



**Department of Energy**  
 Albuquerque Operations Office  
 Los Alamos Area Office  
 Los Alamos, New Mexico 87544

MAR 27 1997



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Benito Garcia, Bureau Chief  
 Hazardous and Radioactive Materials Bureau  
 New Mexico Environment Department  
 2044 Gallisteo, Building A  
 P. O. Box 26110  
 Santa Fe, NM 87505

Dear Mr. Garcia:

SUBJECT: RCRA Gas Cylinders in Storage at the Los Alamos National Laboratory  
 (LANL), Technical Area (TA) 54

The purpose of this letter is to provide to the New Mexico Environment Department (NMED) an update on the status of gas cylinders stored at TA-54, LANL.

Since the Amended Stipulation addressing the work-off of 644 gas cylinders was entered into on May 23, 1995, in response to Compliance Order 94-09, substantial progress has been made at TA-54 in reducing the gas cylinder inventory. All but nine of the original 644 gas cylinders subject to the Stipulation have received proper disposition (see Group 1 of Enclosure 1).

As Enclosure 1 to this letter indicates, two other groups of gas cylinders are stored at TA-54 that we felt are important to bring to your attention. Both groups involve storage concerns beyond one year, for a number of reasons. These reasons include issues concerning characterization for rad content, mechanical problems (stuck valves, wrong type of valve), and too high of a concentration of a given constituent to be accepted by a TSD for treatment or disposal. (A further discussion of what problems we are facing with each cylinder can be found in the table provided as Enclosure 1.) All of these issues are similar to those discussed with John Tymkowych and Jim Seubert of your staff earlier this month in regard to gas cylinders located at TA-21. Mr. Tymkowych told us that when transportation, safety and health issues were a cause for not shipping gas cylinders for disposal, we needed to work closely with NMED.

In the spirit of the Amended Stipulation (Enclosure 2) and the above-cited recent discussion, we would like to reach an understanding with NMED on how the difficulties associated with final disposition of these cylinders can be addressed in a manner that



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Rec'd LANL TA-54 7/19/97

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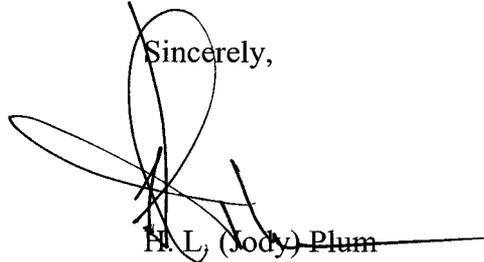
Benito Garcia

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meets the regulatory compliance concerns of both NMED and DOE/University of California. With that goal in mind, I would like to propose that we meet with the appropriate members of your staff to discuss this further. This discussion could take place at the regular monthly meeting (next meeting is April 15, 1997) or we could come down at you and your staff's convenience to handle this as a separate issue.

We look forward to meeting with you and/or your staff on this issue. Please inform us of your preference for meeting time and date. If you have any questions, please contact me at (505) 665-5042.

Sincerely,

A handwritten signature in black ink, appearing to read "H. L. (Jody) Plum". The signature is stylized with large loops and a long horizontal stroke extending to the right.

H. L. (Jody) Plum  
Office of Environment and Projects

LAAMEP:7HJP-048

Enclosures

**Enclosure 1**

**RCRA Gas Cylinders Stored for longer than one year at  
Los Alamos National Laboratory Technical Area 54, Area L**

Table 1: RCRA Cylinders Onsite - Stored For Greater Than One Year

Group	#	Cylinder #	RAD	RCRA	Store date	Description	> 1 yr	problem	efforts to date	expected ship date
group 1	1	907347	non-RAD	D001, D003	08/15/95(rad analysis), 09/13/90(store)	H2S, Air, Ar, CH3OH	yes	wrong valve	rej. RES, rej. 3rd party	Jul-97
	2	907499	non-RAD	D001	03/11/96(rad analysis), 09/24/90(store)	H2, Ar, trace HF	yes	corroded valve	rej. RES, rej. 3rd party	Jul-97
	3	907505	potential	D001,D002	09/24/90(store)	H2, F2, HF, HCl, Ar, trace CH4, SiF4	yes	potential rad, corroded valve	pending RAD charac.	unknown
	4	907799	non-RAD	D001, D004	09/08/95(rad analysis), 08/30/95(store)	H2, Arsine, Ar	yes	high Arsine content, TSDF permit problems	rej. RES, rej. 3rd party	Jul-97
	5	908002	non-RAD	P095	09/08/95(rad analysis), 08/30/95(store)	Carbonic Dichloride Phosgene	yes	DOT Hazard zone A - needs DOT leak test	rej. RES, rej. 3rd party	Mar-97
	6	908200	potential	D002	10/13/90(store)	HF, MOF6, Ar	yes	potential rad, corroded valve - needs DOT leak test	pending RAD charac.	unknown
	7	908251	non-RAD	P095	09/08/95(rad analysis), 10/16/90(store)	Carbonic Dichloride Phosgene	yes	DOT Hazard zone A - needs DOT leak test	rej. RES, rej. 3rd party	Mar-97
	8	91007156	potential	D001	08/02/91(store)	trace Ar, H2S, Air	yes	potential rad, corroded valve	pending RAD charac.	unknown
	9	92030490	potential	D002	05/29/92(store)	BF3	yes	potential rad, location unknown	pending RAD charac.	unknown
group 2	1	94042529	non-RAD	D001	08/10/91(store)	O2, N2, Br, SiF4, trace fluorocarbon, CO2	yes	not gas - will be labpack	rej. RES, rej. 3rd party	Mar-97
	2	94042625	non-RAD	D001,D003	08/10/91(store)	N2, O2, H2, metal carbonyl	yes	high Carbonyl content	rej. RES, rej. 3rd party	this cylinder cannot be handled at RES or any of their subcontractors - may require some onsite treatment by a third party company (such as ETSC) prior to shipment
	3	95059996	non-RAD	D001	01/05/96(store)	Anhydrous Ethylamine	yes	plugged valve	rej. RES, rej. 3rd party	Jul-97
	4	95059997	non-RAD	D001	01/05/96(store)	Anhydrous Ethylamine	yes	plugged valve	rej. RES, rej. 3rd party	Jul-97
	5	95059998	non-RAD	D001	01/05/96(store)	Anhydrous Ethylamine	yes	plugged valve	rej. RES, rej. 3rd party	Jul-97
group 3	1	90000077	suspect	D001	12/18/90(store)	Propylene	yes	suspect RAD	pending RAD charac.	unknown
	2	90248700	suspect	U029	12/03/90(store)	Methyl Bromide, Air	yes	suspect RAD, High Bromine content	pending RAD charac.	unknown
	3	903173	suspect	P078,D001	11/16/90(store)	NO2, trace N2O	yes	suspect RAD, TSDF permit problems	pending RAD charac.	unknown
	4	907437	suspect	D002	09/20/90(store)	HCl	yes	suspect RAD	pending RAD charac.	unknown
	5	908265	suspect	D001	11/08/90(store)	Chlorotrifluoroethylene, Argon	yes	suspect RAD	pending RAD charac.	unknown
	6	909372	suspect	U075	11/16/90(store)	Dichlorodifluoromethane (Freon 12)	yes	suspect RAD	pending RAD charac.	unknown
	7	909926	suspect	D001	11/17/90(store)	Ethylene	yes	suspect RAD	pending RAD charac.	unknown
	8	909927	suspect	D001	11/17/90(store)	Propane, CO2	yes	suspect RAD	pending RAD charac.	unknown
	9	92032654	suspect	D001,U135,D003	11/16/90(store)	H2S	yes	suspect RAD	pending RAD charac.	unknown
	10	93034303	suspect	U075	03/18/93(store)	Dichlorodifluoromethane (Freon 12)	yes	suspect RAD	pending RAD charac.	unknown
	11	94042384	suspect	D001,D003	08/10/91(store)	H2, Pentaborane	yes	suspect RAD	pending RAD charac.	unknown
	12	94042516	suspect	D001	06/04/91(store)	O2, trace Argon	yes	suspect RAD	pending RAD charac.	unknown
	13	94042517	suspect	D001	06/04/91(store)	Deuterium, tritium present	yes	suspect RAD, suspect high tritium	pending RAD charac.	unknown
	14	94042519	suspect	D001	06/04/91(store)	Propane	yes	suspect RAD, plugged valve	pending RAD charac.	unknown
	15	94042521	suspect	D001	02/06/91(store)	Propane	yes	suspect RAD	pending RAD charac.	unknown
	16	94042522	suspect	D001	02/06/91(store)	H2	yes	suspect RAD	pending RAD charac.	unknown
	17	94042523	suspect	D001	02/06/91(store)	H2	yes	suspect RAD	pending RAD charac.	unknown

The gas cylinders described in Table 1 have been divided into three groups as follows:

**Group 1 - RCRA Cylinders in Amended Stipulation to Compliance Order 94-09**

- Nine gas cylinders stored greater than one year.
- All RCRA hazardous waste.
- All cylinders subject to requirements of the Amended Stipulation to Compliance Order 94-09 (see Enclosure 2).
- In accordance with the requirements of the Amended Stipulation to Compliance Order 94-09, all of the cylinders in this group have been tracked and reported to NMED through reports submitted quarterly since March 30, 1995. The next scheduled quarterly report will be submitted to NMED by April 1, 1997.
- Four of these nine cylinders are classified as suspect RAD - analysis for radiological constituents of cylinders 907505, 908200, 91007156, C92030490 must be completed prior to off-site shipment as hazardous waste.
- Non-RAD determination (based on radiological analyses) was made for five of these nine cylinders more than one year ago.
- Due to problems listed in Table 1, all cylinders have been previously rejected by Rollins CHEMPAK, Inc., and their third party contractors.

**Group 2 - RCRA Cylinders**

- Five gas cylinders stored greater than one year.
- All RCRA hazardous waste.
- All cylinders are non-RAD.
- Due to problems listed in Table 1, all cylinders have been previously rejected by Rollins CHEMPAK, Inc., and their third party contractors.

**Group 3 - RCRA Cylinders/Potentially RAD**

- Seventeen gas cylinders stored greater than one year.
- All RCRA hazardous waste.
- All cylinders are suspected to contain radioactive contamination - analysis for radiological constituents must be completed prior to off-site shipment as hazardous waste.
- Previous radiological analyses on approximately half of these cylinders is inconclusive due to chemical interference (known as chemoluminescence).
- The regulatory status of these cylinders will be evaluated and applicable cylinders will be included in future revisions to the Site Treatment Plan.

**Enclosure 2**

**Amended Stipulation to Compliance Order 94-09**

CONTINUED  
STIPULATION

This Stipulation amends and replaces that certain stipulation, "Stipulation Regarding Applicability and Scope of, and Timeframes Provided in, Ordered Action No. 23," entered into by the Water and Waste Management Division of the New Mexico Environment Department, (sometimes referred to herein as "Complainant", or "NMED") and the U.S. Department of Energy ("DOE") and The Regents of the University of California ("UC") (sometimes referred to herein collectively as "Respondents", or "LANL").

RECITALS:

A. Ordered Action No. 23 of Compliance Order NMHWA 94-09 (Order) required Respondents to ship within ninety (90) days from receipt of the Order, "the containers at the TA-54 Area L gas cylinder storage area that have exceeded the one year storage limit to an authorized off-site facility, or provide proof that such storage is solely for the purpose of accumulation of such quantities as necessary to facilitate proper recovery, treatment, or disposal."

B. The containers referred to in Ordered Action No. 23 were identified previously in the Order in Finding No. 51 as follows: "Upon information and belief, at the TA 54 Area L gas cylinder storage area, approximately 644 containers of hazardous waste had exceeded the allowable one year storage limit for land disposal restriction."

C. Conclusion No. 97 of the Order alleged that this storage beyond one year constitutes a violation of Section 801 of HWMR-7, which incorporates federal regulation 40 C.F.R. 268.50 (b).

D. Respondents in Paragraphs 41 and 74 of their Answer, filed on October 28, 1994, stated in response to Finding No. 51, Conclusion No. 97, and Ordered Action No. 23, that they believed that some or all of the cylinders were subject to a work off plan, Gas 100, submitted to U.S.E.P.A. under a previously entered into Federal Facility Compliance Agreement. Respondents further stated that in compliance with this work off plan, cylinders had been shipped off-site subject to three categories of exceptions as follows: (1) no available treatment existed for some cylinders; (2) some cylinders are contaminated with radiological constituents and therefore, are not considered acceptable by treatment facilities; and (3) some cylinders are in such a condition that they are non-shippable under DOT regulations. Respondents also indicated in Paragraphs 41 and 74 and in the Nineteenth Affirmative Defense of their Answer that cylinders containing mixed waste [category (2) of the exceptions] are subject to and governed by the Federal Facility Compliance Act, Public Law 102-386, 102d Congress (FFCAct).

E. Since filing their Answer, Respondents have obtained additional information regarding the status of each of the 644 cylinders referred to in the Order and have organized in 6 Tables specific information regarding the status of each of the cylinders. These 6 Tables are attached hereto and are incorporated herein by reference. Respondents represent to Complainant that the

following descriptions of each of them. They are true and accurate.

- a. Table 1 identifies 490 gas cylinders that have been shipped offsite since the NMED inspection took place in August, 1993.
- b. Table 2 identifies 8 gas cylinders onsite at LANL that recently were not accepted by an off-site facility. LANL had arranged for these 8 cylinders to be picked up and transported offsite in January, 1995. Because treatment and/or disposal facilities for gas cylinders of the type that LANL handles are few in number and limited in capacity as to the type and quantity of the cylinders they can receive, LANL must arrange to get into the queue for such facilities. The next available opening in the queue for the facility willing to receive the 8 cylinders was in January, 1995.
- c. Table 3 identifies 37 cylinders that LANL currently has onsite, the contents of which have been confirmed to be mixed waste.
- d. Table 4 identifies 85 cylinders that are undergoing further evaluation for radioactivity. These cylinders have previously undergone chemical and radiological characterization and all 85 cylinders have been confirmed to contain hazardous waste. However, 10 of the 85 cylinders contain material that causes severe interference during radiological analysis and thus require further characterization for radioactivity, and an additional 73 of the 85 cylinders have shown significant variance in measurement of radioactivity and thus also require further characterization. The remaining 2 of the 85 cylinders have either a stuck valve or cap and require recontainerization into a secondary cylinder before full re-evaluation can occur. The recontainerization procedure can be dangerous and requires special equipment not available at LANL. LANL is attempting to obtain the services of such equipment.
- e. Table 5 identifies 11 cylinders of (non-mixed) hazardous waste, 10 of which have not been shipped offsite because LANL has determined that there currently exists no commercial treatment or disposal facility which has the capability to receive and handle these cylinders. An 11th cylinder does not meet DOT shipping requirements and cannot be shipped offsite until it undergoes recontainerization.
- f. Table 6 identifies 13 cylinders that have been determined to not contain hazardous waste and thus are not subject to RCRA/HWA.

#### STIPULATION:

The Recitals are deemed to be a material part hereof and are incorporated herein. Complainant, based on Respondents' representations that the statements contained in Recital E.a.-f. are true and accurate, and Respondents stipulate as follows:

1. Respondents are granted an extension until February 1, 1995 within which to ship offsite the 8 cylinders identified in Table 2.

2. The 27 gas cylinders identified in Table 3 are hereby removed from the requirements of Ordered Action No. 23 with the understanding that these cylinders will be subject to the site treatment plan to be submitted by Respondent DOE pursuant to the requirements of the FFCAct and will be subject to the order by the State of New Mexico implementing the plan.
3. LANL shall recharacterize the 85 cylinders identified in Table 4. The requirement of Ordered Action No. 23 that all gas cylinders be shipped offsite with 90 days of receipt of the Order shall not apply to these 85 cylinders. These 85 cylinders will be subject to the site treatment plan to be submitted by Respondent DOE pursuant to the requirements of the FFCAct and will be subject to the order by the State of New Mexico implementing the plan. However, as to those of the 85 cylinders that are recharacterized and determined to contain hazardous waste only, LANL shall exercise due diligence in its efforts to ship these cylinders offsite. Beginning from the date of January 1, 1995, LANL shall submit written quarterly reports to NMED describing the efforts taken to ship offsite these cylinders that have been identified as containing hazardous waste only. Thus the first written quarterly report is due April 1, 1995, the second July 1, 1995, etc., and the submission of such reports shall continue until all cylinders identified as containing hazardous waste only, and all the cylinders referred to in Paragraph 4 below, are accounted for as shipped offsite or otherwise treated, stored or disposed of.
4. LANL shall exercise due diligence in its efforts to ship offsite the 11 cylinders identified in Table 5. A description of these efforts shall be included in the quarterly reports referred to in Paragraph 3 above.
5. The 13 cylinders identified in Table 6 are hereby removed from the requirements of Ordered Action No. 23 on the basis that they do not contain hazardous waste.
6. If Complainant determines that LANL is not meeting the requirements to exercise due diligence in accordance with the terms of this Stipulation, then as to that action or actions wherein Complainant determines due diligence is not being exercised, Complainant may terminate the effect of this Stipulation. In such event Complainant reserves the right to issue additional compliance orders and to seek penalties and fines from the date that Complainant determines due diligence ceased to be exercised with respect to a given action. Respondents reserve the right to pursue administrative review of such determination and of any proposed fines and penalties in accordance with the Hazardous Waste Act and the regulations and/or rules promulgated thereunder.
7. So long as Respondents are in compliance with the terms of this Stipulation, Complainant agrees not to take enforcement action(s) against Respondents with regard to the status of any of the 644 cylinders that are not subject to the FFCAct, as exceeding the one year storage limitation for land disposal restricted waste, and not to seek penalties or fines against Respondents or either of them on the basis of noncompliance with Ordered Action No. 23. Nothing contained herein

shall be interpreted as relieving Respondents of their obligation to comply with all other applicable laws and regulations.

APPROVED AND AGREED TO THIS \_\_\_\_\_ day of \_\_\_\_\_, 1982

THE WATER AND WASTE  
MANAGEMENT DIVISION OF THE  
NEW MEXICO ENVIRONMENT  
DEPARTMENT, COMPLAINANT

By: *J. Kelley*

THE U.S. DEPARTMENT OF  
ENERGY, RESPONDENT

By: *Jon Mad*

THE REGENTS OF THE  
UNIVERSITY OF CALIFORNIA,  
RESPONDENT

By: *J. Reynolds*