NPDES PERMIT NO. NM0028355
FACT SHEET

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

APPLICANT:

University of California
Management Contractor for Operations
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

and

U.S. Department of Energy
Los Alamos Area Office
Los Alamos, NM 87544

ISSUING OFFICE:

U.S. Environmental Protection Agency
Region 6
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PERMIT ACTION:

Proposed reissuance of the current permit issued June 24, 1994 with an effective date of August 1, 1994 and an expiration date of October 31, 1998.

DATE PREPARED:

October 18, 1999

40CFR CITATIONS: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations, revised as of 7/1/98.

STATE CERTIFICATION: The permit is in the process of certification by the State agency following regulations promulgated at 40CFR124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service; and to the National Marine Fisheries Service prior to the publication of that notice.

TRIBAL CERTIFICATION

Several Pueblos are located in the vicinity of Los Alamos National Laboratory. They include the following: San Ildefonso, Santa Clara, and Cochiti. The Santa Clara Pueblo has approved water quality standards; however, it is not adjacent to any stream where discharges are proposed to be authorized. Santa Clara is therefore not believed to be affected by the discharges proposed to be authorized by this permit. Neither San Ildefonso nor Cochiti Pueblo has approved water quality standards; therefore, no certification is required for this permit issuance.

ENDANGERED SPECIES ACT

EPA has determined that issuance of this permit may affect but is only likely to beneficially affect any listed threatened or endangered species or designated critical habitat. Conditions proposed to be required by the reissued permit will result in a significant improvement in the quality of waste water the facility is authorized to discharge compared with the environmental baseline established by the previous permit. The draft permit also includes a significant reduction in the number of authorized discharges. EPA is seeking written concurrence with its decision from the United States Fish and Wildlife Service.

The last permit for this facility was issued on June 24, 1994 and expired October 31, 1998. Although the Fish and Wildlife Service did not make a determination as to the effects on listed threatened or endangered species by discharges authorized under it, the Service did support issuance of the permit because it increased the level of protection over the previous permit (Fowler-Propst, 1994). The State of New Mexico Environment Department also certified that the conditions required by the permit met the applicable state water quality standards and the water quality management plan (Piatt, 1994).

In many cases the limits included in the proposed permit are more stringent than those contained in the expired permit. The draft permit includes new site specific water quality standards based limits at each outfall for Chromium, Copper, Lead, and Zinc. Those limits were calculated based on the Total Suspended Solids concentrations of individual discharges. In the previous permit the limits were calculated using site-wide average values for Total Suspended Solids, which resulted in less stringent limitations. The proposed permit also incorporates more stringent limits for Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Tritium, and Zinc on all discharges. Those limits are based on State water quality standards which were promulgated after the previous permit was issued. New, more stringent limits are also proposed for high explosive waste water discharges. Those new limits for Total Toxic Organics and Trinitrotoluene will help to reduce the quantity of pollutants discharged and prevent future contamination from the discharges.

The number of discharges proposed to be authorized by the reissued permit is significantly decreased from the number authorized under the previous permit. 118 discharges which were authorized under the expired permit are not included in the proposed permit. Among those discharges not proposed to be authorized are 19 high explosive waste water discharges, 14 photo waste water discharges 75 cooling water discharges, 8 sanitary waste water discharges, 1 printed circuit board discharge, and 1 asphalt plant air scrubber discharge. This change will result in a

significant decrease in the amount of pollutants which the permit authorizes to be discharged to receiving waters throughout the facility. As proposed, the permit will no longer authorize discharges to: Two Mile Canyon, Chaquehui Canyon, Pajarito Canyon, Ancho Canyon, Three Mile Canyon, Pueblo Canyon, Guaje Canyon, and Rendija Canyon. Following is a summary of the receiving streams and the number of discharges no longer proposed to be authorized.

Receiving Stream	Number of Outfalls Deleted
Los Alamos Canyon	18
Pajarito Canyon	16
Sandia Canyon	15
Water Canyon	15
Canada del Buey	12
Canon de Valle	11
Mortandad Canyon	11
Guaje Canyon	6
Two Mile Canyon	6
Ancho Canyon	2
Chaquehui Canyon	2
Three Mile Canyon	2
Pueblo Canyon	1
Rendija Canyon	1

The proposed permit also contains a new flow limit for the radioactive waste treatment plant which is designed to reduced the risk of erosion of potentially contaminated areas downstream.

Los Alamos National Laboratory has since made many changes in the management of its waste water. It has accomplished operational changes resulting in a significant decrease in the number of waste water discharges and has constructed new, more effective treatment systems for radioactive and industrial waste water and for high explosives waste water. Based on examination of these changes to the facility and analysis of the potential water quality impacts EPA has determined that reissuance of the permit may affect but is likely to result in beneficial affects for any threatened or endangered species or its critical habitat. The Agency is requesting concurrence with that determination from the U.S. Fish and Wildlife Service or in the absence of such concurrence initiation of formal consultation under the Endangered Species Act.

A Biological Evaluation for the facility's Habitat Management Plan has also previously been submitted to the U.S. Fish and Wildlife Service by Los Alamos National Laboratory. The U.S. Fish and Wildlife Service concurred on the Laboratory's determination that implementation of the Habitat Management Plan may affect , but is unlikely to adversely affect any threatened or endangered species (Fowler-Propst, 1999).

FINAL DETERMINATION: The public notice describes the procedures for the formulation of final determinations.

I. PROPOSED CHANGES FROM PREVIOUS PERMIT

It is proposed that the current permit be reissued for a 5-year term.

The changes from the current permit are:

(A) 105 Outfalls have been omitted. Discharge is not proposed to be authorized at those outfalls by the reissued permit.

(B) 13 potable water wells have been transferred to Los Alamos County and the associated discharges are not proposed to be authorized by the reissued permit.

(C) A maximum rate limitation has been added to the Radioactive Liquid Waste Treatment Facility discharge at Outfall 051. Mass limits were recalculated to correspond with the change.

(D) A new Outfall 03A199 has been added for the discharge of cooling tower blowdown.

(E) Limits for Total Toxic Organics and Trinitrotoluene have been added to the High Explosives Wastewater discharge at Outfall 05A055 and 05A097.

(F) Water Quality Standards based limits were recalculated based on current standards.

(G) Monitoring for Total Nitrogen, Nitrate-Nitrite (as N), and Ammonia Nitrogen (as N) at Outfall 051 is proposed to be removed from the permit.

(H) Limits for Total Residual Chlorine are proposed to replace limits for Free Available Chlorine at Outfalls 001, 03A021, 03A022, 03A024, 03A027, 03A028, 03A047, 03A048, 03A049, 03A113, 03A130, 03A158, 03A160, 03A181, 03A185, and 03A199.

The specific effluent limitations and/or conditions will be found in the draft permit.

II. APPLICANT ACTIVITY

Under the Standard Industrial Classification (SIC) Codes 9922, 9711, 9661, and 9611, the applicant currently operates a large multi-disciplinary facility which conducts national defense research and development, scientific research, space research and technology development, and energy development.

III. DISCHARGE LOCATION

As described in the application, the plant site is located in Los Alamos County, New Mexico. The discharges are to receiving waters named various ephemeral tributaries thence to the Rio Grande in Waterbody Segment Code No. 2-111 of the Rio Grande Basin. Those discharges are:

Tech. Area	Outfall Number	Receiving Stream
50-1	051	Mortandad Canyon
46-347	13S	Sandia Canyon or Canada del Buey
3-22	001	Sandia Canyon
3-29	03A021	Mortandad Canyon
3-127	03A022	Mortandad Canyon
3-187	03A024	Sandia Canyon
3-285	03A027	Sandia Canyon
11-30	03A130	Water Canyon
11-52	05A097	Water Canyon
15-202	03A028	Water Canyon
15-312	03A185	Water Canyon
16-1508	05A055	Canon de Valle
21-209	03A158	Los Alamos Canyon
21-357	02A129	Los Alamos Canyon
53-293, 294, 1032, and LEDA	03A113	Sandia Canyon
35-124	03A160	Ten Site Canyon
53-60	03A047	Los Alamos Canyon
53-62	03A048	Los Alamos Canyon
53-64	03A049	Los Alamos Canyon
55-6	03A181	Mortandad Canyon
3-1837	03A199	Sandia Canyon

IV. RECEIVING WATER USES

The known uses of the receiving water(s) are:

(WATERBODY SEGMENT CODE NO. 2-111)
Livestock Watering
Wildlife Habitat

V. STREAM STANDARDS

The general and specific stream standards are provided in "Water Quality Standards for Interstate and Intrastate Streams in New Mexico," (20NMAC6.1, effective 1/23/95).

VI. DISCHARGE DESCRIPTION

A quantitative description of the discharge(s) described in the EPA Permit Application Forms 1, 2C and 2D dated April 30, 1998 and discharge monitoring report data is presented in Appendix A.

VII. TENTATIVE DETERMINATION

On the basis of preliminary staff review and after consultation with the State of New Mexico, the Environmental Protection Agency has made a tentative determination to reissue a permit for the discharge described in the application.

VIII. DRAFT PERMIT RATIONALE

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under 40CFR122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at 40CFR122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to 40CFR122.44(a) or on State water quality standards and requirements pursuant to 40CFR122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

Regulations promulgated at 40CFR122.44(a) require technology-based effluent limitations to be placed in NPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgment) in the absence of guidelines, or on a combination of the two.

For most outfalls, the technology based effluent limitations from the expired permit are retained in the proposed permit. A summary of those limits follows:

Outfall 001 (Power Plant Effluent)

	Monthly Average	Daily Maximum
Total Suspended Solids	30 mg/l	100 mg/l
Free Available Chlorine *	0.2 mg/l	0.5 mg/l
pH range:	6.0 to 9.0 standard units	

Outfall 02A129 (neutralized demineralizer regeneration brine and boiler blowdown)

	Monthly Average	Daily Maximum
Total Suspended Solids	30 mg/l	100 mg/l
Total Iron	10 mg/l	40 mg/l
Total Phosphorus	20 mg/l	40 mg/l
Sulfite (as SO_3)	35 mg/l	70 mg/l
pH range:	6.0 to 9.0 standard units	

Outfall Type 03A (Treated Cooling Water)

Includes Outfalls: 03A021, 03A022, 03A024, 03A027, 03A028, 03A047, 03A048, 03A049, 03A113, 03A130, 03A158, 03A160, 03A181, 03A185, and 03A199

	Monthly Average	Daily Maximum
Total Suspended Solids	30 mg/l	100 mg/l
Total Phosphorus	20 mg/l	40 mg/l
Free Available Chlorine *	0.2 mg/l	0.5 mg/l
pH range:	6.0 to 9.0 standard units	

Outfall Type 05A (High Explosives Waste Water)

Includes Outfalls: 05A055 and 05A097

	Monthly Average	Daily Maximum

Chemical Oxygen Demand	125 mg/l	125 mg/l
Total Suspended Solids	30 mg/l	45 mg/l
Oil & Grease	15 mg/l	15 mg/l
pH range:	6.0 to 9.0 standard units	

Outfall 13S (Sanitary Waste Water)

	Monthly Average	Daily Maximum
Biochemical Oxygen Demand (5-day)	30 mg/l	45 mg/l
Total Suspended Solids	30 mg/l	45 mg/l
Fecal Coliform (colonies/100ml)	500	500
pH range:	6.0 to 9.0 standard units	

Outfall 051 (Radioactive and Industrial Waste Water)

	Monthly Average	Daily Maximum
Chemical Oxygen Demand	125 mg/l	125 mg/l
Total Suspended Solids	30 mg/l	45 mg/l
Total Chromium	1.34 mg/l	2.68 mg/l
Total Iron	7.053 mg/l	14.106 mg/l
Total Lead	0.423 mg/l	N/A
Total Zinc	4.37 mg/l	8.75 mg/l
pH range:	6.0 to 9.0 standard units	

* Limits for Free Available Chlorine are proposed to be changed to Total Residual Chlorine.

2. CHANGES FROM PREVIOUS PERMIT

Mass Limits

The previous permit contained mass limits at Outfalls 13S and 051. Outfall 051 is proposed to have a new limit for flow. The new flow limits and calculation of mass limits for Outfall 051 are discussed later in this Fact Sheet. Biochemical Oxygen Demand and Total Suspended Solids were limited by mass in the expired permit and are again proposed to be limited by mass. The new mass limits were calculated based on the long term average flow reported on Discharge Monitoring Reports for Outfall 13S. The new limits were calculated as follows:

Biochemical Oxygen Demand

Monthly Avg.	= 0.2883 MGD * 8.34 * 30 mg/l	=	72 lbs/day
Daily Max.	= 0.2883 MGD * 8.34 * 45 mg/l	=	108 lbs/day

Total Suspended Solids

Monthly Avg.	= 0.2883 MGD * 8.34 * 30 mg/l	=	72 lbs/day
Daily Max.	= 0.2883 MGD * 8.34 * 45 mg/l	=	108 lbs/day

The previous permit contained mass limits at Outfall 051 for: Chemical Oxygen Demand, Total Suspended Solids, Total Cadmium, Total Chromium, Total Copper, Total Iron, Total Lead, Total Mercury, and Total Zinc. The limits were recalculated based on the facility's present flow rates. The new proposed limits were calculated as follows:

Chemical Oxygen Demand

Monthly Avg.	= 0.0247 MGD * 8.34 * 125 mg/l	=	25.75 lbs/day
Daily Max.	= 0.0247 MGD * 8.34 * 125 mg/l * 1.5	=	38.6 lbs/day

Total Suspended Solids

Monthly Avg.	= 0.0247 MGD * 8.34 * 30 mg/l	=	6.18 lbs/day
Daily Max.	= 0.0247 MGD * 8.34 * 45 mg/l	=	9.27 lbs/day

Total Cadmium

Monthly Avg.	= 0.0247 MGD * 8.34 * 0.05 mg/l	=	0.01 lbs/day **
Daily Max.	= 0.0247 MGD * 8.34 * 0.05 mg/l * 1.5	=	0.015 lbs/day **

Total Chromium

Monthly Avg.	= 0.0247 MGD * 8.34 * 1.34 mg/l	=	0.276 lbs/day
Daily Max.	= 0.0247 MGD * 8.34 * 2.68 mg/l	=	0.552 lbs/day

Total Copper

Monthly Avg.	= 0.0247 MGD * 8.34 * 1.393 mg/l	=	0.287 lbs/day **
Daily Max.	= 0.0247 MGD * 8.34 * 1.393 mg/l * 1.5	=	0.43 lbs/day **

Total Iron

Monthly Avg.	= 0.0247 MGD * 8.34 * 7.05 mg/l	=	1.45 lbs/day
Daily Max.	= 0.0247 MGD * 8.34 * 14.1 mg/l	=	2.9 lbs/day

Total Lead

Monthly Avg.	= 0.0247 MGD * 8.34 * 0.423 mg/l	=	0.87 lbs/day
Daily Max.	= 0.0247 MGD * 8.34 * 0.524 mg/l * 1.5	=	0.162 lbs/day **

Total Mercury

Monthly Avg. = 0.0247 MGD * 8.34 * 0.012 mg/l = 1.12 mg/day **
Daily Max. = 0.0247 MGD * 8.34 * 0.012 mg/l * 1.5 = 1.68 lbs/day **

Total Zinc
Monthly Avg. = 0.0247 MGD * 8.34 * 4.37 mg/l = 0.9 lbs/day
Daily Max. = 0.0247 MGD * 8.34 * 8.75 mg/l = 1.8 lbs/day

** Denotes a water quality based limit. Derivation of the water quality based concentration limits used above is explained later in this Fact Sheet.

Outfall Reduction Program

Los Alamos National Laboratory has conducted an outfall reduction program which consists of eliminating waste water sources, re-piping waste water drainage systems, recirculation, modification or installation of equipment, and plugging floor drains. The permittee has also constructed the Sanitary Wastewater System Facility which treats waste water formerly discharged at nine different outfalls. Treated sanitary waste water is now reused as cooling water at the power plant prior to discharge at Outfall 01A001. This change has resulted in elimination of eight sanitary outfalls and 32 septic tank systems. Waste minimization efforts have resulted in a significant decrease in the volume of high explosives waste water discharged. Los Alamos National Laboratory has also constructed a new High Explosives Wastewater Treatment Facility which has facilitated elimination of nineteen outfalls that formerly discharged waste water from high explosives research and development, decontamination and decommissioning, environmental restoration, and waste minimization projects.

Through the outfall reduction program photo waste discharges, asphalt plant discharges, and photo etching discharges from printed circuit board manufacturing have also been eliminated and are not proposed to be authorized under the reissued permit. A summary of the outfalls proposed to remain in the reissued permit and those which have been eliminated from the expired permit follows:

Outfall Categories

001	Power Plant Discharge
02A	Neutralized demineralizer regeneration brine and boiler blowdown
03A	Cooling tower blowdown, evaporative coolers, chillers, condensers, and air washer blowdown
04A	Non-contact cooling water, non-destructive testing discharge, and production facilities
05A	High explosive waste discharge
S	Sanitary wastewater
051	Industrial wastewater treatment plant

Remaining Outfalls

	Outfall Number	TA/ Building	Description
1.	051	50-1	Radiochemistry lab waste water, duct wash, decontamination and demolition waste water, mop and cleaning waters, environmental restoration liquid wastes, photo rinse water, boiler and equipment room process water, and storm water from secondary containment structures
2.	13S	46-347	Sanitary waste water
3.	001	3-22	Power Plant boiler blowdown/cooling water and sanitary reuse waste water
4.	02A129	21-357	Steam Plant boiler blowdown, demineralizer regeneration water, environmental tank washings, and once through cooling water
5.	03A021	3-29	Chemistry and Metallurgy cooling system air wash
6.	03A022	3-127	Cooling tower blowdown
7.	03A024	3-187	Cooling tower blowdown
8.	03A027	3-285	Cooling tower blowdown and fire protection water
9.	03A028	15-202	Cooling tower blowdown and other de minimus waste streams
10.	03A047	53-60	Cooling tower blowdown and other de minimus waste streams
11.	03A048	53-62	Cooling tower blowdown and other de minimus waste streams
12.	03A049	53-64	Cooling tower blowdown and other de minimus waste streams
13.	03A113	53-293, 294, 1032, and LEDA	Cooling tower blowdown
14.	03A130	11-30	Cooling tower blowdown and other de minimus waste streams
15.	03A158	21-209	Cooling tower blowdown and other de minimus waste streams
16.	03A160	35-124	Cooling tower blowdown and floor washings
17.	03A181	55-6	Cooling tower blowdown
18.	03A185	15-312	Cooling tower blowdown
19.	03A199	3-1837	Cooling tower blowdown
20.	05A055	16-1508	Process waste water from high explosives research and development, decontamination and decommissioning, environmental restoration, and waste minimization projects
21.	05A097	11-25	Wash water from high explosives testing drop pad

Outfalls Deleted

	Outfall Number	TA/ Building	Discharge To	Type
1.	03A114	53-2	Sandia Canyon	Treated Cooling Water

2.	03A124	46-169	Canada del Buey	Treated Cooling Water
3.	03A125	53-28	Sandia Canyon	Treated Cooling Water
4.	03A136	46-200	Canada del Buey	Treated Cooling Water
5.	03A145	53-6	Sandia Canyon	Treated Cooling Water
6.	03A146	53-14	Sandia Canyon	Treated Cooling Water
7.	03A148	3-1498, 1807	Sandia Canyon	Treated Cooling Water
8.	03A184	53-17	Sandia Canyon	Treated Cooling Water
9.	03A009	3-102	Two Mile Canyon	Treated Cooling Water
10.	03A020	2-49	Los Alamos Canyon	Treated Cooling Water
11.	03A023	3-156	Sandia Canyon	Treated Cooling Water
12.	03A025	3-208	Two Mile Canyon	Treated Cooling Water
13.	03A031	21-143	Los Alamos Canyon	Treated Cooling Water
14.	03A032	21-150	Los Alamos Canyon	Treated Cooling Water
15.	03A034	21-166, 167	Los Alamos Canyon	Treated Cooling Water
16.	03A035	21-210	Los Alamos Canyon	Treated Cooling Water
17.	03A036	21-152, 155, 220	Los Alamos Canyon	Treated Cooling Water
18.	03A037	21-314	Los Alamos Canyon	Treated Cooling Water
19.	03A038	33-114	Chaquehui Canyon	Treated Cooling Water
20.	03A040	43-1	Los Alamos Canyon	Treated Cooling Water
21.	03A042	46-1	Canada del Buey	Treated Cooling Water
22.	03A043	46-31	Canada del Buey	Treated Cooling Water
23.	03A045	48-1	Mortandad Canyon	Treated Cooling Water
24.	03A060	16-430	Water Canyon	Treated Cooling Water
25.	03A098	59-1	Two Mile Canyon	Treated Cooling Water
26.	04A013	46-30	Canada del Buey	Non-Contact Cooling Water
27.	04A014	46-88	Canada del Buey	Non-Contact Cooling Water
28.	04A016	48-1	Mortandad Canyon	Non-Contact Cooling Water
29.	04A018	46-24, 59, 76	Canada del Buey	Non-Contact Cooling Water
30.	04A070	16-220	Canon de Valle	Non-Contact Cooling Water
31.	04A083	16-202	Water Canyon	Non-Contact Cooling Water
32.	04A091	16-450	Water Canyon	Non-Contact Cooling Water
33.	04A092	16-370	Water Canyon	Non-Contact Cooling Water
34.	04A093	15-R203	Canon de Valle	Non-Contact Cooling Water
35.	04A094	3-170	Sandia Canyon	Non-Contact Cooling Water
36.	04A101	40-9	Pajarito Canyon	Non-Contact Cooling Water
37.	04A115	8-70	Pajarito Canyon	Non-Contact Cooling Water
38.	04A117	46-41	Canada del Buey	Non-Contact Cooling Water
39.	04A118	Pajarito #4	Canada del Buey	Non-Contact Cooling Water
40.	04A126	48-8	Mortandad Canyon	Non-Contact Cooling Water
41.	04A127	35-213	Mortandad Canyon	Non-Contact Cooling Water
42.	04A131	48-1	Mortandad Canyon	Non-Contact Cooling Water
43.	04A135	53-18	Sandia Canyon	Non-Contact Cooling Water
44.	04A137	48-46	Mortandad Canyon	Non-Contact Cooling Water

45.	04A139	15-184	Water Canyon	Non-Contact Cooling Water
46.	04A140	3-141	Mortandad Canyon	Non-Contact Cooling Water
47.	04A141	39-69	Ancho Canyon	Non-Contact Cooling Water
48.	04A142	21-5, 149	Los Alamos Canyon	Non-Contact Cooling Water
49.	04A143	15-306	Three Mile Canyon	Non-Contact Cooling Water
50	04A147	33-86	Chaquehui Canyon	Non-Contact Cooling Water
51.	04A151	3-22	Sandia Canyon	Non-Contact Cooling Water
52.	04A152	48-28	Mortandad Canyon	Non-Contact Cooling Water
53.	04A153	48-1	Mortandad Canyon	Non-Contact Cooling Water
54.	04A155	9-50	Pajarito Canyon	Non-Contact Cooling Water
55.	04A156	39-89	Ancho Canyon	Non-Contact Cooling Water
56.	04A157	16-460	Water Canyon	Non-Contact Cooling Water
57.	04A161	Otowa #1	Pueblo Canyon	Non-Contact Cooling Water
58.	04A163	Pajarito #1	Sandia Canyon	Non-Contact Cooling Water
59.	04A164	Pajarito #2	Pajarito Canyon	Non-Contact Cooling Water
60.	04A165	Pajarito #3	Sandia Canyon	Non-Contact Cooling Water
61.	04A166	Pajarito #5	Canada del Buey	Non-Contact Cooling Water
62.	04A167	LA Well #1B	Los Alamos Canyon	Non-Contact Cooling Water
63.	04A168	LA Well #2	Los Alamos Canyon	Non-Contact Cooling Water
64.	04A169	LA Well #3	Los Alamos Canyon	Non-Contact Cooling Water
65.	04A170	LA Well #5	Los Alamos Canyon	Non-Contact Cooling Water
66.	04A171	Guaje #1	Guaje Canyon	Non-Contact Cooling Water
67.	04A172	Guaje #1A	Guaje Canyon	Non-Contact Cooling Water
68.	04A173	Guaje #2	Guaje Canyon	Non-Contact Cooling Water
69.	04A174	Guaje #4	Guaje Canyon	Non-Contact Cooling Water
70.	04A175	Guaje #5	Guaje Canyon	Non-Contact Cooling Water
71.	04A176	Guaje #6	Rendija Canyon	Non-Contact Cooling Water
72.	04A177	Guaje Booster #1	Guaje Canyon	Non-Contact Cooling Water
73.	04A178	LA Booster 1	Los Alamos Canyon	Non-Contact Cooling Water
74.	04A182	21-1003	Los Alamos Canyon	Non-Contact Cooling Water
75.	04A186	Otowi Well #4	Los Alamos Canyon	Non-Contact Cooling Water
76.	05A052	16-380	Water Canyon	High Explosive Waste Water
77.	05A053	16-410	Water Canyon	High Explosive Waste Water
78.	05A054	16-340	Canon de Valle	High Explosive Waste Water
79.	05A056	16-260	Canon de Valle	High Explosive Waste Water
80.	05A057	16-265	Canon de Valle	High Explosive Waste Water
81.	05A058	16-300 - 306	Water Canyon	High Explosive Waste Water
82.	05A061	16-280	Canon de Valle	High Explosive Waste Water
83.	05A062	16-342	Canon de Valle	High Explosive Waste Water
84.	05A063	16-400	Canon de Valle	High Explosive Waste Water
85.	05A066	9A-21, 28, 29, 32, 35, 37, 38, & 40	Pajarito Canyon	High Explosive Waste Water

86.	05A067	9B-41, 42, 43, 45, & 46	Pajarito Canyon	High Explosive Waste Water
87.	05A068	9-48	Pajarito Canyon	High Explosive Waste Water
88.	05A069	11-50	Water Canyon	High Explosive Waste Water
89.	05A071	16-430	Water Canyon	High Explosive Waste Water
90.	05A072	16-460	Water Canyon	High Explosive Waste Water
91.	05A096	11-51	Water Canyon	High Explosive Waste Water
92.	05A149	16-267	Canon de Valle	High Explosive Waste Water
93.	05A154	40-41	Two Mile Canyon	High Explosive Waste Water
94.	05A159	16-360	Water Canyon	High Explosive Waste Water
95.	128 128	22-91	Pajarito Canyon	Printed Circuit Board Mfg
96.	02S	TA-9	Sandia Canyon	Sanitary Wastewater
97.	03S	TA-16	Water Canyon	Sanitary Wastewater
98.	04S	TA-18	Pajarito Canyon	Sanitary Wastewater
99.	05S	TA-21 STF	Los Alamos Canyon	Sanitary Wastewater
100.	07S	TA-46N	Canada del Buey	Sanitary Wastewater
101.	09S	TA-53	Los Alamos Canyon	Sanitary Wastewater
102.	10S	TA-35	Mortandad Canyon	Sanitary Wastewater
103.	12S	TA-46S	Canada del Buey	Sanitary Wastewater
104.	06A073	16-222	Canon de Valle	Photo Waste Discharge
105.	06A074	8-22	Pajarito Canyon	Photo Waste Discharge
106.	06A075	8-21	Pajarito Canyon	Photo Waste Discharge
107.	06A078	22-34	Two Mile Canyon	Photo Waste Discharge
108.	06A079	40-4	Pajarito Canyon	Photo Waste Discharge
109.	06A080	40-5	Pajarito Canyon	Photo Waste Discharge
110.	06A081	40-8	Pajarito Canyon	Photo Waste Discharge
111.	06A082	40-12	Pajarito Canyon	Photo Waste Discharge
112.	06A099	40-23	Two Mile Canyon	Photo Waste Discharge
113.	06A100	40-15	Pajarito Canyon	Photo Waste Discharge
114.	06A106	36-1	Three Mile Canyon	Photo Waste Discharge
115.	06A123	15-R183	Canon de Valle	Photo Waste Discharge
116.	06A132	35-87	Mortandad Canyon	Photo Waste Discharge
117.	06A183	3-510	Sandia Canyon	Photo Waste Discharge
118.	07A109	3-73	Sandia Canyon	Asphalt Plant Air Scrubber Wash Water

New Technology Based Limitations

Examination of the existing technology-based permit limits revealed that the limits at most outfalls are representative of the Best Available Technology Economically Achievable (BAT). The exception to this is at the High Explosives Wastewater Treatment Facility discharge (Outfall 05A055 and 05A097). This outfall is limited in the expired permit only for the technology based parameters of Chemical Oxygen Demand, Total Suspended Solids, and Oil & Grease. These

parameters are not deemed to be sufficiently representative of the pollutants expected to be present in the effluent treated at the facility. Additionally, since the permittee has added a new, more advanced treatment system composed of flocculation, sedimentation, slow sand filtration, carbon absorption, and neutralization, it is appropriate to establish new BAT for the outfall with this permit reissuance. It is proposed that the reissued permit contain monthly average and daily maximum limits of 1 mg/l for Total Toxic Organics. These limits are consistent with those at the radioactive and industrial waste treatment facility (Outfall 051). Total Toxic Organics limits based on the Metal Finishing Point Source Category Effluent Limitations Guidelines (40 CFR 433.11) includes a broad spectrum of organic compounds, many of which may be present in the high explosives waste stream. New limits for Trinitrotoluene are also proposed to be added to Outfall 05A055 and 05A097. Trinitrotoluene is also expected to be present in the high explosives waste stream. The proposed limits for Trinitrotoluene are based on those established in the NPDES permit for the Louisiana Army Ammunition Plant which is operated by the Thiokol Corporation (Permit No. LA0003549).

Los Alamos National Laboratory has requested a change in Chlorine limits from Free Available Chlorine to Total Residual Chlorine at Outfall 001 and outfall category 03A (cooling tower blowdown). The category 03A outfalls are: 03A021, 03A022, 03A024, 03A027, 03A028, 03A047, 03A048, 03A049, 03A113, 03A130, 03A158, 03A160, 03A181, 03A185, and 03A199. This change is appropriate because the results produced by the test method for Total Residual Chlorine are not affected by many of the contaminants which affect the results of the Free Available Chlorine test method. Since the change in test method may produce more reliable results and will not result in a less stringent limit, it has been made in the draft permit.

3. MONITORING FREQUENCIES FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40CFR122.48(b)] and to assure compliance with permit limitations [40CFR122.44(i)(1)].

The draft permit establishes a monitoring frequency of based on current permit requirements.

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

Effluent limitations and/or conditions established in the draft permit are in compliance with State water quality standards and the applicable water quality management plan.

2. POST THIRD ROUND POLICY AND STRATEGY

Section 101 of the Clean Water Act (CWA) states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited..." To insure that the CWA's prohibitions on toxic discharges are met, EPA has issued a "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants (49 FR 9016-9019, 3/9/84)." In support of the national policy, Region 6 adopted the "Policy for Post Third Round NPDES Permitting" and the "Post Third Round NPDES Permit Implementation Strategy" on October 1, 1992. The Regional policy and strategy are designed to insure that no source will be allowed to discharge any wastewater which (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical State water quality standard resulting in nonconformance with the provisions of 40CFR122.44(d); (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

3. IMPLEMENTATION

The Region is currently implementing its post third round policy (Appendix E) in conformance with the Regional strategy (Appendix F). The 5-year NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

4. STATE WATER QUALITY NUMERICAL STANDARDS

a. GENERAL COMMENTS

As described earlier in this Fact Sheet, Los Alamos National Laboratory discharges to Canada del buey, Los Alamos Canyon, Mortandad Canyon, Sandia Canyon, Ten Site Canyon, Water Canyon, and Canon de Valle. All of the receiving streams are ephemeral and intermittent in nature; thus, State aquatic life criteria do not apply. The facility's discharges, most of which are also intermittent in nature, are located from 7.5 to 14.3 miles from the Rio Grande. They do not generally reach the Rio Grande, except as the result of precipitation events. Because of this, only the State standards for livestock watering, wildlife habitat, and general water quality standards apply to the discharges which will be authorized by the proposed permit.

b. PERMIT ACTION

Water Quality Standards based limits for: Aluminum, Arsenic, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Selenium, Vanadium, Zinc, Radium 226+228, and Tritium (when accelerator produced) were included in the expired permit and are proposed to be continued in the reissued permit. In some cases the limits have been revised to comply with the

most recent water quality standards. Since the receiving streams are intermittent in nature, no in-stream dilution was used to calculate the proposed limits. They were calculated based on 100% effluent. Outfall specific limits based on the dissolved to total fraction for Arsenic, Chromium, Copper, Lead, and Zinc were recalculated using Total Suspended Solids (TSS) data included in the permit application. Those calculations can be found in Appendix B1 of this Fact Sheet. The previous permit contained limits based on an average TSS concentration for the facility. Since the TSS concentration is reported to be fairly variable in different effluents at the facility, outfall specific limits will better ensure compliance with State water quality standards.

RADIOACTIVE MATERIALS

The Atomic Energy Act regulates three types of radioactive materials: source, byproduct, and special nuclear materials. Under that Act, the Nuclear Regulatory Commission is authorized to regulate the discharge of those radioactive materials. The Environmental Protection Agency does not have authority, under the Clean Water Act, to regulate those radioactive materials. The only radioactive materials which can be regulated under this permit are Radium and accelerator produced Tritium.

Based on available data from the permit renewal application and discharge monitoring reports, none of the permitted outfalls has the potential to exceed State water quality standards for Radium 226+228 or accelerator produced Tritium. Tritium has been discharged at levels which exceed the new water quality standard at Outfall 051; however, available information shows that it is not accelerator produced and EPA does not have the authority to regulate it under this permit. As in the existing permit, the reissued permit is proposed to limit Radium and accelerator produced Tritium at all outfalls based on State water quality standards.

SECTION 304(l) - IMPAIRED WATER BODIES

Water Quality Segment Number 2-111 of the Rio Grande has never been included on the 304(l) list of impaired water bodies. Thus, no additional limits or conditions are required in the permit for Los Alamos National Laboratory.

c. MONITORING FREQUENCIES FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40CFR122.48(b)] and to assure compliance with permit limitations [40CFR122.44(i)(1)].

The expired permit required monitoring for water quality standards based limits at a frequency of once per year at all outfalls. Effluent data show that at most outfalls the concentration of those pollutants is far below the levels required by State water quality standards. Therefore, the current level of monitoring is appropriate. Exceptions to this are Outfalls 02A129, 03A022, 03A048, 03A181, and 051.

Copper has been show to exceed the proposed water quality standard based limit at Outfalls 03A048 and 051. Monitoring for Copper at that outfall is proposed to be increased to once per quarter at Outfalls 03A048 and 051. At Outfall 03A022 Selenium has been reported at concentrations greater than the water quality standards. The monitoring frequency for Selenium at Outfall 03A022 is also proposed to be increased to once per quarter. Mercury has been shown to exceed water quality standards at Outfalls 051, 02A129, and 03A181 and is proposed to have an increased monitoring frequency of once per quarter at those outfalls.

5. AQUATIC TOXICITY TESTING

Since no designated aquatic life uses exist in the receiving streams, aquatic toxicity testing is not applied.

6. WATER QUALITY SCREENING FOR EPA HUMAN HEALTH PROTECTION BIOACCUMULATION CRITERIA

The receiving streams are not designated as a fishery or for domestic water supply; therefore, no comparison of effluent data with human health criteria for bioaccumulation is presented in this fact sheet.

7. OTHER WATER QUALITY BASED LIMITATIONS

a. DISCHARGE RATE LIMIT (OUTFALL 051)

The Radioactive Waste Treatment Facility (TA-50) discharges treated waste water to two 20,000 gallons holding tanks. Those tanks are presently emptied using two pumps with a combined capacity of 712 gallons per minute and are discharged to Mortandad Canyon (Outfall 051). The facility usually discharges one tank per day, which takes approximately thirty minutes. In order to minimize the possibility of erosion of potential release sites near the outfall and to reduce the possible movement of pollutants downstream, a maximum discharge rate limit of 88 gallons per minute is proposed to be added to that discharge. At that rate, the discharge will occur over a period of approximately four hours. This proposed limit is a Best Management Practice deemed to allow plant operators sufficient flexibility to resolve technical complications as it will not be necessary to discharge at times when the facility is not operating. The limit will also afford operators the ability to discharge at least two holding tanks of effluent during normal operating hours.

b. OTHER MONITORING REQUIREMENTS (OUTFALL 051)

The previous permit required monitoring for Total Nitrogen, Nitrate-Nitrite (as N), and Ammonia Nitrogen (as N) at Outfall 051. That monitoring was intended to collect information on the potential for the discharge to effect ground water. The State of New Mexico is regulating discharges to ground water under the Ground Water Discharge plan for Los Alamos National

Laboratory. Since data have been previously collected under this permit and New Mexico will regulate discharges to ground water under State regulation, monitoring in the reissued permit is not necessary. The monitoring requirements for Total Nitrogen, Nitrate-Nitrite (as N), and Ammonia Nitrogen (as N) are not proposed to be included in the reissued permit.

IX. VARIANCE REQUESTS

No variance requests have been received.

XI. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record required by 40CFR124.9:

A. PERMIT(S)
NPDES Permit No. NM0028355 issued June 24, 1994 with an effective date of August 1, 1994 and an expiration date of October 31, 1998.

B. APPLICATION(S)
EPA Application Forms 1 and 2C dated April 30, 1998.

C. CLEAN WATER ACT CITATIONS
Section 101
Section 101(a)(3)
Section 303
Section 304(e)
Section 308
Section 401(a)(1)
Section 401(a)(2)

D. 40CFR CITATIONS

STANDARD CITATIONS
122.44
122.44(a)
122.44(d)
122.44(d)(1)
122.44(i)(1)
122.44(i)(2)
122.44(l)(2)(ii)

122.45(c)(3)
122.46(a)
122.48
122.48(b)
124.5
124.15(b)(1){PERMIT EFFECTIVE DATE > 30 DAYS}
124.53
131 amended at 57FR60848, 12/22/92

E. STATE WATER QUALITY REFERENCES

STATE ADMINSTRATIVE CODE
The general and specific stream standards are provided in "Water Quality Standards for Interstate and Intrastate Streams in New Mexico," (20NMAC6.1, effective 1/23/95)

WATER QUALITY STANDARDS IMPLEMENTATION
Region 6 Implementation Guidance for State of New Mexico Standards for Interstate and Intrastate Stream, 5/5/95.

F. MISCELLANEOUS REFERENCES
Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants [49FR9016-9019, 3/9/84]

EPA Region 6 "Policy for Post Third Round NPDES Permitting" and "Post Third Round NPDES Permit Implementation Strategy," 10/1/92

National Toxics Rule, 57FR60848, 12/22/92

G. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION, ETC.
State Certification Letter, from Jim Piatt, NMED to Myron O. Knudson, EPA Region 6, April 18, 1994

Habitat Management Plan Threatened and Endangered Species Concurrence Letter, from Jennifer Fowler-Propst, USFWS, to David A. Gurule, USDOE, February 12, 1999.

APPENDICES DIRECTORY

APPENDIX A

Available effluent data from the application form 2-C and discharges monitoring report forms for each outfall proposed to be included in the reissued permit follows.

OUTFALL No.: **01A001-Power Plant (Technical Area 3-22)**
DISCHARGED TO: **Sandia Canyon**
FREQUENCY: **Continuous**

	2C NO.	UNITS	MONTH AVG	DAILY MAX
BOD5	A.1.a	mg/L	NA	17.6
TSS	A.1.d	mg/L	NA	< 1
Oil & Grease	B.1.h	mg/L	NA	20.4
Fecal Coliform	B.1.d	#/100 ml	NA	< 2
Flow	A.1.f	MGD	0.03525	0.1008
COD	A.1.b	mg/L	NA	26.2
TOC	A.1.c	mg/L	NA	4.6
Ammonia (as N)	A.1.e	mg/L	NA	0.4
Bromide	B.1.a	ug/L	NA	0.6
Chlorine (Total Residual)	B.1.b	ug/L	NA	0.1
Color	B.1.c	nM	NA	20
Fluoride	B.1.e	ug/L	NA	< 0.5
Nitrate-Nitrite (N)	B.1.f	ug/L	NA	4.82
Organic Nitrogen, Total (as N)	B.1.G	ug/L	NA	0.8
Phosphorus, Total (as P)	B.1.i	ug/L	NA	1.56
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	NA	< 0.88
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	25.8	35
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	3.63	6.5
Radioactivity: Radium 226, Total	B.1.j.(4)	pCi/L	NA	NA
Tritium		pCi/L	89	266
Vanadium		ug/L	10	10
Sulfate (as SO4)	B.1.k	ug/L	NA	118
Sulfide (as S)	B.1.i	ug/L	NA	< 1000
Sulfite: (as SO3)	B.1.m	ug/L	NA	700
Surfactants	B.1.n	ug/L	NA	70
Aluminum (T)	B.1.o	ug/L	NA	< 500
Barium (T)	B.1.p	ug/L	NA	20
Boron (T)	B.1.q	ug/L	NA	< 100
Cobalt (T)	B.1.r	ug/L	NA	< 0.01
Iron (T)	B.1.s	ug/L	NA	< 200
Magnesium (T)	B.1.t	ug/L	NA	3000
Molybdenum (T)	B.1.u	ug/L	NA	< 500
Manganese (T)	B.1.v	ug/L	NA	< 10
Tin (T)	B.1.w	ug/L	NA	< 2000
Titanium (T)	B.1.x	ug/L	NA	< 30
Phenolics (Total Recoverable)	15M	ug/L	NA	< 50
Antimony (T)	1M	ug/L	NA	< 50
Arsenic (T)	2M	ug/L	NA	< 60
Beryllium (T)	3M	ug/L	NA	< 4
Cadmium (T)	4M	ug/L	NA	< 8
Chromium (T)	5M	ug/L	NA	< 40
Copper (T)	6M	ug/L	NA	< 40
Lead (T)	7M	ug/L	NA	< 60
Mercury (T)	8M	ug/L	NA	< 0.2
Nickel (T)	9M	ug/L	NA	< 40
Selenium (T)	10M	ug/L	NA	< 3
Silver (T)	11M	ug/L	NA	< 20

Thallium (T)	12M	ug/L	NA	< 300
Zinc (T)	13M	ug/L	NA	< 700
Cyanide (T)	14M	ug/L	NA	< 20
2,3,7,8-TCDD	DIOXIN	ug/L	NA	<*********
Acrolein	1V	ug/L	NA	< 62
Acrylonitrile	2V	ug/L	NA	< 62
Benzene	3V	ug/L	NA	< 12
Bromoform	5V	ug/L	NA	< 12
Carbon Tetrachloride	6V	ug/L	NA	< 12
Chlorobenzene	7V	ug/L	NA	< 62
Chlorodibromomethane	8V	ug/L	NA	< 12
Chloroethane	9V	ug/L	NA	< 12
2-Chloroethyl Vinyl Ether	10V	ug/L	NA	< 62
Chloroform	11V	ug/L	NA	< 12
Dichlorobromomethane	12V	ug/L	NA	< 12
1,1-Dichloroethane	14V	ug/L	NA	< 12
1,2-Dichloroethane	15V	ug/L	NA	< 12
1,1-Dichloroethylene	16V	ug/L	NA	< 12
1,2-Dichloropropane	17V	ug/L	NA	< 12
1,3-Dichloropropylene	18V	ug/L	NA	< 12
Ethylbenzene	19V	ug/L	NA	< 12
Methyl Bromide	20V	ug/L	NA	< 62
Methyl Chloride	21V	ug/L	NA	< 62
Methylene Chloride	22V	ug/L	NA	< 25
1,1,2,2-Tetrachloroethane	23V	ug/L	NA	< 12
Tetrachloroethylene	24V	ug/L	NA	< 12
Toluene	25V	ug/L	NA	< 12
1,2-trans-Dichloroethylene	26V	ug/L	NA	< 12
1,1,1-Trichloroethane	27V	ug/L	NA	< 12
1,1,2-Trichloroethane	28V	ug/L	NA	< 12
Trichloroethylene	29V	ug/L	NA	< 12
Vinyl Chloride	31V	ug/L	NA	< 12
2-Chlorophenol	1A	ug/L	NA	< 10
2,4-Dichlorophenol	2A	ug/L	NA	< 10
2,4-Dimethylphenol	3A	ug/L	NA	< 10
4,6-Dinitro-o-Cresol	4A	ug/L	NA	< 50
2,4-Dinitrophenol	5A	ug/L	NA	< 50
2-Nitrophenol	6A	ug/L	NA	< 20
4-Nitrophenol	7A	ug/L	NA	< 50
p-Chloro-m-Cresol	8A	ug/L	NA	< 10
Pentachlorophenol	9A	ug/L	NA	< 50
Phenol	10A	ug/L	NA	< 10
2,4,6-Trichlorophenol	11A	ug/L	NA	< 10
Acenaphthene	1B	ug/L	NA	< 10
Acenaphthylene	2B	ug/L	NA	< 10
Anthracene	3B	ug/L	NA	< 10
Benzidine	4B	ug/L	NA	< 50
Benzo(a)anthracene	5B	ug/L	NA	< 10
Benzo(a)pyrene	6B	ug/L	NA	< 10
3,4-Benzofluoranthene	7B	ug/L	NA	< 10
Benzo(ghi)perylene	8B	ug/L	NA	< 20
Benzo(k)fluoranthene	9B	ug/L	NA	< 10
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	< 10
Bis(2-chloroethyl) Ether	11B	ug/L	NA	< 10
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	< 10
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	< 10
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	< 10
Butyl Benzyl Phthalate	15B	ug/L	NA	< 10
2-Chloronapthalene	16B	ug/L	NA	< 10

4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	< 10
Chrysene	18B	ug/L	NA	< 10
Dibenzo(a,h)anthracene	19B	ug/L	NA	< 20
1,2-Dichlorobenzene	20B	ug/L	NA	< 10
1,3-Dichlorobenzene	21B	ug/L	NA	< 10
1,4-Dichlorobenzene	22B	ug/L	NA	< 10
3,3'-Dichlorobenzidine	23B	ug/L	NA	< 50
Diethyl Phthalate	24B	ug/L	NA	< 10
Dimethyl Phthalate	25B	ug/L	NA	< 10
Di-n-Butyl Phthalate	26B	ug/L	NA	< 10
2,4-Dinitrotoluene	27B	ug/L	NA	< 10
2,6-Dinitrotoluene	28B	ug/L	NA	< 10
Di-n-octyl Phthalate	29B	ug/L	NA	< 10
1,2-Diphenylhydrazine	30B	ug/L	NA	< 20
Fluoranthene	31B	ug/L	NA	< 10
Fluorene	32B	ug/L	NA	< 10
Hexachlorobenzene	33B	ug/L	NA	< 10
Hexachlorobutadiene	34B	ug/L	NA	< 10
Hexachlorocyclopentadiene	35B	ug/L	NA	< 10
Hexachloroethane	36B	ug/L	NA	< 20
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	< 20
Isophorone	38B	ug/L	NA	< 10
Naphthalene	39B	ug/L	NA	< 10
Nitrobenzene	40B	ug/L	NA	< 10
n-Nitrosodimethylamine	41B	ug/L	NA	< 50
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	< 20
n-Nitrosodiphenylamine	43B	ug/L	NA	< 20
Phenanthrene	44B	ug/L	NA	< 10
Pyrene	45B	ug/L	NA	< 10
1,2,4-Trichlorobenzene	46B	ug/L	NA	< 10
Aldrin	1P	ug/L	NA	< 0.05
Alpha-BHC	2P	ug/L	NA	< 0.05
Beta-BHC	3P	ug/L	NA	< 0.05
Gamma-BHC [Lindane]	4P	ug/L	NA	< 0.05
Delta-BHC	5P	ug/L	NA	< 0.05
Chlordane	6P	ug/L	NA	< 0.1
4,4'-DDT	7P	ug/L	NA	< 0.1
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	< 0.1
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	< 0.1
Dieldrin	10P	ug/L	NA	< 0.1
Alpha-Endosulfan	11P	ug/L	NA	< 0.1
Beta-Endosulfan	12P	ug/L	NA	< 0.1
Endosulfan Sulfate	13P	ug/L	NA	< 0.1
Endrin	14P	ug/L	NA	< 0.1
Endrin Aldehyde	15P	ug/L	NA	< 0.1
Heptachlor	16P	ug/L	NA	< 0.05
Heptachlor Epoxide	17P	ug/L	NA	< 0.05
PCB-1242	18P	ug/L	NA	< 1
PCB-1254	19P	ug/L	NA	< 1
PCB-1221	20P	ug/L	NA	< 1
PCB-1232	21P	ug/L	NA	< 1
PCB-1248	22P	ug/L	NA	< 1
PCB-1260	23P	ug/L	NA	< 1
PCB-1016	24P	ug/L	NA	< 1
Toxaphene	25P	ug/L	NA	< 5

OUTFALL NO: 13S - Sanitary Waste Water (Technical Area 46-347)

DISCHARGED TO: Canada del Buey
FREQUENCY: Continuous

	2C NO.	UNITS	MONTH AVG	DAILY MAX
BOD5	A.1.a	mg/L	3.22	73
TSS	A.1.d	mg/L	3.37	10.5
Oil & Grease	B.1.h	mg/L	NA	<5
Fecal Coliform	B.1.d	#/100 ml	2.1	11
Flow	A.1.f	MGD	0.2883	0.85
COD	A.1.b	mg/L	NA	15.4
TOC	A.1.c	mg/L	NA	3.5
Ammonia (as N)	A.1.e	mg/L	NA	0.7
Bromide	B.1.a	ug/L	NA	<500
Chlorine (Total Residual)	B.1.b	ug/L	NA	1660
Color	B.1.c	nM	NA	10
Fluoride	B.1.e	ug/L	NA	<500
Nitrate-Nitrite (N)	B.1.f	ug/L	NA	2000
Organic Nitrogen, Total (as N)	B.1.G	ug/L	NA	700
Phosphorus, Total (as P)	B.1.i	ug/L	NA	3740
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	1.3	2
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	13.1	23
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	2.3	3.5
Radioactivity: Radium 226	B.1.j.(4)	pCi/L	NA	0
Tritium		pCi/L	84	254
Vanadium		ug/L	13	20
Sulfate (as SO4)	B.1.k	ug/L	NA	10700
Sulfide (as S)	B.1.i	ug/L	NA	<1000
Sulfite: (as SO3)	B.1.m	ug/L	NA	<3000
Surfactants	B.1.n	ug/L	NA	<30
Aluminum (T)	B.1.o	ug/L	NA	<500
Barium (T)	B.1.p	ug/L	NA	10
Boron (T)	B.1.q	ug/L	100	400
Cobalt (T)	B.1.r	ug/L	NA	<10
Iron (T)	B.1.s	ug/L	NA	<200
Magnesium (T)	B.1.t	ug/L	NA	6100
Molybdenum (T)	B.1.u	ug/L	NA	<500
Manganese (T)	B.1.v	ug/L	NA	20
Tin (T)	B.1.w	ug/L	NA	<2000
Titanium (T)	B.1.x	ug/L	NA	<30
Phenolics (Total Recoverable)	15M	ug/L	NA	<50
Antimony (T)	1M	ug/L	NA	<50
Arsenic (T)	2M	ug/L	NA	<60
Beryllium (T)	3M	ug/L	NA	<4
Cadmium (T)	4M	ug/L	NA	<8
Chromium (T)	5M	ug/L	NA	<40
Copper (T)	6M	ug/L	NA	<40
Lead (T)	7M	ug/L	NA	<60
Mercury (T)	8M	ug/L	NA	<0.2
Nickel (T)	9M	ug/L	NA	<40
Selenium (T)	10M	ug/L	NA	<50
Silver (T)	11M	ug/L	NA	<20
Thallium (T)	12M	ug/L	NA	<300
Zinc (T)	13M	ug/L	NA	200
Cyanide (T)	14M	ug/L	NA	<20
2,3,7,8-TCDD	DIOXIN	ug/L	NA	*********
Acrolein	1V	ug/L	NA	<50
Acrylonitrile	2V	ug/L	NA	<50
Benzene	3V	ug/L	NA	<10

Bromoform	5V	ug/L	NA	<10
Carbon Tetrachloride	6V	ug/L	NA	<10
Chlorobenzene	7V	ug/L	NA	<50
Chlorodibromomethane	8V	ug/L	NA	<10
Chloroethane	9V	ug/L	NA	<10
2-Chloroethyl Vinyl Ether	10V	ug/L	NA	<50
Chloroform	11V	ug/L	NA	<10
Dichlorobromomethane	12V	ug/L	NA	<10
1,1-Dichloroethane	14V	ug/L	NA	<10
1,2-Dichloroethane	15V	ug/L	NA	<10
1,1-Dichloroethylene	16V	ug/L	NA	<10
1,2-Dichloropropane	17V	ug/L	NA	<10
1,3-Dichloropropylene	18V	ug/L	NA	<10
Ethylbenzene	19V	ug/L	NA	<10
Methyl Bromide	20V	ug/L	NA	<50
Methyl Chloride	21V	ug/L	NA	<50
Methylene Chloride	22V	ug/L	NA	<20
1,1,2,2-Tetrachloroethane	23V	ug/L	NA	<10
Tetrachloroethylene	24V	ug/L	NA	<10
Toluene	25V	ug/L	NA	<10
1,2-trans-Dichloroethylene	26V	ug/L	NA	<10
1,1,1-Trichloroethane	27V	ug/L	NA	<10
1,1,2-Trichloroethane	28V	ug/L	NA	<10
Trichloroethylene	29V	ug/L	NA	<10
Vinyl Chloride	31V	ug/L	NA	<10
2-Chlorophenol	1A	ug/L	NA	<10
2,4-Dichlorophenol	2A	ug/L	NA	<10
2,4-Dimethylphenol	3A	ug/L	NA	<10
4,6-Dinitro-o-Cresol	4A	ug/L	NA	<50
2,4-Dinitrophenol	5A	ug/L	NA	<50
2-Nitrophenol	6A	ug/L	NA	<20
4-Nitrophenol	7A	ug/L	NA	<50
p-Chloro-m-Cresol	8A	ug/L	NA	<10
Pentachlorophenol	9A	ug/L	NA	<50
Phenol	10A	ug/L	NA	<10
2,4,6-Trichlorophenol	11A	ug/L	NA	<10
Acenaphthene	1B	ug/L	NA	<10
Acenaphthylene	2B	ug/L	NA	<10
Anthracene	3B	ug/L	NA	<10
Benzidine	4B	ug/L	NA	<50
Benzo(a)anthracene	5B	ug/L	NA	<10
Benzo(a)pyrene	6B	ug/L	NA	<10
3,4-Benzofluoranthene	7B	ug/L	NA	<10
Benzo(ghi)perylene	8B	ug/L	NA	<20
Benzo(k)fluoranthene	9B	ug/L	NA	<10
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	<10
Bis(2-chloroethyl) Ether	11B	ug/L	NA	<10
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	<10
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	<10
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	<10
Butyl Benzyl Phthalate	15B	ug/L	NA	<10
2-Chloronapthalene	16B	ug/L	NA	<10
4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	<10
Chrysene	18B	ug/L	NA	<10
Dibenzo(a,h)anthracene	19B	ug/L	NA	<20
1,2-Dichlorobenzene	20B	ug/L	NA	<10
1,3-Dichlorobenzene	21B	ug/L	NA	<10
1,4-Dichlorobenzene	22B	ug/L	NA	<10
3,3'-Dichlorobenzidine	23B	ug/L	NA	<50

Diethyl Phthalate	24B	ug/L	NA	<10
Dimethyl Phthalate	25B	ug/L	NA	<10
Di-n-Butyl Phthalate	26B	ug/L	NA	<10
2,4-Dinitrotoluene	27B	ug/L	NA	<10
2,6-Dinitrotoluene	28B	ug/L	NA	<10
Di-n-octyl Phthalate	29B	ug/L	NA	<10
1,2-Diphenylhydrazine	30B	ug/L	NA	<20
Fluoranthene	31B	ug/L	NA	<10
Fluorene	32B	ug/L	NA	<10
Hexachlorobenzene	33B	ug/L	NA	<10
Hexachlorobutadiene	34B	ug/L	NA	<10
Hexachlorocyclopentadiene	35B	ug/L	NA	<10
Hexachloroethane	36B	ug/L	NA	<20
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	<20
Isophorone	38B	ug/L	NA	<10
Naphthalene	39B	ug/L	NA	<10
Nitrobenzene	40B	ug/L	NA	<10
n-Nitrosodimethylamine	41B	ug/L	NA	<50
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	<20
n-Nitrosodiphenylamine	43B	ug/L	NA	<20
Phenanthrene	44B	ug/L	NA	<10
Pyrene	45B	ug/L	NA	<10
1,2,4-Trichlorobenzene	46B	ug/L	NA	<10
Aldrin	1P	ug/L	NA	<0.05
Alpha-BHC	2P	ug/L	NA	<0.05
Beta-BHC	3P	ug/L	NA	<0.05
Gamma-BHC [Lindane]	4P	ug/L	NA	<0.05
Delta-BHC	5P	ug/L	NA	<0.05
Chlordane	6P	ug/L	NA	<0.1
4,4'-DDT	7P	ug/L	NA	<0.1
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	<0.1
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	<0.1
Dieldrin	10P	ug/L	NA	<0.1
Alpha-Endosulfan	11P	ug/L	NA	<0.1
Beta-Endosulfan	12P	ug/L	NA	<0.1
Endosulfan Sulfate	13P	ug/L	NA	<0.1
Endrin	14P	ug/L	NA	<0.1
Endrin Aldehyde	15P	ug/L	NA	<0.1
Heptachlor	16P	ug/L	NA	<0.05
Heptachlor Epoxide	17P	ug/L	NA	<0.05
PCB-1242	18P	ug/L	NA	<1
PCB-1254	19P	ug/L	NA	<1
PCB-1221	20P	ug/L	NA	<1
PCB-1232	21P	ug/L	NA	<1
PCB-1248	22P	ug/L	NA	<1
PCB-1260	23P	ug/L	NA	<1
PCB-1016	24P	ug/L	NA	<1
Toxaphene	25P	ug/L	NA	<5.3

OUTFALL No.: 051 - Radioactive/Industrial Waste Water (Technical Area 50-1)
DISCHARGED TO: Mortandad Canyon
FREQUENCY: Intermittent

	2C NO.	UNITS	MONTH AVG	DAILY MAX
BOD5	A.1.a	mg/L	NA	< 2
TSS	A.1.d	mg/L	8.2	85
Oil & Grease	B.1.h	mg/L	NA	< 1

Flow	A.1.f	MGD	0.0247	0.0439
COD	A.1.b	mg/L	36.22	145
TOC	A.1.c	mg/L	NA	11
Ammonia (as N)	A.1.e	mg/L	5.38	20.7
Bromide	B.1.a	ug/L	NA	<1000
Chlorine (Total Residual)	B.1.b	ug/L	NA	10
Color	B.1.c	nM	NA	5
Fluoride	B.1.e	ug/L	NA	770
Nitrate-Nitrite (N)	B.1.f	ug/L	55950	241100
Organic Nitrogen, Total (as N)	B.1.G	ug/L	29370	175000
Phosphorus, Total (as P)	B.1.i	ug/L	NA	340
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	NA	47
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	NA	165
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	4.8	16
Radioactivity: Radium 226	B.1.j.(4)	pCi/L	NA	0.07
Tritium		pCi/L	103534	147059
Vanadium		ug/L	3	10
Total Toxic Organics		ug/L	8	300
Sulfate (as SO4)	B.1.k	ug/L	NA	20900
Sulfite: (as SO3)	B.1.m	ug/L	NA	<3000
Surfactants	B.1.n	ug/L	NA	<100
Aluminum (T)	B.1.o	ug/L	NA	< 50
Barium (T)	B.1.p	ug/L	NA	20
Boron (T)	B.1.q	ug/L	NA	200
Cobalt (T)	B.1.r	ug/L	NA	< 3
Iron (T)	B.1.s	ug/L	70	3442
Magnesium (T)	B.1.t	ug/L	NA	430
Molybdenum (T)	B.1.u	ug/L	NA	22
Manganese (T)	B.1.v	ug/L	NA	7
Tin (T)	B.1.w	ug/L	NA	<20
Titanium (T)	B.1.x	ug/L	NA	< 2
Phenolics (Total Recoverable)	15M	ug/L	NA	<50
Antimony (T)	1M	ug/L	NA	<40
Arsenic (T)	2M	ug/L	NA	0
Beryllium (T)	3M	ug/L	NA	<3
Cadmium (T)	4M	ug/L	0	100
Chromium (T)	5M	ug/L	0.2	20
Copper (T)	6M	ug/L	116.3	900
Lead (T)	7M	ug/L	7	100
Mercury (T)	8M	ug/L	< 0.032	10
Nickel (T)	9M	ug/L	143	5600
Selenium (T)	10M	ug/L	NA	<3
Silver (T)	11M	ug/L	NA	<4
Thallium (T)	12M	ug/L	NA	<70
Zinc (T)	13M	ug/L	57	200
Cyanide (T)	14M	ug/L	NA	0
2,3,7,8-TCDD	DIOXIN	ug/L	NA	*********
Acrolein	1V	ug/L	NA	<100
Acrylonitrile	2V	ug/L	NA	<100
Benzene	3V	ug/L	NA	< 5
Bromoform	5V	ug/L	NA	< 5
Carbon Tetrachloride	6V	ug/L	NA	< 5
Chlorobenzene	7V	ug/L	NA	< 5
Chlorodibromomethane	8V	ug/L	NA	< 5
Chloroethane	9V	ug/L	NA	<10
2-Chloroethyl Vinyl Ether	10V	ug/L	NA	<50
Chloroform	11V	ug/L	NA	< 5
Dichlorobromomethane	12V	ug/L	NA	< 5
1,1-Dichloroethane	14V	ug/L	NA	< 5

1,2-Dichloroethane	15V	ug/L	NA	< 5
1,1-Dichloroethylene	16V	ug/L	NA	< 5
1,2-Dichloropropane	17V	ug/L	NA	< 5
1,3-Dichloropropylene	18V	ug/L	NA	< 5
Ethylbenzene	19V	ug/L	NA	< 5
Methyl Bromide	20V	ug/L	NA	< 10
Methyl Chloride	21V	ug/L	NA	< 10
Methylene Chloride	22V	ug/L	NA	< 2
1,1,2,2-Tetrachloroethane	23V	ug/L	NA	< 5
Tetrachloroethylene	24V	ug/L	NA	< 5
Toluene	25V	ug/L	NA	< 5
1,2-trans-Dichloroethylene	26V	ug/L	NA	< 2
1,1,1-Trichloroethane	27V	ug/L	NA	< 5
1,1,2-Trichloroethane	28V	ug/L	NA	< 5
Trichloroethylene	29V	ug/L	NA	< 5
Vinyl Chloride	31V	ug/L	NA	< 10
2-Chlorophenol	1A	ug/L	NA	< 10
2,4-Dichlorophenol	2A	ug/L	NA	< 10
2,4-Dimethylphenol	3A	ug/L	NA	< 10
4,6-Dinitro-o-Cresol	4A	ug/L	NA	< 50
2,4-Dinitrophenol	5A	ug/L	NA	< 50
2-Nitrophenol	6A	ug/L	NA	< 10
4-Nitrophenol	7A	ug/L	NA	< 50
p-Chloro-m-Cresol	8A	ug/L	NA	< 10
Pentachlorophenol	9A	ug/L	NA	< 50
Phenol	10A	ug/L	NA	< 10
2,4,6-Trichlorophenol	11A	ug/L	NA	< 10
Acenaphthene	1B	ug/L	NA	< 10
Acenaphthylene	2B	ug/L	NA	< 10
Anthracene	3B	ug/L	NA	< 10
Benzidine	4B	ug/L	NA	< 50
Benzo(a)anthracene	5B	ug/L	NA	< 10
Benzo(a)pyrene	6B	ug/L	NA	< 10
3,4-Benzofluoranthene	7B	ug/L	NA	< 10
Benzo(ghi)perylene	8B	ug/L	NA	< 10
Benzo(k)fluoranthene	9B	ug/L	NA	< 10
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	< 10
Bis(2-chloroethyl) Ether	11B	ug/L	NA	< 10
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	< 10
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	< 4
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	< 10
Butyl Benzyl Phthalate	15B	ug/L	NA	< 10
2-Chloronapthalene	16B	ug/L	NA	< 10
4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	< 10
Chrysene	18B	ug/L	NA	< 10
Dibenzo(a,h)anthracene	19B	ug/L	NA	< 10
1,2-Dichlorobenzene	20B	ug/L	NA	< 10
1,3-Dichlorobenzene	21B	ug/L	NA	< 10
1,4-Dichlorobenzene	22B	ug/L	NA	< 10
3,3'-Dichlorobenzidine	23B	ug/L	NA	< 10
Diethyl Phthalate	24B	ug/L	NA	< 10
Dimethyl Phthalate	25B	ug/L	NA	< 10
Di-n-Butyl Phthalate	26B	ug/L	NA	< 10
2,4-Dinitrotoluene	27B	ug/L	NA	< 10
2,6-Dinitrotoluene	28B	ug/L	NA	< 10
Di-n-octyl Phthalate	29B	ug/L	NA	< 10
1,2-Diphenylhydrazine	30B	ug/L	NA	< 10
Fluoranthene	31B	ug/L	NA	< 10
Fluorene	32B	ug/L	NA	< 10

Hexachlorobenzene	33B	ug/L	NA	< 10
Hexachlorobutadiene	34B	ug/L	NA	< 10
Hexachlorocyclopentadiene	35B	ug/L	NA	< 10
Hexachloroethane	36B	ug/L	NA	< 10
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	< 10
Isophorone	38B	ug/L	NA	< 10
Naphthalene	39B	ug/L	NA	< 10
Nitrobenzene	40B	ug/L	NA	< 10
n-Nitrosodimethylamine	41B	ug/L	NA	< 10
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	< 10
n-Nitrosodiphenylamine	43B	ug/L	NA	< 10
Phenanthrene	44B	ug/L	NA	< 10
Pyrene	45B	ug/L	NA	< 10
1,2,4-Trichlorobenzene	46B	ug/L	NA	< 10
Aldrin	1P	ug/L	NA	< 0.05
Alpha-BHC	2P	ug/L	NA	< 0.05
Beta-BHC	3P	ug/L	NA	< 0.06
Gamma-BHC [Lindane]	4P	ug/L	NA	< 0.05
Delta-BHC	5P	ug/L	NA	< 0.05
Chlordane	6P	ug/L	NA	< 0.5
4,4'-DDT	7P	ug/L	NA	< 0.05
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	< 0.05
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	< 0.05
Dieldrin	10P	ug/L	NA	< 0.05
Alpha-Endosulfan	11P	ug/L	NA	< 0.05
Beta-Endosulfan	12P	ug/L	NA	< 0.05
Endosulfan Sulfate	13P	ug/L	NA	< 0.05
Endrin	14P	ug/L	NA	< 0.05
Endrin Aldehyde	15P	ug/L	NA	< 0.05
Heptachlor	16P	ug/L	NA	< 0.05
Heptachlor Epoxide	17P	ug/L	NA	< 0.05
PCB-1242	18P	ug/L	NA	< 1
PCB-1254	19P	ug/L	NA	< 1
PCB-1221	20P	ug/L	NA	< 1
PCB-1232	21P	ug/L	NA	< 1
PCB-1248	22P	ug/L	NA	< 1
PCB-1260	23P	ug/L	NA	< 1
PCB-1016	24P	ug/L	NA	< 1
Toxaphene	25P	ug/L	NA	< 2

OUTFALL No.: **05A055 - High Explosives Waste Water (Technical Area 16-1508)**
DISCHARGED TO: **Canon de Valle**
FREQUENCY: **Intermittent**

	2C NO.	UNITS	MONTH AVG	DAILY MAX
BOD5	A.1.a	mg/L	NA	< 2
TSS	A.1.d	mg/L	5.5	18
Oil & Grease	B.1.h	mg/L	1.7	5.6
Fecal Coliform	B.1.d	#/100 ml	NA	3
Flow	A.1.f	MGD	0.01	0.02
COD	A.1.b	mg/L	11.3	28
TOC	A.1.c	mg/L	NA	< 0.7
Ammonia (as N)	A.1.e	mg/L	NA	< 0.2
Bromide	B.1.a	ug/L	NA	< 500

Chlorine (Total Residual)	B.1.b	ug/L	NA		40
Color	B.1.c	nM	NA		10
Fluoride	B.1.e	ug/L	NA	<	500
Nitrate-Nitrite (N)	B.1.f	ug/L	NA		610
Organic Nitrogen, Total (as N)	B.1.G	ug/L	NA		100
Phosphorus, Total (as P)	B.1.i	ug/L	NA		90
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	0.9		0.9
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	6.2		7
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	2.73		6.9
Radioactivity: Radium 226	B.1.j.(4)	pCi/L	NA		0.81
Tritium		pCi/L	NA		0
Vanadium		ug/L	NA		0
Sulfate (as SO4)	B.1.k	ug/L	NA		63300
Sulfide (as S)	B.1.i	ug/L	NA	<	1000
Sulfite: (as SO3)	B.1.m	ug/L	NA	<	3000
Surfactants	B.1.n	ug/L	NA	<	30
Aluminum (T)	B.1.o	ug/L	100		100
Barium (T)	B.1.p	ug/L	NA		60
Boron (T)	B.1.q	ug/L	130		200
Cobalt (T)	B.1.r	ug/L		<	10
Iron (T)	B.1.s	ug/L	NA		300
Magnesium (T)	B.1.t	ug/L	NA		3200
Molybdenum (T)	B.1.u	ug/L	NA	<	500
Manganese (T)	B.1.v	ug/L	NA		43
Tin (T)	B.1.w	ug/L	NA	<	2000
Titanium (T)	B.1.x	ug/L	NA	<	30
Phenolics (Total Recoverable)	15M	ug/L	NA	<	50
Antimony (T)	1M	ug/L	NA	<	50
Arsenic (T)	2M	ug/L	NA	<	60
Beryllium (T)	3M	ug/L	NA	<	4
Cadmium (T)	4M	ug/L	NA	<	8
Chromium (T)	5M	ug/L	NA	<	40
Copper (T)	6M	ug/L	NA	<	40
Lead (T)	7M	ug/L	NA	<	100
Mercury (T)	8M	ug/L	NA	<	0.2
Nickel (T)	9M	ug/L	NA	<	40
Selenium (T)	10M	ug/L	NA	<	3
Silver (T)	11M	ug/L	NA	<	10
Thallium (T)	12M	ug/L	NA	<	100
Zinc (T)	13M	ug/L	70		100
Cyanide (T)	14M	ug/L	NA	<	20
2,3,7,8-TCDD	DIOXIN	ug/L	NA	<*********	
Acrolein	1V	ug/L	NA	<	50
Acrylonitrile	2V	ug/L	NA	<	50
Benzene	3V	ug/L	NA	<	10
Bromoform	5V	ug/L	NA	<	10
Carbon Tetrachloride	6V	ug/L	NA	<	10
Chlorobenzene	7V	ug/L	NA	<	50
Chlorodibromomethane	8V	ug/L	NA	<	10
Chloroethane	9V	ug/L	NA	<	10
2-Chloroethyl Vinyl Ether	10V	ug/L	NA	<	50
Chloroform	11V	ug/L	NA	<	10
Dichlorobromomethane	12V	ug/L	NA	<	10
1,1-Dichloroethane	14V	ug/L	NA	<	10
1,2-Dichloroethane	15V	ug/L	NA	<	10
1,1-Dichloroethylene	16V	ug/L	NA	<	10
1,2-Dichloropropane	17V	ug/L	NA	<	10
1,3-Dichloropropylene	18V	ug/L	NA	<	20
Ethylbenzene	19V	ug/L	NA	<	10

Methyl Bromide	20V	ug/L	NA	<	50
Methyl Chloride	21V	ug/L	NA	<	50
Methylene Chloride	22V	ug/L	NA	<	20
1,1,2,2-Tetrachloroethane	23V	ug/L	NA	<	10
Tetrachloroethylene	24V	ug/L	NA	<	10
Toluene	25V	ug/L	NA	<	10
1,2-trans-Dichloroethylene	26V	ug/L	NA	<	10
1,1,1-Trichloroethane	27V	ug/L	NA	<	10
1,1,2-Trichloroethane	28V	ug/L	NA	<	10
Trichloroethylene	29V	ug/L	NA	<	10
Vinyl Chloride	31V	ug/L	NA	<	10
2-Chlorophenol	1A	ug/L	NA	<	10
2,4-Dichlorophenol	2A	ug/L	NA	<	10
2,4-Dimethylphenol	3A	ug/L	NA	<	10
4,6-Dinitro-o-Cresol	4A	ug/L	NA	<	50
2,4-Dinitrophenol	5A	ug/L	NA	<	50
2-Nitrophenol	6A	ug/L	NA	<	20
4-Nitrophenol	7A	ug/L	NA	<	50
p-Chloro-m-Cresol	8A	ug/L	NA	<	10
Pentachlorophenol	9A	ug/L	NA	<	50
Phenol	10A	ug/L	NA	<	10
2,4,6-Trichlorophenol	11A	ug/L	NA	<	10
Acenaphthene	1B	ug/L	NA	<	10
Acenaphthylene	2B	ug/L	NA	<	10
Anthracene	3B	ug/L	NA	<	10
Benzidine	4B	ug/L	NA	<	50
Benzo(a)anthracene	5B	ug/L	NA	<	10
Benzo(a)pyrene	6B	ug/L	NA	<	10
3,4-Benzofluoranthene	7B	ug/L	NA	<	10
Benzo(ghi)perylene	8B	ug/L	NA	<	20
Benzo(k)fluoranthene	9B	ug/L	NA	<	10
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	<	10
Bis(2-chloroethyl) Ether	11B	ug/L	NA	<	10
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	<	10
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	<	10
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	<	10
Butyl Benzyl Phthalate	15B	ug/L	NA	<	10
2-Chloronapthalene	16B	ug/L	NA	<	10
4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	<	10
Chrysene	18B	ug/L	NA	<	10
Dibenzo(a,h)anthracene	19B	ug/L	NA	<	20
1,2-Dichlorobenzene	20B	ug/L	NA	<	10
1,3-Dichlorobenzene	21B	ug/L	NA	<	10
1,4-Dichlorobenzene	22B	ug/L	NA	<	10
3,3'-Dichlorobenzidine	23B	ug/L	NA	<	50
Diethyl Phthalate	24B	ug/L	NA	<	10
Dimethyl Phthalate	25B	ug/L	NA	<	10
Di-n-Butyl Phthalate	26B	ug/L	NA	<	10
2,4-Dinitrotoluene	27B	ug/L	NA	<	10
2,6-Dinitrotoluene	28B	ug/L	NA	<	10
Di-n-octyl Phthalate	29B	ug/L	NA	<	10
1,2-Diphenylhydrazine	30B	ug/L	NA	<	20
Fluoranthene	31B	ug/L	NA	<	10
Fluorene	32B	ug/L	NA	<	10
Hexachlorobenzene	33B	ug/L	NA	<	10
Hexachlorobutadiene	34B	ug/L	NA	<	10
Hexachlorocyclopentadiene	35B	ug/L	NA	<	10
Hexachloroethane	36B	ug/L	NA	<	20
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	<	20

Isophorone	38B	ug/L	NA	<	10
Naphthalene	39B	ug/L	NA	<	10
Nitrobenzene	40B	ug/L	NA	<	10
n-Nitrosodimethylamine	41B	ug/L	NA	<	50
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	<	20
n-Nitrosodiphenylamine	43B	ug/L	NA	<	20
Phenanthrene	44B	ug/L	NA	<	10
Pyrene	45B	ug/L	NA	<	10
1,2,4-Trichlorobenzene	46B	ug/L	NA	<	10
Aldrin	1P	ug/L	NA	<	0.05
Alpha-BHC	2P	ug/L	NA	<	0.05
Beta-BHC	3P	ug/L	NA	<	0.05
Gamma-BHC [Lindane]	4P	ug/L	NA	<	0.05
Delta-BHC	5P	ug/L	NA	<	0.05
Chlordane	6P	ug/L	NA	<	0.1
4,4'-DDT	7P	ug/L	NA	<	0.1
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	<	0.1
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	<	0.1
Dieldrin	10P	ug/L	NA	<	0.1
Alpha-Endosulfan	11P	ug/L	NA	<	0.1
Beta-Endosulfan	12P	ug/L	NA	<	0.1
Endosulfan Sulfate	13P	ug/L	NA	<	0.1
Endrin	14P	ug/L	NA	<	0.1
Endrin Aldehyde	15P	ug/L	NA	<	0.1
Heptachlor	16P	ug/L	NA	<	0.05
Heptachlor Epoxide	17P	ug/L	NA	<	0.05
PCB-1242	18P	ug/L	NA	<	1.1
PCB-1254	19P	ug/L	NA	<	1.1
PCB-1221	20P	ug/L	NA	<	1.1
PCB-1232	21P	ug/L	NA	<	1.1
PCB-1248	22P	ug/L	NA	<	1.1
PCB-1260	23P	ug/L	NA	<	1.1
PCB-1016	24P	ug/L	NA	<	1.1
Toxaphene	25P	ug/L	NA	<	5.4

OUTFALL No.: **05A097 - High Explosives Waste Water (Technical Area 11-52)**
DISCHARGED TO: **Water Canyon**
FREQUENCY: **Not Presently Discharging**

	2C NO.	UNITS	MONTH AVG		DAILY MAX
BOD5	A.1.a	mg/L	NA		5.7
TSS	A.1.d	mg/L		<	4
Oil & Grease	B.1.h	mg/L		<	5
Fecal Coliform	B.1.d	#/100 ml	NA		NA
Flow	A.1.f	MGD	NA		NA
COD	A.1.b	mg/L			21.6
TOC	A.1.c	mg/L	NA		6.29
Ammonia (as N)	A.1.e	mg/L	NA	<	0.2
Bromide	B.1.a	ug/L	NA	<	500
Chlorine (Total Residual)	B.1.b	ug/L	NA		100
Color	B.1.c	nM	NA		35
Fluoride	B.1.e	ug/L	NA	<	500
Nitrate-Nitrite (N)	B.1.f	ug/L	NA		200
Organic Nitrogen, Total (as N)	B.1.G	ug/L	NA		1600
Phosphorus, Total (as P)	B.1.i	ug/L	NA		100
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	0.7		2.03
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	2		5.83

Radioactivity: Radium, Total		B.1.j.(3)	pCi/L			3.35
Radioactivity: Radium 226		B.1.j.(4)	pCi/L	NA		1.89
Sulfate (as SO4)		B.1.k	ug/L	NA		3300
Sulfide (as S)		B.1.i	ug/L	NA	<	1000
Sulfite: (as SO3)		B.1.m	ug/L	NA	<	3000
Surfactants		B.1.n	ug/L	NA		150
Aluminum	(T)	B.1.o	ug/L	100	<	500
Barium	(T)	B.1.p	ug/L	NA		70
Boron	(T)	B.1.q	ug/L	130	<	300
Cobalt	(T)	B.1.r	ug/L		<	10
Iron	(T)	B.1.s	ug/L	NA	<	200
Magnesium	(T)	B.1.t	ug/L	NA		200
Molybdenum	(T)	B.1.u	ug/L	NA	<	500
Manganese	(T)	B.1.v	ug/L	NA	<	10
Tin	(T)	B.1.w	ug/L	NA	<	2000
Titanium	(T)	B.1.x	ug/L	NA	<	30
Phenolics	(Total Recoverable)	15M	ug/L	NA	<	50
Antimony	(T)	1M	ug/L	NA	<	50
Arsenic	(T)	2M	ug/L	NA	<	60
Beryllium	(T)	3M	ug/L	NA	<	4
Cadmium	(T)	4M	ug/L	NA	<	8
Chromium	(T)	5M	ug/L	NA	<	40
Copper	(T)	6M	ug/L	NA	<	40
Lead	(T)	7M	ug/L	NA	<	60
Mercury	(T)	8M	ug/L	NA	<	0.2
Nickel	(T)	9M	ug/L	NA	<	40
Selenium	(T)	10M	ug/L	NA	<	3
Silver	(T)	11M	ug/L	NA	<	20
Thallium	(T)	12M	ug/L	NA	<	300
Zinc	(T)	13M	ug/L		<	100
Cyanide	(T)	14M	ug/L	NA	<	20

OUTFALL No.: **02A129 - Steam Plant (Technical Area 21-357)**
DISCHARGED TO: **Los Alamos Canyon**
FREQUENCY: **Intermittent**

	2C NO.	UNITS	MONTH AVG		DAILY MAX
BOD5	A.1.a	mg/L	NA		10.5
TSS	A.1.d	mg/L	NA		7
Oil & Grease	B.1.h	mg/L	NA	<	5
Fecal Coliform	B.1.d	#/100 ml	NA	<	2
Flow	A.1.f	MGD	0.0178		0.0864
COD	A.1.b	mg/L	NA		64.1
TOC	A.1.c	mg/L	NA		30
Ammonia (as N)	A.1.e	mg/L	NA	<	0.2
Bromide	B.1.a	ug/L	NA	<	0.5
Chlorine (Total Residual)	B.1.b	ug/L	NA		0
Color	B.1.c	nM	NA		20
Fluoride	B.1.e	ug/L	NA	<	600
Nitrate-Nitrite (N)	B.1.f	ug/L	NA		630
Organic Nitrogen, Total (as N)	B.1.G	ug/L	NA		900
Phosphorus, Total (as P)	B.1.i	ug/L	NA		6810
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	NA		2
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	19.9		36
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	3.63	<	3.14
Radioactivity: Radium 226	B.1.j.(4)	pCi/L	NA	<	1.68
Tritium		pCi/L	377		731

Vanadium		ug/L	27		40
Sulfate (as SO4)	B.1.k	ug/L	NA		28600
Sulfide (as S)	B.1.i	ug/L	NA		4200
Sulfite: (as SO3)	B.1.m	ug/L	NA		1500
Surfactants	B.1.n	ug/L	NA		70
Aluminum (T)	B.1.o	ug/L	NA	<	500
Barium (T)	B.1.p	ug/L	NA	<	10
Boron (T)	B.1.q	ug/L	NA	<	100
Cobalt (T)	B.1.r	ug/L	NA	<	10
Iron (T)	B.1.s	ug/L	NA		110
Magnesium (T)	B.1.t	ug/L	NA		1400
Molybdenum (T)	B.1.u	ug/L	NA	<	20
Manganese (T)	B.1.v	ug/L	NA		15
Tin (T)	B.1.w	ug/L	NA	<	2000
Titanium (T)	B.1.x	ug/L	NA	<	30
Phenolics (Total Recoverable)	15M	ug/L	NA	<	50
Antimony (T)	1M	ug/L	NA	<	50
Arsenic (T)	2M	ug/L	NA	<	60
Beryllium (T)	3M	ug/L	NA	<	4
Cadmium (T)	4M	ug/L	NA	<	8
Chromium (T)	5M	ug/L	NA	<	20
Copper (T)	6M	ug/L	NA	<	40
Lead (T)	7M	ug/L	NA	<	50
Mercury (T)	8M	ug/L	NA		0.3
Nickel (T)	9M	ug/L	NA	<	40
Selenium (T)	10M	ug/L	NA	<	3
Silver (T)	11M	ug/L	NA	<	2
Thallium (T)	12M	ug/L	NA	<	300
Zinc (T)	13M	ug/L	NA	<	700
Cyanide (T)	14M	ug/L	NA	<	20
2,3,7,8-TCDD	DIOXIN	ug/L	NA	<*********	
Acrolein	1V	ug/L	NA	<	50
Acrylonitrile	2V	ug/L	NA	<	50
Benzene	3V	ug/L	NA	<	10
Bromoform	5V	ug/L	NA	<	10
Carbon Tetrachloride	6V	ug/L	NA	<	10
Chlorobenzene	7V	ug/L	NA	<	50
Chlorodibromomethane	8V	ug/L	NA	<	10
Chloroethane	9V	ug/L	NA	<	10
2-Chloroethyl Vinyl Ether	10V	ug/L	NA	<	50
Chloroform	11V	ug/L	NA	<	10
Dichlorobromomethane	12V	ug/L	NA	<	10
1,1-Dichloroethane	14V	ug/L	NA	<	10
1,2-Dichloroethane	15V	ug/L	NA	<	10
1,1-Dichloroethylene	16V	ug/L	NA	<	10
1,2-Dichloropropane	17V	ug/L	NA	<	10
1,3-Dichloropropylene	18V	ug/L	NA	<	10
Ethylbenzene	19V	ug/L	NA	<	10
Methyl Bromide	20V	ug/L	NA	<	50
Methyl Chloride	21V	ug/L	NA	<	50
Methylene Chloride	22V	ug/L	NA	<	20
1,1,2,2-Tetrachloroethane	23V	ug/L	NA	<	10
Tetrachloroethylene	24V	ug/L	NA	<	10
Toluene	25V	ug/L	NA	<	10
1,2-trans-Dichloroethylene	26V	ug/L	NA	<	10
1,1,1-Trichloroethane	27V	ug/L	NA	<	10
1,1,2-Trichloroethane	28V	ug/L	NA	<	10
Trichloroethylene	29V	ug/L	NA	<	10
Vinyl Chloride	31V	ug/L	NA	<	10

2-Chlorophenol	1A	ug/L	NA	<	10
2,4-Dichlorophenol	2A	ug/L	NA	<	10
2,4-Dimethylphenol	3A	ug/L	NA	<	10
4,6-Dinitro-o-Cresol	4A	ug/L	NA	<	50
2,4-Dinitrophenol	5A	ug/L	NA	<	50
2-Nitrophenol	6A	ug/L	NA	<	20
4-Nitrophenol	7A	ug/L	NA	<	50
p-Chloro-m-Cresol	8A	ug/L	NA	<	10
Pentachlorophenol	9A	ug/L	NA	<	50
Phenol	10A	ug/L	NA	<	10
2,4,6-Trichlorophenol	11A	ug/L	NA	<	10
Acenaphthene	1B	ug/L	NA	<	10
Acenaphthylene	2B	ug/L	NA	<	10
Anthracene	3B	ug/L	NA	<	10
Benzidine	4B	ug/L	NA	<	50
Benzo(a)anthracene	5B	ug/L	NA	<	10
Benzo(a)pyrene	6B	ug/L	NA	<	10
3,4-Benzofluoranthene	7B	ug/L	NA	<	10
Benzo(ghi)perylene	8B	ug/L	NA	<	20
Benzo(k)fluoranthene	9B	ug/L	NA	<	10
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	<	10
Bis(2-chloroethyl) Ether	11B	ug/L	NA	<	10
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	<	10
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	<	10
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	<	10
Butyl Benzyl Phthalate	15B	ug/L	NA	<	10
2-Chloronapthalene	16B	ug/L	NA	<	10
4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	<	10
Chrysene	18B	ug/L	NA	<	10
Dibenzo(a,h)anthracene	19B	ug/L	NA	<	20
1,2-Dichlorobenzene	20B	ug/L	NA	<	10
1,3-Dichlorobenzene	21B	ug/L	NA	<	10
1,4-Dichlorobenzene	22B	ug/L	NA	<	10
3,3'-Dichlorobenzidine	23B	ug/L	NA	<	50
Diethyl Phthalate	24B	ug/L	NA	<	10
Dimethyl Phthalate	25B	ug/L	NA	<	10
Di-n-Butyl Phthalate	26B	ug/L	NA	<	10
2,4-Dinitrotoluene	27B	ug/L	NA	<	10
2,6-Dinitrotoluene	28B	ug/L	NA	<	10
Di-n-octyl Phthalate	29B	ug/L	NA	<	10
1,2-Diphenylhydrazine	30B	ug/L	NA	<	20
Fluoranthene	31B	ug/L	NA	<	10
Fluorene	32B	ug/L	NA	<	10
Hexachlorobenzene	33B	ug/L	NA	<	10
Hexachlorobutadiene	34B	ug/L	NA	<	10
Hexachlorocyclopentadiene	35B	ug/L	NA	<	10
Hexachloroethane	36B	ug/L	NA	<	20
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	<	20
Isophorone	38B	ug/L	NA	<	10
Naphthalene	39B	ug/L	NA	<	10
Nitrobenzene	40B	ug/L	NA	<	10
n-Nitrosodimethylamine	41B	ug/L	NA	<	50
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	<	20
n-Nitrosodiphenylamine	43B	ug/L	NA	<	20
Phenanthrene	44B	ug/L	NA	<	10
Pyrene	45B	ug/L	NA	<	10
1,2,4-Trichlorobenzene	46B	ug/L	NA	<	10
Aldrin	1P	ug/L	NA	<	0.05
Alpha-BHC	2P	ug/L	NA	<	0.05

Beta-BHC	3P	ug/L	NA	<	0.05
Gamma-BHC [Lindane]	4P	ug/L	NA	<	0.05
Delta-BHC	5P	ug/L	NA	<	0.05
Chlordane	6P	ug/L	NA	<	0.1
4,4'-DDT	7P	ug/L	NA	<	0.1
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	<	0.1
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	<	0.1
Dieldrin	10P	ug/L	NA	<	0.1
Alpha-Endosulfan	11P	ug/L	NA	<	0.1
Beta-Endosulfan	12P	ug/L	NA	<	0.1
Endosulfan Sulfate	13P	ug/L	NA	<	0.1
Endrin	14P	ug/L	NA	<	0.1
Endrin Aldehyde	15P	ug/L	NA	<	0.1
Heptachlor	16P	ug/L	NA	<	0.05
Heptachlor Epoxide	17P	ug/L	NA	<	0.05
PCB-1242	18P	ug/L	NA	<	1.1
PCB-1254	19P	ug/L	NA	<	1.1
PCB-1221	20P	ug/L	NA	<	1.1
PCB-1232	21P	ug/L	NA	<	1.1
PCB-1248	22P	ug/L	NA	<	1.1
PCB-1260	23P	ug/L	NA	<	1.1
PCB-1016	24P	ug/L	NA	<	1.1
Toxaphene	25P	ug/L	NA	<	5.4

OUTFALL No.: **03A021 - Cooling Water (Technical Area 3-29)**
DISCHARGED TO: **Mortandad Canyon**
FREQUENCY: **Intermittent**

	2C NO.	UNITS	MONTH AVG		DAILY MAX
BOD5	A.1.a	mg/L	NA	<	2
TSS	A.1.d	mg/L	NA	<	4
Oil & Grease	B.1.h	mg/L	NA	<	1
Fecal Coliform	B.1.d	#/100 ml	NA	<	30
Flow	A.1.f	MGD	0.01351		0.0576
COD	A.1.b	mg/L	NA		2.5
TOC	A.1.c	mg/L	NA		2.3
Ammonia (as N)	A.1.e	mg/L	NA	<	0.2
Bromide	B.1.a	ug/L	NA	<	0.5
Chlorine (Total Residual)	B.1.b	ug/L	NA	<	0.1
Color	B.1.c	nM	NA		10
Fluoride	B.1.e	ug/L	NA		600
Nitrate-Nitrite (N)	B.1.f	ug/L	NA		900
Organic Nitrogen, Total (as N)	B.1.G	ug/L	NA		0
Phosphorus, Total (as P)	B.1.i	ug/L	NA		120
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	NA		1
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	NA		12
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	3.63		0.4
Radioactivity: Radium 226, Total	B.1.j.(4)	pCi/L	NA	<	0.1
Sulfate (as SO4)	B.1.k	ug/L	NA		6200
Sulfide (as S)	B.1.i	ug/L	NA	<	1000
Sulfite: (as SO3)	B.1.m	ug/L	NA	<	3000
Surfactants	B.1.n	ug/L	NA	<	30
Aluminum (T)	B.1.o	ug/L	NA	<	500
Barium (T)	B.1.p	ug/L	NA	<	60
Boron (T)	B.1.q	ug/L	NA	<	300
Cobalt (T)	B.1.r	ug/L	NA	<	10
Iron (T)	B.1.s	ug/L	NA	<	200
Magnesium (T)	B.1.t	ug/L	NA		9400

Molybdenum	(T)	B.1.u	ug/L	NA	<	500
Manganese	(T)	B.1.v	ug/L	NA	<	10
Tin	(T)	B.1.w	ug/L	NA		2000
Titanium	(T)	B.1.x	ug/L	NA	<	30
Phenolics	(Total Recoverable)	15M	ug/L	NA	<	50
Antimony	(T)	1M	ug/L	NA	<	50
Arsenic	(T)	2M	ug/L	NA	<	60
Beryllium	(T)	3M	ug/L	NA	<	4
Cadmium	(T)	4M	ug/L	NA	<	8
Chromium	(T)	5M	ug/L	NA	<	40
Copper	(T)	6M	ug/L	NA	<	40
Lead	(T)	7M	ug/L	NA	<	60
Mercury	(T)	8M	ug/L	NA	<	0.2
Nickel	(T)	9M	ug/L	NA	<	40
Selenium	(T)	10M	ug/L	NA	<	3
Silver	(T)	11M	ug/L	NA	<	20
Thallium	(T)	12M	ug/L	NA	<	300
Zinc	(T)	13M	ug/L	NA	<	100
Cyanide	(T)	14M	ug/L	NA	<	20
2,3,7,8-TCDD		DIOXIN	ug/L	NA	<*********	
Acrolein		1V	ug/L	NA	<	20
Acrylonitrile		2V	ug/L	NA	<	20
Benzene		3V	ug/L	NA	<	1
Bromoform		5V	ug/L	NA	<	1
Carbon Tetrachloride		6V	ug/L	NA	<	1
Chlorobenzene		7V	ug/L	NA	<	1
Chlorodibromomethane		8V	ug/L	NA	<	1
Chloroethane		9V	ug/L	NA	<	5
2-Chloroethyl Vinyl Ether		10V	ug/L	NA	<	5
Chloroform		11V	ug/L	NA	<	1
Dichlorobromomethane		12V	ug/L	NA	<	1
1,1-Dichloroethane		14V	ug/L	NA	<	1
1,2-Dichloroethane		15V	ug/L	NA	<	1
1,1-Dichloroethylene		16V	ug/L	NA	<	1
1,2-Dichloropropane		17V	ug/L	NA	<	1
1,3-Dichloropropylene		18V	ug/L	NA	<	1
Ethylbenzene		19V	ug/L	NA	<	1
Methyl Bromide		20V	ug/L	NA	<	5
Methyl Chloride		21V	ug/L	NA	<	5
Methylene Chloride		22V	ug/L	NA	<	10
1,1,2,2-Tetrachloroethane		23V	ug/L	NA	<	1
Tetrachloroethylene		24V	ug/L	NA	<	1
Toluene		25V	ug/L	NA	<	1
1,2-trans-Dichloroethylene		26V	ug/L	NA	<	1
1,1,1-Trichloroethane		27V	ug/L	NA	<	1
1,1,2-Trichloroethane		28V	ug/L	NA	<	1
Trichloroethylene		29V	ug/L	NA	<	1
Vinyl Chloride		31V	ug/L	NA	<	5
2-Chlorophenol		1A	ug/L	NA	<	10
2,4-Dichlorophenol		2A	ug/L	NA	<	10
2,4-Dimethylphenol		3A	ug/L	NA	<	10
4,6-Dinitro-o-Cresol		4A	ug/L	NA	<	50
2,4-Dinitrophenol		5A	ug/L	NA	<	50
2-Nitrophenol		6A	ug/L	NA	<	20
4-Nitrophenol		7A	ug/L	NA	<	50
p-Chloro-m-Cresol		8A	ug/L	NA	<	10
Pentachlorophenol		9A	ug/L	NA	<	50
Phenol		10A	ug/L	NA	<	10
2,4,6-Trichlorophenol		11A	ug/L	NA	<	10

Acenaphthene	1B	ug/L	NA	<	10
Acenaphthylene	2B	ug/L	NA	<	10
Anthracene	3B	ug/L	NA	<	10
Benzidine	4B	ug/L	NA	<	50
Benzo(a)anthracene	5B	ug/L	NA	<	10
Benzo(a)pyrene	6B	ug/L	NA	<	10
3,4-Benzofluoranthene	7B	ug/L	NA	<	10
Benzo(ghi)perylene	8B	ug/L	NA	<	20
Benzo(k)fluoranthene	9B	ug/L	NA	<	10
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	<	10
Bis(2-chloroethyl) Ether	11B	ug/L	NA	<	10
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	<	10
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	<	10
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	<	10
Butyl Benzyl Phthalate	15B	ug/L	NA	<	10
2-Chloronapthalene	16B	ug/L	NA	<	10
4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	<	10
Chrysene	18B	ug/L	NA	<	10
Dibenzo(a,h)anthracene	19B	ug/L	NA	<	20
1,2-Dichlorobenzene	20B	ug/L	NA	<	10
1,3-Dichlorobenzene	21B	ug/L	NA	<	10
1,4-Dichlorobenzene	22B	ug/L	NA	<	10
3,3'-Dichlorobenzidine	23B	ug/L	NA	<	50
Diethyl Phthalate	24B	ug/L	NA	<	10
Dimethyl Phthalate	25B	ug/L	NA	<	10
Di-n-Butyl Phthalate	26B	ug/L	NA	<	10
2,4-Dinitrotoluene	27B	ug/L	NA	<	10
2,6-Dinitrotoluene	28B	ug/L	NA	<	10
Di-n-octyl Phthalate	29B	ug/L	NA	<	10
1,2-Diphenylhydrazine	30B	ug/L	NA	<	20
Fluoranthene	31B	ug/L	NA	<	10
Fluorene	32B	ug/L	NA	<	10
Hexachlorobenzene	33B	ug/L	NA	<	10
Hexachlorobutadiene	34B	ug/L	NA	<	10
Hexachlorocyclopentadiene	35B	ug/L	NA	<	10
Hexachloroethane	36B	ug/L	NA	<	20
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	<	20
Isophorone	38B	ug/L	NA	<	10
Naphthalene	39B	ug/L	NA	<	10
Nitrobenzene	40B	ug/L	NA	<	10
n-Nitrosodimethylamine	41B	ug/L	NA	<	50
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	<	20
n-Nitrosodiphenylamine	43B	ug/L	NA	<	20
Phenanthrene	44B	ug/L	NA	<	10
Pyrene	45B	ug/L	NA	<	10
1,2,4-Trichlorobenzene	46B	ug/L	NA	<	10
Aldrin	1P	ug/L	NA	<	0.02
Alpha-BHC	2P	ug/L	NA	<	0.02
Beta-BHC	3P	ug/L	NA	<	0.02
Gamma-BHC [Lindane]	4P	ug/L	NA	<	0.02
Delta-BHC	5P	ug/L	NA	<	0.02
Chlordane	6P	ug/L	NA	<	0.1
4,4'-DDT	7P	ug/L	NA	<	0.03
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	<	0.02
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	<	0.03
Dieldrin	10P	ug/L	NA	<	0.02
Alpha-Endosulfan	11P	ug/L	NA	<	0.03
Beta-Endosulfan	12P	ug/L	NA	<	0.03
Endosulfan Sulfate	13P	ug/L	NA	<	0.03

Endrin	14P	ug/L	NA	<	0.05
Endrin Aldehyde	15P	ug/L	NA	<	0.05
Heptachlor	16P	ug/L	NA	<	0.03
Heptachlor Epoxide	17P	ug/L	NA	<	0.03
PCB-1242	18P	ug/L	NA	<	0.1
PCB-1254	19P	ug/L	NA	<	0.1
PCB-1221	20P	ug/L	NA	<	0.1
PCB-1232	21P	ug/L	NA	<	0.1
PCB-1248	22P	ug/L	NA	<	0.1
PCB-1260	23P	ug/L	NA	<	0.1
PCB-1016	24P	ug/L	NA	<	0.1
Toxaphene	25P	ug/L	NA	<	0.1

OUTFALL No.: 03A022 - Cooling Water (Technical Area 3-2274)
DISCHARGED TO: Mortandad Canyon
FREQUENCY: Intermittent

	2C NO.	UNITS	MONTH AVG		DAILY MAX
BOD5	A.1.a	mg/L	NA	<	2
TSS	A.1.d	mg/L	NA	<	4
Flow	A.1.f	MGD	0.01379		0.0288
COD	A.1.b	mg/L	NA		12.8
TOC	A.1.c	mg/L	NA		1.5
Ammonia (as N)	A.1.e	mg/L	NA	<	0.2
Bromide	B.1.a	ug/L	NA	<	500
Phosphorus, Total (as P)	B.1.i	ug/L	NA		70
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	NA		0.2
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	2.2		2.5
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	0.87		1.7
Radioactivity: Radium 226	B.1.j.(4)	pCi/L	NA		0.1
Tritium		pCi/L	191		418
Vanadium		ug/L	23		40
Boron (T)	B.1.q	ug/L	30		100
Cobalt (T)	B.1.r	ug/L	0		0
Molybdenum (T)	B.1.u	ug/L	NA	<	20
Arsenic (T)	2M	ug/L	0		0
Cadmium (T)	4M	ug/L	0		0
Chromium (T)	5M	ug/L	0		0
Copper (T)	6M	ug/L	30		100
Lead (T)	7M	ug/L	0		0
Mercury (T)	8M	ug/L	0		0
Selenium (T)	10M	ug/L	3		10
Zinc (T)	13M	ug/L	70		100
Acrolein	1V	ug/L	NA	<	20
Acrylonitrile	2V	ug/L	NA	<	20
Benzene	3V	ug/L	NA	<	1
Bromoform	5V	ug/L	NA	<	1
Carbon Tetrachloride	6V	ug/L	NA	<	1
Chlorobenzene	7V	ug/L	NA	<	1
Chlorodibromomethane	8V	ug/L	NA	<	1
Chloroethane	9V	ug/L	NA	<	5
2-Chloroethyl Vinyl Ether	10V	ug/L	NA	<	5
Chloroform	11V	ug/L	NA	<	1
Dichlorobromomethane	12V	ug/L	NA	<	1

1,1-Dichloroethane	14V	ug/L	NA	<	1
1,2-Dichloroethane	15V	ug/L	NA	<	1
1,1-Dichloroethylene	16V	ug/L	NA	<	1
1,2-Dichloropropane	17V	ug/L	NA	<	1
1,3-Dichloropropylene	18V	ug/L	NA	<	1
Ethylbenzene	19V	ug/L	NA	<	1
Methyl Bromide	20V	ug/L	NA	<	5
Methyl Chloride	21V	ug/L	NA	<	5
Methylene Chloride	22V	ug/L	NA	<	10
1,1,2,2-Tetrachloroethane	23V	ug/L	NA	<	1
Tetrachloroethylene	24V	ug/L	NA	<	1
Toluene	25V	ug/L	NA	<	1
1,2-trans-Dichloroethylene	26V	ug/L	NA	<	1
1,1,1-Trichloroethane	27V	ug/L	NA	<	1
1,1,2-Trichloroethane	28V	ug/L	NA	<	1
Trichloroethylene	29V	ug/L	NA	<	1
Vinyl Chloride	31V	ug/L	NA	<	5
2-Chlorophenol	1A	ug/L	NA	<	10
2,4-Dichlorophenol	2A	ug/L	NA	<	10
2,4-Dimethylphenol	3A	ug/L	NA	<	10
4,6-Dinitro-o-Cresol	4A	ug/L	NA	<	50
2,4-Dinitrophenol	5A	ug/L	NA	<	50
2-Nitrophenol	6A	ug/L	NA	<	20
4-Nitrophenol	7A	ug/L	NA	<	50
p-Chloro-m-Cresol	8A	ug/L	NA	<	10
Pentachlorophenol	9A	ug/L	NA	<	50
Phenol	10A	ug/L	NA	<	10
2,4,6-Trichlorophenol	11A	ug/L	NA	<	10
Acenaphthene	1B	ug/L	NA	<	10
Acenaphthylene	2B	ug/L	NA	<	10
Anthracene	3B	ug/L	NA	<	10
Benzidine	4B	ug/L	NA	<	50
Benzo(a)anthracene	5B	ug/L	NA	<	10
Benzo(a)pyrene	6B	ug/L	NA	<	10
3,4-Benzofluoranthene	7B	ug/L	NA	<	10
Benzo(ghi)perylene	8B	ug/L	NA	<	20
Benzo(k)fluoranthene	9B	ug/L	NA	<	10
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	<	10
Bis(2-chloroethyl) Ether	11B	ug/L	NA	<	10
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	<	10
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	<	10
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	<	10
Butyl Benzyl Phthalate	15B	ug/L	NA	<	10
2-Chloronapthalene	16B	ug/L	NA	<	10
4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	<	10
Chrysene	18B	ug/L	NA	<	10
Dibenzo(a,h)anthracene	19B	ug/L	NA	<	20
1,2-Dichlorobenzene	20B	ug/L	NA	<	10
1,3-Dichlorobenzene	21B	ug/L	NA	<	10
1,4-Dichlorobenzene	22B	ug/L	NA	<	10
3,3'-Dichlorobenzidine	23B	ug/L	NA	<	50
Diethyl Phthalate	24B	ug/L	NA	<	10
Dimethyl Phthalate	25B	ug/L	NA	<	10
Di-n-Butyl Phthalate	26B	ug/L	NA	<	10
2,4-Dinitrotoluene	27B	ug/L	NA	<	10
2,6-Dinitrotoluene	28B	ug/L	NA	<	10
Di-n-octyl Phthalate	29B	ug/L	NA	<	10
1,2-Diphenylhydrazine	30B	ug/L	NA	<	20
Fluoranthene	31B	ug/L	NA	<	10

Fluorene	32B	ug/L	NA	<	10
Hexachlorobenzene	33B	ug/L	NA	<	10
Hexachlorobutadiene	34B	ug/L	NA	<	10
Hexachlorocyclopentadiene	35B	ug/L	NA	<	10
Hexachloroethane	36B	ug/L	NA	<	20
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	<	20
Isophorone	38B	ug/L	NA	<	10
Naphthalene	39B	ug/L	NA	<	10
Nitrobenzene	40B	ug/L	NA	<	10
n-Nitrosodimethylamine	41B	ug/L	NA	<	50
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	<	20
n-Nitrosodiphenylamine	43B	ug/L	NA	<	20
Phenanthrene	44B	ug/L	NA	<	10
Pyrene	45B	ug/L	NA	<	10
1,2,4-Trichlorobenzene	46B	ug/L	NA	<	10
Aldrin	1P	ug/L	NA	<	0.02
Alpha-BHC	2P	ug/L	NA	<	0.02
Beta-BHC	3P	ug/L	NA	<	0.02
Gamma-BHC [Lindane]	4P	ug/L	NA	<	0.02
Delta-BHC	5P	ug/L	NA	<	0.02
Chlordane	6P	ug/L	NA	<	0.1
4,4'-DDT	7P	ug/L	NA	<	0.03
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	<	0.02
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	<	0.03
Dieldrin	10P	ug/L	NA	<	0.02
Alpha-Endosulfan	11P	ug/L	NA	<	0.03
Beta-Endosulfan	12P	ug/L	NA	<	0.03
Endosulfan Sulfate	13P	ug/L	NA	<	0.03
Endrin	14P	ug/L	NA	<	0.05
Endrin Aldehyde	15P	ug/L	NA	<	0.05
Heptachlor	16P	ug/L	NA	<	0.03
Heptachlor Epoxide	17P	ug/L	NA	<	0.03
PCB-1242	18P	ug/L	NA	<	0.1
PCB-1254	19P	ug/L	NA	<	0.1
PCB-1221	20P	ug/L	NA	<	0.1
PCB-1232	21P	ug/L	NA	<	0.1
PCB-1248	22P	ug/L	NA	<	0.1
PCB-1260	23P	ug/L	NA	<	0.1
PCB-1016	24P	ug/L	NA	<	0.1
Toxaphene	25P	ug/L	NA	<	0.1

OUTFALL No.: 03A024 - Cooling Water (Technical Area 3-187)
DISCHARGED TO: Sandia Canyon
FREQUENCY: Intermittent

	2C NO.	UNITS	MONTH AVG	DAILY MAX
TSS	A.1.d	mg/L	1.4	9
Flow	A.1.f	MGD	0.00052	0.0014
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	NA	4.1
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	6	10
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	0.45	0.9
Tritium		pCi/L	327	205
Vanadium		ug/L	NA	0
Aluminum (T)	B.1.o	ug/L	450	800
Boron (T)	B.1.q	ug/L	10	100
Cobalt (T)	B.1.r	ug/L	0	0
Arsenic (T)	2M	ug/L	30	30

Cadmium	(T)	4M	ug/L	0	0
Chromium	(T)	5M	ug/L	100	100
Copper	(T)	6M	ug/L	0	0
Lead	(T)	7M	ug/L	0	0
Mercury	(T)	8M	ug/L	0	0
Zinc	(T)	13M	ug/L	100	100

OUTFALL No.: 03A027 - Cooling Water (Technical Area 3-285)
DISCHARGED TO: Sandia Canyon
FREQUENCY: Intermittent

		2C NO.	UNITS	MONTH AVG	DAILY MAX
TSS		A.1.d	mg/L	1.8	10
Flow		A.1.f	MGD	0.03589	0.1080
Phosphorus, Total (as P)		B.1.i	ug/L	0.9	4
Radioactivity: Alpha, Total		B.1.j.(1)	pCi/L	NA	0.2
Radioactivity: Beta, Total		B.1.j.(2)	pCi/L	10.1	18.6
Radioactivity: Radium, Total		B.1.j.(3)	pCi/L	1.7	2.6
Tritium			pCi/L	67	200
Vanadium			ug/L	30	130
Boron	(T)	B.1.q	ug/L	70	200
Cobalt	(T)	B.1.r	ug/L	0	0
Arsenic	(T)	2M	ug/L	30	30
Cadmium	(T)	4M	ug/L	0	0
Chromium	(T)	5M	ug/L	30	100
Copper	(T)	6M	ug/L	0	0
Lead	(T)	7M	ug/L	0	0
Mercury	(T)	8M	ug/L	0	0
Zinc	(T)	13M	ug/L	0	0

OUTFALL No.: 03A028 - Cooling Water (Technical Area 15-202)
DISCHARGED TO: Water Canyon
FREQUENCY: Intermittent

		2C NO.	UNITS	MONTH AVG	DAILY MAX
Flow		A.1.f	MGD	0.0043	0.0288
Chlorine (Total Residual)		B.1.b	ug/L	8	100
Phosphorus, Total (as P)		B.1.i	ug/L	1.76	15
Radioactivity: Alpha, Total		B.1.j.(1)	pCi/L	0.3	0.4
Radioactivity: Beta, Total		B.1.j.(2)	pCi/L	5	7.8
Radioactivity: Radium, Total		B.1.j.(3)	pCi/L	0.83	1.8
Tritium			pCi/L	121	300
Vanadium			ug/L	30	30
Aluminum	(T)	B.1.o	ug/L	100	100
Boron	(T)	B.1.q	ug/L	100	100
Cobalt	(T)	B.1.r	ug/L	0	0
Arsenic	(T)	2M	ug/L	18	280
Cadmium	(T)	4M	ug/L	0	0
Chromium	(T)	5M	ug/L	0	0
Copper	(T)	6M	ug/L	100	300
Lead	(T)	7M	ug/L	0	0
Mercury	(T)	8M	ug/L	0	0
Selenium	(T)	10M	ug/L	0	<3
Zinc	(T)	13M	ug/L	130	200

OUTFALL No.: 03A047 - Cooling Water (Technical Area 53-60)
DISCHARGED TO: Los Alamos Canyon

FREQUENCY: **Intermittent**

	2C NO.	UNITS	MONTH AVG	DAILY MAX
BOD5	A.1.a	mg/L	NA	7.2
TSS	A.1.d	mg/L	NA	6
Flow	A.1.f	MGD	0.02357	0.0864
COD	A.1.b	mg/L	NA	131
TOC	A.1.c	mg/L	NA	38
Ammonia (as N)	A.1.e	mg/L	NA	13
Bromide	B.1.a	ug/L	NA	14.9
Chlorine (Total Residual)	B.1.b	ug/L	23	600
Phosphorus, Total (as P)	B.1.i	ug/L	850	4000
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	0.5	6.41
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	21.9	45.7
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L		< 1.46
Radioactivity: Radium 226	B.1.j.(4)	pCi/L	NA	0.22
Tritium		pCi/L	434	1302
Vanadium		ug/l	20	30
Aluminum (T)	B.1.o	ug/L	100	100
Boron (T)	B.1.q	ug/L	30	100
Cobalt (T)	B.1.r	ug/L	0	0
Molybdenum (T)	B.1.u	ug/L	NA	9400
Arsenic (T)	2M	ug/L	6	10
Cadmium (T)	4M	ug/L	0	0
Chromium (T)	5M	ug/L	0	0
Copper (T)	6M	ug/L	0	0
Lead (T)	7M	ug/L	0	0
Mercury (T)	8M	ug/L	0	0
Selenium (T)	10M	ug/L	NA	<3
Zinc (T)	13M	ug/L	30	100

OUTFALL No.: **03A048 - Cooling Water (Technical Area 53-62)**
DISCHARGED TO: **Los Alamos Canyon**
FREQUENCY: **Intermittent**

	2C NO.	UNITS	MONTH AVG	DAILY MAX
BOD5	A.1.a	mg/L		2.3
TSS	A.1.d	mg/L	1.6	8
Oil & Grease	B.1.h	mg/L	NA	< 5
Flow	A.1.f	MGD	0.06971	0.288
COD	A.1.b	mg/L	NA	25
TOC	A.1.c	mg/L	NA	7.3
Ammonia (as N)	A.1.e	mg/L	NA	0.6
Bromide	B.1.a	ug/L	NA	700
Chlorine (Total Residual)	B.1.b	ug/L	0	0
Color	B.1.c	nM	NA	< 5
Fluoride	B.1.e	ug/L	NA	< 500
Nitrate-Nitrite (N)	B.1.f	ug/L	NA	910
Organic Nitrogen, Total (as N)	B.1.G	ug/L	NA	1600
Phosphorus, Total (as P)	B.1.i	ug/L	630	2000
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	0	0
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	7	10
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L		< 0.71
Radioactivity: Radium 226, Total	B.1.j.(4)	pCi/L	NA	< 0.71
Sulfate (as SO4)	B.1.k	ug/L	NA	31000
Sulfide (as S)	B.1.i	ug/L	NA	< 1000
Sulfite: (as SO3)	B.1.m	ug/L	NA	< 3000

Surfactants		B.1.n	ug/L	NA	<	30
Aluminum	(T)	B.1.o	ug/L	100		100
Barium	(T)	B.1.p	ug/L	NA	<	32
Boron	(T)	B.1.q	ug/L	30		100
Cobalt	(T)	B.1.r	ug/L	0	<	10
Iron	(T)	B.1.s	ug/L	NA		74
Magnesium	(T)	B.1.t	ug/L	NA		3700
Molybdenum	(T)	B.1.u	ug/L	NA		4300
Manganese	(T)	B.1.v	ug/L	NA	<	10
Tin	(T)	B.1.w	ug/L	NA	<	2000
Titanium	(T)	B.1.x	ug/L	NA	<	30
Phenolics	(Total Recoverable)	15M	ug/L	NA	<	50
Antimony	(T)	1M	ug/L		<	3
Arsenic	(T)	2M	ug/L	13		70
Beryllium	(T)	3M	ug/L		<	3
Cadmium	(T)	4M	ug/L	0	<	5
Chromium	(T)	5M	ug/L	0	<	20
Copper	(T)	6M	ug/L	130		1400
Lead	(T)	7M	ug/L	0	<	30
Mercury	(T)	8M	ug/L	0	<	0.2
Nickel	(T)	9M	ug/L		<	20
Selenium	(T)	10M	ug/L	0	<	3
Silver	(T)	11M	ug/L		<	10
Thallium	(T)	12M	ug/L		<	2
Zinc	(T)	13M	ug/L	30		100
Cyanide	(T)	14M	ug/L		<	20
2,3,7,8-TCDD		DIOXIN	ug/L	NA	<	********
Acrolein		1V	ug/L	NA	<	50
Acrylonitrile		2V	ug/L	NA	<	50
Benzene		3V	ug/L	NA	<	10
Bromoform		5V	ug/L	NA	<	10
Carbon Tetrachloride		6V	ug/L	NA	<	10
Chlorobenzene		7V	ug/L	NA	<	50
Chlorodibromomethane		8V	ug/L	NA	<	10
Chloroethane		9V	ug/L	NA	<	10
2-Chloroethyl Vinyl Ether		10V	ug/L	NA	<	50
Chloroform		11V	ug/L	NA	<	10
Dichlorobromomethane		12V	ug/L	NA	<	10
1,1-Dichloroethane		14V	ug/L	NA	<	10
1,2-Dichloroethane		15V	ug/L	NA	<	10
1,1-Dichloroethylene		16V	ug/L	NA	<	10
1,2-Dichloropropane		17V	ug/L	NA	<	10
1,3-Dichloropropylene		18V	ug/L	NA	<	10
Ethylbenzene		19V	ug/L	NA	<	10
Methyl Bromide		20V	ug/L	NA	<	50
Methyl Chloride		21V	ug/L	NA	<	50
Methylene Chloride		22V	ug/L	NA	<	20
1,1,2,2-Tetrachloroethane		23V	ug/L	NA	<	10
Tetrachloroethylene		24V	ug/L	NA	<	10
Toluene		25V	ug/L	NA	<	10
1,2-trans-Dichloroethylene		26V	ug/L	NA	<	10
1,1,1-Trichloroethane		27V	ug/L	NA	<	10
1,1,2-Trichloroethane		28V	ug/L	NA	<	10
Trichloroethylene		29V	ug/L	NA	<	10
Vinyl Chloride		31V	ug/L	NA	<	10
2-Chlorophenol		1A	ug/L	NA	<	8.617
2,4-Dichlorophenol		2A	ug/L	NA	<	8.617
2,4-Dimethylphenol		3A	ug/L	NA	<	8.617
4,6-Dinitro-o-Cresol		4A	ug/L	NA	<	43.085

2,4-Dinitrophenol	5A	ug/L	NA	<43.085
2-Nitrophenol	6A	ug/L	NA	<17.234
4-Nitrophenol	7A	ug/L	NA	<43.085
p-Chloro-m-Cresol	8A	ug/L	NA	< 8.617
Pentachlorophenol	9A	ug/L	NA	<43.085
Phenol	10A	ug/L	NA	< 8.617
2,4,6-Trichlorophenol	11A	ug/L	NA	< 8.617
Acenaphthene	1B	ug/L	NA	< 8.617
Acenaphthylene	2B	ug/L	NA	< 8.617
Anthracene	3B	ug/L	NA	< 8.617
Benzidine	4B	ug/L	NA	<43.085
Benzo(a)anthracene	5B	ug/L	NA	< 8.617
Benzo(a)pyrene	6B	ug/L	NA	< 8.617
3,4-Benzofluoranthene	7B	ug/L	NA	< 8.617
Benzo(ghi)perylene	8B	ug/L	NA	<17.234
Benzo(k)fluoranthene	9B	ug/L	NA	< 8.617
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	< 8.617
Bis(2-chloroethyl) Ether	11B	ug/L	NA	< 8.617
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	< 8.617
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	< 8.617
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	< 8.617
Butyl Benzyl Phthalate	15B	ug/L	NA	< 8.617
2-Chloronapthalene	16B	ug/L	NA	< 8.617
4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	< 8.617
Chrysene	18B	ug/L	NA	< 8.617
Dibenzo(a,h)anthracene	19B	ug/L	NA	<17.234
1,2-Dichlorobenzene	20B	ug/L	NA	< 8.617
1,3-Dichlorobenzene	21B	ug/L	NA	< 8.617
1,4-Dichlorobenzene	22B	ug/L	NA	< 8.617
3,3'-Dichlorobenzidine	23B	ug/L	NA	<43.085
Diethyl Phthalate	24B	ug/L	NA	< 8.617
Dimethyl Phthalate	25B	ug/L	NA	< 8.617
Di-n-Butyl Phthalate	26B	ug/L	NA	< 8.617
2,4-Dinitrotoluene	27B	ug/L	NA	< 8.617
2,6-Dinitrotoluene	28B	ug/L	NA	< 8.617
Di-n-octyl Phthalate	29B	ug/L	NA	< 8.617
1,2-Diphenylhydrazine	30B	ug/L	NA	<17.234
Fluoranthene	31B	ug/L	NA	< 8.617
Fluorene	32B	ug/L	NA	< 8.617
Hexachlorobenzene	33B	ug/L	NA	< 8.617
Hexachlorobutadiene	34B	ug/L	NA	< 8.617
Hexachlorocyclopentadiene	35B	ug/L	NA	< 8.617
Hexachloroethane	36B	ug/L	NA	<17.234
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	<17.234
Isophorone	38B	ug/L	NA	< 8.617
Naphthalene	39B	ug/L	NA	< 8.617
Nitrobenzene	40B	ug/L	NA	< 8.617
n-Nitrosodimethylamine	41B	ug/L	NA	<43.085
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	<17.234
n-Nitrosodiphenylamine	43B	ug/L	NA	<17.234
Phenanthrene	44B	ug/L	NA	< 8.617
Pyrene	45B	ug/L	NA	< 8.617
1,2,4-Trichlorobenzene	46B	ug/L	NA	< 8.617
Aldrin	1P	ug/L	NA	< 0.2825
Alpha-BHC	2P	ug/L	NA	< 0.2825
Beta-BHC	3P	ug/L	NA	< 0.2825
Gamma-BHC [Lindane]	4P	ug/L	NA	< 0.2825
Delta-BHC	5P	ug/L	NA	< 0.2825
Chlordane	6P	ug/L	NA	< 0.56

4,4'-DDT	7P	ug/L	NA	< 0.565
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	< 0.565
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	< 0.565
Dieldrin	10P	ug/L	NA	< 0.565
Alpha-Endosulfan	11P	ug/L	NA	< 0.565
Beta-Endosulfan	12P	ug/L	NA	< 0.565
Endosulfan Sulfate	13P	ug/L	NA	< 0.565
Endrin	14P	ug/L	NA	< 0.565
Endrin Aldehyde	15P	ug/L	NA	< 0.565
Heptachlor	16P	ug/L	NA	< 0.2825
Heptachlor Epoxide	17P	ug/L	NA	< 0.2825
PCB-1242	18P	ug/L	NA	< 0.565
PCB-1254	19P	ug/L	NA	< 0.565
PCB-1221	20P	ug/L	NA	< 0.565
PCB-1232	21P	ug/L	NA	< 0.565
PCB-1248	22P	ug/L	NA	< 0.565
PCB-1260	23P	ug/L	NA	< 0.565
PCB-1016	24P	ug/L	NA	< 0.565
Toxaphene	25P	ug/L	NA	< 0.2825

OUTFALL No.: **03A049 - Cooling Water (Technical Area 53-64)**
DISCHARGED TO: **Los Alamos Canyon**
FREQUENCY: **Intermittent**

	2C NO.	UNITS	MONTH AVG	DAILY MAX
TSS	A.1.d	mg/L	2.2	10
Flow	A.1.f	MGD	0.02288	0.064
Chlorine (Total Residual)	B.1.b	ug/L	54	1700
Phosphorus, Total (as P)	B.1.i	ug/L	1300	3000
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	0.36	0.4
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	14.5	20.4
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	0.87	1.7
Tritium		pCi/L	233	700
Vanadium		ug/L	23	30
Aluminum (T)	B.1.o	ug/L	100	100
Boron (T)	B.1.q	ug/L	70	100
Cobalt (T)	B.1.r	ug/L	0	0
Arsenic (T)	2M	ug/L	NA	70
Cadmium (T)	4M	ug/L	0	0
Chromium (T)	5M	ug/L	0	0
Copper (T)	6M	ug/L	0	0
Lead (T)	7M	ug/L	0	0
Mercury (T)	8M	ug/L	0	0
Selenium (T)	10M	ug/L	0	<3
Zinc (T)	13M	ug/L	0	100

OUTFALL No.: **03A113 - Cooling Water (Technical Area 53-293, 294, 1032, and LEDA)**
DISCHARGED TO: **Sandia Canyon**
FREQUENCY: **Intermittent**

	2C NO.	UNITS	MONTH AVG	DAILY MAX
BOD5	A.1.a	mg/L	NA	20.5
TSS	A.1.d	mg/L	3.9	29
Flow	A.1.f	MGD	0.0109	0.0792
COD	A.1.b	mg/L	NA	22
TOC	A.1.c	mg/L	NA	8.2

Ammonia (as N)	A.1.e	mg/L		NA	<	0.2
Bromide	B.1.a	ug/L		NA		2900
Chlorine (Total Residual)	B.1.b	ug/L		46		2500
Phosphorus, Total (as P)	B.1.i	ug/L		1200		7000
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L		0.8		1.2
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L		8.6		14
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	NA			3.94
Radioactivity: Radium 226	B.1.j.(4)	pCi/L		NA		0.69
Tritium		pCi/L		432		700
Vanadium		ug/L		27		30
Aluminum (T)	B.1.o	ug/L		100		100
Boron (T)	B.1.q	ug/L		70		100
Cobalt (T)	B.1.r	ug/L		0		0
Molybdenum (T)	B.1.u	ug/L		NA		720
Arsenic (T)	2M	ug/L	NA			10
Cadmium (T)	4M	ug/L		0		0
Chromium (T)	5M	ug/L		0		0
Copper (T)	6M	ug/L		0		0
Lead (T)	7M	ug/L		0		0
Mercury (T)	8M	ug/L		0		0
Selenium (T)	10M	ug/L		0		<3
Zinc (T)	13M	ug/L		30		100

OUTFALL No.: **03A130 - Cooling Water (Technical Area 11-30)**
DISCHARGED TO: **Water Canyon**
FREQUENCY: **Intermittent**

	2C NO.	UNITS	MONTH AVG		DAILY MAX
BOD5	A.1.a	mg/L	NA	<	2
TSS	A.1.d	mg/L	NA	<	1
Flow	A.1.f	MGD	0.00408		0.0216
COD	A.1.b	mg/L	NA	<	1
TOC	A.1.c	mg/L	NA	<	0.7
Ammonia (as N)	A.1.e	mg/L	NA	<	0.2
Bromide	B.1.a	ug/L	NA	<	500
Phosphorus, Total (as P)	B.1.i	ug/L	1390		5000
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	0.2		2.96
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	4.7		10
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	1.57		3
Radioactivity: Radium 226	B.1.j.(4)	pCi/L	NA		0.54
Tritium		pCi/L	NA		0
Vanadium		ug/L	7		10
Aluminum (T)	B.1.o	ug/L	100		100
Boron (T)	B.1.q	ug/L	70		100
Cobalt (T)	B.1.r	ug/L	0		0
Molybdenum (T)	B.1.u	ug/L	NA	<	20
Arsenic (T)	2M	ug/L	1		10
Cadmium (T)	4M	ug/L	0		0
Chromium (T)	5M	ug/L	30		100
Copper (T)	6M	ug/L	20		600
Lead (T)	7M	ug/L	0		0
Mercury (T)	8M	ug/L	0		0
Selenium (T)	10M	ug/L	0		<3
Zinc (T)	13M	ug/L	30		100

OUTFALL NO: 03A158 - Cooling Tower Blowdown (Technical Area 21-209)
DISCHARGED TO: Los Alamos Canyon
FREQUENCY: Intermittent

	2C NO.	UNITS	MONTH AVG	DAILY MAX
TSS	A.1.d	mg/L	1.2	6
Flow	A.1.f	MGD	0.00285	0.0065
Chlorine (Total Residual)	B.1.b	ug/L	10	100
Phosphorus, Total (as P)	B.1.i	ug/L	130	1000
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	0.5	0.7
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	3.3	4.4
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	1.4	3.7
Tritium		pCi/L	1230	3090
Aluminum (T)	B.1.o	ug/L	NA	100
Boron (T)	B.1.q	ug/L	70	100
Cobalt (T)	B.1.r	ug/L	NA	0
Arsenic (T)	2M	ug/L	10	10
Cadmium (T)	4M	ug/L	NA	0
Chromium (T)	5M	ug/L	NA	0
Copper (T)	6M	ug/L	NA	0
Lead (T)	7M	ug/L	NA	0
Mercury (T)	8M	ug/L	NA	0
Selenium (T)	10M	ug/L	NA	< 3
Zinc (T)	13M	ug/L	30	100

OUTFALL NO: 03A160 - Cooling Tower Blowdown (Technical Area 35-124)
DISCHARGED TO: Ten Site Canyon
FREQUENCY: Intermittent

	2C NO.	UNITS	MONTH AVG	DAILY MAX
TSS	A.1.d	mg/L	31.5	54
Flow	A.1.f	MGD	0.0576	0.0576
Chlorine (Total Residual)	B.1.b	ug/L	NA	0
Phosphorus, Total (as P)	B.1.i	ug/L	1500	2000
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	NA	2.9
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	NA	20
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	7.6	10.6
Tritium		pCi/L	205	327
Vanadium		ug/L	NA	0
Aluminum (T)	B.1.o	ug/L	150	200
Boron (T)	B.1.q	ug/L	50	100
Cobalt (T)	B.1.r	ug/L	NA	0
Arsenic (T)	2M	ug/L		0
Cadmium (T)	4M	ug/L	NA	0
Chromium (T)	5M	ug/L	NA	0
Copper (T)	6M	ug/L	NA	0
Lead (T)	7M	ug/L	NA	0
Mercury (T)	8M	ug/L	NA	0
Selenium (T)	10M	ug/L	NA	<3
Zinc (T)	13M	ug/L	150	200

OUTFALL NO: 03A181 - Cooling Tower Blowdown (Technical Area 55-6)
DISCHARGED TO: Tributary to Mortandad Canyon
FREQUENCY: Intermittent

	2C NO.	UNITS	MONTH AVG		DAILY MAX
BOD5	A.1.a	mg/L	NA		6.3
TSS	A.1.d	mg/L	1.3		9
Oil & Grease	B.1.h	mg/L	NA		8.4
Fecal Coliform	B.1.d	#/100 ml	NA	<	1
Flow	A.1.f	MGD	0.02232		0.0432
COD	A.1.b	mg/L	NA		75
TOC	A.1.c	mg/L	NA		27
Ammonia (as N)	A.1.e	mg/L	NA	<	0.2
Bromide	B.1.a	ug/L	NA	<	500
Chlorine (Total Residual)	B.1.b	ug/L	NA		210
Color	B.1.c	nM	NA	<	5
Fluoride	B.1.e	ug/L	NA		500
Nitrate-Nitrite (N)	B.1.f	ug/L	NA		960
Organic Nitrogen, Total (as N)	B.1.G	ug/L	NA		1800
Phosphorus, Total (as P)	B.1.i	ug/L	1450		5620
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	NA		0.3
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	NA		18
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L	3.67		8.3
Radioactivity: Radium 226	B.1.j.(4)	pCi/L	NA		1.95
Tritium		pCi/L	360		900
Vanadium		ug/L	30		30
Sulfate (as SO4)	B.1.k	ug/L	NA		5.8
Sulfide (as S)	B.1.i	ug/L	NA	<	1000
Sulfite: (as SO3)	B.1.m	ug/L	NA	<	3000
Surfactants	B.1.n	ug/L	NA	<	30
Aluminum (T)	B.1.o	ug/L	100		100
Barium (T)	B.1.p	ug/L	NA		60
Boron (T)	B.1.q	ug/L	100		100
Cobalt (T)	B.1.r	ug/L	NA		0
Iron (T)	B.1.s	ug/L	NA	<	200
Magnesium (T)	B.1.t	ug/L	NA		7400
Molybdenum (T)	B.1.u	ug/L	NA	<	500
Manganese (T)	B.1.v	ug/L	NA	<	10
Tin (T)	B.1.w	ug/L	NA	<	2000
Titanium (T)	B.1.x	ug/L	NA	<	30
Phenolics (Total Recoverable)	15M	ug/L	NA	<	50
Antimony (T)	1M	ug/L	NA	<	50
Arsenic (T)	2M	ug/L			10
Beryllium (T)	3M	ug/L	NA	<	4
Cadmium (T)	4M	ug/L	NA	<	8
Chromium (T)	5M	ug/L	NA	<	40
Copper (T)	6M	ug/L	NA	<	40
Lead (T)	7M	ug/L	NA		100
Mercury (T)	8M	ug/L	NA		0.4
Nickel (T)	9M	ug/L	NA	<	40
Selenium (T)	10M	ug/L	NA	<	3
Silver (T)	11M	ug/L	NA	<	10
Thallium (T)	12M	ug/L	NA	<	100
Zinc (T)	13M	ug/L	30		100
Cyanide (T)	14M	ug/L	NA	<	20
2,3,7,8-TCDD	DIOXIN	ug/L	NA	<*********	
Acrolein	1V	ug/L	NA	<	50
Acrylonitrile	2V	ug/L	NA	<	50
Benzene	3V	ug/L	NA	<	10
Bromoform	5V	ug/L	NA	<	10
Carbon Tetrachloride	6V	ug/L	NA	<	10
Chlorobenzene	7V	ug/L	NA	<	50
Chlorodibromomethane	8V	ug/L	NA	<	10

Chloroethane	9V	ug/L	NA	<	10
2-Chloroethyl Vinyl Ether	10V	ug/L	NA	<	50
Chloroform	11V	ug/L	NA	<	10
Dichlorobromomethane	12V	ug/L	NA	<	10
1,1-Dichloroethane	14V	ug/L	NA	<	10
1,2-Dichloroethane	15V	ug/L	NA	<	10
1,1-Dichloroethylene	16V	ug/L	NA	<	10
1,2-Dichloropropane	17V	ug/L	NA	<	10
1,3-Dichloropropylene	18V	ug/L	NA	<	10
Ethylbenzene	19V	ug/L	NA	<	10
Methyl Bromide	20V	ug/L	NA	<	50
Methyl Chloride	21V	ug/L	NA	<	50
Methylene Chloride	22V	ug/L	NA	<	20
1,1,2,2-Tetrachloroethane	23V	ug/L	NA	<	10
Tetrachloroethylene	24V	ug/L	NA	<	10
Toluene	25V	ug/L	NA	<	10
1,2-trans-Dichloroethylene	26V	ug/L	NA	<	10
1,1,1-Trichloroethane	27V	ug/L	NA	<	10
1,1,2-Trichloroethane	28V	ug/L	NA	<	10
Trichloroethylene	29V	ug/L	NA	<	10
Vinyl Chloride	31V	ug/L	NA	<	10
2-Chlorophenol	1A	ug/L	NA	<	10
2,4-Dichlorophenol	2A	ug/L	NA	<	10
2,4-Dimethylphenol	3A	ug/L	NA	<	10
4,6-Dinitro-o-Cresol	4A	ug/L	NA	<	50
2,4-Dinitrophenol	5A	ug/L	NA	<	50
2-Nitrophenol	6A	ug/L	NA	<	20
4-Nitrophenol	7A	ug/L	NA	<	50
p-Chloro-m-Cresol	8A	ug/L	NA	<	10
Pentachlorophenol	9A	ug/L	NA	<	50
Phenol	10A	ug/L	NA	<	10
2,4,6-Trichlorophenol	11A	ug/L	NA	<	10
Acenaphthene	1B	ug/L	NA	<	10
Acenaphthylene	2B	ug/L	NA	<	10
Anthracene	3B	ug/L	NA	<	10
Benzidine	4B	ug/L	NA	<	50
Benzo(a)anthracene	5B	ug/L	NA	<	10
Benzo(a)pyrene	6B	ug/L	NA	<	10
3,4-Benzofluoranthene	7B	ug/L	NA	<	10
Benzo(ghi)perylene	8B	ug/L	NA	<	20
Benzo(k)fluoranthene	9B	ug/L	NA	<	10
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	<	10
Bis(2-chloroethyl) Ether	11B	ug/L	NA	<	10
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	<	10
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	<	10
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	<	10
Butyl Benzyl Phthalate	15B	ug/L	NA	<	10
2-Chloronapthalene	16B	ug/L	NA	<	10
4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	<	10
Chrysene	18B	ug/L	NA	<	10
Dibenzo(a,h)anthracene	19B	ug/L	NA	<	20
1,2-Dichlorobenzene	20B	ug/L	NA	<	10
1,3-Dichlorobenzene	21B	ug/L	NA	<	10
1,4-Dichlorobenzene	22B	ug/L	NA	<	10
3,3'-Dichlorobenzidine	23B	ug/L	NA	<	50
Diethyl Phthalate	24B	ug/L	NA	<	10
Dimethyl Phthalate	25B	ug/L	NA	<	10
Di-n-Butyl Phthalate	26B	ug/L	NA	<	10
2,4-Dinitrotoluene	27B	ug/L	NA	<	10

2,6-Dinitrotoluene	28B	ug/L	NA	<	10
Di-n-octyl Phthalate	29B	ug/L	NA	<	10
1,2-Diphenylhydrazine	30B	ug/L	NA	<	20
Fluoranthene	31B	ug/L	NA	<	10
Fluorene	32B	ug/L	NA	<	10
Hexachlorobenzene	33B	ug/L	NA	<	10
Hexachlorobutadiene	34B	ug/L	NA	<	10
Hexachlorocyclopentadiene	35B	ug/L	NA	<	10
Hexachloroethane	36B	ug/L	NA	<	20
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	<	20
Isophorone	38B	ug/L	NA	<	10
Naphthalene	39B	ug/L	NA	<	10
Nitrobenzene	40B	ug/L	NA	<	10
n-Nitrosodimethylamine	41B	ug/L	NA	<	50
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	<	20
n-Nitrosodiphenylamine	43B	ug/L	NA	<	20
Phenanthrene	44B	ug/L	NA	<	10
Pyrene	45B	ug/L	NA	<	10
1,2,4-Trichlorobenzene	46B	ug/L	NA	<	10
Aldrin	1P	ug/L	NA	<	0.06
Alpha-BHC	2P	ug/L	NA	<	0.06
Beta-BHC	3P	ug/L	NA	<	0.06
Gamma-BHC [Lindane]	4P	ug/L	NA	<	0.06
Delta-BHC	5P	ug/L	NA	<	0.06
Chlordane	6P	ug/L	NA	<	0.1
4,4'-DDT	7P	ug/L	NA	<	0.1
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	<	0.1
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	<	0.1
Dieldrin	10P	ug/L	NA	<	0.1
Alpha-Endosulfan	11P	ug/L	NA	<	0.1
Beta-Endosulfan	12P	ug/L	NA	<	0.1
Endosulfan Sulfate	13P	ug/L	NA	<	0.1
Endrin	14P	ug/L	NA	<	0.1
Endrin Aldehyde	15P	ug/L	NA	<	0.1
Heptachlor	16P	ug/L	NA	<	0.06
Heptachlor Epoxide	17P	ug/L	NA	<	0.06
PCB-1242	18P	ug/L	NA	<	1.2
PCB-1254	19P	ug/L	NA	<	1.2
PCB-1221	20P	ug/L	NA	<	1.2
PCB-1232	21P	ug/L	NA	<	1.2
PCB-1248	22P	ug/L	NA	<	1.2
PCB-1260	23P	ug/L	NA	<	1.2
PCB-1016	24P	ug/L	NA	<	1.2
Toxaphene	25P	ug/L	NA	<	6

OUTFALL NO: 03A185 - Cooling Tower Blowdown (Technical Area 15-312)
DISCHARGED TO: Tributary to Water Canyon
FREQUENCY: Intermittent

This Outfall is not presently discharging. The effluent is expected to be similar to Outfall 03A181. Data presented below are from Outfall 03A181.

	2C NO.	UNITS	MONTH AVG		DAILY MAX
BOD5	A.1.a	mg/L	NA		6.3
TSS	A.1.d	mg/L	1.3		9
Oil & Grease	B.1.h	mg/L	NA		8.4
Fecal Coliform	B.1.d	#/100 ml	NA	<	1

Flow (Estimate)	A.1.f	MGD		NA	0.0432
COD	A.1.b	mg/L		NA	75
TOC	A.1.c	mg/L		NA	27
Ammonia (as N)	A.1.e	mg/L		NA	< 0.2
Bromide	B.1.a	ug/L		NA	< 500
Chlorine (Total Residual)	B.1.b	ug/L	NA		210
Color	B.1.c	nM		NA	< 5
Fluoride	B.1.e	ug/L		NA	500
Nitrate-Nitrite (N)	B.1.f	ug/L		NA	960
Organic Nitrogen, Total (as N)	B.1.G	ug/L		NA	1800
Phosphorus, Total (as P)	B.1.i	ug/L		1450	5620
Radioactivity: Alpha, Total	B.1.j.(1)	pCi/L	NA		0.3
Radioactivity: Beta, Total	B.1.j.(2)	pCi/L	NA		18
Radioactivity: Radium, Total	B.1.j.(3)	pCi/L		3.67	8.3
Radioactivity: Radium 226	B.1.j.(4)	pCi/L		NA	1.95
Tritium		pCi/L		360	900
Vanadium		ug/L		30	30
Sulfate (as SO4)	B.1.k	ug/L		NA	5.8
Sulfide (as S)	B.1.i	ug/L		NA	< 1000
Sulfite: (as SO3)	B.1.m	ug/L		NA	< 3000
Surfactants	B.1.n	ug/L		NA	< 30
Aluminum (T)	B.1.o	ug/L		100	100
Barium (T)	B.1.p	ug/L		NA	60
Boron (T)	B.1.q	ug/L		100	100
Cobalt (T)	B.1.r	ug/L		NA	0
Iron (T)	B.1.s	ug/L		NA	< 200
Magnesium (T)	B.1.t	ug/L		NA	7400
Molybdenum (T)	B.1.u	ug/L		NA	< 500
Manganese (T)	B.1.v	ug/L		NA	< 10
Tin (T)	B.1.w	ug/L		NA	< 2000
Titanium (T)	B.1.x	ug/L		NA	< 30
Phenolics (Total Recoverable)	15M	ug/L		NA	< 50
Antimony (T)	1M	ug/L		NA	< 50
Arsenic (T)	2M	ug/L			10
Beryllium (T)	3M	ug/L		NA	< 4
Cadmium (T)	4M	ug/L		NA	< 8
Chromium (T)	5M	ug/L		NA	< 40
Copper (T)	6M	ug/L		NA	< 40
Lead (T)	7M	ug/L		NA	100
Mercury (T)	8M	ug/L		NA	0.4
Nickel (T)	9M	ug/L		NA	< 40
Selenium (T)	10M	ug/L		NA	< 3
Silver (T)	11M	ug/L		NA	< 10
Thallium (T)	12M	ug/L		NA	< 100
Zinc (T)	13M	ug/L		30	100
Cyanide (T)	14M	ug/L		NA	< 20
2,3,7,8-TCDD	DIOXIN	ug/L		NA	<*********
Acrolein	1V	ug/L		NA	< 50
Acrylonitrile	2V	ug/L		NA	< 50
Benzene	3V	ug/L		NA	< 10
Bromoform	5V	ug/L		NA	< 10
Carbon Tetrachloride	6V	ug/L		NA	< 10
Chlorobenzene	7V	ug/L		NA	< 50
Chlorodibromomethane	8V	ug/L		NA	< 10
Chloroethane	9V	ug/L		NA	< 10
2-Chloroethyl Vinyl Ether	10V	ug/L		NA	< 50
Chloroform	11V	ug/L		NA	< 10
Dichlorobromomethane	12V	ug/L		NA	< 10
1,1-Dichloroethane	14V	ug/L		NA	< 10

1,2-Dichloroethane	15V	ug/L	NA	<	10
1,1-Dichloroethylene	16V	ug/L	NA	<	10
1,2-Dichloropropane	17V	ug/L	NA	<	10
1,3-Dichloropropylene	18V	ug/L	NA	<	10
Ethylbenzene	19V	ug/L	NA	<	10
Methyl Bromide	20V	ug/L	NA	<	50
Methyl Chloride	21V	ug/L	NA	<	50
Methylene Chloride	22V	ug/L	NA	<	20
1,1,2,2-Tetrachloroethane	23V	ug/L	NA	<	10
Tetrachloroethylene	24V	ug/L	NA	<	10
Toluene	25V	ug/L	NA	<	10
1,2-trans-Dichloroethylene	26V	ug/L	NA	<	10
1,1,1-Trichloroethane	27V	ug/L	NA	<	10
1,1,2-Trichloroethane	28V	ug/L	NA	<	10
Trichloroethylene	29V	ug/L	NA	<	10
Vinyl Chloride	31V	ug/L	NA	<	10
2-Chlorophenol	1A	ug/L	NA	<	10
2,4-Dichlorophenol	2A	ug/L	NA	<	10
2,4-Dimethylphenol	3A	ug/L	NA	<	10
4,6-Dinitro-o-Cresol	4A	ug/L	NA	<	50
2,4-Dinitrophenol	5A	ug/L	NA	<	50
2-Nitrophenol	6A	ug/L	NA	<	20
4-Nitrophenol	7A	ug/L	NA	<	50
p-Chloro-m-Cresol	8A	ug/L	NA	<	10
Pentachlorophenol	9A	ug/L	NA	<	50
Phenol	10A	ug/L	NA	<	10
2,4,6-Trichlorophenol	11A	ug/L	NA	<	10
Acenaphthene	1B	ug/L	NA	<	10
Acenaphthylene	2B	ug/L	NA	<	10
Anthracene	3B	ug/L	NA	<	10
Benzidine	4B	ug/L	NA	<	50
Benzo(a)anthracene	5B	ug/L	NA	<	10
Benzo(a)pyrene	6B	ug/L	NA	<	10
3,4-Benzofluoranthene	7B	ug/L	NA	<	10
Benzo(ghi)perylene	8B	ug/L	NA	<	20
Benzo(k)fluoranthene	9B	ug/L	NA	<	10
Bis(2-chloroethoxy) Methane	10B	ug/L	NA	<	10
Bis(2-chloroethyl) Ether	11B	ug/L	NA	<	10
Bis(2-chloroisopropyl) Ether	12B	ug/L	NA	<	10
Bis(2-ethylhexyl) Phthalate	13B	ug/L	NA	<	10
4-Bromophenyl Phenyl Ether	14B	ug/L	NA	<	10
Butyl Benzyl Phthalate	15B	ug/L	NA	<	10
2-Chloronapthalene	16B	ug/L	NA	<	10
4-Chlorophenyl Phenyl Ether	17B	ug/L	NA	<	10
Chrysene	18B	ug/L	NA	<	10
Dibenzo(a,h)anthracene	19B	ug/L	NA	<	20
1,2-Dichlorobenzene	20B	ug/L	NA	<	10
1,3-Dichlorobenzene	21B	ug/L	NA	<	10
1,4-Dichlorobenzene	22B	ug/L	NA	<	10
3,3'-Dichlorobenzidine	23B	ug/L	NA	<	50
Diethyl Phthalate	24B	ug/L	NA	<	10
Dimethyl Phthalate	25B	ug/L	NA	<	10
Di-n-Butyl Phthalate	26B	ug/L	NA	<	10
2,4-Dinitrotoluene	27B	ug/L	NA	<	10
2,6-Dinitrotoluene	28B	ug/L	NA	<	10
Di-n-octyl Phthalate	29B	ug/L	NA	<	10
1,2-Diphenylhydrazine	30B	ug/L	NA	<	20
Fluoranthene	31B	ug/L	NA	<	10
Fluorene	32B	ug/L	NA	<	10

Hexachlorobenzene	33B	ug/L	NA	<	10
Hexachlorobutadiene	34B	ug/L	NA	<	10
Hexachlorocyclopentadiene	35B	ug/L	NA	<	10
Hexachloroethane	36B	ug/L	NA	<	20
Indeno (1,2,3-cd) Pyrene	37B	ug/L	NA	<	20
Isophorone	38B	ug/L	NA	<	10
Naphthalene	39B	ug/L	NA	<	10
Nitrobenzene	40B	ug/L	NA	<	10
n-Nitrosodimethylamine	41B	ug/L	NA	<	50
n-Nitrosodi-n-Propylamine	42B	ug/L	NA	<	20
n-Nitrosodiphenylamine	43B	ug/L	NA	<	20
Phenanthrene	44B	ug/L	NA	<	10
Pyrene	45B	ug/L	NA	<	10
1,2,4-Trichlorobenzene	46B	ug/L	NA	<	10
Aldrin	1P	ug/L	NA	<	0.06
Alpha-BHC	2P	ug/L	NA	<	0.06
Beta-BHC	3P	ug/L	NA	<	0.06
Gamma-BHC [Lindane]	4P	ug/L	NA	<	0.06
Delta-BHC	5P	ug/L	NA	<	0.06
Chlordane	6P	ug/L	NA	<	0.1
4,4'-DDT	7P	ug/L	NA	<	0.1
4,4'-DDE [p,p-DDX]	8P	ug/L	NA	<	0.1
4,4'-DDD [p,p-TDE]	9P	ug/L	NA	<	0.1
Dieldrin	10P	ug/L	NA	<	0.1
Alpha-Endosulfan	11P	ug/L	NA	<	0.1
Beta-Endosulfan	12P	ug/L	NA	<	0.1
Endosulfan Sulfate	13P	ug/L	NA	<	0.1
Endrin	14P	ug/L	NA	<	0.1
Endrin Aldehyde	15P	ug/L	NA	<	0.1
Heptachlor	16P	ug/L	NA	<	0.06
Heptachlor Epoxide	17P	ug/L	NA	<	0.06
PCB-1242	18P	ug/L	NA	<	1.2
PCB-1254	19P	ug/L	NA	<	1.2
PCB-1221	20P	ug/L	NA	<	1.2
PCB-1232	21P	ug/L	NA	<	1.2
PCB-1248	22P	ug/L	NA	<	1.2
PCB-1260	23P	ug/L	NA	<	1.2
PCB-1016	24P	ug/L	NA	<	1.2
Toxaphene	25P	ug/L	NA	<	6

APPENDIX B1 WATER QUALITY STANDARDS, CALCULATION OF NUMERICAL STANDARDS-BASED EFFLUENT LIMITATIONS

Effluent limitations for metals were converted from the dissolved fraction specified in New Mexico's Water Quality Standards using the following equations which can also be found in the Region 6 Implementation Guidance for State of New Mexico Standards for Interstate and Intrastate Streams.

$$K_p = K_{po} * TSS^{\alpha}$$

$$\frac{C}{C_t} = \frac{1}{1 + (K_p)(TSS)(10^{-6})}$$

$$\text{Total Metal Limit} = \frac{C_r}{C/C_t}$$

where:

K_p	=	Linear partition coefficient
K_{po}	=	found in table below
α	=	found in table below
TSS	=	total suspended solids concentration found in receiving stream or approximation thereof, geometric mean, unit of mg/l
C/C_t	=	Dissolved fraction of metal
C_r	=	Dissolved criteria value from water quality standards

Linear Partition Coefficients for Priority Metals in Streams

Metal	K_{po}	α
Arsenic	$0.48 * 10^6$	- 0.73
Chromium	$3.36 * 10^6$	- 0.93
Copper	$1.04 * 10^6$	- 0.74
Lead	$2.80 * 10^6$	- 0.80
Nickel	$0.49 * 10^6$	- 0.57
Zinc	$1.25 * 10^6$	- 0.70

Total metals limits were calculated based on the Total Suspended Solids (TSS) concentration reported for each outfall. For discharges to perennial streams, the in-stream TSS concentration would be used for the calculations. However, since the receiving streams at Los Alamos National Laboratory are intermittent, the effluent TSS concentration was used to determine the total to dissolved metals ratio. The results of those calculations are shown in the following table.

Total Metals Limits (mg/l)

Metal	Criteria	Total Suspended Solids Concentration (mg/l)							
		1	2	3	4	6	7	8	31.5
Arsenic	0.2	0.296	0.316	0.329	0.34	0.356	0.362	0.368	0.444
Chromium	1.0	4.36	4.527	4.629	4.702	4.809	4.85	4.886	5.278
Copper	0.5	1.02	1.123	1.192	1.246	1.329	1.362	1.393	1.775
Lead	0.1	0.38	0.421	0.449	0.469	0.501	0.513	0.524	0.658
Zinc	25.0	56.25	63.47	68.45	72.37	78.5	81.0	83.3	113.0

Other Applicable Water Quality Standards

Dissolved Aluminum	5.0 mg/l
Dissolved Boron	5.0 mg/l
Dissolved Cobalt	1.0 mg/l
Dissolved Cadmium	50 ug/l
Total Mercury	0.012 ug/l
Total Recoverable Selenium	2.0 ug/l
Dissolved Vanadium	100 ug/l
Radium-226 + Radium-228	30 pCi/l
Tritium	20,000 pCi/l

In cases where there is no method to convert the dissolved standard to the total metal concentration in the implementation plan, the dissolved standard is treated as total for the purposes of establishing permit limits. The Total Suspended Solids concentrations used above to calculate limits is an estimation of the average effluent concentration obtained from the facility's discharge monitoring report forms.

APPENDIX B2 WATER QUALITY STANDARDS, MINIMUM QUANTIFICATION LEVELS (MQLs)

	MQL (µg/L)
Aluminum	100
Barium	100
Boron	100
Residual Chlorine (Total)	100
Cobalt	50
Nitrate as N	100
Vanadium	50
Antimony (Total)	60
Arsenic (Total)	10
Beryllium (Total)	5
Cadmium (Total)	1
Chromium (Total)	10
Chromium (3+)	10
Chromium (6+)	10
Copper (Total)	10
Lead (Total)	5
Mercury (Total)	0.2
Nickel (Total)	5
Selenium (Total)	5
Silver (Total)	2
Thallium (Total)	10
Zinc (Total)	20
Cyanide (Total)	20
Cyanide (Amenable)	20
Chlordane	0.2

The permittee may develop an effluent specific method detection limit (MDL) in accordance with Appendix B to 40CFR136. For any pollutant for which the permittee determines an effluent specific MDL, the permittee shall send to EPA Region 6 a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that the effluent specific MDL was correctly calculated. An effluent specific minimum quantification level (MQL) shall be determined in accordance with the following calculation:

$$MQL = 3.3 \times MDL$$

Upon written approval by EPA Region 6, the effluent specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

APPENDIX C POLICY FOR POST THIRD ROUND NPDES PERMITTING

Original document signed September 9, 1992, by Myron O. Knudson, Director, Water Management Division, U.S. EPA Region 6

I. EPA NATIONAL POLICY

The Water Quality Act states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addressing this, the Environmental Protection Agency's national policy for issuance of third round NPDES permits was published in the Federal Register in March 9, 1984. This policy states that, "... the Environmental Protection Agency (EPA) will use an integrated strategy consisting of both biological and chemical methods to address toxic and nonconventional pollutants from industrial and municipal sources. In addition to enforcing specific numerical criteria, EPA and the States will use biological techniques and available data on chemical effects to assess toxicity impacts and human health hazards..."

II. EPA REGULATORY AUTHORITY

On June 2, 1989, EPA promulgated national regulations for the issuance of third round NPDES permits. Section 122.44(d)(1) of Title 40 of the Code of Federal Regulations requires EPA and the delegated states to evaluate each NPDES permit for the potential to exceed state numerical or narrative water quality standards, including those for toxics, and to establish effluent limitations for those facilities with the "reasonable potential" to exceed those standards. These regulations require both chemical specific limits, based on the state numerical water quality standards or other criteria developed by EPA, and whole effluent toxicity effluent limits, where appropriate.

III. EPA REGION 6 POLICY

A. The Region 6 implementation strategy is designed to support and implement the national policy. The regional policy is that no source (industrial, municipal, or federal facility) will be allowed to discharge any wastewater which:

1. Results in the endangerment of a drinking water supply;
2. Results in aquatic bioaccumulation which threatens human health;
3. Results in instream acute or chronic aquatic toxicity; or
4. Causes a violation of an applicable general or numerical state water quality standard.

B. In order to accomplish these objectives Region 6 will, as part of the post third round permit issuance procedures:

1. Ensure that no source will cause, or significantly contribute to, an exceedence of state water quality standards which protect public drinking water supplies;
2. Ensure that no source will cause, or significantly contribute to, an exceedence of state water quality standards for aquatic bioaccumulation which threatens human health;
3. Identify and address sources which may exceed EPA Water Quality Criteria for human health protection;
4. Address known aquatic toxicity by applying appropriate chemical specific and/or whole effluent toxicity limitations or toxicity reduction requirements when a reasonable potential for toxic conditions exists.

APPENDIX D POST THIRD ROUND NPDES PERMIT IMPLEMENTATION STRATEGY

Adopted October 1, 1992

Original document signed September 9, 1992, by Jack V. Ferguson, Chief, Permits Branch, Water Management Division, U.S. EPA Region 6

I. PREAMBLE

A. BACKGROUND

Over the history of the NPDES permit program, the Environmental Protection Agency (EPA) has focused on two primary concepts to abate the discharge of pollutants. First, EPA has utilized a technology-based control approach. This was reflected in permits originally issued with requirements for secondary treatment (municipalities) and Best Practicable Control Technology Currently Available (industries). More recently permits have required implementation of the Best Conventional Pollutant Control Technology, Best Available Technology Economically Achievable (industries) and pretreatment program development (municipalities).

Secondly, EPA has addressed water quality as impacted primarily by conventional (or oxygen demanding) parameters. This has occurred through the use of specific state water quality standards (and the resulting water quality management plans) for specific pollutants.

EPA Region 6 moved into the "third round" of NPDES permits in 1987. The focus of these "post BAT" permits is to move beyond our first two phases of control and insure that adequate controls are being implemented to confirm that human health and aquatic life are being adequately protected on a site-specific receiving stream basis. Region 6 developed its third round policy on March 11, 1987, and adopted a strategy to implement this policy on April 1, 1987, revised October 31, 1989.

B. EPA NATIONAL POLICY

The Clean Water Act states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addressing this, the EPA outlined the national policy objectives for development of post-BAT NPDES permit limitations (third round) in the March 9, 1984, Federal Register. This policy states that "to control pollutants beyond Best Available Technology Economically Achievable (BAT), secondary treatment, and other Clean Water Technology-based requirements in order to meet state water quality standards, the EPA will use an integrated strategy consisting of both biological and chemical methods to address toxic and nonconventional pollutants from industrial and municipal sources. Where State standards contain numerical criteria

for toxic pollutants, NPDES permits will contain limits as necessary to assure compliance with these standards. In addition to enforcing specific numerical criteria, EPA and the States will use biological techniques and available data on chemical effects to assess toxicity impacts and human health hazards based on the general standard of 'no toxic materials in toxic amounts'."

Where violations of water quality standards are identified or projected, EPA and the States will develop water quality based effluent limits for inclusion in any issued permit. Where there is a significant likelihood of toxic effects to biota in the receiving stream, EPA and the States may impose permit limits on effluent toxicity and may require an NPDES permittee to conduct a toxicity reduction evaluation. Where toxic effects are present but there is a significant likelihood that compliance with technology based requirements will sufficiently mitigate the effects, EPA and the States may require chemical and toxicity testing after installation of treatment and may reopen the permit to incorporate additional limitations if needed to meet water quality standards.

C. NATIONAL REGULATIONS

Section 122.44(d)(1) of Title 40 of the Code of Federal Regulations requires EPA and the delegated states to evaluate each NPDES permit for the potential to exceed a state numerical or narrative water quality standards, including those for toxics, and to establish effluent limits for those facilities with the "reasonable potential" to exceed those standards. These regulations require chemical specific limits, based on state numerical water quality standards or other criteria developed by EPA, and whole effluent toxicity effluent limits.

D. EPA REGION 6 IMPLEMENTATION STRATEGY

The Region 6 implementation strategy is designed to support and implement the regional policy of March 11, 1987. The intent of this strategy is that there shall be no discharge of any wastewater from any source (industrial, municipal, or federal facility) which:

1. Results in the endangerment of any drinking water supply;

2. Results in aquatic bioaccumulation which endangers human health;

3. Results in any instream acute or chronic aquatic toxicity after dilution; or

4. Violates any other applicable general or numerical state water quality standard.

II. OVERVIEW

A. GOAL

The goal of the regional policy is to assure that there are "no toxic materials in toxic amounts" in waters of the United States; this is stated in the Water Quality Act as the national policy. The specific areas of concern are human health protection and aquatic biota protection. The goal of the Office of Water Third Round Permit Issuance Strategy (to eliminate toxics as expeditiously as possible) will be achieved by industrial, municipal, and federal discharges in Region 6.

B. GENERAL IMPLEMENTATION PROCEDURE

1. In accordance with the priorities listed below, all potential significant contributors to toxicity will be evaluated at permit issuance, or when modifications are requested for new processes or expansions. Also, discharges in known areas of ambient toxicity will be evaluated. This evaluation will consist of a review of both specific chemical data and toxicity testing data representative of the facility's discharge into the receiving water. The review will consist of a projection of ambient impacts at appropriate critical low river flow conditions or at the appropriate mixing zone conditions for bays, lakes, and estuaries.

2. Routine biomonitoring and, where appropriate, chemical specific monitoring of discharges will be required for all major dischargers. New sources shall be required to comply with appropriate whole effluent toxicity limits.

3. Increased monitoring of discharges may be required in areas of suspected ambient toxicity problems to confirm the presence and causes of ambient toxicity. Suspected toxicity will be verified by toxicity testing, specific chemical evaluations and/or bioassessments.

4. Appropriate controls will be established to correct identified problems at permit reissuance, or by reopening the permit, if necessary to prevent ambient toxicity.

C. PRIORITIES

The regional policy will be implemented to the maximum extent possible given available EPA and state resources in accordance with the following priorities:

1. Facilities with known or suspected toxicity problems.

2. Facilities discharging to priority water bodies.

3. Other major industrial, municipal and federal facilities.

4. Other minor industrial and federal facilities.

5. Other minor municipal facilities.

6. Stormwater only facilities.

D. CONTROL MEASURES

The following general control measures will be utilized to implement the policy:

1. Specific chemical effluent limits, and/or

2. Whole effluent toxicity testing on a flow weighted composite sample of all discharges from a facility into a receiving stream. The results of such testing may trigger a requirement to conduct a toxicity reduction evaluation and/or the imposition of whole effluent toxicity limitations; and/or

3. Pollution prevention measures and best management practices; and/or

4. No facility will be allowed to discharge in excess of the technology based limit for that specific chemical and discharge type.

III. HUMAN HEALTH PROTECTION (SPECIFIC CHEMICAL)

A. STATE NUMERICAL STANDARDS

Permits written under this strategy will establish effluent limits, if specific chemical state water quality standards, established for protection of human health, have a reasonable potential to be exceeded. Permits will implement all waste load allocations as specified in the water quality management plan.

B. FOOD CONSUMPTION

For pollutants for which there are no applicable state water quality standards:

1. EPA will calculate the instream concentrations of all pollutants for which EPA has published human health criteria in the current edition of EPA's "Quality Criteria for Water", or National Toxics Standards, as promulgated, or for which EPA has identified human health toxicological

properties in EPA's Integrate Risk Information System (IRIS). These calculations will use an appropriate flow or mixing zone condition.

2. In using these criteria and information, EPA will follow the cancer risk level and fish consumption rate provided by the appropriate state regulatory agency. In the event no policy is provided by the state, EPA policy and/or guidance will be utilized, such as the manual "Assessment and Control of Bioconcentratable Contaminants in Surface Waters".

3. Where these dilution calculations indicate that instream pollutant concentrations may exceed the criteria referenced in paragraphs III.B.1 and III.B.2 above, the facility will be required to monitor for those pollutants. The State will be requested to consider the stream as a "priority waterbody" and to develop state water quality standards and a wasteload allocation where appropriate. NPDES permits may be reopened for point sources that are shown to cause or significantly contribute to these ambient problems, when state water quality standards and wasteload allocations are established.

C. FISH TISSUE INFORMATION

1. If available fish or shellfish tissue information identifies the potential threat to human health at a cancer risk greater than those specified in III.B.2, permittees discharging into the waterbody may be required, by way of a permit requirement or request for information under Section 308 of the Clean Water Act, to analyze their effluents for the subject pollutants and/or identify using a laboratory test the actual bioaccumulation or bioconcentration of the pollutant in fish tissue. The permits for facilities found to be causing or significantly contributing to this problem may be reopened to establish effluent limits based on the appropriate state water quality standards.

2. Enforcement action will be considered under Sections 309 and/or 504 of the Clean Water Act if available fish or shellfish flesh information confirms the existence of an imminent and substantial endangerment to the health or welfare of persons, such as an exceedence of the FDA Action Levels.

IV. CHEMICAL SPECIFIC CONTROLS FOR AQUATIC BIOTA PROTECTION

A. STATE NUMERICAL STANDARDS

Permits written under this strategy will establish effluent limits, if specific chemical water quality standards are or have a reasonable potential to be exceeded, and implement all waste load allocations as specified in the water quality management plan.

B. CHLORINE

Permits for facilities with the potential for a continuous discharge of chlorine will include water quality based effluent limits for Total Residual Chlorine. Water quality based limits will be derived from the state water quality standards giving consideration to appropriate dilution factors, state implementation procedures, or federal criteria if no state standard has been approved.

C. PRETREATMENT

POTWs with approved pretreatment programs controlling indirect discharges of toxic pollutants will be required to develop and adopt technically based local limits (or demonstrate that they are not necessary) which will protect against pass-through, interference and sludge contamination. Additionally POTWs with approved pretreatment programs will be required to monitor the influent, effluent and sludge concentration of toxic and hazardous pollutants, as applicable, in order to evaluate the adequacy of the local limits on an ongoing basis. Some non-pretreatment POTWs with substantial industrial contributions may be required to monitor influent and effluent for toxic pollutants on a case-specific basis.

V. BIOLOGICAL CONTROLS FOR AQUATIC BIOTA PROTECTION

A. Specific state required effluent limits or monitoring for whole effluent toxicity will be imposed as required by the state water quality standards and implementation plan.

B. Where ambient toxicity is identified as a result of a facility discharge, the Region will proceed with permit effluent limits to regulate controllable pollutants.

1. Effluent limits will be established using available state water quality standards and implementation procedures.

2. "Toxicity Reduction Evaluations" may be initially required to identify the source(s) of the toxicity and determine how the toxicity can be reduced as a part of a schedule leading to compliance with effluent limits.

C. Permits issued to dischargers with a potential for causing ambient toxicity will require that the permittee perform periodic toxicity screening using whole effluent biomonitoring techniques.

1. Permittees will typically be required to monitor for the duration of the permit. The monitoring frequency will be based on toxicity potential and effluent variability.

2. State mixing zone procedures will determine the applicability of acute or chronic test methods.

3. Discharge samples used for biomonitoring analysis will consist of flow weighted composite samples of all dry weather flows discharged into overlapping mixing zones within a receiving stream. Stormwater flows may be considered if a significant threat of contamination exists. If a facility discharges (or may discharge) into two or more receiving streams, testing will be required for each stream.

4. Required biomonitoring will be performed in accordance with methods published in references 2, 3, and 4 in the attached bibliography. The permit will require a dilution series necessary to calculate the NOEL. One dilution will be reflective of the critical low flow dilution.

5. Tests on more than one species will be required. Some combination of the following test methods or methods specified in approved state water quality standards will be required for biomonitoring:

   *Freshwater receiving streams (salinity <2000 ppm)
   -- 48 hour Daphnia acute survival
   -- 48 hour Fathead Minnow acute survival
   -- 7 day Ceriodaphnia chronic survival/reproduction
   -- 7 day Fathead Minnow chronic survival/growth

   *Saline receiving streams (salinity >2000 ppm)
   -- 48 hour Mysid acute survival
   -- 48 hour Silverside Minnow acute survival
   -- 7 day Mysid chronic survival/growth
   -- 7 day Silverside Minnow chronic survival/growth

6. Dilution water used in the biomonitoring test will be receiving stream water collected at a point upstream of the discharge point(s) or other stream water if approved by the permitting authority. Synthetic laboratory water will be used if the upstream water is shown to already be toxic or if there is no acceptable natural water.

D. When the biomonitoring data shows actual or potential toxicity after dilution with the receiving stream, permittees will be required to retest their effluent to determine if toxicity is consistent or occurs on a periodic basis. If effluent toxicity

is persistent, whole effluent toxicity limits and/or a TRE requirement will be applied, as appropriate.

VI. BIBLIOGRAPHY

1. "Quality Criteria for Water 1986," EPA 440/5-86-001, United States Environmental Protection Agency, May 1, 1986.

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3. "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," EPA 600/4-89/001, U.S. Environmental Protection Agency, February 1989.

4. "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms", EPA 600/4-87/028, U.S. Environmental Protection Agency, May 1988.

5. "Technical Support Document for Water Quality-based Toxics Control," EPA/505/2-90-001, PB91-127415, U.S. Environmental Protection Agency, March 1991.

6. "Permit Writer's Guide to Water Quality-based Permitting for Toxic Pollutants," EPA 440/4-87-005, U.S. Environmental Protection Agency, 1987.

7. National Policy for Development of Water Quality-based Permit Limitations for Toxic Pollutants, 49 Federal Register 9016, March 9, 1984.

8. "Methods for Aquatic Toxicity Identification Evaluations, Phase I: Toxicity Characterization Procedures", EPA 600/6-91/003, U.S. Environmental Protection Agency, February, 1991.

9. "Methods for Aquatic Toxicity Identification Evaluations, Phase II: Toxicity Identification Procedures", EPA 600/3-88/035, U.S. Environmental Protection Agency, February 1989.

10. "Methods for Aquatic Toxicity Identification Evaluations, Phase III: Toxicity Confirmation Procedures", EPA 600/3-88/036, U.S. Environmental Protection Agency, February 1989.

11. "Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs)", EPA 600/2-88/070, U.S. Environmental Protection Agency March 1989.

12. "Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatment Plants", EPA 600/2-88/062, U.S. Environmental Protection Agency, April 1989.

13. "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I", EPA-600/6-91/005, U.S. Environmental Protection Agency, June, 1991.