File Copy

WASTEWATER STREAM CHARACTERIZATION FOR TA-61

at
Los Alamos National Laboratory

ENVIRONMENTAL STUDY

CHARACTERIZATION REPORT # 14

15229

ENVIRONMENTAL MANAGEMENT DIVISION
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Los Alamos National Laboratory is operated by the University of California for the United States Department of Energy

WASTEWATER STREAM CHARACTERIZATION FOR TA-61

ENVIRONMENTAL STUDY

prepared for:
THE LOS ALAMOS NATIONAL LABORATORY
Los Alamos, New Mexico

under subcontract 9-XG8-2874P-1

by:
Santa Fe Engineering, Ltd.
1429 Second Street
Santa Fe, New Mexico 87501
(505) 988-7438

July, 1992

EXECUTIVE SUMMARY

Buildings 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 and 26 in TA-61 were visited to document all drain piping and to make permitting recommendations. The outfall pipes exiting the buildings are as follows:

1) from 61-16: 17, 18, 19, 20, 21, 22, 24 and 25: no drains,

2) from 61-23: one outfall to the TA-3 sanitary sewer system and

3) from 61-26: one French drain that leaches underground.

No application forms have been prepared. Recommendations for repiping are provided to allow outfall consolidation to minimize permit maintenance and to bring the facility into compliance with the Laboratory's NPDES permit. Floor drain plugging is recommended where the potential for discharge of pollutants exists.

A waste stream database has been prepared for listing wastewater type and flow rate for each outfall.

TABLE OF CONTENTS

1.0	**INTRODUCTION**	1
2.0	**FIELD INVESTIGATION**	3
3.0	**RECOMMENDATIONS FOR BUILDINGS 16, 17, 18, 19, 20, 21 AND 22**	4
4.0	**RECOMMENDATIONS FOR BUILDING 23**	4
5.0	**RECOMMENDATIONS FOR BUILDINGS 24, 25 AND 26**	4
6.0	**CONCLUSION**	5

APPENDICES

Appendix 1 - DRAIN SUMMARY TABLES
Appendix 2 - WASTE STREAM CHARACTERIZATION DATABASE
Appendix 3 - EPA FORMS
Appendix 4 - DYE STUDY INFORMATION
Appendix 5 - DRAINS SCHEMATICS

LIST OF TABLES

1. SUMMARY OF ABBREVIATIONS

2. TA 61-23 DRAIN SUMMARY

LIST OF FIGURES

1. TA-61 AREA PLOT PLAN

2. TA 61-23 BUILDING DRAIN SCHEMATIC

1.0 INTRODUCTION

On August 9,1991, Patrick E. Binkley of Santa Fe Engineering (SFE) toured buildings 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 and 26 in TA-61. Mike Shepherd of Johnson Controls, Inc. (JCI) provided access to building 16. Buildings 17, 18, 19, 20, 21 and 22 were toured with Benito Martinez of JCI. David Water (MEC-9) provided the tour of building 23. The tour of buildings 24, 25 and 26 was with Scott Richmond of INC-5. The purpose of this study is to identify building drain piping and to characterize the wastewater flows and sources at the time of the visit. This report will not reflect any subsequent changes in piping or operation. The Wastewater Stream Characterization Policy of April 14, 1992 was followed for this study. The following tasks were performed for this purpose:

1. Building drains and all piping exiting the building were identified and laid out in schematic form;

2. Wastewater sources were identified at each drain and the wastewater was characterized according to flow rate and quality. The location of outfalls and their potential sources of discharge were determined. Potential pollutants were also noted;

3. Permit applications for discharges of clean water were not prepared since these discharges do not require permitting at this time and

4. Potential problems were identified and recommendations were made for repiping, floor drain plugging and spill containment where deemed appropriate.

The field investigation proceeded with a site visit to verify the SFE schematics and to insure that all pipes exiting the building

were documented. The following information was used to define drain piping and characterize the wastewater streams:

1. Laboratory engineering drawings were used to prepare the SFE drain piping schematic. The Solid Waste Stream Characterization conducted by IT Corporation was also reviewed. The National Pollutant Discharge Elimination System (NPDES) Permit, the 1990 NPDES Permit Application submitted by Los Alamos National Laboratory (LANL) in September, 1990, the latest Federal Facilities Compliance Agreement (FFCA) between the Department of Energy (DOE) and the Environmental Protection Agency (EPA) and the Administrative Order (AO) Docket Number VI-91-1329 issued by EPA to the University of California were used for reference;

2. SFE verified drain piping by dye checking and

3. A site visit was performed to verify the SFE drain schematic and to identify potential outfall pipes exiting the building. The visit entailed a room by room inspection of wastewater sources and drain. Interviews with site personnel were conducted to assist in wastestream characterization.

2.0 FIELD INVESTIGATION

The pipes exiting the building have been assigned an Outlet Piping Number. The four part number, sequentially, identifies the Technical Area where the pipe is located, the building from which the pipe discharges, the letters OPN to indicate that it is an outlet piping number and the unique number for the pipe. The piping exiting the building will be labeled for easy identification in the future.

Each drain has a unique identification number. Each number consists of three parts. The first part is the floor the drain is on. The second part has letters that indicate the drain type (abbreviations used are summarized in Table 1). The final part is a unique number for each drain. For example, the floor drain numbering on the first floor would start with 1FD1. The roof drains do not have the number identifying the floor such as RD1 for Roof Drain 1.

The drains to of the pipe exiting from the one building are listed Appendix 1 in Table 2, with an abbreviations list in Table 1. Appendix 2 contains the waste stream characterization database output, listing wastewater source, flow rates and periodicity information for each outfall drain. No EPA forms were included in Appendix 3. Appendix 4 provides dye study information. Flow schematics of the drains from each building are attached in Appendix 5 as Figure 2.

3.0 RECOMMENDATIONS FOR BUILDINGS 16, 17, 18, 19, 20 AND 21

These seven buildings have no drains and no water supply. Building 16 is scheduled for demolition. No changes or permitting are recommended. No EPA forms were prepared.

4.0 RECOMMENDATIONS FOR BUILDING 23

Table 2 is a list of the drains to the building outfall and Figure 2 is a schematic of the piping. The table lists the drains that connect to each outfall pipe and includes recommendations for changes to the drain piping. The building outfall flows to the TA-3 sanitary treatment plant that discharges as 03S. All of the sources are appropriate for the sanitary sewer system. The floor drain 1FD1 has no source of water nearby. Plugging is recommended to insure that nothing is spilled into the drain. No permitting is recommended. No EPA forms were prepared.

5.0 RECOMMENDATIONS FOR BUILDINGS 24, 25 AND 26

Building 24 contains a blower that provides air to a venturi. The suction side of the venturi connects to the TA-2 reactor vent. The venturi exhausts through a stack (structure 26). Building 25 contains equipment that monitors the quality of air being exhausted through the stack. No discharge pipes were seen from either of the two buildings. Engineering drawing C-46 shows a French drain on the bottom of the piping to the stack. Any condensate in the piping would leach into the ground under the stack. The existence of the French drain can only be verified by excavation of the area. The potential exists for leaching of radioactive water into the ground. Locating the discharge point and containerizing the liquid are recommended. No permitting is recommended. No EPA forms were prepared.

6.0 CONCLUSION

This document provides the information to characterize buildings 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 and 26 in TA-61. Permit application forms have not been completed for any of the outfalls. The outfalls do not require permitting, as itemized below:

Discharge to the TA-3 sanitary sewer system:

1. 61-23-OPN-1

Areas with no drains:

1. 61-16	2. 61-17	3. 61-18
4. 61-19	5. 61-20	6. 61-21
7. 61-22	8. 61-24	9. 61-25

Discharges to a French drain:

1. 61-26

The following outfalls have storm water combined with non-storm water discharges:

1. None

Recommended permitting and corrective action are outlined in Table 2. Corrective actions should be performed as soon as practicable to minimize the chance of unpermitted discharge of pollutants.

TABLE 1
SUMMARY OF ABBREVIATIONS

ABBREVIATION	MEANING
FD	Floor Drain
LV	Lavatory
S	Sink
T	Toilet
WF	Water Fountain

TABLE 2: TA 61-23 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
61-23-OPN-1	1FD1	SHOP	PLUG	NO
	1LV1	REST ROOM	NO CHANGE	
	1LV2	REST ROOM	NO CHANGE	
	1S1	SHOP	NO CHANGE	
	1T1	REST ROOM	NO CHANGE	
	1T2	REST ROOM	NO CHANGE	
	1WF1	SHOP	NO CHANGE	

RECOMMENDATIONS REVIEWED WITH PERSONNEL FROM WX-12, EM-8 & ENG-6

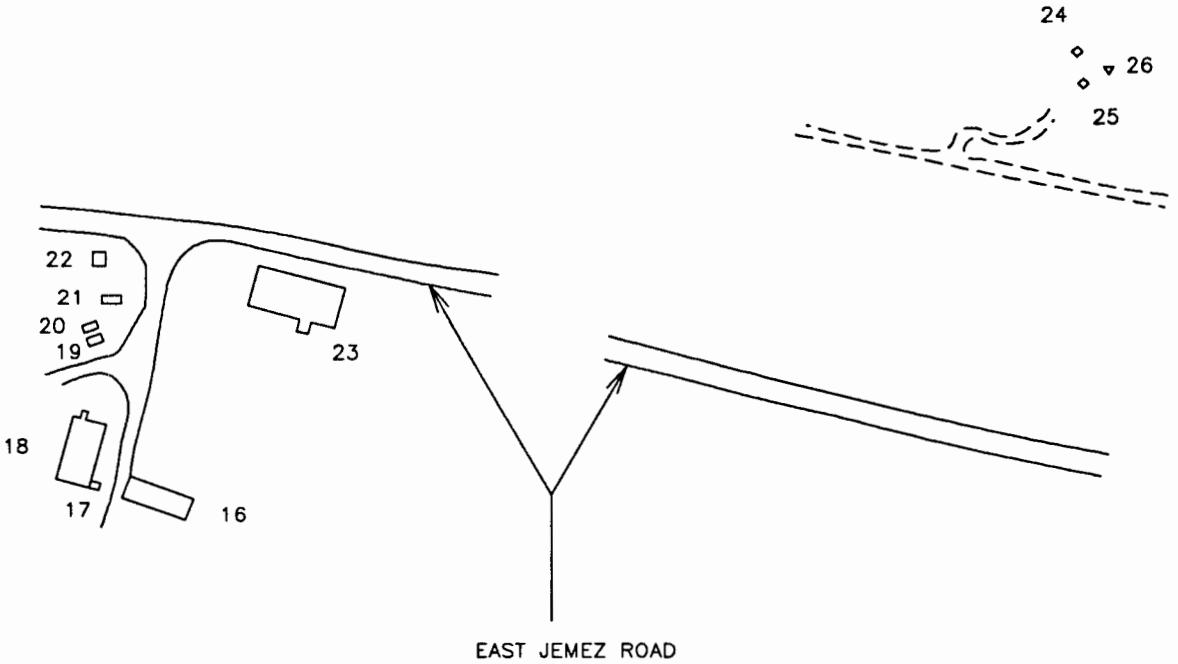
REPORT 14

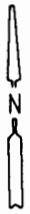
TA BLDG	OUTLET PIPING NUMBER	EPA OUTFALL #	DRAIN #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	ROOM #	SOURCE TYPES
61	16 61-16			STORAGE BUILDING			no		NONE
61	17 61-17			STORAGE SHED			no		NONE
61	18 61-18			WAREHOUSE			no		NONE
61	19 61-19			STORAGE SHED			no		NONE
61	20 61-20			STORAGE SHED			no		NONE
61	21 61-21			STORAGE SHED			no		NONE
61	22 61-22			STORAGE SHED			no		NONE
61	23 61-23-OPN-1	01S	1FD1	MODEL SHOP		FLOW IS NIL	no		FLOOR WASHINGS
61	23 61-23-OPN-1	01S	1LV1	REST ROOM		5 DAYS PER WEEK	no		HAND WASHINGS
61	23 61-23-OPN-1	01S	1LV2	REST ROOM		5 DAYS PER WEEK	no		HAND WASHINGS
61	23 61-23-OPN-1	01S	1S1	SHOP		5 DAYS PER WEEK	no		HAND WASHINGS
61	23 61-23-OPN-1	01S	1T1	REST ROOM		5 DAYS PER WEEK	no		SANITARY WASTE
61	23 61-23-OPN-1	01S	1T2	REST ROOM		5 DAYS PER WEEK	no		SANITARY WASTE
61	23 61-23-OPN-1	01S	1WF1	WATER FOUNTAIN		5 DAYS PER WEEK	no		DRINKING WATER
61	24 61-24			BLOWER HOUSE			no		NONE
61	25 61-25			STACK MONITORING BUILDING			no		NONE
61	26 61-26			BLOWER MAST		FLOW IS NIL	no		CONDENSATE FROM RX STACK

NO EPA FORMS WERE PREPARED.

DYE STUDY INFORMATION

BUILDING NUMBER	DRAIN NUMBER	DID DYE REACH EXPECTED DESTINATION?	COMMENTS
61-23	1LV1	YES	NONE



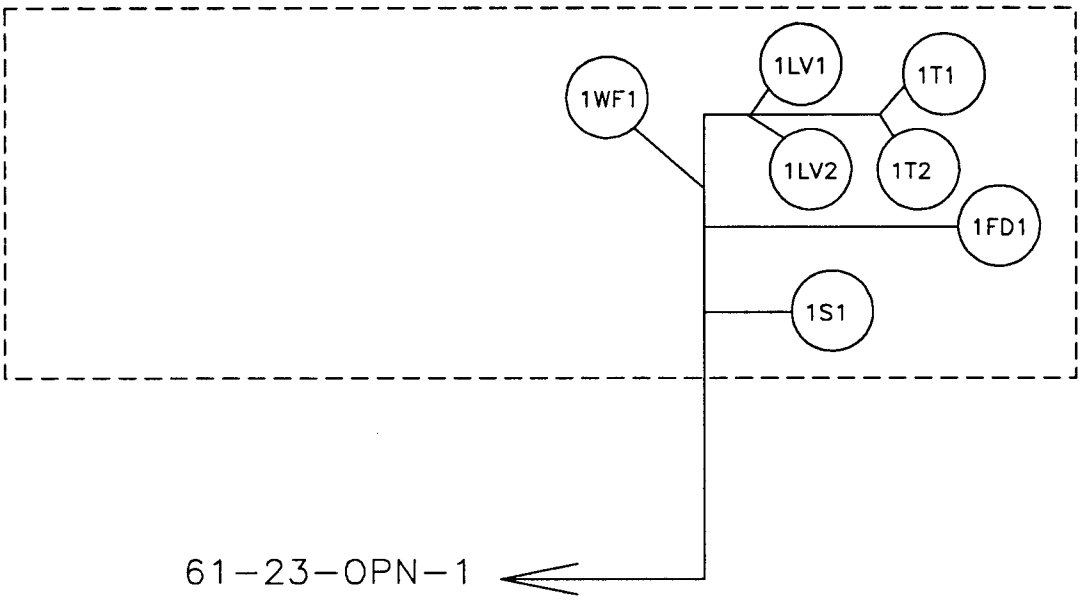


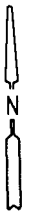
NOTES

NOTE 1:PLOT PLAN BASED ON DRAWINGS

R-7104 SHEETS 1 & 2

SANTA FE ENGINEERING, LTD.			
TA-61 AREA PLOT PLAN		DRAWN	PEB
		DESIGN	PEB
		CHECKED	LBA
		DATE	6/29/92
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos	Los Alamos National Laboratory Los Alamos, New Mexico 87545	SHEET	OF
CLASSIFICATION	REVIEWER	DATE	
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP	11056-14	FIGURE 1	





NOTES

NOTE 1: SCHEMATIC BASED ON DRAWINGS C-34795, C-37122, C-37305 & R-1731 AND SITE VISIT

SANTA FE ENGINEERING, LTD.			
TA 61-23 BUILDING DRAIN SCHEMATIC		DRAWN	PEB
		DESIGN	PEB
		CHECKED	LBA
		DATE	6/29/92
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos	Los Alamos National Laboratory Los Alamos, New Mexico 87545	SHEET	OF
CLASSIFICATION	REVIEWER	DATE	
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP	11056-14	FIGURE 2	