ERID 098049

OFFICE MEMORANDUM

TO : H. S. Jordan, A-DO, MS 690

DATE: November 2, 1976

Thru : T. K. Keenan, H-7 Group Leader (TK)

FROM : W. M. Dunne, H-7 WMD

Reviewed/Lab Counsel S-7 11/24/00
Publicly Releasable

SUBJECT : UPDATED LIST OF WASTE SOURCES

SYMBOL : H7-76-530

MAIL STOP: 518

The attached list identifies various waste sources for which NPDES permit applications have not been prepared. Sources fall into the following categories:

Non-contact cooling water	18
Photo wastes	9
Treated Cooling Water	3
Explosives Research effluents	9
Chemical Wastes	13

Also noted on the attached sheet are strategies for complying with PL 92-500 by filing for permits, process change or land application systems. We estimate about 29 added NPDES applications (mostly in the once-through, non-contact cooling water and photo waste categories). About 13 land application systems may be installed if such discharges do not violate New Mexico EIA regulations. The balance of the discharges may be eliminated by process change or connection to sanitary sewer.

WMD:bh

Enc: a/s

30780

460 1 2000

4 500 Yes

TA	Bldg	Type	Estimated Q, GPD	Land Application	Remarks
3	141	1	1000		Apply for Permit
	170	1	400		Air Compressor cooling; Apply for Permit
	170	5	4 (Based on 365 days/yr		NaOH waste; process change
	216	1	unknown		Discovered 10/28/76. Intermittent Flow. App for Permit
	184	3	? Require Sump Pump		Investigate connection to sanitary sewer.
	30	5	? Chem Dump		Acid from battery Re-charging-Process Change
8	21	2	4320		Photo waste; Apply for Permit
	22	2	1500		Photo Waste; Apply for Permit
	22~~40~~	5	+ 60 (intermittent)		Dye Penetrant & Process Change
	70	5	5		~~Dye solution from~~ ultra sonic-Process ~~Change~~. 7! Gallons Dumped twice/mo To Chem Dump.
9	21, 28, 29, 32	5	? (small) 10 GPM - 8 hrs/d 365 d/y		Apply for Permit
	34, 35, 43	5	6 GPM		Apply for Permit
11	25	4	55 (based on 365 days/yr)		Drop Tower; HE residuals washed down 3 times/yr.
	30	?	5500 (based on 365/yr operation)		Intermittent operation
15	183	2	3000		Apply for permit
	183	5	?		Several acid sinks no longer use acid & dayli Conn. to sanitary sewer
	184	1	4320		About 3 GPM cooling
	194	5	?		Overflow from Rinse Tan
	203	1	2880 (6 mo/yr)		Apply for Permit

Code: 1 = Non-Contact Cooling Water
2 = Photo Waste
3 = Treated Cooling Water
4 = High Explosive Research Effluent
5 = Chemical Waste

H-7-Copy

11/24/00

ALTERNATIVES

1. REMOVE DISCHARGE BY PROCESS CHANGE, RECIRCULATION, ETC.

2. DISCHARGE TO SANITARY SEWERS WHEN NO RADIOACTIVITY IS INVOLVED.

3. MANIFOLD CLOSE DISCHARGES AND PUMP TO LAND IRRIGATION, ABSORPTION BED OR EVAPORATION POND SYSTEMS.

4. USE SYSTEMS IN (3) ABOVE FOR SEPARATE DISCHARGES AS NECESSARY.

5. INCLUDE ALL DISCHARGES NOT INCLUDED IN (1) THROUGH (4) ABOVE IN THE PERMIT SYSTEM.

TA	Bldg	Type	Estimated Q, GPD	Land Application	Remarks
16	380	5	120		Apply for Permit
	370	3,5	1200		Apply for Permit
	410	4	500	Yes	
	340	4	21600	Yes	
	342	4	?	Yes	
	260	1	4860	Yes	
	300	4	?	Yes	
	460	1	2000	Yes	
		4	500	Yes	
	450	1	7000(Based on 30day/mo)		Apply for Permit
	430	1	1000	Yes	
		4	3000	Yes	
	280	1,3	9000	Yes	
	222	2	1000	Yes	
	220	4	240	Yes	
18	28	1			Welding unit operates 4 hrs/wk - cooling H_2O. Apply for Permit
22	1	4	100(when flowing)		HE sump discharge;intermittent
	5	1	500		Apply for permit
	6	1	3000		Apply for Permit
	34				
	52	5	100		$FeCl_3$. Take to Chem Dum Methanol & Acetone
33	86	1	1500		Apply for Permit
	114	1	1500		Apply for Permit
		5	?		20 Lab Sinks; Redesign Waste System
35	46	1	2880		File for Permit
36	1	2	3240		Apply for Permit
40	4	2	500		Apply for Permit
	5	2	500 (4 day/wk)		Apply for Permit
	8	2	?		Apply for Permit
	12	2	750		Apply for Permit; also includes laser cooling
46	31	5	---		Process Change; Acid Ta

Code: 1 = Non-Contact Cooling Water
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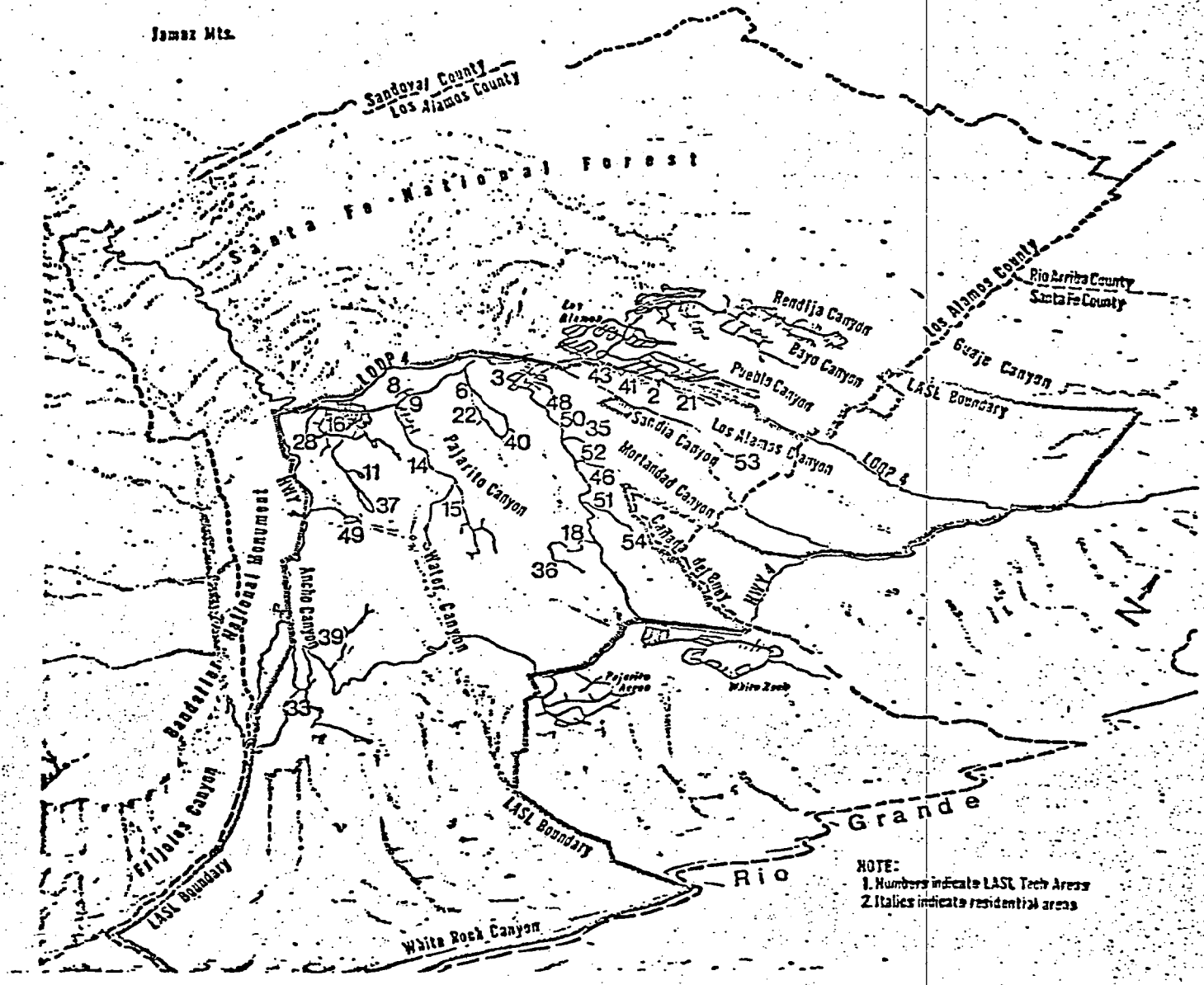

Figure 2

Topography of the Los Alamos, N. M., area.

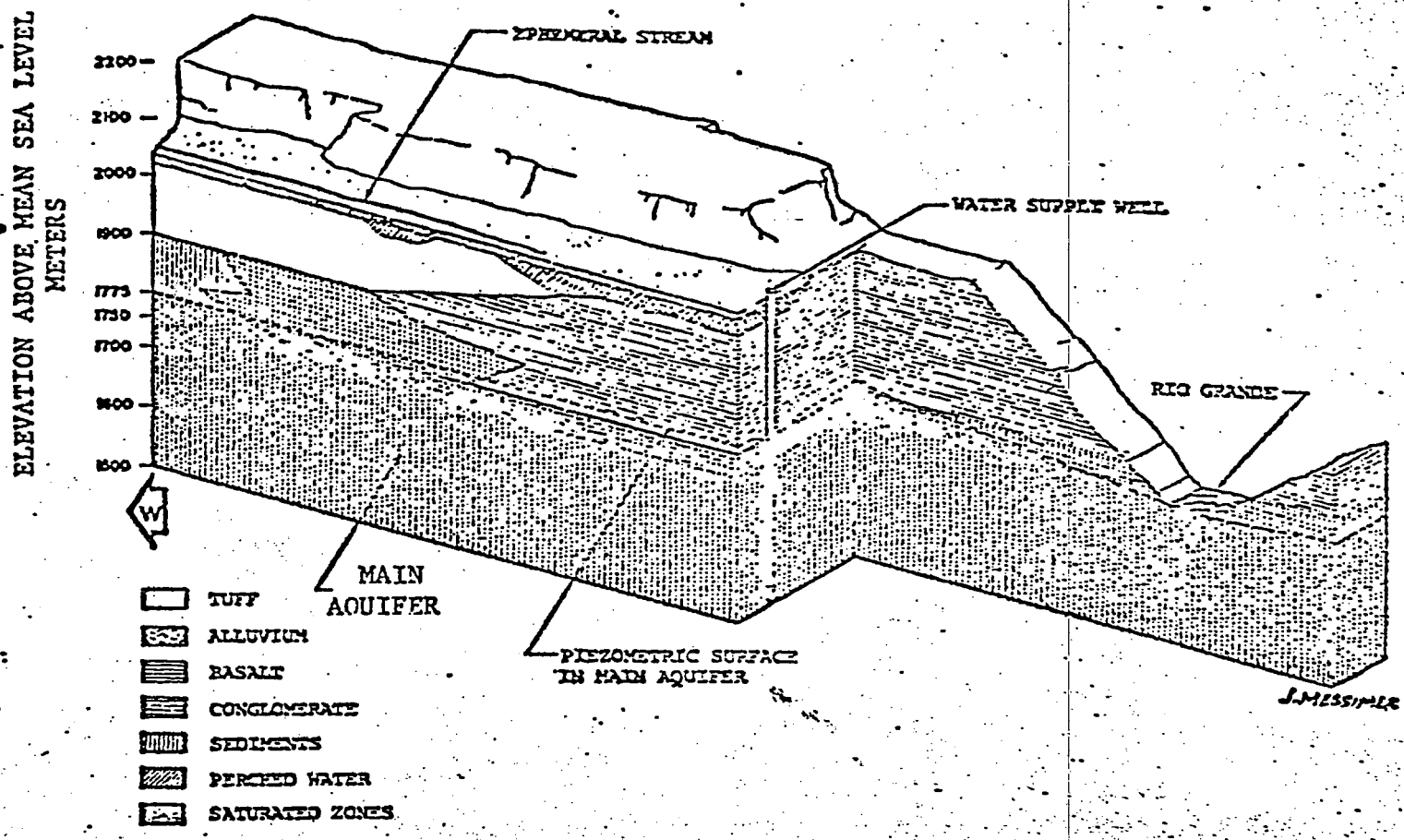

Figure 3

CONCEPTUAL HYDROLOGICAL CROSS SECTION OF THE LOS ALAMOS AREA

Conceptual relationships between principal types of rock material and occurrence of water in the Pajarito Plateau are illustrated in the diagram. The horizontal scale in particular has been distorted in order to show the continuity of the main aquifer to the vicinity of the Rio Grande. The scale and the left portion of the diagram indicate typical thicknesses and depth-to-water in the central portion of the Plateau. There the tuff is about 300 m thick measuring from the mesa tops. Water in the main aquifer is under water table conditions and is at least 200 m below the alluvial stream beds. The center portion of the diagram represents the eastern portion of the Plateau where the main aquifer is confined by the basalt and is under artesian conditions. The right portion of the diagram indicates the decline of the water level down to the Rio Grande where natural discharge from the aquifer is added to the river's flow.

Water in the alluvial stream channels may flow in ephemeral streams or occur as perched water which penetrates only for short distances into either the tuff or the basalt. The tuff and basalt effectively isolate the main aquifer from any recharge by surface water.

TABLE I

THE LASL'S ONCE-THROUGH COOLING WATER EFFLUENTS

Technical Area	Point Source Structure No.	Estimated Volume Discharged (gal/day)	Receiving Canyon
TA-8	TA-8-22	3,500	Pajarito
TA-15	TA-15-183	2,900	Water
	~~TA-15-48~~	~~4,000~~	~~Water~~
	TA-15-184	3,500	Water
	~~TA-15-194~~	~~3,500~~	~~Water~~
TA-16	TA-16-222	3,000	Water
	TA-16-450	1,100	Water
	TA-16-430	2,000	Water
	TA-16-410	2,000	Water
	TA-16-370	2,000	Water
	TA-16-307	1,000	Water
	TA-16-303	500	Water
	TA-16-301	500	Water
	TA-16-302	600	Water
	TA-16-340	41,000	Water
	TA-16-280	2,200	Water
	TA-16-260	6,500	Water
	TA-16-260	21,500	Water
TA-18	~~TA-18-23~~	~~700~~	~~Pajarito~~
	~~TA-18-32~~	~~700~~	~~Pajarito~~
	~~TA-18-116~~	~~700~~	~~Pajarito~~
TA-21	TA-21-257	3,000	Los Alamos
TA-22	TA-22-5	11,000	Pajarito
TA-35	~~TA-35-34~~	~~10,000~~	~~Mortandad~~
	TA-35-46	3,700	Mortandad
	TA-35-67	3,700	Mortandad
	TA-35-2	3,700	Mortandad
TA-46	TA-46-24	14,000	Canada del Buey
	TA-46-30	~~18,000~~	" "
	TA-46-88	14,000	" "
	~~TA-46-77~~	~~4,300~~	~~" "~~
TA-48	TA-48-1	17,300	Mortandad
TA-52	~~TA-52-1~~	~~4,000~~	~~Mortandad~~

TABLE II

THE LASL'S RINSE WATER EFFLUENTS

Technical Area	Point Source Structure No.	Type of Operation	Estimated Volume Discharged Gal/day	Receiving Canyon
TA-8	TA-8-22	Photo lab	3,500	Pajarito
TA-15	TA-15-183	Photo lab	12,000	Water
TA-22	TA-22-52	Printed circuit rinse	1,000	Pajarito
TA-36	TA-36-4	Photo lab	3,500	Water

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TABLE III

THE LASL'S TREATED COOLING WATER EFFLUENTS

Technical Area	Structure No.	Estimated Volume Discharged gal/day	Receiving Canyon	Year July 1, 1975 to June 30, 1976
TA-2	TA-2-44 D	60	Los Alamos	
	TA-2-49 D	550	Los Alamos	
TA-3	[redacted]	120	Pajarito	21,600
	TA-3-127 D	2,000	Sandia	905,000
	TA-3-156 D	1,000	Sandia	323,495
	TA-3-184 D ★	300	Pajarito	35,860
	TA-3-187 D	250	Sandia	133,632
	TA-3-208 D	130	Pajarito	53,645
	TA-3-208 CTD	550	Pajarito	235,235
	TA-3-285 D ★	5,200	Sandia	2,220,300
	TA-3-22 D	1,000	Sandia	
	Steam & electric generating plant TA-3-29 D	100,000	Sandia	
TA-9	TA-9-21 LAGOON	80	Pajarito	67,945
	TA-9-32 LAGOON	60	Pajarito	45,710
TA-15	TA-15-202 D	1,200	Water	199,425
TA-16	[redacted]	360	Water	67,945 CC
	[redacted]	30	Water	4,680 AW
	TA-16-280 D	200	Water	20873 CC [redacted]
	TA-16-302 D	160	Water	13,600
	TA-16-304 D	200	Water	50,333
	TA-16-304 D	220	Water	out of service
	TA-16-390 D	280	Water	
	TA-16-340 D	50	Water	187,364
	[redacted]	150	Water	21,497
	[redacted]	100	Water	25,375 AW-1
	TA-16-430 D	200	Water	70,310 EMC-1
	TA-16-540 D	7,000	Water	
TA-21	TA-21-2 D ★	60	Los Alamos	13,870
	TA-21-143 D	1,050	Los Alamos	388,350
	TA-21-150 D	800	Los Alamos	120,000
	TA-21-152 D	180	Los Alamos	33,680
	TA-21-166 D	120	Los Alamos	57,775
	TA-21-166 D	180	Los Alamos	off
	[redacted]	170	Los Alamos	off
	[redacted]	160	Los Alamos	42,172
	TA-21-210 D	70	Los Alamos	59,392
	[redacted] D	230	Los Alamos	112,467 NOP
	TA-21-314 D ★	15	Los Alamos	23,860
	TA-21-314 D ★	30	Los Alamos	25,770

TABLE III
(continued)

Technical Area	Structure No.	Estimated Volume Discharged gal/day	Receiving Canyon	
TA-33	~~TA-33-2~~	60	Ancho	8180
	TA-33-114 D	275	Ancho	101,527
TA-35	~~TA-35-2~~	375	Mortandad	94,425
	~~TA-35-2~~	260	Mortandad	14,985
	~~TA-35-2~~	320	Mortandad	80,912
	~~TA-35-2~~	40	Mortandad	37,860
	~~TA-35-27~~	25	Mortandad	34,800
TA-41	~~TA-41-1~~ E C	100	Los Alamos	26,252 SEP C
	TA-41-4 C T	100	Los Alamos	7,169
TA-43	TA-43-1 P S	150	Los Alamos	50,407
	TA-43-1 P *	160	Los Alamos	34,365
	TA-43-1 D *	100	Los Alamos	48,747
TA-46	TA-46-1 inop	180	Canada del Buey	
	TA-46-1 D	150	"	52,795
	TA-46-31 D	230	"	81,125
TA-48	TA-48-1 P *	520	Mortandad	111,725
	TA-48-1 D *	430	Mortandad	103,457
TA-53	MPF-08 P	30	Los Alamos	
	MPF-60	1,460	Los Alamos	
	MPF-62	5,300	Los Alamos	
	MPF-64	1,500	Los Alamos	
	~~MPF-2~~	~~60~~	~~Sandia~~	

TABLE IV

THE LASL'S EXPLOSIVES RESEARCH EFFLUENTS

Technical Area	Structure No.	Effluent Av Gal/Day (Estimated)	Receiving Canyon
9	48	7,000	Pajarito
9	45	1,000	Pajarito
11	51	50	Water
11	52	50	Water
16	202	100	Water
"	222	100	Water
"	260	12,000	Water
"	300, 302, 304 & 306 (combined)	3,500	Water
"	307	50	Water
"	308	100	Water
"	340	4,500	Water
"	342	500	Water
"	380	2,500	Water
"	389	100	Water
"	400	100	Water
"	410	50	Water
"	430	6,000	Water
"	460	100	Water

TABLE V

THE LASL'S RADIOACTIVE WASTE TREATMENT EFFLUENTS

Technical Area	Structure No.	Volume Discharged gal/day	Receiving Canyon
TA-21	TA-21-257	3,300	Los Alamos
TA-50	TA-50-1	28,000	Mortandad

INDUSTRIAL WASTE DISCHARGES

	GPD	Discharge Points	Responsible Group
TA-2 :	610	2	P-2
TA-3 :	110,550	10	ZIA
TA-8 :	7,000	2	M-1, 5
TA-9 :	8,140	4	WX-2
TA-11 :	100	2	WX-3
TA-15 :	27,100	6	M-2, 4
TA-16 :	122,550	39	WX-3
TA-18 :	2,100	3	A-2, P-5
TA-21 :	9,365	14	CMB-3, 11, CNC-4
TA-22 :	12,000+	2+	WX-7
TA-33 :	335	2	Q-22
TA-35 :	22,120	9	L Groups
TA-36 :	3,500	1	M-3
TA-41 :	200	2	WX-1, 5, 6
TA-43 :	410	3	H-4, 9, 10, 11
TA-46 :	50,860	7	L, Q
TA-48 :	18,250	3	CNC-11
TA-50 :	28,000	1	H-7
TA-52 :	4,000	1	L
TA-53 :	8,350	5	MP
TOTALS:	438,540	118	

SITE

VISIT SCHEDULE

(AM - 0900; PM - 1330)

7-14	AM	TA-2, TA-41
	PM	TA-43, TA-48
7-15	AM	TA-52, TA-46
	PM	TA-35, TA-18, TA-36
7-16	AM	TA-21
	PM	TA-53
7-19	AM	TA-3
	PM	TA-3
7-20	AM	TA-8, TA-9, TA-22
	PM	TA-15, TA-11
7-21	AM	TA-33
	PM	TA-16
7-22	AM	TA-16
	PM	TA-16
7-23	AM	TA-16
	PM	TA-16