada Site Office  
Las Vegas, Nevada

Controlled Copy No.: \_\_\_\_

Revision No.: 0

October 2008

Approved for public release; further dissemination unlimited.

**UNCONTROLLED When Printed**

### **Addendum to the Closure Report for Removal of the Use Restriction**

This document constitutes an addendum to the April 2000, Closure Report for Corrective Action Unit 342: Area 23 Mercury Fire Training Pit as described in the document *Recommendations and Justifications for Modifications for Use Restrictions Established under the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office Federal Facility Agreement and Consent Order* (UR Modification document) dated February 2008. The UR Modification document was approved by NDEP on February 26, 2008. The approval of the UR Modification document constituted approval of each of the recommended UR modifications. In conformance with the UR Modification document, this addendum consists of:

- This cover page that refers the reader to the UR Modification document for additional information
- The cover and signature pages of the UR Modification document
- The NDEP approval letter
- The corresponding section of the UR Modification document

This addendum provides the documentation justifying the cancellation of the UR for CAS 23-56-01, Former Mercury Fire Training Pit. This UR was established as part of a *Federal Facility Agreement and Consent Order* (FFACO) corrective action and is based on the presence of contaminants at concentrations greater than the action levels established at the time of the initial investigation (FFACO, 1996; as amended August 2006).

Since this UR was established, practices and procedures relating to the implementation of risk-based corrective actions (RBCA) have changed. Therefore, this UR was re-evaluated against the current RBCA criteria as defined in the *Industrial Sites Project Establishment of Final Action Levels* (NNSA/NSO, 2006c). This re-evaluation consisted of comparing the original data (used to define the need for the UR) to risk-based final action levels (FALs) developed using the current Industrial Sites RBCA process.

The re-evaluation resulted in a recommendation to remove the UR because contamination is not present at the site above the risk-based FALs. Requirements for inspecting and maintaining this UR will be canceled, and the postings and signage at this site will be removed. Fencing and posting may be present at this site that are unrelated to the FFACO UR such as for radiological control purposes as required by the *NV/YMP Radiological Control Manual* (NNSA/NSO, 2004f). This modification will not affect or modify any non-FFACO requirements for fencing, posting, or monitoring at this site.

Nevada  
Environmental  
Restoration  
Project

DOE/NV--1237



Recommendations and Justifications for  
Modifications for Use Restrictions Established  
under the U.S. Department of Energy,  
National Nuclear Security Administration  
Nevada Site Office  
*Federal Facility Agreement and Consent Order*

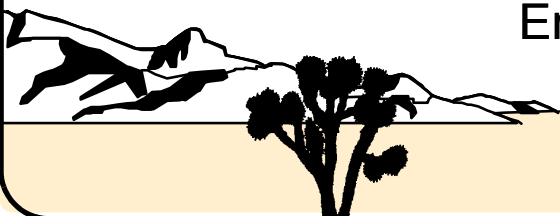
Controlled Copy No.: \_\_\_\_

Revision No.: 0

February 2008

Approved for public release; further dissemination unlimited.

Environmental Restoration  
Project



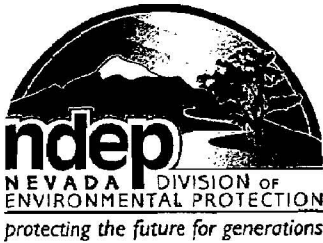
U.S. Department of Energy  
National Nuclear Security Administration  
Nevada Site Office

UNCONTROLLED When Printed

**Recommendations and Justifications for Modifications for  
Use Restrictions Established under the U.S. Department of Energy,  
National Nuclear Security Administration Nevada Site Office  
*Federal Facility Agreement and Consent Order***

Approved by: /s/ Kevin J. Cabble Date: 02/05/2008  
Kevin J. Cabble  
Federal Sub-Project Director  
Industrial Sites Sub-Project

Approved by: /s/ John B. Jones Date: 02/04/2008  
John B. Jones  
Acting Federal Project Director  
Environmental Restoration Project



# STATE OF NEVADA

Department of Conservation & Natural Resources  
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor

Allen Biaggi, Director

Leo M. Drozdoff, P.E., Administrator

February 26, 2008

John B. Jones  
Acting Federal Project Director  
Environmental Restoration Project  
National Nuclear Security Administration  
Nevada Site Office  
P. O. Box 98518  
Las Vegas, NV 89193-8518

RE: Approval of Recommendations and Justifications for Modifications for Use Restrictions  
Established under the U.S. Department of Energy, National Nuclear Security  
Administration, Nevada Site Office *Federal Facility Agreement and Consent Order*

Dear Mr. Jones:

The Nevada Division of Environmental Protection, Bureau of Federal Facilities (NDEP) staff has received and reviewed the February 2008 final report for Recommendations and Justifications for Modifications for Use Restrictions Established under the U.S. Department of Energy, National Nuclear Security Administration, Nevada Site Office. The NDEP approves the requested changes to the previously agreed upon use restrictions for those Corrective Action Sites (CASs) as described in the report.

Address any questions regarding this matter to either Ted Zaferatos at (702) 486-2850, ext. 234, or me at (702) 486-2850, ext. 231.

Sincerely,

/s/ Tim Murphy

T.H. Murphy  
Chief  
Bureau of Federal Facilities

TZ

cc: E.F. DiSanza, WMP, NNSA/NSO  
FFACO Group, PSG, NNSA/NSO, Las Vegas, NV  
David C. Loewer, DTRA/CXT1, M/S 645, Mercury, NV  
W.R. Griffin, SNJV/DTRA, M/S 645, Mercury, NV  
T.A. Thiele, NSTec, Las Vegas, NV  
R.F. Boehlecke, SNJV, Las Vegas, NV  
K. J. Cabble, ERP, NNSA/NSO, Las Vegas, NV  
John Wong, Jeff MacDougall, Dennis Nicodemus, NDEP Las Vegas, NV



## ***13.0 CAU 342, CAS 23-56-01 – Former Mercury Fire Training Pit***

---

### ***13.1 CAS Description***

The Former Mercury Fire Training Pit (FTP) is located in Area 23 of the NTS on the west side of the Mercury Bypass Road and was used between approximately 1965 and 1990 to train firefighting personnel. It encompasses an area approximately 85 by 115 m (280 by 380 ft). The FTP formerly included a bermed burn pit with four small burn tanks; four large aboveground storage tanks (ASTs); an overturned bus; a telephone pole storage area; and areas for burning sheds, pallets, and cables. Training events involved burning fuels including off-specification or rust-contaminated gasoline; diesel; aviation fuel (JP-4); and other materials such as paint, tires, a pond liner, wood, paper, cloth, and copper cable (DOE/NV, 2000a).

### ***13.2 Current Use Restriction Description***

The future use of any land related to this CAS is restricted from any DOE or Air Force activity that may alter or modify the containment control, as approved by the state and identified in the CAU CR or other CAU documentation, unless appropriate concurrence is obtained in advance. A perimeter fence with warning signs encompasses the former Mercury FTP area (approximately 85 by 115 m [280 by 380 ft]). The defined plume is limited vertically to 50 ft. Site monitoring requirements include biannual visual inspection (DOE/NV, 2000a).

The CR states that the Post-Closure Plan also includes monitoring of soil gas vapor, to be performed initially within six months of completing field activities to establish baseline concentrations, and then every two years to determine whether natural attenuation is degrading the remaining petroleum hydrocarbons (DOE/NV, 2000a). Soil gas samples were collected on November 29, 2005, for VOC and SVOC analysis. Samples were collected on December 1, 2005, for analysis of base gases. The effectiveness of natural attenuation was evaluated and noted to be occurring. It was recommended that monitoring be discontinued (NNSA/NSO, 2006d) and on August 28, 2006, NDEP acknowledged and approved the decision to discontinue soil monitoring (Elle, 2006).

### ***13.3 Basis for Current Use Restriction***

Samples were analyzed for total and leachable VOCs, total SVOCs, total and leachable RCRA metals and zinc, TPH, PCBs, and gamma spectroscopy. Samples collected from locations where physical evidence or site history indicated burning (e.g., cable racks, charcoal stains, and burn



sheds) were analyzed for dioxins and furans. Petroleum hydrocarbons, xylene, and arsenic were the only COPCs detected above PALs. Petroleum hydrocarbons (diesel, gasoline, waste oil, and unknown hydrocarbons) were detected above the PAL of 100 mg/kg in 37 samples. Of these, 33 were taken from the AST area and the CAS 23-56-01 burn pit. The VOC xylene was detected above the PAL of 320 mg/kg in one sample from the area of highest TPH contamination in the AST subsurface plume. The concentrations of arsenic above the PAL of 2.7 mg/kg were within the range considered representative of ambient conditions at the site. Therefore, arsenic is not considered to be a basis for this UR (DOE/NV, 1999c).

Table 13-1 contains analytical results of all COCs at CAS 23-56-01 that are the basis for the current UR. The sample matrix for all samples is soil.

**Table 13-1**  
**Sample Results for COCs at CAS 23-56-01**  
**Used To Establish Current Use Restriction**  
(Page 1 of 2)

Sample ID	Depth (ft bgs)	Xylene	Diesel	Waste Oil	Gasoline	Unknown Hydrocarbon
		PAL 320 mg/kg	PAL 100 mg/kg	PAL 100 mg/kg	PAL 100 mg/kg	PAL 100 mg/kg
FTP00020	0 - 1	--	--	--	--	440
FTP00021	3 - 4	--	--	--	--	420
FTP00022	0 - 1	--	--	--	--	130
FTP00025	3 - 4	--	--	--	--	100
FTP00026	0 - 1	--	--	--	--	230
FTP00027	3 - 4	--	--	--	--	420
FTP00028	0 - 1	--	--	--	--	180
FTP00029	3 - 4	--	--	--	--	370
FTP00034	0 - 1	--	--	--	--	210
FTP00035	3 - 4	--	--	--	--	590
FTP00036	0 - 1	--	--	--	--	760
FTP00048	0 - 1	--	250	--	--	--
FTP00049	3 - 4	--	--	--	--	3,000
FTP00055	0 - 1	--	--	--	--	4,000
FTP00056	3 - 4	--	2,800	--	--	--
FTP00057	0 - 1	--	--	--	--	410

**Table 13-1**  
**Sample Results for COCs at CAS 23-56-01**  
**Used To Establish Current Use Restriction**  
(Page 2 of 2)

Sample ID	Depth (ft bgs)	Xylene	Diesel	Waste Oil	Gasoline	Unknown Hydrocarbon
		PAL 320 mg/kg	PAL 100 mg/kg	PAL 100 mg/kg	PAL 100 mg/kg	PAL 100 mg/kg
FTP00058	3 - 4	--	2,500	--	--	--
FTP00062	0 - 1	--	--	1,400	--	--
FTP00086	0 - 1	--	--	--	--	4,000
FTP00089	0 - 1	--	4,100 (J)	--	--	--
FTP00091	4 - 5	--	3,400 (J)	--	--	--
FTP00094	19 - 20	--	10,000 (J)	--	--	--
FTP00108	14 - 15	--	--	230	--	--
FTP00109	19 - 20	--	140	--	--	--
FTP00111	4 - 5	--	--	--	--	3,300
FTP00112	9 - 10	--	--	--	--	10,000
FTP00128	9 - 10	--	16,000 (J)	--	530	--
FTP00133	9 - 10	--	13,000 (J)	--	--	--
FTP00136	14 - 15	--	7,600 (J)	--	--	--
FTP00145	19 - 20	--	3,000 (J)	--	--	--
FTP00149	19 - 20	--	7,500 (J)	--	--	--
FTP00154	24 - 25	480 (J)	18,000 (J)	--	3,000 (J)	--
FTP00160	18.5 - 19	--	5,400 (J)	--	320 (J)	--

bgs = Below ground surface

ft = Foot

ID = Identification

mg/kg = Milligrams per kilogram

PAL = Preliminary action level

J = Estimated value

-- = No detects above action levels

### **13.4 Basis for Use Restriction Modification**

The revised FALs associated with the TPH contamination were established based on the hazardous constituents of TPH as described in Section 2.2.2. The only TPH-related contaminant detected above the corresponding PAL (DOE/NV, 1999c) was xylene. This constituent was evaluated per the Tier 2 evaluation process as described in Section 2.2.2. Under a Tier 2 evaluation, comparisons to action levels are only conducted at reasonable points of exposure. The single sample with a concentration exceeding the PAL was collected from a depth of 24 to 25 ft bgs. As this depth is not a reasonable point of exposure, it was not evaluated. No other

instances of xylene contamination exist at the CAS at concentrations that exceed the PAL. Therefore, no contaminants are considered to be present at this site in concentrations exceeding the revised FALs, and all revised FALs were established at the PAL concentrations.

### ***13.5 Proposed Modification***

Remove the FFACO UR, associated fencing and postings, and inspection and maintenance requirements from this site.

## **References**

---

DOE/NV, see U.S. Department of Energy, Nevada Operations Office.

Elle, D.R., Nevada Division of Environmental Protection. 2006. Letter to J. Appenzeller-Wing (NNSA/NSO) entitled, "Acceptance of the Post Closure Inspection and Monitoring Report Corrective Action Unit (CAU) 342: Mercury Fire Training Pit Calendar Years 2004-2005, Nevada Test Site, Nevada, *Federal Facility Agreement and Consent Order*," 28 August. Las Vegas, NV.

FFACO, see *Federal Facility Agreement and Consent Order*.

*Federal Facility Agreement and Consent Order*. 1996 (as amended). Agreed to by the State of Nevada; U.S. Department of Energy, Environmental Management; U.S. Department of Defense; and U.S. Department of Energy, Legacy Management.

NNSA/NSO, see U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2004f. *NV/YMP Radiological Control Manual*, DOE/NV--11718-079, Rev. 5. Prepared by Bechtel Nevada. Las Vegas, NV.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2006c. *Industrial Sites Project Establishment of Final Action Levels*, Rev. 0, DOE/NV--1107. Las Vegas, NV.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2006d. *Post-Closure Inspection and Monitoring Report for Corrective Action Unit 342: Area 23 Mercury Fire Training Pit, Nevada Test Site, Nevada, for Calendar Years 2004-2005*, Rev. 0, DOE/NV--1151. August. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1999c. *Corrective Action Decision Document for Corrective Action Unit 342: Area 23 Mercury Fire Training Pit, Nevada Test Site, Nevada*, Rev. 1, DOE/NV--534-REV. 1. June. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 2000a. *Closure Report for Corrective Action Unit 342: Area 23 Mercury Fire Training Pit, Nevada Test Site, Nevada*, Rev. 0, DOE/NV--603. April. Las Vegas, NV.

## Library Distribution List

### Copies

U.S. Department of Energy  
National Nuclear Security Administration  
Nevada Site Office  
Technical Library  
P.O. Box 98518, M/S 505  
Las Vegas, NV 89193-8518

1 (Uncontrolled, electronic copy)

U.S. Department of Energy  
Office of Scientific and Technical Information  
P.O. Box 62  
Oak Ridge, TN 37831-0062

1 (Uncontrolled, electronic copy)

Southern Nevada Public Reading Facility  
c/o Nuclear Testing Archive  
P.O. Box 98521, M/S 400  
Las Vegas, NV 89193-8521

2 (Uncontrolled, electronic copies)

Manager, Northern Nevada FFACO  
Public Reading Facility  
c/o Nevada State Library & Archives  
100 N Stewart Street  
Carson City, NV 89701-4285

1 (Uncontrolled, electronic copy)