

# LA-UR-22-32184

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**Title:** IDEA ID 856 - Los Alamos National Laboratory 2022 Third Quarter Beryllium Emissions Report July 1-September 30, 2022, Air Quality Permit No. 634-M2

**Author(s):** Whetham, Walter Wiley

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**Environment, Safety, Health, and Quality  
 Associate Laboratory Directorate**

**Symbol:** ALDESHQ: 22-004  
**LAUR:** 22-32184  
**Locates:** N/A  
**Date:** November 21, 2022

Mr. David Feather  
 Compliance Reporting Manager  
 New Mexico Environment Department, Air Quality Bureau  
 525 Camino de los Marquez, Suite 1  
 Santa Fe, NM 87505-1816

**Subject: IDEA ID 856 – Los Alamos National Laboratory 2022 Third Quarter Beryllium Emissions Report July 1-September 30, 2022, Air Quality Permit No. 634-M2**

Dear Mr. Feather:

Attached is a copy of the sampling data for the **third quarter of calendar year 2022**. The attached emissions data were obtained from the continuous air monitor installed on the main exhaust stack at the Beryllium Technology Facility (BTF) at Los Alamos National Laboratory (LANL). This submission of the quarterly emissions data, collected from this source, is required by permit condition 5.f of the New Mexico Environment Department (NMED) New Source Review (NSR) Air Quality Permit #634-M2 dated October 30, 1998. This quarterly report is transmitted within the allowed 60 days after the end of the calendar quarter, as specified in NSR permit and incorporated in Title V permit P100-R2M4.

Air Quality Permit #634-M2 condition #2 requires that the beryllium stack emissions from the BTF shall not exceed 0.35 grams in a 24-hour time period and shall not exceed 3.5 grams per year. For this reporting period, the current quarterly data and the total emissions for calendar year 2022 were obtained from the attached data sheet and summarized in the following table.

Reporting Period	Description of Data	Beryllium Emission Rate	NSR 634-M2/Title V P100-R2M4 Permit Limit
2022Q3	Highest daily emission rate	$9.87 \times 10^{-5}$ gm/24 hours	0.35 gm/24 hours
2022Q3	Total amount for 2022Q3	$5.57 \times 10^{-3}$ gm	N/A
2022Q3	Total amount for 2022	$8.72 \times 10^{-3}$ gm	3.5 gm/year

On August 11, 2022, LANL changed analytical laboratories. The new analytical laboratory's standard procedure has a higher minimum detectable concentration (MDC) for beryllium than the prior laboratory. As most of the data from the analytical laboratory is below detection limits, we use the detection limit value in these quarterly reports. As noted, the reported values after August 11, 2022 are higher than previously reported data due to this higher detection limit value. Actual emissions have not changed. Even with the increased reported values due to the change in detection limits, the emission rates are well below the permit limits.

Based on the above summary table and Attachment 1 datasheet, the beryllium emissions are well below the permit limit and LANL is in compliance with condition #2 of NMED Air Quality Permit #634-M2.

If you have questions or comments regarding this submittal or would like to discuss this in greater detail, please feel free to contact Marjorie B. Stockton at (505) 665-3289 or Vincent A. Carretti at (505) 665-1658.

Sincerely,

STEVEN  
STORY  
(Affiliate)

Digitally signed by  
STEVEN STORY  
(Affiliate)  
Date: 2022.11.21  
12:50:56 -07'00'

Steven L. Story  
Group Leader

Attachment(s): Attachment 1 Beryllium 2022 Stack Emissions

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Phone (505) 476-4300**



Version 07.20.18

NMED USE ONLY	
TEMPO	

## REPORTING SUBMITTAL FORM

NMED USE ONLY	
Staff	
Admin	

PLEASE NOTE: ® - Indicates required field

SECTION I - GENERAL COMPANY AND FACILITY INFORMATION					
<b>A. ® Company Name:</b> Triad National Security, LLC			<b>D. ® Facility Name:</b> Los Alamos National Laboratory		
<b>B.1 ® Company Address:</b> P.O. Box 1663 MS K491			<b>E.1 ® Facility Address:</b> Same as Company		
<b>B.2 ® City:</b> Los Alamos	<b>B.3 ® State:</b> NM	<b>B.4 ® Zip:</b> 8 7 5 4 5	<b>E.2 ® City:</b>	<b>E.3 ® State:</b>	<b>E.4 ® Zip:</b>
<b>C.1 ® Company Environmental Contact:</b> Steven L. Story		<b>C.2 ® Title:</b> Group Leader, EPC-CP		<b>F.2 ® Title:</b> Meteorology & Air Quality Team Leader	
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<b>C.5 ® Email Address:</b> story@lanl.gov			<b>F.4 ® Fax Number:</b> NA		
<b>G. Responsible Official: (Title V only):</b> Theodore A. Wyka		<b>H. Title:</b> Manager		<b>F.5 ® Email Address:</b> mstockton@lanl.gov	
<b>K. ® AI Number:</b> 856		<b>L. Title V Permit Number:</b> P100-R2M4		<b>I. Phone Number:</b> (505) 667-5105	
<b>M. Title V Permit Issue Date:</b> 07/18/2019		<b>N. NSR Permit Number:</b> 634-M2		<b>J. Fax Number:</b> NA	
<b>O. NSR Permit Issue Date:</b> 10/30/1998		<b>P. Reporting Period:</b> From: July 1, 2022 To: September 30, 2022			

Do NOT submit NSPS OOOO or OOOOa well completion or flowback notifications to the Air Quality Bureau. See <https://www.env.nm.gov/air-quality/notices-and-faqs-for-compliance-and-enforcement/> for explanation.

SECTION II - TYPE OF SUBMITTAL (check one that applies)					
<input type="checkbox"/>	<b>Title V Annual Compliance Certification</b>	<b>Permit Condition(s):</b>	<b>Description:</b>		
<input type="checkbox"/>	<b>Title V Semi-Annual Monitoring Report</b>	<b>Permit Condition(s):</b>	<b>Description:</b>		
<input type="checkbox"/>	<b>NSPS Requirement (40CFR60)</b>	<b>Regulation:</b>	<b>Section(s):</b>	<b>Description:</b>	
<input type="checkbox"/>	<b>MACT Requirement (40CFR63)</b>	<b>Regulation:</b>	<b>Section(s):</b>	<b>Description:</b>	
<input type="checkbox"/>	<b>NMAC Requirement (20.2.xx) or NESHAP Requirement (40CFR61)</b>	<b>Regulation:</b>	<b>Section(s):</b>	<b>Description:</b>	
<input checked="" type="checkbox"/>	<b>Permit or Notice of Intent (NOI) Requirement</b>	Permit No. <input checked="" type="checkbox"/> or NOI No. <input type="checkbox"/> 634-M2	<b>Condition(s):</b> 5.f	<b>Description:</b> 2022Q3 Report containing beryllium emissions data from the continuous air monitor of the exhaust stack, due within 60 days after calendar quarter.	
<input type="checkbox"/>	<b>Requirement of an Enforcement Action</b>	NOV No. <input type="checkbox"/> or SFO No. <input type="checkbox"/> or CD No. <input type="checkbox"/> or Other <input type="checkbox"/>	<b>Section(s):</b>	<b>Description:</b>	

SECTION III - CERTIFICATION			
After reasonable inquiry, I <u>Steven L. Story</u> certify that the information in this submittal is true, accurate and complete. <small>(Name of Certifier)</small>			
<b>® Signature of Certifier:</b> STEVEN STORY (Affiliate)	<small>Digitally signed by STEVEN STORY (Affiliate) Date: 2022.11.21 12:51:30 -0700'</small>	<b>® Title:</b> Group Leader, EPC-CP	<b>® Date</b>
			<b>® Responsible Official for Title V?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Reviewed By: \_\_\_\_\_

Date Reviewed: \_\_\_\_\_

# **ATTACHMENT 1**

## **Beryllium 2022 Stack Emissions**

ALDESHQ: 22-004

LAUR: 22-32184

Date: November 21, 2022

**Los Alamos National Laboratory  
TA-03-0141 Beryllium 2022 Stack Emissions**

**TA-03-0141      StackID: 03014101**

Sampling dates		Emissions (g)	
Period #:	Sampling dates	Weekly(1)	Daily(2)
<b>1</b>			
-	12/21/2021	< 1.24E-04	< 7.70E-06
-	01/06/2022	< 1.24E-04	< 1.77E-05
-	01/13/2022	< 1.24E-04	< 1.77E-05
-	01/20/2022	< 1.24E-04	< 1.78E-05
-	01/27/2022	< 1.24E-04	< 8.87E-06
		<b>Period 1 Sum: &lt; 6.20E-04</b>	
<b>2</b>			
-	02/10/2022	< 1.24E-04	< 1.75E-05
-	02/17/2022	< 1.24E-04	< 1.79E-05
-	02/24/2022	< 1.24E-04	< 1.77E-05
		<b>Period 2 Sum: &lt; 3.72E-04</b>	
<b>3</b>			
-	03/03/2022	< 1.24E-04	< 1.77E-05
-	03/10/2022	< 1.24E-04	< 1.77E-05
-	03/17/2022	< 1.24E-04	< 1.77E-05
-	03/24/2022	< 1.24E-04	< 1.75E-05
		<b>Period 3 Sum: &lt; 4.96E-04</b>	
		<b>1st Quarter Total: 1.49E-03</b>	
		<b><sup>a</sup>HDER 1.79E-05</b>	

*Sum of weekly results must be < 3.5 g/year*

*Cannot Exceed 0.35 g/day*

<sup>a</sup> HDER = Highest Daily Emission Rate

**Los Alamos National Laboratory  
TA-03-0141 Beryllium 2022 Stack Emissions**

**TA-03-0141**      **StackID: 03014101**

**Sampling dates**

Sampling dates		Emissions (g)	
Period #:	Sampling dates	Weekly(1)	Daily(2)
<b>4</b>			
-	04/07/2022	< 1.24E-04	< 1.78E-05
-	04/14/2022	< 1.24E-04	< 1.78E-05
-	04/21/2022	< 1.24E-04	< 1.77E-05
-	04/28/2022	1.65E-04	2.35E-05
		<b>Period 4 Sum: &lt; 5.37E-04</b>	
<b>5</b>			
-	05/05/2022	< 1.24E-04	< 1.79E-05
-	05/12/2022	< 1.24E-04	< 1.77E-05
-	05/19/2022	< 1.24E-04	< 1.78E-05
-	05/26/2022	< 1.24E-04	< 1.77E-05
-	06/02/2022	< 1.24E-04	< 1.77E-05
		<b>Period 5 Sum: &lt; 6.20E-04</b>	
<b>6</b>			
-	06/09/2022	1.31E-04	1.87E-05
-	06/16/2022	< 1.24E-04	< 1.77E-05
-	06/23/2022	< 1.24E-04	< 1.77E-05
-	06/30/2022	< 1.24E-04	< 1.77E-05
		<b>Period 6 Sum: &lt; 5.03E-04</b>	

**2nd Quarter Total: 1.66E-03**

**<sup>a</sup>HDER 2.35E-05**

<sup>a</sup> HDER = Highest Daily Emission Rate



**Los Alamos National Laboratory  
TA-03-0141 Beryllium 2022 Stack Emissions**

**TA-03-0141**      **StackID: 03014101**

**Sampling dates**

**Emissions (g)**

**Weekly(1)**  
*Sum of weekly results must be <3.5 g/year*

**Daily(2)**  
*Cannot Exceed 0.35 g/day*

Period #:	7
-	07/07/2022
-	07/14/2022
-	07/21/2022
-	07/28/2022
-	08/04/2022

< 1.24E-04  
< 1.24E-04  
< 1.24E-04  
< 1.24E-04  
< 1.24E-04  
< 1.77E-05  
< 1.78E-05  
< 1.76E-05  
< 1.78E-05  
< 1.77E-05

**Period 7 Sum: < 6.20E-04**

Period #:	8
-	08/11/2022
-	08/18/2022
-	08/25/2022
-	09/01/2022

< 1.24E-04  
< 6.89E-04  
< 6.89E-04  
< 6.89E-04  
< 6.89E-04  
< 1.77E-05  
< 9.83E-05  
< 9.87E-05  
< 9.83E-05

**Period 8 Sum: < 2.19E-03**

Period #:	9
-	09/08/2022
-	09/15/2022
-	09/22/2022
-	09/29/2022

< 6.89E-04  
< 6.89E-04  
< 6.89E-04  
< 6.89E-04  
< 6.89E-04  
< 9.85E-05  
< 9.82E-05  
< 9.82E-05  
< 9.87E-05

**Period 9 Sum: < 2.76E-03**

**3rd Quarter Total: 5.57E-03      <sup>a</sup>HDER 9.87E-05**

<sup>a</sup> HDER = Highest Daily Emission Rate

**Los Alamos National Laboratory**  
**TA-03-0141 Beryllium 2022 Stack Emissions**

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**Comments**

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\* On August 11, 2022, LANL changed analytical laboratories. The new laboratory's standard procedures has a higher minimum detectable concentration (MDC) than the prior laboratory. The MDC of the old laboratory was 1.8 nanograms per sample which corresponds to 1.77E-5 grams per day, and 1.24E-4 grams per week. The new laboratory's MDC is 10 nanograms per sample. Therefore, the new emission rates have increased by a factor of 5.6. As most of the data from the analytical laboratory is below detection limits, we use the detection limit value in these quarterly reports. The reported values after August 11, 2022 are higher than previously reported data due to this higher detection limit value. Actual emissions have not changed. Even with the increased reported values due to the change in detection limits, the emission rates are well below the permit limits.

<sup>a</sup> HDER = Highest Daily Emission Rate