



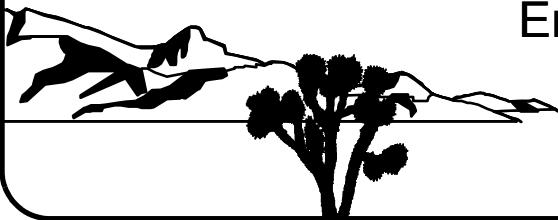
Addendum to the Closure Report for Corrective Action Unit 356: Mud Pits and Disposal Sites Nevada Test Site, Nevada

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

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
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

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.



Printed on
recycled paper

**ADDENDUM TO THE CLOSURE REPORT
FOR CORRECTIVE ACTION UNIT 356:
MUD PITS AND DISPOSAL SITES
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.

Addendum to the Closure Report for Removal of the Use Restriction

This document constitutes an addendum to the November 2002, Closure Report for Corrective Action Unit 356: Mud Pits and Disposal Sites 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 URs for:

- CAS 03-04-01, Area 3 Change House Septic System
- CAS 03-09-04, Mud Pit

These URs were established as part of *Federal Facility Agreement and Consent Order* (FFACO) corrective actions and were 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 these URs were established, practices and procedures relating to the implementation of risk-based corrective actions (RBCA) have changed. Therefore, these URs were 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 URs) to risk-based final action levels (FALs) developed using the current Industrial Sites RBCA process.

The re-evaluation resulted in a recommendation to remove these URs because contamination is not present at these sites above the risk-based FALs. Requirements for inspecting and maintaining these URs will be canceled, and the postings and signage at each site will be removed. Fencing and posting may be present at these sites that are unrelated to the FFACO URs 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 these sites.



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

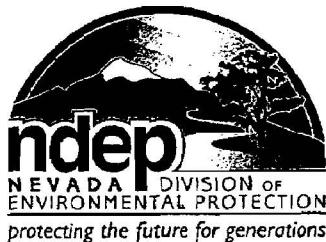
**Recommendations and Justifications for Modifications for
Use Restrictions Established under the U.S. Department of Energy,
National Nuclear Security Administration Nevada Site Office
*Federal Facility Agreement and Consent Order***

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

Lea M. Drazdoff, 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 (CASSs) 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



15.0 CAU 356, CAS 03-04-01 – Area 3 Change House Septic System

15.1 CAS Description

The Area 3 Change House Septic System consists of a dual-chambered, steel septic tank; a concrete manhole south of the septic tank; two leachfields (referred to as the “previous leachfield” and the “fenced leachfield”); a concrete skimmer box at the proximal end of the fenced leachfield; and associated piping both upstream and downstream of the septic tank. The system was initially constructed in the 1960s and received effluent from at least nine Area 3 Camp buildings and trailers until its abandonment in 1991. In 1989, an unpermitted lagoon formed above the fenced leachfield as a consequence of excessive flow and saturated conditions. A new septic system was proposed, but not implemented due to the impending relocation of the Area 3 Camp to Area 6. Temporary remediation of the existing system consisted of evacuating the septic tank of fluids to be treated at other NTS facilities until the camp was abandoned. The temporary remediation efforts resulted in no additional percolation of effluent above ground surface (NNSA/NV, 2002a).

15.2 Current Use Restriction Description

The future use of any land affected by this UR 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. Orange snow fencing was installed around the 100-by-75-ft perimeter of the fenced leachfield. Use restriction signs were posted on permanent posts/poles on each side of the fenced leachfield. There is no annual monitoring or inspection requirements associated with the UR (NNSA/NV, 2002a).

15.3 Basis for Current Use Restriction

Twenty-three soil samples were collected and analyzed for VOCs, SVOCs, RCRA metals, TPH (DRO and GRO), isotopic Pu, isotopic U, isotopic Am, and gamma spectrometry. One analytical result indicated the presence of TPH (DRO) (400 mg/kg) contamination exceeding the NDEP action level of 100 mg/kg at one location. No VOCs or SVOCs were detected above PALs. Arsenic was detected above the PAL of 2.7 mg/kg in all samples analyzed, but all concentrations were within the range considered representative of ambient conditions at the site. Therefore, arsenic is not considered to be a basis for this UR. The radionuclides Am-241, Pu-238, and Pu-239/240 exceeded their respective PALs. The PALs for the radionuclides were

established in the CAIP as any activity distinguishable from undisturbed background activity (NNSA/NV, 2002a).

Table 15-1 contains analytical results of all COCs that are the basis for the current UR. The sample matrix for all samples is soil.

Table 15-1
Sample Results for COCs at CAS 03-04-01
Used To Establish Current Use Restriction

Sample ID	Depth (ft bgs)	Pu-238	Pu-239/240	Am-241	TPH (DRO)
		PAL 0.05 pCi/g	PAL 0.106 pCi/g	PAL 0.05 pCi/g	PAL 100 mg/kg
356003	5.0 - 5.5	--	0.485 ± 0.14 (J)	0.639 ± 0.20	--
356005	5.25 - 5.75	--	--	2.44 ± 0.38	--
356012	0.0 - 0.5	--	--	--	400 (J)
356013	0.0 - 0.5	--	--	1.76 ± 0.41 (J)	--
356016	4.0 - 4.5	--	--	4.08 ± 0.53 (J)	--
356095	5.0 - 5.5	--	0.435 ± 0.12 (J)	3.64 ± 1.8	--
356204	0.0 - 0.5	0.049 ± 0.026	0.211 ± 0.058	--	--
356205	0.0 - 0.5	--	0.226 ± 0.058	0.053 ± 0.027	--
356207	0.0 - 0.5	0.117 ± 0.042	1.38 ± 0.23	0.173 ± 0.052	--
356209	0.0 - 0.5	0.469 ± 0.094	16.5 ± 2.3	2.23 ± 0.34	--

Am = Americium

bgs = Below ground surface

DRO = Diesel-range organics

ft = Foot

mg/kg = Milligrams per kilogram

ID = Identification

PAL = Preliminary action level

pCi/g = Picocuries per gram

Pu = Plutonium

TPH = Total petroleum hydrocarbons

J = Estimated value

-- = No detects above action levels

15.4 Basis for Use Restriction Modification

The revised FALs for radionuclides listed in Table 12-2 were established based on the PALs presented in Section 2.2.1.

The revised FALs associated with the TPH contamination were established based on the PALs of hazardous constituents of TPH diesel as described in Section 2.2.2. Hazardous constituents of TPH diesel were not detected in any of the samples at concentrations greater than their respective PALs (NNSA/NV, 2002a).

Therefore, no contaminants are present at this site in concentrations exceeding the revised FALs, and all revised FALs were established at the PAL concentrations.

Table 15-2 presents the sample results that are the basis for the current UR was based and demonstrate that none exceed the revised FALs.

Table 15-2
Revised Final Action Levels for CAS 03-04-01

Sample ID	Depth (ft bgs)	Pu-238	Pu-239/240	Am-241
		Revised FAL 13 pCi/g	Revised FAL 12.7 pCi/g	Revised FAL 12.7 pCi/g
356003	5.0 - 5.5	--	0.485 ± 0.14 (J)	0.639 ± 0.20
356005	5.25 - 5.75	--	--	2.44 ± 0.38
356013	0.0 - 0.5	--	--	1.76 ± 0.41 (J)
356016	4.0 - 4.5	--	--	4.08 ± 0.53 (J)
356095	5.0 - 5.5	--	0.435 ± 0.12 (J)	3.64 ± 1.8
356204	0.0 - 0.5	0.049 ± 0.026	0.211 ± 0.058	--
356205	0.0 - 0.5	--	0.226 ± 0.058	0.053 ± 0.027
356207	0.0 - 0.5	0.117 ± 0.042	1.38 ± 0.23	0.173 ± 0.052
356209	0.0 - 0.5	0.469 ± 0.094	16.5 ± 2.3	2.23 ± 0.34

Am = Americium
 bgs = Below ground surface
 FAL = Final action level
 ft = Foot

ID = Identification
 pCi/g = Picocuries per gram
 Pu = Plutonium

J = Estimated value
 -- = No detects above original action levels

15.5 Proposed Modification

Remove the FFACO UR and associated fencing and postings.

16.0 CAU 356, CAS 03-09-04 – Mud Pit

16.1 CAS Description

Corrective Action Site 03-09-04 consists of one mud pit that received drill cuttings, drilling fluid, and/or circulated drilling materials during pre-test drilling activities. The mud pit is located west of the potential crater area for U3gi in Area 3 at the NTS. The mud pit is bermed, and tumbleweeds obscure the pit surface. The mud pit is associated with the pre-test drilling activities of either the Tuloso weapons test emplacement hole or the exploratory hole, which were drilled in 1971 and 1972 before the test. Soil originally excavated during construction of the mud pit forms a dirt mound on the southwest margin of the mud pit (NNSA/NV, 2001d).

16.2 Current Use Restriction Description

The future use of any land affected by all URs in this CAU 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. The UR is defined as the perimeter of the mud pit (approximately 35 by 105 ft). Three-strand wire fencing approximately 4 ft high was emplaced around the perimeter. Use restriction signs were attached to the top strand of the wire fence on each side of the mud pit. There are no monitoring or inspection requirements associated with this UR (NNSA/NV, 2002a).

16.3 Basis for Current Use Restriction

Samples were analyzed for the Streamlined Approach for Environmental Restoration (SAFER) Plan-specified COPCs, which included total VOCs, total SVOCs, total RCRA metals, TPH (DRO and GRO), isotopic U, isotopic Pu, and gamma spectroscopy; and for PCBs, which were not required by the SAFER Plan. Total petroleum hydrocarbons were the only COPC detected above PALs, except for arsenic. Two samples and the field duplicate exceeded the TPH PAL of 100 mg/kg, and TPH was determined to be a COC. The concentration of TPH ranged from 160 to 200 mg/kg. No VOCs or SVOCs were detected above PALs. 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 (NNSA/NV, 2002a).

Table 16-1 contains analytical results of all COCs at CAS 03-09-04 that are the basis for the current UR. The sample matrix for all samples is soil.

Table 16-1
Sample Results for COCs at CAS 03-09-04
Used To Establish Current Use Restriction

Sample ID	Sample Location	Depth (ft bgs)	TPH (DRO)
			PAL 100 mg/kg
356050	Point of maximum accumulation	0.9 - 1.4	160
356051	Surface at point of maximum accumulation	0.0 - 0.5	170
356069 (FD of 356051)	Surface at point of maximum accumulation	0.0 - 0.5	200

bgs = Below ground surface

DRO = Diesel-range organics

FD = Field duplicate

ft = Foot

ID = Identification

mg/kg = Milligrams per kilogram

PAL = Preliminary action level

TPH = Total petroleum hydrocarbons

16.4 Basis for Use Restriction Modification

The revised FALs associated with the TPH contamination were established based on the PALs of hazardous constituents of TPH diesel as described in Section 2.2.2. Hazardous constituents of TPH diesel were not detected in any of the samples at concentrations greater than their respective PALs (NNSA/NV, 2002a). Therefore, no contaminants are present at this site in concentrations exceeding the revised FALs, and all revised FALs were established at the PAL concentrations.

16.5 Proposed Modification

Remove the FFACO UR and associated fencing and postings from this site.

References

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.

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

U.S. Department of Energy, National Nuclear Security Administration Nevada Operations Office. 2001d. *Streamlined Approach for Environmental Restoration (SAFER) Plan for Corrective Action Unit 356: Mud Pits and Disposal Sites, Nevada Test Site, Nevada*, Rev. 0, DOE/NV--747. August. Las Vegas, NV.

U.S. Department of Energy, National Nuclear Security Administration Nevada Operations Office. 2002a. *Closure Report for Corrective Action Unit 356: Mud Pits and Disposal Sites, Nevada Test Site, Nevada*, Rev. 1, DOE/NV--835-REV.1. November. Las Vegas, NV.

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.

Library Distribution List

	<u>Copies</u>
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)