Rationale for the Changes
to the
Water Pollution Control General Permit, GNEV 93001
and
Fact Sheet
(pursuant to NAC 445A.236)

General Water Pollution Control Permit Number: GNEV93001

The existing terms and conditions currently incorporated into the General Permit ensure the existing regulatory protection of the State's water. The General Permit also emphasizes the mode of disposal, whereas the mode of treatment was the dominant context of previous individual permits.

The proposed effluent limitations on existing and new facilities or ancillaries prohibit discharge to the surface waters of the state (with allowance for extraordinary storm events) and prohibit the degradation of existing or potential underground sources of drinking water.

The proposed standard of performance for existing facilities and for new construction is prescribed by regulation and is appropriately limited to the no-discharge standard. New or modified facilities must comply with permit conditions and limitations upon commencement of sewage treatment in the new or modified facility.

Permittee: National Nuclear Security Administration, Nevada Site Office (NNSA/NSO)

Location: The Nevada Test Site (NTS)

Prior History:

In the early days of the Nevada Test Site (NTS) there were ten individual and active facilities. The Nevada Division of Environmental Protection (NDEP) originally permitted each of theses facilities for treatment of sewage by lagoons or basins with discharge via evaporation. In 1993, NDEP staff proposed consolidating the 10 permits into one general permit and in 1994, the NDEP Administrator issued a single general permit (Water Pollution Control Permit GNEV93001) to cover all ten facilities.

Incorporating these ten facilities into one general permit had accomplished the following: (1) It reduced the opportunity for error in submitting multiple quarterly reports, and (2) it reduced the time and labor in compiling a single quarterly report for each facility. In addition, the incorporation of a single Operations & Maintenance (O&M) manual covering all the facilities has also reduced the amount of work involved in the revision of a single document instead of multiple manuals for multiple facilities.

In recent years, however, the funding, the effort of work and the population at the NTS has decreased to a level that warranted placing eight of the facilities on a standby status. NDEP has altered the Permit to accommodate NNSA/NSO's necessity to deactivate or activate these facilities as the workloads changed with the needs of the various government agencies.

Tentative Determinations:

The Permit currently authorizes the NNSA/NSO or any operator under contract to them, to commission, construct, operate, maintain, and decommission sewage treatment works at the NTS. As the operator, the NNSA/NSO has requested of the NDEP relief from annual monitoring of toxic contaminants because the full containment ensures a no-discharge standard due to the newly installed synthetic liners. Under previous conditions at the Mercury facility, the NDEP had required NNSA/NSO to measure annually the influent for those toxic compounds listed in Appendix I of the permit. Recently, NNSA/NSO has made improvements to the Mercury facility. The installation of synthetic liners and combining of two primary lagoons are the latest improvements to the Mercury facility. Of the original three primaries, NNSA/NSO combined two of the smaller lagoons into one. Two primaries now exist where there were three. In compliance with the new regulatory guidelines for sewage lagoons, NNSA/NSO installed approved synthetic liners in the now two primary sewage lagoons in Mercury.

The Administrator has made the tentative determination to revise the existing Permit. NDEP has tentatively revised the Permit to remove the annual monitoring of the sewage lagoon effluent. However, in the event of specific, accidental or natural-caused discharges of potential contaminants to the environment, the Permit imposes sampling requirements of whatever event occurs. With this change, the revised Permit meets or exceeds the standards established in other State issued permits.

NDEP has let stand the requirements on weekly monitoring on the liquid level of each basin, quarterly monitoring on the influent flow for pH (time- or flow-weighted composite) and biological oxygen demand (BOD_5) using time- or flow-weighted composites.

Rationale:

NDEP has altered the Permit in the past to accommodate NNSA/NSO's changes in these facilities as the workloads changed with the needs of the various government agencies. NDEP staff has evaluated NNSA/NSO's request and concurred with the concept of the conclusions. Upon review of the Permit and regulations pertaining to the Permit, NDEP concurred with the premise of NNSA/NSO's request. NDEP staff has advised the Administrator to change the requirement from annual monitoring of the Appendix I contaminants to exceptional monitoring of accidental or natural discharges to the environment.

Regulatory Authority, Citation of Standards, Uses and Limitations:

The General Permit was issued pursuant to NRS 445A.475 for the category of discharge. With the promulgation of the Federal Facilities Act, the facilities are deemed indistinguishable from a Publicly Owned Treatment Works, as defined and regulated by the Clean Water Act and the Solid Waste Act.

The water quality standards in NAC445A.121, "Standards applicable to all waters," apply to all surface water of the state, regardless of designation or classifications, and to all groundwater.

The Nevada policy of "non-degradation of groundwater" is established by NRS445A.490, "Permits: Issuance prohibited in certain cases." No permit may be issued which authorizes the degradation of existing or potential underground sources of drinking water.

General Permit Parameters

The main objectives of the General Permit are *protection of the water of the State, prevention of groundwater degradation, and adherence to the standard of performance for no discharge to the surface*. Any escape of sewage from a built facility (collection system, treatment lagoon, or infiltration basin) onto the surface which is reasonably preventable is contrary to the objectives of the Permit. Corollary objectives are operation and maintenance in conformance with the following:

1. The provisions of design and as-built configuration, and

2. The prohibition of receiving wastes with characteristics above the regulatory limit.

The existing sewage treatment facilities are each configured to meet the New Source Performance Standard for Zero Discharge to the Surface. In addition, all replacements or new construction must meet these same standards. The mode of disposal is evaporation from total containment. The mode of treatment is facultative lagoons.

The principle of the Permit is to authorize *impoundment of sewage, raw or treated, for biochemical oxidation of its organic load followed by disposal through evaporation.* The as-built configurations, mode of operation, mode of disposal, and maintenance of each facility, must continuously assure sufficient retention time for bio-oxidation of the particulates and for predation of pathogens. The two active facilities have full containment liners in the primary and secondary lagoons and have no effluent. Evaporation accommodates the influent flow rate, such that the required freeboard is not compromised. For each of the permitted facilities, the mean annual influent rate has been less than the mean annual evaporation rate.

Synopsis of Sewage Characterization

Influent:

1. BOD_5: time- or flow-weighted composite, quarterly
2. Total Suspended Solids: time- or flow-weighted composite, quarterly
3. pH: time or flow weighted composite, quarterly
4. Influent flow rate: measured or estimated, to enable calculation of the quarterly mean daily organic loading
5. toxic compounds: composite, as per accidental or natural catastrophic discharge to the environment.

Effluent:

1. The active sewage lagoons have full containment liners that eliminate any effluent.

Sewage Lagoon Sludge:

1. The Permit requires the characterization of the sludge prior to its removal for disposal.

The National Security Technologies, LLC (NSTec) currently operates and maintains sewage treatment works under contract with the NNSA/NSO. NSTec has on-staff professional engineers with the proper training and certification needed to operate and maintain the facilities in compliance with Nevada State and Federal laws and regulations. For a listing of the facilities, see Table 1 below.

Public Participation Procedures:

NDEP has published a Notice of the proposed action to revise this permit in the Las Vegas Review Journal, a daily newspaper of general circulation in southern Nevada. For not less than 30 days following the date of publication, persons may submit written comments on the terms or conditions of the draft Permit. All written comments will be made part of the public record and will be considered in the final determination. The 30-day period may be prolonged at the Administrator's discretion.

The Administrator or his delegate will take requests from any individual for a public hearing. If sufficient interest for a hearing is perceived by the Administrator, the time and place for such a hearing will be published in the Las Vegas Review Journal, not less than 30 days in advance of the published date for the hearing. The agenda of the hearing must be limited to those issues presented in the request for a public hearing.

Upon completing the public participation process, the final determination of the Administrator may be challenged through petition of the State Environmental Commission, in accordance with Nevada Revised Statute 445A.605.

The permittee has equal opportunity as does any other person to submit comments or make requests or attend hearings during the period for public participation.

The revised permit, and its supplemental information will be available for public review and comment for a period of thirty (30) days beginning October 19, 2008 and ending November 19, 2008. All interested parties may review the documents during standard business hours at:

1.) Nevada Division of Environmental Protection
2030 E. Flamingo Road
Suite 230
Las Vegas, Nevada 89119-0837
tel. (702) 486-2850

2.) National Nuclear Security Administration
Nevada Site Office
Public Reading Facility
755 E. Flamingo, Room 103
North Las Vegas, Nevada 89119
tel. (702) 794-5117

Table 1: Synopsis of Pertinent Information in the Permit.

Facility	Status	Type of ponds; type of waste	Characteristics
1. **Area 23 Mercury**	Active	Evaporation; sewage	max. design flow: 73,407 gal/day max. loading: 115.4 kg/day average flow: 33,267 gal/day
2. **Area 6 Yucca Lake**	Active	Evaporation; sewage	max. design flow: 8,943 gal/day max. loading: 8.66 kg/day average flow: 4,996 gal/day
3. **Area 23 Gate 100**	Standby	Evaporation; sewage	max. design flow: 1,548 gal/day max. loading: 2.43 kg/day average flow: 636 gal/day
4. **Area 5 RWMS**	Standby	Evaporation; sewage	max. design flow: 875 gal/day max. loading: 0.955 kg/day average flow: 798 gal/day
5. **Area 6 DAF**	Standby	Evaporation, infiltration; sewage	max. design flow: 3,080 gal/day max. loading: 7.60 kg/day average flow: 1,872 gal/day
6. **Area 6 LANL**	Standby	Evaporation, infiltration; sewage	max. design flow: 5,070 gal/day max. loading: 5.01 kg/day average flow: 1,285 gal/day
7. **Area 12 Camp**	Standby	Evaporation, basins 4&5 infiltration; approved for sewage & drying portable toilet waste containing propylene glycol antifreeze.	max. design flow: 16,800 gal/day max. loading: 54.2 kg/day average flow: 1,252 gal/day
8. **Area 25 Central Support Area**	Standby	Evaporation, infiltration & percolation; 25 gal. cleaning chemicals/month allowed with sewage.	max. design flow: 7,989 gal/day max. loading: 7.37 kg/day average flow: 5,036 gal/day
9. **Area 25 Reactor Control Point**	Standby	Evaporation, infiltration & percolation; sewage.	max. design flow: 1,903 gal/day max. loading: 2.41 kg/day average flow: 1,333 gal/day
10. **Area 25 Engine Test Stand**	Standby	Evaporation, infiltration; **Inactive for flowing sewage**; approved only for drying portable toilet waste containing propylene glycol antifreeze.	**Allowable only if reactivated** max. design flow: 1,428 gal/day max. loading: 2.27 kg/day average flow: 0 gal/day