**U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
ENVIRONMENTAL MONITORING PROGRAM
SUMMARY DATA REPORT
SECOND CALENDAR QUARTER
1997**

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December 1997

Work Performed Under
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Prepared for

Nevada Operations Office
U.S. Department of Energy

Prepared by

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LIST OF ACRONYMS

C.F.R.	Code of Federal Regulations
Cu	Copper
CX	Categorical Exclusion
CY	Calendar Year
DCG	Derived Concentration Guide
DOE	U.S. Department of Energy
DOE/NV	U.S. Department of Energy Nevada Operations Office
EA	Environmental Assessment
EDE	Effective Dose Equivalent
EIS	Environmental Impact Statement
HTO	Tritiated Water
LANL	Los Alamos National Laboratory
MDC	Minimum Detectable Concentration
NEPA	National Environmental Policy Act
NTS	Nevada Test Site
Pb	Lead
RWMS	Radioactive Waste Management Site
SDWA	Safe Drinking Water Act
TLD	Thermoluminescent Dosimeter
TTR	Tonopah Test Range
VOC	Volatile Organic Compound

1.0 INTRODUCTION

The moratorium on the testing of nuclear explosive devices, possibility of alternate uses for the Nevada Test Site (NTS), and reduced budget have led to significant changes in the extent of environmental surveillance activities on and around the NTS. Not only have the number of monitored locations been reduced since 1992, but also the frequency and types of analyses have been changed. The onsite surveillance program for collection of radiological data is outlined in **Table 1.0**. This report consists of a summary of the radiological and non-radiological data collected and analyzed during the second quarter of 1997.

2.0 AIR MONITORING DATA

2.1 RADIOLOGICAL MONITORING

Measured concentrations of radioactivity may be compared to the Derived Concentration Guides (DCG) found in U.S. Department of Energy (DOE) Order 5400.5 for limiting radiation exposure to the public. The DCG values used are listed in **Table 2.0**. When making these comparisons, the most restrictive DCG was used.

During the second calendar quarter of 1997, air samples were collected and analyzed from 45 air particulate sampling stations, 3 noble gas stations, and 13 tritiated water (HTO) vapor stations in accordance with the schedule set forth in **Table 1.0**. The locations of these monitoring stations on the NTS are shown in **Figure 1.0**.

Table 3.0 presents a summary of the air monitoring data. Particulate monitoring includes three categories: effluent, operational, and environmental. These categories are reported as a unit in **Table 3.0**. The 45 active air particulate sampling stations were operated continuously at locations where airborne radioactivity is believed to be present. Forty-one stations were on the NTS and four were on the Nellis Air Force Range Complex at locations where weapons transport/safety tests were conducted. Samples were collected weekly on glass-fiber filters. After a delay of five to seven days (for radon progeny decay), the filters were counted for gamma, gross alpha, and gross beta activity; composited quarterly; and then analyzed for ^{238}Pu and $^{239+240}\text{Pu}$. The Radioactive Waste Management Site (RWMS) samples were not analyzed for gross alpha activity.

Samples for noble gas analysis were collected weekly, at three fixed locations, by compressing air into pressure tanks. A cryogenic distillation process separated the krypton gas from the air sample. The krypton was dissolved in a scintillation cocktail and measured for ^{85}Kr using liquid scintillation counting.

HTO vapor was monitored continuously at 12 locations. Samples were collected every two weeks on silica gel; the water was extracted, distilled, and then analyzed for ^3H by use of liquid scintillation counting.

2.1.1 PARTICULATE SAMPLE RESULTS

The network mean gross alpha was $1.8 \times 10^{-15} \mu\text{Ci/mL}$ ($67 \mu\text{Bq/m}^3$) for the second quarter as shown in **Table 3.0**. This value was slightly higher than both the minimum detectable concentration (MDC) and the first quarter value.

Figure 1.0 Location of NTS Air Sampling Stations, 1997

All gross beta results, shown in **Table 3.0**, exceeded their applicable MDC. Mean gross beta concentrations ranged from 1.7 to 2.4×10^{-14} $\mu\text{Ci/mL}$ (63 to 89 mBq/m^3) with a network mean concentration of 2.1×10^{-14} $\mu\text{Ci/mL}$ (0.78 mBq/m^3). This concentration is only 2.3 percent of the DCG for ^{90}Sr in DOE Order 5400.5 and is adjusted to an annual effective dose equivalent (EDE) of 10 mrem (0.1 mSv) in accordance with the requirements of Title 40 Code of Federal Regulations (C.F.R.) 61. The network mean is similar to the values observed during the past few years (1989 - 1996), as shown in **Figure 2.0**.

The glass-fiber filters used to collect particulates were also analyzed by gamma spectroscopy. All radionuclides detected were naturally occurring in the environment (^{40}K , ^7Be , and members of the uranium and thorium series are usually seen during this analysis). The network mean concentration of ^7Be , the most frequently detected isotope, was 2.8×10^{-13} $\mu\text{Ci/mL}$ (10 mBq/m^3), similar to the averages for the last few years as shown in **Figure 3.0**.

Particulate filters from all stations were composited quarterly and analyzed for both ^{238}Pu and $^{239+240}\text{Pu}$. So far, only the results for the first calendar quarter of 1997 are available. A few stations had a detectable ^{238}Pu concentration, but the network average was only about half the average MDC. The network average concentration of $^{239+240}\text{Pu}$ was 5.8×10^{-18} $\mu\text{Ci/mL}$ (0.21 $\mu\text{Bq/m}^3$), lower than the mean value for calendar year (CY) 1996. The individual station results are shown in **Table 3.0**.

2.1.2 TRITIATED WATER VAPOR RESULTS

Summary data for HTO vapor sampling from the 13 active stations are shown in **Table 4.0**. The mean station concentrations ranged from -1.4 to 230×10^{-13} $\mu\text{Ci/mL}$ (-5 to 850 mBq/m^3). The network mean concentration was 5.2×10^{-12} $\mu\text{Ci/mL}$ (190 mBq/m^3). This mean value was slightly higher than previous measurements, as shown in **Figure 4.0**. The highest mean occurred at the Decon Pad and was only 0.23 percent of the DCG for tritium, adjusted for an annual EDE of 10 mrem.

2.1.3 NOBLE GAS (^{85}Kr) SAMPLING RESULTS

Noble gas analyses for the second quarter of CY 1997 have been completed and the results are shown in **Table 5.0**. The network average concentration of ^{85}Kr for the three stations sampled the second quarter is 28 pCi/m^3 (1.0 Bq/m^3), which is near the annual average for the past several years, as shown in **Figure 5.0**. The stations on Pahute Mesa at the Area 20 Camp had higher biweekly maximum detections than the other stations, but the average values were not statistically different.

2.1.4 NELLIS AIR FORCE RANGE COMPLEX

The offsite data for this quarter are presented in **Table 5.0**. The samples collected from Area 13, the DOUBLE TRACKS, and CLEAN SLATE sites were analyzed for gross alpha, gross beta, and gamma activity. The average gross beta of 2.1×10^{-14} $\mu\text{Ci/mL}$ (0.78 mBq/m^3) is similar to the onsite average data, as is the ^7Be result of 2.9×10^{-13} $\mu\text{Ci/mL}$ (11 mBq/m^3). However, the average of the gross alpha results for these four samplers was 2.3×10^{-15} $\mu\text{Ci/mL}$ (85 $\mu\text{Bq/m}^3$), slightly higher than the onsite network average. The first quarter ^{238}Pu and $^{239+240}\text{Pu}$ concentrations in the Nellis Air Force Range Complex samples were both less than the average of the onsite samples. All of these results are shown in **Table 5.0**.

Figure 2.0 Comparative Data for Gross Beta in Air on the NTS

Figure 3.0 Comparative Data for ⁷Be in Air on the NTS

Figure 4.0 Comparative Data for HTO in Air on the NTS

Figure 5.0 Comparative Data for ⁸⁵Kr in Air on the NTS

2.1.5 THERMOLUMINESCENT DOSIMETRY RESULTS

Thermoluminescent dosimeters (TLDs) were placed about three feet above ground at the 168 locations on the NTS shown in **Figure 6.0**. There were 16 TLDs located close to the NTS boundary, 9 TLDs historically called controls, and 143 TLDs at boundaries of contaminated areas or in residential or working areas. The results obtained during the first and second quarters of CY 1997 are shown in **Table 6.0**. Many of these results compare favorably with the external radiation background in the United States, which ranges between 0.16 and 0.4 mR/day (0.04 and 0.1 $\mu\text{C/kg}$). The exposures of the boundary and control TLDs were consistent with previous results.

2.2 OTHER AIR ANALYSES

The state has issued a Class II Air Quality Operating Permit (Permit No. AP9711-0549) that includes all operating emission sources on the NTS (246 emission units). Compliance with this permit is maintained by measuring opacity during operation of specific units by a state-certified monitor and by limiting the throughput of materials to the amount that is prescribed for each unit.

Ambient air quality monitoring is not required for operations on the NTS and is not done.

3.0 WATER MONITORING DATA

The water monitoring network includes both surface and groundwater. Grab samples are collected and analyzed for radioactive and certain non-radioactive parameters. The network for the radiological surveillance program is given in **Table 1.0**, and the locations of the sampling points are shown in **Figure 7.0**. All available results for the second quarter of CY 1997 are reported in the following subsections.

3.1 RADIOLOGICAL MONITORING

3.1.1 GROUNDWATER SURVEILLANCE

Groundwater samples are collected quarterly as grab samples from all active water supply wells (a total of 11 this quarter) and analyzed for gross alpha, gross beta, ^3H , ^{226}Ra , ^{228}Ra , ^{238}Pu , $^{239+240}\text{Pu}$, and ^{90}Sr . Grab samples from the springs on the NTS are collected and analyzed annually, generally in the third quarter.

3.1.1.1 ANALYTICAL RESULTS FOR WELL WATER

Summary data for well water samples are shown in **Table 7.0**. The network average gross alpha result of 7.7×10^{-9} $\mu\text{Ci/mL}$ (0.28 Bq/L) is similar to the result from the first quarter.

The network average gross beta result of 8.4×10^{-9} $\mu\text{Ci/mL}$ (0.31 Bq/L) was slightly higher than the first quarter's result, but was within the analytical error of the procedure.

Tritium analysis for well water samples was by the enrichment method. The MDC of these samples for the second quarter was about 14 pCi/L (0.5 Bq/L). The network average of 7.6×10^{-9} $\mu\text{Ci/mL}$ (0.28 Bq/L) was less than the MDC. Only the result of the sample from Well J-12 of 17 pCi/L (0.63 Bq/L) barely exceeded the MDC.

Figure 6.0 Location of TLDs on the NTS, 1997

Figure 7.0 Location of NTS Water Sampling Stations, 1997

The second quarter network average for ^{226}Ra was 1.6×10^{-9} $\mu\text{Ci/mL}$ (0.06 Bq/L) and for ^{228}Ra the network average was 4.0×10^{-10} $\mu\text{Ci/mL}$ (0.015 Bq/L). Both of these values were slightly higher than the first quarter's values, but both were less than the MDC. In no case did the sum of the two radium concentrations exceed the guideline value of 5 pCi/L (0.18 Bq/L).

The network average for ^{90}Sr was 1.5×10^{-10} $\mu\text{Ci/mL}$ (6 mBq/L). This was higher than the first quarter's concentration. Only one of the results exceeded the MDC for this analysis. This result was from Well J-13 with a concentration of 0.68 pCi/L, which is much less than the guideline value of 8 pCi/L (0.3 Bq/L) specified in Title 40 C.F.R. 141.

The results for ^{238}Pu and $^{239+240}\text{Pu}$ are both negative, thus indicating none detected. Both network averages were near -6×10^{-13} $\mu\text{Ci/mL}$ (-22 $\mu\text{Bq/L}$), similar to the data for the first quarter.

3.1.1.2 ANALYTICAL RESULTS FOR TAP WATER SAMPLES

Tap water samples were collected from faucets that are at the end of each potable water distribution system on the NTS. Since much of the piping runs under areas that are contaminated with radioactivity from nuclear explosive testing, analysis of these samples confirms that the system does not pick up any radioactivity. The results are shown in **Table 8.0**.

The network averages for gross alpha and gross beta this quarter are 5×10^{-9} and 6×10^{-9} $\mu\text{Ci/mL}$ (0.18 and 0.22 Bq/L), respectively, both less than the supply well average values.

The tap water network average for tritium was 9.5×10^{-8} $\mu\text{Ci/mL}$ (3.5 Bq/L), much less than the 7.4×10^{-7} $\mu\text{Ci/mL}$ (27 Bq/L) MDC for conventional tritium analysis used for these samples.

The average plutonium result, though higher than that for the well water samples, was still only about 10 percent of the MDC. The ^{238}Pu and $^{239+240}\text{Pu}$ results were 1.2 and 2.4×10^{-12} $\mu\text{Ci/mL}$ (44 and 88 $\mu\text{Bq/L}$), respectively.

3.1.2 RADIOANALYSES OF SURFACE WATER SAMPLES

The surface water surveillance program consists of radiological analyses of grab samples from reservoirs (annually), containment ponds and influent (quarterly), and sewage lagoons (quarterly). These grab samples are analyzed for gamma emitters, gross beta activity, and plutonium. Other measurements are discussed below under physical and chemical data.

3.1.2.1 ANALYTICAL RESULTS FOR E TUNNEL POND AND INFLUENT

Quarterly samples were taken from the Area 12 E Tunnel effluent and from Containment Pond No. 2. These samples were analyzed for gross beta activity, tritium, ^{238}Pu , $^{239+240}\text{Pu}$, and gamma-emitting nuclides. The results of analyses for these two samples are given in **Table 7.0**. These results are very close to the results for the first quarter and are consistent with the samples collected during 1996, although the ^{137}Cs concentrations are slightly lower.

3.1.2.2 ANALYTICAL RESULTS FOR SEWAGE LAGOONS

Each sewage lagoon is part of a closed system used for evaporative treatment of sanitary waste. The lagoons are located in Areas 5, 6, 12, 22, 23, and 25. Quarterly samples were taken and analyzed for gross beta activity, tritium, ^{238}Pu , $^{239+240}\text{Pu}$, and gamma-emitting nuclides. Summary data for the sewage lagoon samples are also shown in **Table 7.0**.

Gross beta concentrations ranged from 7 to 59×10^{-9} $\mu\text{Ci/mL}$ (.26 to 2.4 Bq/L) with a network mean of 22×10^{-9} $\mu\text{Ci/mL}$ (0.8 Bq/L). All results were above their detection limits. The maximum station mean was at Area 6 Los Alamos National Laboratory (LANL) Pond. These results are consistent with previous data.

Tritium concentrations in all sewage lagoon water samples were less than the median MDC of 700 pCi/L (26 Bq/L) for conventional tritium analysis.

Maximum concentrations of ^{238}Pu and $^{239+240}\text{Pu}$ were 0.006 and 0.046×10^{-9} $\mu\text{Ci/mL}$ (0.22 and 1.7 mBq/L), respectively. All of the ^{238}Pu and the $^{239+240}\text{Pu}$ results, except for those at the Area 23 lagoons, were less than the median MDC, as have been observed previously.

The only radionuclides detected by gamma spectroscopy were naturally occurring in the environment (^{40}K , ^7Be , and members of the uranium and thorium series).

The results for sewage lagoons for this quarter are comparable with past results, and the network means are within the ranges observed during the past six years.

3.2 PHYSICAL AND CHEMICAL MONITORING

3.2.1 DRINKING WATER SYSTEMS

Water sampling was conducted for analysis of bacteria in the water, as required by the federal Safe Drinking Water Act (SDWA) and state of Nevada regulations. Samples were taken at various locations throughout all drinking water distribution systems on the NTS. Common sampling points were restrooms and cafeteria sinks. Samples were also collected this quarter for inorganic and organic analyses. All analyses were performed in accordance with Nevada Administrative Code 445A.450 ff. and Title 40 C.F.R. 141.

3.2.1.1 BACTERIOLOGICAL SAMPLING

All water systems were sampled periodically, with the number of people being served determining the number of samples collected. These samples were analyzed for the presence of coliform bacteria. Residual chlorine analyses are no longer required by the state. The systems requiring sampling, the sampling frequency, and the number of samples collected at each sampling period are shown in **Table 9.0**.

No coliform bacteria were detected in any sample collected during the second quarter of 1997.

3.2.1.2 CHEMICAL ANALYSIS

During the first quarter, all systems (10 water wells) were sampled and analyzed for nitrates. The results of these analyses are now available and are shown in **Table 10.0**. Since the samples from Wells J-12 and J-13 had nitrate concentrations at one-half the maximum contaminant level, repeat analyses for four consecutive quarters, beginning with this second quarter, is required. Samples were collected from two of the wells for the annual analysis of fluoride. Also, in the first quarter, Wells 4A and 5B were sampled for analysis of volatile organic compounds (VOCs). No VOCs were detected in either sample.

In compliance with a state agreement, samples were taken from faucets and a fill stand at 37 separate locations on the NTS, covering all of the water distribution systems. These samples were analyzed for copper (Cu) and lead (Pb). All results were less than the detection limits of 0.5 mg/L for Cu and 0.01 mg/L for Pb. A second set of such samples will be taken during the last six months of 1997 for the same analyses.

3.2.2 SEWAGE LAGOONS

During the second quarter of 1997, sampling was conducted for sewage lagoon systems at the NTS in accordance with state of Nevada General Permit, GNEV93001. Water parameters monitored included water depth in infiltration basins, monitoring of influent quality, and organic loading rates in sewage lagoons. The results for water depth measurements are shown in Table 11.0, influent quality data are shown in **Table 12.0**, and the results of organic loading rates are shown in **Table 13.0**. The results in these three tables are all within permit limits.

The permit also requires annual sampling and analysis for toxics of primary lagoon contents near the inlet lines. The sampling was conducted on April 1, 1997. The analytic results, shown in **Table 14.0**, were all below the compliance limits.

4.0 OTHER COLLECTED DATA

4.1 NON-HAZARDOUS SOLID WASTE DISPOSAL

Monitoring of the three sanitary landfills was limited to recording daily refuse amounts by weight. All waste disposed of in the Area 23 landfill was weighed at the Gate 100 weighing station. Waste disposed of in the Area 9 10c crater landfill was weighed at the landfill site. Approximately 2,112 tons of waste were disposed of in the Areas 6, 9, and 23 sanitary landfills during the second quarter of 1997, as shown in **Table 15.0**.

4.2 NATIONAL ENVIRONMENTAL POLICY ACT

In accordance with the National Environmental Policy Act (NEPA) of 1969, the DOE Nevada Operations Office (DOE/NV) activities are evaluated for their potential environmental impacts and to ensure the proper level of NEPA documentation is initiated. During the second quarter of 1997, NTS-related NEPA activities included one Environmental Impact Statement (EIS), two Environmental Assessments (EAs), five Categorical Exclusions (CXs), and six projects covered by the NTS/EIS. Of these, four CXs and all six NTS/EIS projects were initiated in the second quarter of 1997. These NEPA documents are listed in chronological order in **Table 16.0**, with their assigned number and present status.

4.3 OCCURRENCE REPORTING

Occurrences are environmental, health, and/or safety-related events which are reported in several categories in accordance with the requirements of DOE Order 5000.3B. One environmental occurrence was reported for NTS facilities during the second quarter of 1997. Details for this occurrence, including report number, description, and status, appear in **Table 17.0**.

TABLES

Table 1.0 Network Collection and Analysis Information

<u>Sampling Locations</u>			<u>Frequency and Type of Analyses</u>			
<u>Media</u>	<u>Network</u>	<u>No.</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Quarterly</u>	<u>Annually</u>
AIR	NTS Air	28	α, β, γ		Pu	
	Nellis Range Air	4	α, β, γ		Pu	
	RWMS Air	13	β, γ		Pu	
	Tritium	13		Bi-weekly		
	Noble Gas	3	^{85}Kr			
WATER	Reservoir	15				$\beta, \gamma, ^3\text{H}, \text{Sr}, \text{Pu}$
	Springs	8				$\beta, \gamma, ^3\text{H}, \text{Sr}, \text{Pu}$
	Wells	12			$\beta, \gamma, \alpha, ^3\text{H}, \text{Sr}$ $\text{Pu}, ^{226}, ^{228}\text{Ra}$	
	Spigot	7			$\beta, \gamma, \alpha, ^3\text{H}, \text{Pu}$	Sr
	Sewage	9			$\beta, \gamma, ^3\text{H}, \text{Pu}$	Sr
	Pond	2			$\beta, \gamma, ^3\text{H}, \text{Pu}$	Sr
TLD	Environ.	168			γ	

Table 2.0 Derived Limits for Radionuclides in Air and Water

<u>Radionuclide</u>	<u>$\mu\text{Ci/mL}$</u>	
	<u>DCG (air)^(a)</u>	<u>DCG (water)^(b)</u>
^3H	1×10^{-8}	8×10^{-5}
^{40}K	9×10^{-11}	3×10^{-7}
^{85}Kr	$3 \times 10^{-7} \text{ (c)}$	--
^{90}Sr	9×10^{-13}	4×10^{-8}
$^{226}\text{Ra}/^{228}\text{Ra}$	1×10^{-13}	4×10^{-9}
^{238}Pu	3×10^{-15}	2×10^{-9}
$^{239+240}\text{Pu}$	2×10^{-15}	1×10^{-9}

(a) DCG - Derived Concentration Guides are reference values for conducting radiological protection programs at operational DOE facilities and sites. The DCG values for air are for an EDE of 10 mrem (0.1 mSv) (inhalation), for a year as required by Title 40 C.F.R. 61.92 and DOE Order 5400.5.

(b) The values listed for beta and photon emitters in the table are based on 4 mrem committed EDE for the radionuclide taken into the body by ingestion of water during one year (730 L). Gross beta levels less than or equal to 50 pCi/L are in compliance with Title 40 C.F.R. 141, SDWA.

(c) Nonstochastic value.

Table 3.0 Summary Data for Gross Alpha, Gross Beta, and ⁷Be in Air - Second Quarter and Plutonium in Air - First Quarter, CY 1997

Location	Gross α	Gross β	Beryllium-7	²³⁸ Pu	²³⁹⁺²⁴⁰ Pu
Area 1 BJY	1.4x10 ⁻¹⁵	1.7x10 ⁻¹⁴	2.6x10 ⁻¹³	3.6x10 ⁻¹⁹	1.4x10 ⁻¹⁷
Area 2	1.8x10 ⁻¹⁵	2.1x10 ⁻¹⁴	2.8x10 ⁻¹³	-3.0x10 ⁻²⁰	3.0x10 ⁻¹⁹
Area 2 2-1 Substation	1.9x10 ⁻¹⁵	2.0x10 ⁻¹⁴	2.6x10 ⁻¹³	-3.0x10 ⁻²⁰	5.8x10 ⁻¹⁸
Area 3 Mud Plant	1.6x10 ⁻¹⁵	1.9x10 ⁻¹⁴	2.6x10 ⁻¹³	-3.0x10 ⁻²⁰	1.9x10 ⁻¹⁷
Area 3 U-3ah/at S	2.2x10 ⁻¹⁵	2.1x10 ⁻¹⁴	2.8x10 ⁻¹³	-3.4x10 ⁻²⁰	1.1x10 ⁻¹⁷
Area 3 U-3ah/at N	2.0x10 ⁻¹⁵	2.2x10 ⁻¹⁴	2.9x10 ⁻¹³	-3.9x10 ⁻²⁰	1.1x10 ⁻¹⁷
Area 3 U-3ah/at E		2.2x10 ⁻¹⁴	3.2x10 ⁻¹³		
Area 3 U-3ah/at W		2.2x10 ⁻¹⁴	2.6x10 ⁻¹³		
Area 3 U-3bh S	1.5x10 ⁻¹⁵	1.9x10 ⁻¹⁴	2.4x10 ⁻¹³	1.0x10 ⁻¹⁸	1.9x10 ⁻¹⁷
Area 3 U-3bg N	2.2x10 ⁻¹⁵	2.1x10 ⁻¹⁴	3.2x10 ⁻¹³	-4.6x10 ⁻²⁰	1.2x10 ⁻¹⁷
Area 3 Well ER-3-1	1.8x10 ⁻¹⁵	2.3x10 ⁻¹⁴	3.0x10 ⁻¹³	4.1x10 ⁻¹⁹	3.8x10 ⁻¹⁹
Area 4 Bunker T-4	1.7x10 ⁻¹⁵	2.0x10 ⁻¹⁴	2.6x10 ⁻¹³	2.6x10 ⁻¹⁸	1.4x10 ⁻¹⁷
Area 5 RWMS#1		2.3x10 ⁻¹⁴	3.1x10 ⁻¹³	-2.9x10 ⁻²⁰	1.6x10 ⁻¹⁸
Area 5 RWMS#4		2.3x10 ⁻¹⁴	2.9x10 ⁻¹³	3.4x10 ⁻¹⁹	7.2x10 ⁻¹⁹
Area 5 RWMS#6		2.3x10 ⁻¹⁴	3.4x10 ⁻¹³	-3.8x10 ⁻²⁰	3.9x10 ⁻¹⁹
Area 5 RWMS#8		2.3x10 ⁻¹⁴	3.1x10 ⁻¹³	4.1x10 ⁻¹⁹	2.2x10 ⁻¹⁸
Area 5 RWMS Pit 5		2.4x10 ⁻¹⁴	3.0x10 ⁻¹³	-2.9x10 ⁻²⁰	3.6x10 ⁻¹⁹
Area 5 TP Building S		2.4x10 ⁻¹⁴	3.0x10 ⁻¹³	-4.3x10 ⁻²⁰	-4.8x10 ⁻²⁰
Area 5 WEF S	2.1x10 ⁻¹⁵	2.1x10 ⁻¹⁴	2.8x10 ⁻¹³	-7.7x10 ⁻²⁰	3.4x10 ⁻¹⁸
Area 5 WEF N	2.4x10 ⁻¹⁵	2.2x10 ⁻¹⁴	3.1x10 ⁻¹³	1.3x10 ⁻¹⁸	-8.5x10 ⁻²⁰
Area 5 DOD	1.5x10 ⁻¹⁵	2.2x10 ⁻¹⁴	2.7x10 ⁻¹³	-4.6x10 ⁻²⁰	1.1x10 ⁻¹⁷
Area 5 Well 5B	1.8x10 ⁻¹⁵	2.3x10 ⁻¹⁴	3.4x10 ⁻¹³	-2.9x10 ⁻²⁰	1.5x10 ⁻¹⁸
Area 6 YUCCA	2.0x10 ⁻¹⁵	2.2x10 ⁻¹⁴	3.0x10 ⁻¹³	4.8x10 ⁻¹⁹	1.1x10 ⁻¹⁷
Area 6 CP-6	1.8x10 ⁻¹⁵	2.2x10 ⁻¹⁴	2.7x10 ⁻¹³	-3.7x10 ⁻²⁰	1.9x10 ⁻¹⁸
Area 6 Well 3	1.8x10 ⁻¹⁵	2.1x10 ⁻¹⁴	3.0x10 ⁻¹³	-3.7x10 ⁻²⁰	7.1x10 ⁻¹⁹
Area 7 UE-7ns	1.7x10 ⁻¹⁵	1.9x10 ⁻¹⁴	2.7x10 ⁻¹³	-3.4x10 ⁻²⁰	6.4x10 ⁻¹⁸
Area 9-300	2.7x10 ⁻¹⁵	2.1x10 ⁻¹⁴	2.5x10 ⁻¹³	9.4x10 ⁻¹⁹	5.8x10 ⁻¹⁷
Area 10 Gate 700 S	1.7x10 ⁻¹⁵	1.9x10 ⁻¹⁴	2.7x10 ⁻¹³	4.4x10 ⁻¹⁹	1.9x10 ⁻¹⁸
Area 10 SEDAN Crater	1.6x10 ⁻¹⁵	2.2x10 ⁻¹⁴	3.1x10 ⁻¹³	8.9x10 ⁻¹⁹	1.6x10 ⁻¹⁷
Area 11 Gate 293	1.5x10 ⁻¹⁵	2.1x10 ⁻¹⁴	2.8x10 ⁻¹³	-3.4x10 ⁻²⁰	3.6x10 ⁻¹⁸
Area 12	1.9x10 ⁻¹⁵	2.0x10 ⁻¹⁴	2.6x10 ⁻¹³	-3.3x10 ⁻²⁰	3.3x10 ⁻¹⁹
Area 15 EPA Farm	1.6x10 ⁻¹⁵	2.0x10 ⁻¹⁴	2.5x10 ⁻¹³	-2.9x10 ⁻²⁰	2.6x10 ⁻¹⁹
Area 16 3545 Substa	1.6x10 ⁻¹⁵	2.0x10 ⁻¹⁴	2.6x10 ⁻¹³	2.4x10 ⁻¹⁹	4.9x10 ⁻¹⁹
Area 18 Well UE-18t	1.6x10 ⁻¹⁵	2.0x10 ⁻¹⁴	3.1x10 ⁻¹³	-3.1x10 ⁻²⁰	2.8x10 ⁻¹⁹
Area 20 SCHOONER	1.6x10 ⁻¹⁵	2.0x10 ⁻¹⁴	2.7x10 ⁻¹³	2.9x10 ⁻¹⁹	9.0x10 ⁻¹⁹
Area 20 CABRIOLET	2.5x10 ⁻¹⁵	1.9x10 ⁻¹⁴	2.6x10 ⁻¹³	-3.0x10 ⁻²⁰	8.9x10 ⁻¹⁹
Area 20	1.6x10 ⁻¹⁵	1.8x10 ⁻¹⁴	2.6x10 ⁻¹³	8.2x10 ⁻¹⁹	-7.3x10 ⁻²⁰
Area 23 Bldg 790#2	1.6x10 ⁻¹⁵	2.1x10 ⁻¹⁴	2.4x10 ⁻¹³	-3.0x10 ⁻²⁰	5.9x10 ⁻¹⁹
Area 23 H&S Building	1.8x10 ⁻¹⁵	2.0x10 ⁻¹⁴	2.7x10 ⁻¹³	-3.1x10 ⁻²⁰	-5.1x10 ⁻²⁰
Area 25 E-MAD N	1.7x10 ⁻¹⁵	1.9x10 ⁻¹⁴	2.7x10 ⁻¹³	-3.3x10 ⁻²⁰	6.5x10 ⁻¹⁹
Area 25 NRDS	2.2x10 ⁻¹⁵	2.1x10 ⁻¹⁴	3.0x10 ⁻¹³	-3.1x10 ⁻²⁰	2.8x10 ⁻¹⁹
Area 27	1.7x10 ⁻¹⁵	2.0x10 ⁻¹⁴	2.7x10 ⁻¹³	-4.4x10 ⁻²⁰	3.2x10 ⁻¹⁸
Average	1.8x10 ⁻¹⁵	2.1x10 ⁻¹⁴	2.8x10 ⁻¹³	2.4x10 ⁻¹⁹	5.8x10 ⁻¹⁸
Average MDC	1.6x10 ⁻¹⁵	3.8x10 ⁻¹⁵	1.2x10 ⁻¹³	5.8x10 ⁻¹⁹	1.9x10 ⁻¹⁸

Table 4.0 Tritium in Atmospheric Moisture Summary Data - Second Quarter, CY 1997

<u>Location</u>	<u>Average</u>	<u>Maximum</u>	<u>Minimum</u>
Area 1 BJJ	8.29×10^{-13}	1.60×10^{-12}	3.27×10^{-14}
Area 3 Mud Plant	1.44×10^{-12}	3.56×10^{-12}	4.12×10^{-14}
Area 3 U-3ah/at N	1.91×10^{-12}	3.29×10^{-12}	8.34×10^{-13}
Area 5 RWMS #1	1.12×10^{-12}	2.25×10^{-12}	2.93×10^{-13}
Area 5 RWMS #4	2.90×10^{-12}	4.58×10^{-12}	7.84×10^{-13}
Area 5 RWMS #6	1.50×10^{-12}	2.29×10^{-12}	4.51×10^{-13}
Area 5 RWMS #8	3.79×10^{-12}	8.09×10^{-12}	8.36×10^{-13}
Area 6 Decon Pad	2.33×10^{-11}	2.33×10^{-11}	2.33×10^{-11}
Area 10 SEDAN Crater	1.02×10^{-11}	1.59×10^{-11}	4.69×10^{-12}
Area 12 Camp	1.38×10^{-13}	8.74×10^{-13}	-1.50×10^{-12}
Area 12 E Tunnel Pond	1.52×10^{-11}	2.28×10^{-11}	6.28×10^{-12}
Area 15 EPA Farm	5.57×10^{-12}	8.39×10^{-12}	3.18×10^{-12}
Area 23 H&S Building	2.50×10^{-15}	5.75×10^{-13}	-2.39×10^{-13}
All Sites	5.20×10^{-12}	2.33×10^{-11}	-1.50×10^{-12}

Table 5.0 Offsite Particulate and Onsite ^{85}Kr in Air Summary Data - Second Quarter and Offsite Plutonium in Air Summary Data - First Quarter CY 1997

<u>Location</u>	<u>Gross α</u>	<u>Gross β</u>	<u>Beryllium-7</u>	<u>^{238}Pu</u>	<u>$^{239+240}\text{Pu}$</u>
<u>Offsite Particulate Results ($\mu\text{Ci/mL}$)</u>					
Area 13 Project 57	1.8×10^{-15}	1.8×10^{-14}	2.7×10^{-13}	7.4×10^{-19}	3.1×10^{-18}
Area 52 DOUBLE TRACKS	2.2×10^{-15}	2.1×10^{-14}	2.8×10^{-13}	-4.4×10^{-20}	2.2×10^{-18}
TTR CLEAN SLATE I	2.2×10^{-15}	2.2×10^{-14}	3.1×10^{-13}	-2.9×10^{-20}	1.9×10^{-18}
TTR CLEAN SLATE III	2.9×10^{-15}	2.2×10^{-14}	3.1×10^{-13}	-2.2×10^{-20}	7.7×10^{-18}
Average	2.3×10^{-15}	2.1×10^{-14}	2.9×10^{-13}	1.6×10^{-19}	3.7×10^{-18}
Average MDC	1.6×10^{-15}	3.8×10^{-15}	1.2×10^{-13}	5.8×10^{-19}	1.9×10^{-18}

<u>Location</u>	<u>Average</u>	<u>Maximum</u>	<u>Minimum</u>
<u>Onsite Krypton-85 Results ($\mu\text{Ci/mL}$)</u>			
Area 1 BJJ	2.72×10^{-11}	3.62×10^{-11}	6.22×10^{-12}
Area 19 Pahute Substation	2.72×10^{-11}	3.55×10^{-11}	3.28×10^{-12}
Area 20 Camp	3.05×10^{-11}	4.23×10^{-11}	1.67×10^{-11}
All Sites	2.83×10^{-11}	4.23×10^{-11}	3.28×10^{-12}

Table 6.0 TLD Results for the NTS (mR/day) - First and Second Quarters, CY 1997

<u>Location</u>	<u>1st Qtr</u>	<u>2nd Qtr</u>	<u>Location</u>	<u>1st Qtr</u>	<u>2nd Qtr</u>
Area 1 BJY	0.26	0.28	Area 5 RWMS TRU PAD SW	0.34	0.35
Area 1 Stake TH-28/27	0.26	0.31	Area 5 RWMS TRU PAD S	0.45	0.50
Area 1 Stake TH-38	0.29	0.33	Area 5 RWMS TRU PAD SE	0.35	0.37
Area 1 Sandbag Storage Hut	0.30	0.35	Area 5 RWMS MSM-1 S E	2.10	0.90
Area 2 Stake M-140	0.35	0.39	Area 5 RWMS MSM-1 E	3.87	0.59
Area 2 Stake N-8	2.14	2.38	Area 5 RWMS MSM-1 NE	2.13	0.48
Area 2 Stake L-9	0.49	0.53	Area 5 RWMS MSM-1 NNE	10.4	1.38
Area 2 Stake M-150	0.37	0.40	Area 5 RWMS MSM-1 NNW	3.44	0.77
Area 2 Cable Yard	0.38	0.41	Area 5 RWMS MSM-1 N	3.32	0.55
Area 2 Stake TH-58	0.24	0.27	Area 5 RWMS MSM-1 W	7.83	1.00
Area 3 Stake OB-11.5	0.34	0.37	Area 5 RWMS MSM-1 SW	3.58	0.62
Area 3 Stake OB-20	0.25	0.26	Area 5 RWMS MSM-1 SSW	3.41	0.81
Area 3 LANL TRAILERS	0.33	0.34	Area 5 RWMS MSM-1 SSE	5.74	0.65
Area 3 Stake A-6.5	0.42	0.44	Area 5 RWMS MSM-2 NE	4.65	0.53
Area 3 Hill Top	0.35	0.38	Area 5 RWMS MSM-2 N	8.10	1.21
Area 3 U-3ah/at N	0.39	(a)	Area 5 RWMS MSM-2 NW	5.41	0.61
Area 3 U-3ah/at S	0.51	(a)	Area 5 RWMS MSM-2 W	13.1	1.16
Area 3 U-3ah/at E	0.40	(a)	Area 5 RWMS MSM-2 SW	4.31	0.64
Area 3 U-3ah/at W	0.36	(a)	Area 5 RWMS MSM-2 S	6.28	0.74
Area 3 U-3ah/at S Gate	0.39	0.40	Area 5 RWMS MSM-2 SE	4.06	0.57
Area 3 A3 RWMS N	0.32	0.34	Area 5 RWMS MSM-2 E	13.1	0.68
Area 3 A3 RWMS E	0.39	0.46	Area 5 RWMS PIT 5 W Side	0.49	1.60
Area 3 A3 RWMS S	1.39	1.61	Area 5 RWMS PIT 5 E Side	0.44	1.57
Area 3 A3 RWMS W	0.34	0.35	Area 5 WEF W	0.35	0.38
Area 4 Stake A-9	2.58	2.71	Area 5 WEF S	0.32	0.37
Area 4 Stake M-130	0.33	0.34	Area 5 WEF E	0.33	0.37
Area 4 Stake TH-48	0.32	0.37	Area 5 WEF N	0.32	0.35
Area 5 3.3 Mi. SE of Aggr. Pit	0.17	0.19	Area 6 CP-6	0.20	0.21
Area 5 Well 5B	0.30	0.33	Area 6 CP-50 Calibration Door	0.21	0.24
Area 5 RWMS E 1500'	0.33	0.35	Area 6 CP-50 Calibration Bench	0.22	0.22
Area 5 RWMS E 1000'	0.37	0.39	Area 6 Yucca Oil Storage Area	0.27	0.30
Area 5 RWMS E 500'	0.33	0.37	Area 6 Well 3	0.30	0.32
Area 5 RWMS N E COR	0.32	0.36	Area 6 Stake TH-1	0.19	0.22
Area 5 RWMS N 1500'	0.34	0.36	Area 6 Stake TH-9	0.27	0.30
Area 5 RWMS N 1000'	0.36	0.39	Area 6 Stake TH-18	0.24	0.27
Area 5 RWMS N 500'	0.35	0.40	Area 6 Decon Pad NW	0.33	0.48
Area 5 RWMS NW COR	0.36	0.39	Area 6 Decon Pad SW	0.41	16.5
Area 5 RWMS W 500'	0.37	0.56	Area 6 Decon Pad SE	0.34	1.84
Area 5 RWMS W 1000'	0.35	0.40	Area 6 Decon Pad NE	0.36	0.46
Area 5 RWMS W 1500'	0.35	0.37	Area 7 7-300 Bunker	0.77	0.91
Area 5 RWMS S W COR	0.33	0.38	Area 7 UE-7ns	0.31	0.34

(a) Missing TLDs.

Note: Differences at MSM Sites and Decon Pad Sites are Due to Moving Cotter Concentrations.

Table 6.0 (TLD Results for the NTS [mR/day] - First and Second Quarters, CY 1997, cont.)

<u>Location</u>	<u>1st Qtr</u>	<u>2nd Qtr</u>	<u>Location</u>	<u>1st Qtr</u>	<u>2nd Qtr</u>
Area 5 RWMS S 500'	0.34	0.38	Area 7 Reitmann Seep	0.34	0.37
Area 5 RWMS S Gate	(a)	0.33	Area 8 Stake K-25	0.29	0.31
Area 5 RWMS E Gate	0.38	0.40	Area 9 9-300 Bunker	0.34	0.37
Area 5 RWMS Office	0.35	0.40	Area 9 Papoose Lake Rd	0.22	0.24
Area 5 RWMS PIT 3 N	0.30	0.35	Area 9 V&G Road Jct	0.28	0.33
Area 5 RWMS PIT 3 S	0.35	(a)	Area 9 Crater U9CW	0.22	0.31
Area 5 RWMS TRU Pad NE	4.07	1.36	Area 10 SEDAN W	0.85	0.91
Area 5 RWMS TRU Pad N	1.03	1.05	Area 10 SEDAN E Visitor Box	0.37	0.40
Area 5 RWMS TRU Pad NW	0.33	0.35	Area 10 Stake A-24	0.42	0.46
Area 10 Circle & L Road	0.33	0.35	Area 19 Stake R-8	0.43	0.52
Area 11 East of U11B	0.34	0.35	Area 19 Stake R-3	0.46	0.52
Area 11 Gate 293	0.32	0.38	Area 20 Stake P-116.5	0.37	0.45
Area 12 Stake TH-68.5	0.27	0.29	Area 20 Stake P-124	0.41	0.46
Area 12 T Tunnel #2 Pond	0.78	0.75	Area 20 Stake P-134.5	0.37	0.45
Area 12 Upper N Pond	0.33	0.38	Area 20 Stake J-31	0.49	0.59
Area 12 Stake M-168	0.33	0.35	Area 20 Stake J-16	0.38	0.47
Area 12 Upper Haines Lake	0.30	0.36	Area 20 Stake J-6	0.40	0.47
Area 12 Stake M-175	0.37	0.38	Area 20 Stake J-41	0.35	0.42
Area 12 Gold Meadows	0.29	0.31	Area 20 Stake LC-4	0.44	0.51
Area 15 EPA Complex	0.32	0.32	Area 20 Stake A-118	0.39	0.45
Area 15 Office	0.36	0.37	Area 22 Desert Rk Control Tower	0.17	0.18
Area 15 U15E Substation	0.27	0.28	Area 22 Army Well #1	0.24	(a)
Area 17 Stake M-190	0.38	0.46	Area 23 Bldg. 650 Store Room	0.20	0.21
Area 18 Stake P-35	0.38	0.47	Area 23 Bldg. 650 Dosimetry	0.16	0.18
Area 18 Stake A-106	0.42	0.49	Area 23 Bldg. 650 Roof	0.16	0.16
Area 18 Stake A-83	0.37	0.43	Area 23 Post Office	0.20	0.22
Area 19 Stake P-41	0.43	0.53	Area 23 Bldg. 610 Gate	0.16	0.18
Area 19 Stake P-54	0.36	0.43	Area 23 Gate 100	0.16	(a)
Area 19 Stake P-66	0.44	0.54	Area 23 NRDS Warehouse	0.32	0.37
Area 19 Stake P-71	0.40	0.47	Area 25 25-4-P Gate	0.37	0.39
Area 19 Stake C-31	0.40	0.47	Area 25 25-7-P Gate	0.36	0.37
Area 19 Stake C-27	0.41	0.47	Area 25 E-MAD N	0.30	0.34
Area 19 Stake C-25	0.39	0.46	Area 25 E-MAD E	0.33	0.36
Area 19 Stake C-16	0.40	0.47	Area 25 E-MAD S	0.35	0.36
Area 19 Gate 19-3P Kawich	0.39	0.43	Area 25 E-MAD W	0.32	0.35
Area 19 Stake P-77	0.42	0.51	Area 25 HENRE Site	0.27	0.38
Area 19 Stake P-88	0.49	0.57	Area 25 Jackass Flats 27 Rd	0.23	0.25
Area 19 Stake P-91	0.48	0.55	Area 25 Guard Station 510	0.34	0.41
Area 19 Stake R-29	0.38	0.46	Area 25 Yucca Mtn	0.42	0.43
Area 19 Stake R-26	0.42	0.49	Area 27 Area 27 Cafe	0.35	0.41
Area 19 Stake R-18	0.38	(a)	Area 30 Cat Cany Rd @ BUGGY	0.44	0.53

(a) Missing TLDs.

Note: Differences at MSM Sites and Decon Pad Sites are Due to Moving Cotter Concentrations.

Table 7.0 Summary Data for Well and Surface Water Samples - Second Quarter, CY 1997

<u>Location</u>	<u>Gross α</u>	<u>Gross β</u>	<u>Tritium^(a)</u>	<u>Ra-226</u>	<u>Ra-228</u>	<u>Pu-238</u>	<u>Pu-239</u>	<u>Sr-90</u>
<u>Water Supply Wells ($\mu\text{Ci/mL}$)</u>								
Area 5 Well 5B	5.6×10^{-09}	1.3×10^{-08}	1.3×10^{-08}	7.1×10^{-10}	1.3×10^{-10}	3.2×10^{-12}	1.5×10^{-12}	7.7×10^{-12}
Area 5 Well 5C	1.3×10^{-08}	8.9×10^{-09}	2.5×10^{-09}	3.3×10^{-09}	4.8×10^{-10}	-1.2×10^{-12}	1.2×10^{-12}	9.0×10^{-13}
Area 5 Well UE-5C ^(b)	1.1×10^{-08}	1.6×10^{-08}	4.7×10^{-09}	2.1×10^{-10}	3.9×10^{-10}	-1.2×10^{-12}	3.4×10^{-12}	1.9×10^{-10}
Area 6 Well #4A	1.1×10^{-08}	7.3×10^{-09}	1.4×10^{-08}	2.2×10^{-09}	1.5×10^{-10}	8.1×10^{-13}	-7.6×10^{-13}	1.2×10^{-12}
Area 6 Well #4	7.9×10^{-09}	6.2×10^{-09}	2.3×10^{-09}	6.5×10^{-10}	5.4×10^{-10}	-1.4×10^{-12}	-2.9×10^{-12}	8.2×10^{-11}
Area 6 Well C-1	1.7×10^{-08}	1.4×10^{-08}	6.6×10^{-09}	2.7×10^{-09}	7.8×10^{-10}	-1.6×10^{-12}	-3.3×10^{-12}	1.1×10^{-10}
Area 16 Well UE-16D	8.2×10^{-09}	7.8×10^{-09}	8.8×10^{-09}	1.5×10^{-09}	3.8×10^{-10}	-1.4×10^{-12}	-3.0×10^{-12}	3.0×10^{-10}
Area 18 Well HTH #8	8.3×10^{-10}	3.2×10^{-09}	2.9×10^{-10}	3.2×10^{-09}	9.7×10^{-11}	-1.6×10^{-12}	-3.4×10^{-12}	8.4×10^{-11}
Area 22 Well Army #1	5.5×10^{-09}	6.8×10^{-09}	4.5×10^{-09}	2.4×10^{-09}	4.1×10^{-10}	-1.4×10^{-12}	3.5×10^{-12}	1.6×10^{-10}
Area 25 Well J-12	1.2×10^{-09}	4.6×10^{-09}	1.7×10^{-08}	8.4×10^{-11}	7.1×10^{-10}	-1.4×10^{-12}	-2.9×10^{-12}	5.4×10^{-11}
Area 25 Well J-13	3.1×10^{-09}	4.6×10^{-09}	1.0×10^{-08}	5.0×10^{-10}	3.3×10^{-10}	7.0×10^{-13}	-6.6×10^{-13}	6.8×10^{-10}
Average	7.7×10^{-09}	8.4×10^{-09}	7.6×10^{-09}	1.6×10^{-09}	4.0×10^{-10}	-5.8×10^{-13}	-6.6×10^{-13}	1.5×10^{-10}
Average MDC	1.8×10^{-09}	1.5×10^{-09}	1.4×10^{-08}	3.9×10^{-09}	6.7×10^{-10}	1.5×10^{-11}	1.8×10^{-11}	3.8×10^{-10}

(a) Analyzed by the Enrichment Method.

(b) Used for Industrial Purposes, not for Drinking Water.

<u>Location</u>	<u>Gross β</u>	<u>Tritium</u>	<u>Pu-238</u>	<u>Pu-239</u>
<u>Sewage Lagoons ($\mu\text{Ci/mL}$)</u>				
Area 5 RWMS Swg Pond	1.9×10^{-08}	2.4×10^{-07}	2.2×10^{-12}	4.1×10^{-12}
Area 6 Yucca Swg Pond	1.6×10^{-08}	1.5×10^{-07}	1.7×10^{-12}	3.9×10^{-12}
Area 6 LANL Swg Pond	1.3×10^{-08}	2.2×10^{-07}	2.0×10^{-12}	1.9×10^{-12}
Area 6 DAF Swg Pond	2.5×10^{-08}	2.7×10^{-07}	1.5×10^{-12}	1.4×10^{-12}
Area 12 Swg Pond	7.0×10^{-09}	2.1×10^{-07}	1.8×10^{-12}	4.4×10^{-12}
Area 22 Swg Pond	5.9×10^{-08}	3.8×10^{-08}	1.9×10^{-12}	3.6×10^{-12}
Area 23 Swg Pond	2.5×10^{-08}	3.3×10^{-08}	2.6×10^{-12}	4.6×10^{-11}
Area 25 Reactor Control Pd	1.2×10^{-08}	1.3×10^{-07}	9.0×10^{-13}	5.1×10^{-12}
Area 25 Central Supt. Pond	1.8×10^{-08}	3.8×10^{-08}	6.0×10^{-12}	8.5×10^{-13}
Average	2.2×10^{-08}	1.5×10^{-07}	2.3×10^{-12}	7.9×10^{-12}

<u>Location</u>	<u>Gross β</u>	<u>Tritium</u>	<u>Cs-137</u>	<u>Pu-238</u>	<u>Pu-239</u>
<u>E Tunnel Pond and Influent ($\mu\text{Ci/mL}$)</u>					
Area 12 E Tunnel Effluent	8.8×10^{-08}	1.0×10^{-03}	1.4×10^{-07}	3.6×10^{-10}	2.9×10^{-09}
Area 12 E Tunnel Pond 2	8.0×10^{-08}	1.0×10^{-03}	1.3×10^{-07}	3.2×10^{-10}	2.6×10^{-09}

Table 8.0 Potable Water Sample Summary Results ($\mu\text{Ci/mL}$) - Second Quarter, CY 1997

<u>Location</u>	<u>Gross α</u>	<u>Gross β</u>	<u>Tritium</u>	<u>Pu-238</u>	<u>Pu-239</u>
Area 1 Building 101	7.7×10^{-09}	7.1×10^{-09}	3.4×10^{-08}	1.4×10^{-12}	3.2×10^{-12}
Area 2 Restroom	5.8×10^{-10}	3.4×10^{-09}	1.2×10^{-07}	1.4×10^{-12}	3.2×10^{-12}
Area 6 Cafe	1.0×10^{-08}	6.3×10^{-09}	8.6×10^{-08}	1.3×10^{-12}	3.1×10^{-12}
Area 6 Building 6-900	9.1×10^{-09}	6.8×10^{-09}	4.0×10^{-08}	1.2×10^{-12}	8.2×10^{-13}
Area 12 Ice House	4.6×10^{-10}	3.8×10^{-09}	9.8×10^{-08}	8.2×10^{-13}	2.8×10^{-12}
Area 23 Mercury	6.0×10^{-09}	9.3×10^{-09}	2.1×10^{-07}	9.4×10^{-13}	9.1×10^{-13}
Area 25 Building 4221	1.1×10^{-09}	4.7×10^{-09}	6.9×10^{-08}	1.2×10^{-12}	2.9×10^{-12}
Average	5.0×10^{-09}	5.9×10^{-09}	9.5×10^{-08}	1.2×10^{-12}	2.4×10^{-12}
Average MDC	1.3×10^{-09}	1.2×10^{-09}	7.4×10^{-07}	1.4×10^{-11}	1.8×10^{-11}

Table 9.0 NTS Drinking Water Supply System Permits and Sampling Frequency - Second Quarter, CY 1997

<u>Permit No.</u>	<u>Area(s)</u>	<u>Expiration Date</u>	<u>Sample Frequency</u>	<u>Number of Samples</u>
NY-5024-12NCNT	Area 1	09/30/97	Monthly	1
NY-4099-12C	Areas 2 & 12	09/30/97	Monthly	1
NY-0360-12C	Areas 5, 6, & 23	09/30/97	Monthly	6
NY-4098-12NCNT	Area 25	09/30/97	Monthly	2
NY-835-12H	Sitewide Truck	09/30/97	Weekly	1
NY-836-12H	Sitewide Truck	09/30/97	Weekly	1
NY-841-12H	Sitewide Truck	09/30/97	Weekly	1

Table 10.0 Inorganic Analyses of Well Water Samples (mg/L) - First Quarter, CY 1997

<u>Well Name</u>	<u>Analysis</u>	<u>Limit</u>	<u>Result</u>	<u>Well Name</u>	<u>Analysis</u>	<u>Limit</u>	<u>Result</u>
Well 5C	Nitrate	10	<1	Well J-12	Nitrate	10	5
Well 5B	Nitrate	10	3	Well J-13	Nitrate	10	5
Well 4	Nitrate	10	2	Well 8	Nitrate	10	<1
Well C-1	Nitrate	10	4	Well UE-16d	Nitrate	10	<1
Well 4A	Nitrate	10	4	Well J-12	Fluoride	2	2
Well Army 1	Nitrate	10	<1	Well J-13	Fluoride	2	2

Table 11.0 Pond Water Depths in Infiltration Basins -Second Quarter, CY 1997

<u>Impound</u>	<u>Maximum Operating Depth, cm</u>	<u>Average Depth, cm (Second Quarter)</u>
Gate 100, Basin	90	0.7
Mercury, Basin	180	0
Yucca Lake		
North Basin	140	126
South Basin	140	0
Tweezer		
East Basin	244	0
West Basin	244	0
CP-6		
East Basin	90	0
West Basin	90	0
CP-72	90	0
DAF		
Basin 1	150	0
Basin 2	150	0
Reactor Control, Basin	130	0
Test Stand 1, Basin	90	0
Test Cell C, Basin	90	0
Base Camp 25, Basin	100	0
Base Camp 12, Basin 1	120	0
Base Camp 12, Basin 2	120	0
Base Camp 12, Basin 3	120	0
Base Camp 12, Basin 4	120	0
Base Camp 12, Basin 5	120	0
RWMS-5, Basin 1	150	0
RWMS-5, Basin 2	150	0

Table 12.0 Influent Quality - Second Quarter, CY 1997

<u>Facility</u>	<u>BOD5^(a) (mg/L)</u>	<u>S.C.^(b) (μmhos/cm)</u>
Gate 100	472	1.38
Mercury	514	0.97
Yucca Lake	50	0.63
Tweezer	135	1.15
DAF	106	1.31
Reactor Control	0	0
Test Stand 1	0	0
Base Camp 25	124	0.85
Base Camp 12	8	0.36
Test Cell C	0	0
RWMS-5	40	0.65

(a) Biochemical Oxygen Demand.

(b) Specific Conductivity.

Table 13.0 Organic Loading Rates - Second Quarter, CY 1997

<u>Facility</u>	<u>Limit (Kg/day)</u>	<u>Mean Daily Load Metered Rates</u>
Mercury	172	120.91
Yucca Lake	8.6	2.30
Base Camp 12	54	0.08
LANL on Tweezer	5.0	1.01
RWMS-5	0.955	.36
<u>Calculated Rates</u>		
DAF	7.6	3.21
Reactor Control	4.2	0 ^(a)
Eng Test Stand	2.3	0 ^(a)
Test Cell C	1.3	0 ^(a)
Base Camp 25	7.4	1.43
Gate 100	2.4	1.72

(a) Samples not taken due to inadequate or nonexistent flow.

Table 14.0 Sample Results for Influent Toxics - Second Quarter, CY 1997

<u>Parameter</u>	<u>Compliance Limit (mg/L)</u>	<u>Measurement (Mg/L)</u>
<u>Area 6 Yucca Lake</u>		
Barium	100	0.508
Total Cresol	200	<0.30
<u>Area 5. RWMS</u>		
Barium	100	0.735
Total Cresol	200	<0.30
<u>Tweezer</u>		
Arsenic	5.0	0.0127
Barium	100	0.618
Total Cresol	200	<0.30
<u>DAF</u>		
Arsenic	5.0	0.0167
Barium	100	0.499
Total Cresol	200	<0.30
<u>Mercury</u>		
Arsenic	5.0	0.015
Barium	100	0.59
Total Cresol	200	<0.30
<u>Area 25. Base Camp</u>		
Barium	100	0.665
Total Cresol	200	<0.30

Table 15.0 Quantity of Waste Disposed of in Landfills - Second Quarter, CY 1997

<u>Month</u>	<u>Quantity (in pounds)</u>		
	<u>Area 9</u>	<u>Area 23</u>	<u>Area 6</u>
April	1,157,870	124,400	340
May	1,029,180	300,350	4,170
June	<u>1,451,190</u>	<u>155,980</u>	<u>300</u>
Total	3,638,240	580,730	4,810

Table 16.0 NEPA Documentation - Second Quarter, CY 1997

<u>Number</u>	<u>Description</u>	<u>Category</u>	File Review <u>Status</u> ^(a)
NV-95-032	Sitewide EIS for LANL, NTS/LANL	EIS	Pending
NV-95-066	Area 5 LLW Management Site Improvement Project	EA	Pending
NV-96-036	Bench Scale Technology Demonstration Project	CX	Pending
NV-96-037	Kistler Aerospace Corporation	EA	Pending
NV-97-008	NTS Survey Control & Photo Marker Placement	CX	Canceled
NV-97-011	Area 6 Steam Cleaning Effluent Ponds Remediation	NTS ^(b)	05/13/97
NV-97-012	Installation of Septic Tank for Infrastructure, Area 18	CX	05/14/97
NV-97-013	Area 6 Decon Pond Sampling	NTS ^(b)	05/22/97
NV-97-014	General Research for Advanced Sensor Systems	NTS ^(b)	05/22/97
NV-97-016	Water & Communication Line Upgrades, Hazardous Materials Spill Center	CX	06/06/97
NV-97-017	Dipole Uncle 5 Testing Program	NTS ^(b)	06/11/97
NV-97-018	Fluid Tech, Area 25	CX	06/18/97
NV-97-019	10 MW Solar Power Plant	NTS ^(b)	Pending
NV-97-020	Fleet Operations Steam Cleaning Discharge Area Closure	NTS ^(b)	06/30/97

(a) Date in this Column is the Date Approved.

(b) Projects Covered by the NTS EIS.

Table 17.0 Environmental Occurrences at NTS Facilities -Second Quarter, CY 1997

<u>Date</u>	<u>Report Number</u>	<u>Description</u>	<u>Status</u>
04/28/97	NVOO-BNLV-NTS 1997-0006	A Drum of Compressor Oil Leaked about 35 gal onto the Ground	Pending

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