

APR 14 16 PM 2:54



Associate Director for ESH
Environment, Safety, and Health
P.O. Box 1663, MS K491
Los Alamos, New Mexico 87545
505-667-4218/Fax 505-665-3811

Environmental Management
Los Alamos Field Office, MS A316
3747 West Jemez Road
Los Alamos, New Mexico 87544
(505) 665-5658/FAX (505) 606-2132

Date: APR 14 2016

Refer To: ADESH-16-046

LAUR: 16-22362

Locates Action No.: n/a

Paulette Johnsey, Chief
Water Enforcement Branch (6EN)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Everett Spencer
Water Enforcement Branch (6EN)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Subject: NPDES Permit No. NM0030759 – Addendum to the Alternative Compliance Request for M-SMA-7.9

Dear Ms. Johnsey and Mr. Spencer:

Enclosed please find one hard copy with electronic files of the U.S. Department of Energy (DOE) and Los Alamos National Security, LLC (LANS) (the Permittees) addendum to the alternative compliance request for M-SMA-7.9. The addendum was prepared to fulfill the Permittees' obligations set forth in their response to public comments related to the 2014 alternative compliance request for M-SMA-7.9.

The Permittees received public comments from the Communities for Clean Water (CCW) on June 13, 2014, stating the end of the Outfall 051 discharge pipe was not located within the SMA drainage area. During the August 2014 Individual Permit compliance evaluation inspection, the New Mexico Environment Department Surface Water Quality Bureau (NMED-SWQB) questioned whether the current sampler location would adequately capture storm water impact from Site-related releases. On November 25, 2014, the Permittees responded to public comments from the CCW and NMED-SWQB, stating that the Permittees agreed that impacts from Outfall 051 were likely not captured by the M-SMA-7.9 sampler and the Permittees would conduct more representative sampling by performing run-on/runoff sampling in Effluent Canyon until at least two paired samples were collected and analyzed. In their response, the Permittees agreed that once a minimum of two sets of run-on/runoff paired storm water samples were collected and analyzed, they would prepare and submit an addendum to the M-SMA-7.9 alternative compliance request to the U.S. Environmental Protection Agency (EPA).

The Permittees will post the addendum on the Los Alamos National Laboratory's public website and submit the addendum to the CCW, NMED-SWQB, and EPA, Region 6, for a final determination on the request.

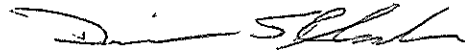
If you have any questions, please contact Terrill Lemke at (505) 665-2397 (tlemke@lanl.gov) or David Rhodes at (505) 665-5325 (david.rhodes@em.doe.gov).

Sincerely,

Sincerely,



John P. McCann, Acting Division Leader
Environmental Protection & Compliance Division
Los Alamos National Laboratory



David S. Rhodes, Director
Office of Quality and Regulatory Compliance
Environmental Management
Los Alamos Field Office

JM/DR/BR/SV:sm

Attachment: One hard copy with electronic files – Addendum to the Alternative Compliance Request for M-SMA-7.9

Cy: (w/att.)
Bruce Yurdin, NMED-SWQB, P.O. Box 5469, Santa Fe, NM 87502

Cy: (w/electronic att.)
Laurie King, EPA Region 6, Dallas, TX
Steve Yanicak, NMED-DOE-OB, MS M894
Sarah Holcomb, NMED-SWQB
emla.docs@em.doe.gov, MS A316
Steve Veenis, ADEM ER Program
Public Reading Room (EPRR)
ADESH Records
PRS Database

Cy: (w/o att./date-stamped letter emailed)
Isaac Chen, EPA Region 6, Dallas, TX
Renea Ryland, EPA Region 6, Dallas, TX
John Kieling, NMED-HWB, Santa Fe, NM
James Hogan, NMED-SWQB, Santa Fe, NM
lasomailbox@nnsa.doe.gov
Kimberly Davis Lebak, DOE-NA-LA
Peter Maggiore, DOE-NA-LA
Karen Armijo, DOE-EM-LA
David Rhodes, DOE-EM-LA
Bruce Robinson, ADEM ER Program
Terrill Lemke, ADESH-EPC-CP
John McCann, ADESH-EPC-DO
Michael Brandt, ADESH
William Mairson, PADOPS
Craig Leasure, PADOPS

**Addendum to the
Alternative Compliance Request
for M-SMA-7.9**

CONTENTS

1.0	INTRODUCTION	1
1.1	Background.....	1
1.2	Public Comment	1
2.0	RUN-ON/RUNOFF STORM EVENT ANALYSIS.....	2
2.1	Sampler Locations	2
2.2	Analytical Results	5
2.3	PCB and Gross-Alpha Developed/Undeveloped Backgrounds	5
3.0	RECOMMENDATIONS BASED ON DATA RESULTS.....	6
4.0	REFERENCES.....	6

Tables

Table 1	Gross-Alpha Results	2
Table 2	Total PCB Results	2

Figures

Figure 1	Run-on/runoff SMA drainage for M-SMA-7.9	3
Figure 2	SMA run-on/runoff map for M-SMA-7.9	4

1.0 INTRODUCTION

1.1 Background

This addendum is to fulfill obligations defined by the November 25, 2014, response to public comments on the request for alternative compliance for site monitoring area (SMA) M-SMA-7.9 (LANL 2014a). In their response, the U.S. Department of Energy and Los Alamos National Security, LLC (hereafter, the Permittees) committed to collecting paired run-on/runoff storm water samples from Effluent Canyon above and below the Radioactive Liquid Waste Treatment Facility (RLWTF) Outfall 051 [Solid Waste Management Unit (SWMU) 50-006(d)] associated with M-SMA-7.9. The Permittees committed to analyzing the paired samples for total polychlorinated biphenyls (PCBs) and gross alpha, constituents that exceeded target action levels (TALs) at M-SMA-7.9, to characterize potential water-quality impacts of Site 50-006(d) in Effluent Canyon. This addendum reports on the results of paired run-on/runoff sampling in 2014 and 2015 in a submittal to the U.S. Environmental Protection Agency (EPA) with a copy provided to the Communities for Clean Water (CCW) and the New Mexico Environment Department Surface Water Quality Bureau (NMED-SWQB). This submittal fulfills the Permittees' obligations set forth in their response to public comments related to the 2014 alternative compliance request.

1.2 Public Comment

The Permittees received public comments from the CCW on June 13, 2014 (LANL 2014b). In the public comment, the CCW stated that the end of the Outfall 051 discharge pipe had not been located within the SMA drainage area. During the August 2014 Individual Permit compliance evaluation inspection, NMED-SWQB questioned whether the current sampler location adequately captures storm water impacts from Site-related releases. During the inspection, the Permittees explained that the current location of the SMA sampler was selected to represent storm water captured from within the Los Alamos National Laboratory (LANL) Geographic Information System (GIS) SWMU boundary, and its location was selected based on information available at the time of issuance of the Individual Permit. The GIS boundary is located directly upgradient of Outfall 051 and any discharges from the outfall did not likely discharge within the GIS SWMU boundary but rather directly into Effluent Canyon. In 2009–2010, documentation of the exact location of the pre-1995 RLWTF drainline outfall was not available.

On November 25, 2014, the Permittees responded to public comments from the CCW and NMED-SWQB, stating that the Permittees agreed that impacts from Outfall 051 were likely not captured by the M-SMA-7.9 sampler and the Permittees would conduct more representative sampling by performing run-on/runoff sampling in Effluent Canyon until at least two paired samples were collected and analyzed. In their response, the Permittees agreed that once a minimum of two sets of paired run-on/runoff storm water samples were collected and analyzed, they would prepare and submit an addendum to the M-SMA-7.9 alternative compliance request to the EPA. Figure 1 illustrates the watersheds of the run-on and runoff locations and the percent developed and undeveloped of each watershed. Storm events on December 4, 2014, and August 17, 2015, yielded paired run-on and runoff samples, and the analytical results are presented in Tables 1 and 2 and in Figure 2. Paired run-on and runoff samples (WTROFF-14-90653/WTROFF-14-91279 and WTRON-15-104251/WTROFF-15-99490) were collected on the same days and during the same storm events.

**Table 1
Gross-Alpha Results**

Sample ID	Sampler Type	Result (pCi/L)	TAL Exceedance Ratio*	Minimum Detectible Activity (pCi/L)	Uncertainty (pCi/L)	Sample Date	Sample Time	Data Receipt and Validation Date
WTROFF-14-90653	Run-on	49.5	3.30	6.08	3.3	12/4/2014	14:22	1/7/2015
WTROFF-14-91279	Runoff	5.89	0.39	4.18	1.39	12/4/2014	16:25	1/7/2015
WTRON-15-104251	Run-on	31.9	2.13	4.95	2.28	8/17/2015	13:17	9/22/2015
WTROFF-15-99490	Runoff	12.6	0.84	2.8	1.28	8/17/2015	13:49	9/22/2015

Note: Constituent was detected

* TAL exceedance ratio = Result/TAL.

**Table 2
Total PCB Results**

Sample ID	Sampler Type	Detect Status	Result (µg/L)	TAL Exceedance Ratio ^a	Quantification Limit	Sample Date	Sample Time	Data Receipt and Validation Date
WTROFF-14-90653	Run-on	Detect	0.00341	5.33	n/a ^b	12/4/2014	14:22	1/8/2015
WTROFF-14-91279	Runoff	Detect	0.00153	2.39	n/a	12/4/2014	16:25	1/8/2015
WTRON-15-104251	Run-on	Detect	0.0054	8.44	n/a	8/17/2015	13:17	9/21/2015
WTROFF-15-99490	Runoff	Detect	0.0037	5.78	n/a	8/17/2015	13:47	9/17/2015

^a TAL exceedance ratio = Result/TAL.

^b n/a = Not applicable for total PCBs analyses.

2.0 RUN-ON/RUNOFF STORM EVENT ANALYSIS

2.1 Sampler Locations

The run-on and runoff sampler locations in Effluent Canyon were selected to be upstream and downstream of Outfall 051 to ascertain whether the outfall could be a significant source of gross-alpha and PCB pollutants. The run-on sampler (RA141239) is located approximately 100 ft upstream of the outfall and has a receiving watershed that is approximately 56.16 acres and is 45% developed and 55% undeveloped. The primary contributor of developed storm water run-on is predominantly from Technical Area 48 (TA-48) and TA-55 building rooftops and paved surfaces. The runoff sampler (RB141240) is located approximately 500 ft downstream of Outfall 051 and has an approximate watershed of 68.40 acres and is 61% developed and 39% undeveloped. Figure 1 illustrates the watersheds of the run-on and runoff locations and the percent developed and undeveloped of each watershed. When evaluating the run-on and runoff watersheds, it should be noted that, by definition, the runoff watershed includes the entire run-on watershed.



Figure 1 Run-on/runoff SMA drainage for M-SMA-7.9

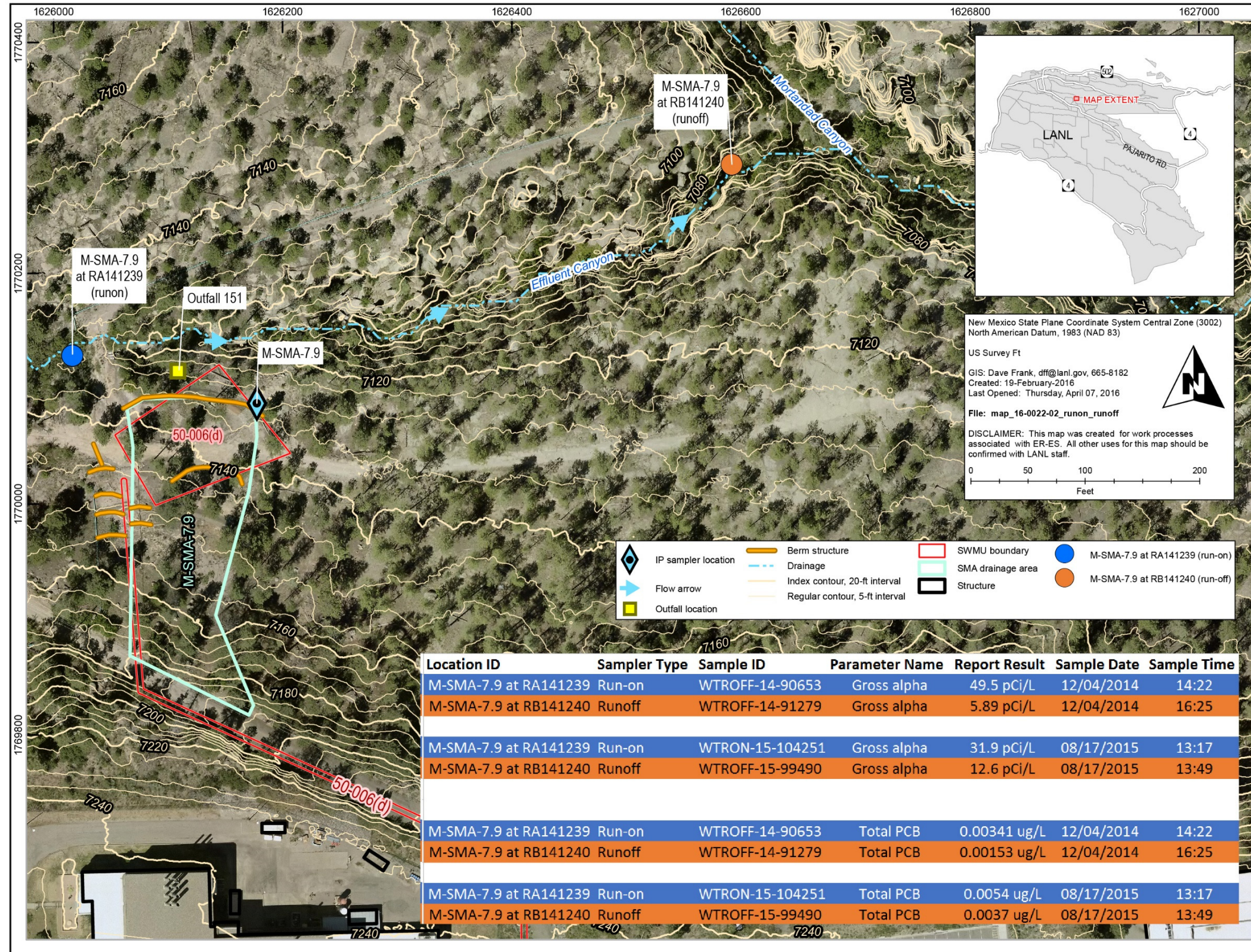


Figure 2 SMA run-on/runoff map for M-SMA-7.9

2.2 Analytical Results

Paired run-on and runoff samples were collected in Effluent Canyon at M-SMA-7.9 during rain events on December 4, 2014, and August 17, 2015 (Table 1). Figure 2 illustrates the location of the run-on (RA141239) and runoff (RB141240) samplers in Effluent Canyon, where samples were collected after the two rain events.

During the December 4, 2014, storm event, the run-on sampler (RA141239) collected a storm water sample with a gross-alpha activity of 49.5 pCi/L, while the runoff sampler (RB141240) collected a sample with a gross-alpha activity of 5.89 pCi/L, an 88% reduction in activity. During the same event, the run-on sampler collected a storm water sample with a total PCB concentration of 0.00341 µg/L, while the runoff sampler collected a sample with a total PCB concentration of 0.00153 µg/L, a 55% reduction in concentration.

During the August 17, 2015, storm event, the run-on sampler (RA141239) collected a storm water sample with a gross-alpha activity of 31.9 pCi/L, while the runoff sampler (RB141240) collected a sample with gross-alpha activity of 12.6 pCi/L, a 61% reduction in activity. During the same event, the run-on sampler collected a sample with total PCB concentration of 0.0054 µg/L, while the runoff sampler collected a sample with a total PCB concentration of 0.0037 µg/L, a 31% reduction in concentration.

2.3 Gross-Alpha and PCB Developed/Undeveloped Backgrounds

Gross alpha and total PCBs have been shown to originate from both developed and undeveloped landscapes at LANL (LANL 2013). Comparison of the run-on/runoff sample results to the gross-alpha and PCB upper threshold limits (UTLs) calculated for developed and undeveloped landscapes demonstrates the potential for detections of these analytes greater than the TAL to be from non-Site-impacted developed and undeveloped landscapes.

The gross-alpha undeveloped UTL for storm water containing sediments derived from Bandelier Tuff is 1490 pCi/L. From both rain events, the run-on and runoff sampler results are below undeveloped UTLs.

The PCB UTL from developed urban landscape storm water run-on is 0.098 µg/L, and the undeveloped PCB UTL for background storm water containing sediments derived from Bandelier Tuff is 0.0117 µg/L (LANL 2013). Both run-on and runoff sampler results of PCBs from both rain events are below developed and undeveloped landscape UTLs.

The activities/concentrations of gross alpha and total PCBs in storm water samples from 2014 and 2015 run-on/runoff samples are within the range of background expected for the landscape generating storm water discharge.

3.0 RECOMMENDATIONS BASED ON DATA RESULTS

Based on the paired sample water data, run-on activities/concentrations of gross alpha and total PCBs are higher than runoff activities/concentrations; in addition, the results are consistent with developed and undeveloped landscapes as the sources of these constituents in storm water. The results indicate that releases from Outfall 051 [i.e., SWMU 50-006(d)] do not have a discernible impact on activities/concentrations of gross alpha or PCBs detected in storm water runoff in Effluent Canyon. The primary source of gross-alpha radioactivity in the run-on/runoff is natural background from Bandelier Tuff, and the source of PCBs is nonpoint source runoff from developed areas within the run-on/runoff watershed boundaries. Based on the results of this analysis, the Permittees will request that EPA respond to and approve their request for alternative compliance for M-SMA-7.9.

4.0 REFERENCES

LANL 2013 (Los Alamos National Laboratory), April 2013. "Background Metals Concentrations and Radioactivity in Storm Water on the Pajarito Plateau, Northern New Mexico," Los Alamos National Laboratory document LA-UR-13-22841, Los Alamos, New Mexico.

LANL 2014a (Los Alamos National Laboratory), April 2014. "Alternative Compliance Request for M-SMA-7.9," Los Alamos National Laboratory document LA-UR-14-22489, Los Alamos, New Mexico.

LANL 2014b (Los Alamos National Laboratory), November 25, 2014. "NPDES Permit No. NM0030759 – Los Alamos National Laboratory's Response to Written Public Comment on the Request for Alternative Compliance for Site Monitoring Area M-SMA-7.9," Los Alamos National Laboratory letter (ADESH-14-111) to P. Johnsey (EPA Region 6) and E. Spencer (EPA Region 6) from M.T. Brandt (LANL) and P. Maggiore (DOE-NA-LA), Los Alamos, New Mexico.