LOS ALAMOS COUNTY PRELIMINARY DESIGNATION DOCUMENT

Designation Analysis in Response to Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit

I. SUMMARY OF PETITION AND REGION 6 DETERMINATION

On June 30, 2014, Amigos Bravos, a river conservation organization in New Mexico, petitioned the Regional Administrator of EPA Region 6 (EPA) for a "determination, pursuant to 40 CFR. 122.26(a)(9)(i)(D) that non-de minimis, currently non NPDES permitted storm water discharges in Los Alamos County are contributing to violations of water quality standards in certain impaired waters throughout the area, and therefore require a National Pollutant Discharge Elimination System (NPDES) permit pursuant to section 402(p) of the Clean Water act and/or designation as a municipal separate storm sewer system " *A Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit* ("the Petition").

The Petition alleges that urban storm water pollution from Los Alamos County sites, particularly urban storm water runoff from developed areas at Los Alamos National Laboratory (LANL), the Los Alamos Townsite, and the community of White Rock Canyon is contributing to violations of New Mexico state water quality standards (WQS), including state WQS for PCBs, copper, zinc and nickel, and that as a result, these sites should be covered by an NPDES permit. 40 CFR 122.26(a)(9)(i)(D) provides that the EPA Regional Administrator may designate storm water discharges as requiring NPDES permit coverage if he determines that the discharge, or category of discharges within a geographic area, contributes to a violation of a WQS or is a significant contributor of pollutants to waters of the U.S. In response to the Petition, Los Alamos County and LANL submitted additional information and data related to storm water discharges in Los Alamos County on November 4, 2014 and November 24, 2014, respectively. A summary breakdown of Petition allegations for which LANL and/or Los Alamos County provided additional information, along with EPA's preliminary response, is attached as Appendix 3 to this document.

After careful review of the Petition and the additional information provided by LANL and Los Alamos County, as well as review of the State of New Mexico's assessment of water quality in the area, EPA Region 6 has determined that discharges of storm water from municipal separate storm sewer systems (MS4s) on LANL property and urban portions of Los Alamos County has the potential to cause or contribute to violations of one or more New Mexico water quality standards. Runoff from urban areas in Los Alamos County and from developed areas of LANL contain pollutants for which the state of New Mexico has listed receiving waters as impaired in the State's CWA §303(d) list of impaired waters not fully supporting their designated beneficial uses. Under an NPDES permit, dischargers would be required to reduce pollutants in such discharges to the Maximum Extent Practicable and to address water quality impacts, thereby addressing EPA's concern that theses discharges are at least contributing to the associated water quality impairments, if not causing the impairments, and that they may also be causing or

contributing to exceedances of instream water quality standards for other pollutants for which the receiving waters are not yet listed as impaired. As a result, EPA has made a preliminary determination to designate the MS4s on LANL property and urban portions of Los Alamos County as storm water discharges requiring NPDES permit coverage pursuant to 40 CFR § 122.26(a)(9)(i)(A), 40 CFR 122.26(a)(9)(i)(D), and 122.32(a)(2).

This designation of regulated small MS4s requiring NPDES permit coverage applies to municipal separate storm sewer systems owned or operated by:

1. LANL including the Department of Energy (DOE) and Los Alamos National Security, LLC (LANS) located within Los Alamos County
2. Los Alamos County located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census
3. New Mexico Department of Transportation (NMDOT) located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census
4. NMDOT located within and interconnected with regulated LANL (DOE and LANS) storm sewer systems.

II. BACKGROUND

As part of the Water Quality Act of 1987 (WQA), P.L. 100-4 (Feb. 4, 1987), Congress required EPA to establish permitting requirements for certain storm water discharges, including discharges from large and medium MS4s. (WQA § 405, codified as CWA § 402(p), 33 U.S.C. § 1342(p)). Congress also gave EPA authority to designate additional storm water discharges for permitting on a case-by-case basis. EPA Region 6, reacting to a petition under 40 CFR §122.26(f)(2) and (4), has made a preliminary determination to designate certain MS4s in Los Alamos County pursuant to 40 CFR § 122.26(a)(9)(i)(A), 40 CFR 122.26(a)(9)(i)(D), and 122.32(a)(2).

A. Current Status of MS4s on Los Alamos County under the NPDES Stormwater Regulations

There are currently no regulated MS4s[1] in Los Alamos County. EPA's Phase I storm water

[1] "Small MS4" is defined as all separate storm sewers that are:
(i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.
(ii) Not defined as "large" or "medium" municipal separate storm sewer systems pursuant to paragraphs (b)(4) and (b)(7) of this section, or designated under paragraph (a)(1)(v) of this section.
(iii) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

regulations (55 FR 47990, November 16, 1990) required NPDES permits for large and medium MS4s, as defined at 40 § CFR 122.26(b)(4) and (7). The regulations included a list of incorporated places (cities) and counties which qualified as large or medium MS4s and required an NPDES permit. (40 CFR § 122, Appendices F through I). No areas of Los Alamos County are qualified as medium or large MS4s under the Phase I regulations. Phase I also regulated discharges of storm water associated with industrial activity and Los Alamos National Laboratory individual storm water permit NM0030759 covers certain storm water discharges falling under the definition of "industrial activity" (40 CFR§ 122.26(b)(14)). However, the majority of LANL is not considered "industrial activity."

EPA's Phase II storm water regulations (64 FR 68722, December 8, 1999) added a requirement for permitting of small MS4s that are either located in an "urbanized area" under the latest Decennial Census or otherwise designated by the NPDES permitting authority. 40 CFR § 122.32(a). Los Alamos County does not include any urbanized areas and thus was not automatically designated by rule as a small municipal separate storm sewer system requiring an NPDES storm water permit.

Los Alamos County has two designated "urban clusters," based on the results of the 2010 census.[2] According to the 2010 Census, the county has a population of 17,950. A Census-designated urban cluster is similar to an urbanized area, but contains less than 50,000 population and is not automatically designated as needing an NPDES permit. The main population center for Los Alamos County is called the Los Alamos Townsite. The Townsite is a Census Designated Place (CDP) and according to the 2010 Census the population of the CDP was 12,019.[3] According to the 2010 Census, the density of the Los Alamos Townsite CDP is 1,078.7 persons per square mile. The other densely inhabited place in the County is the community of White Rock, which is also a CDP. According to the 2010 Census the population of White Rock Canyon is 5,725 and the density is 811.8 persons per square mile. White Rock has been designated as an 'urban cluster," based on the results of the 2010 census.[4]

B. Standard for Designation

Statutory authority for case-by-case designations of discharges composed of storm water is provided by Clean Water Act §402(p)(2)(E) and §402(p)(6). Small MS4s may be designated for

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40 CFR 122.26(b)(16).

[2] http://www.census.gov/geo/reference/ua/urban-rural-2010.html, For Census 2000, the definition of an "urban cluster" is identical to that of an "urbanized area" except that the population of a cluster is at least 2,500 people, but fewer than 50,000 people."
.html

[3] http://quickfacts.census.gov/qfd/states/35/3542320.html

[4] http://quickfacts.census.gov/qfd/states/35/3584740.html

NPDES permits pursuant to the following provisions of the storm water regulations:

- 40 CFR § 122.26(a)(9)(i)(C) -The EPA Regional Administrator determines that storm water controls are needed for the discharge based on wasteload allocations that are part of "total maximum daily loads" (TMDLs) that address the pollutant(s) of concern.

- 40 CFR § 122.26(a)(9)(i)(D) – The EPA Regional Administrator, determines that the discharge, or category of discharges within a geographic area, contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

- Pursuant to 40 CFR §§ 122.26(a)(9)(i)(A), 122.32(a)(2) and 123.35(b)(1)(i), small MS4s may be designated based upon a determination that a stormwater discharge from the small MS4 "results in or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts."

- Pursuant to 40 CFR §122.26(f)(2) and (4), any person may petition the Director (in this case the Regional Administrator) to require a NPDES permit for any discharge composed entirely of storm water not statutorily exempt or to designate a MS4 to be regulated.

Note that unlike the Phase I and II automatic designations by rule, neither population nor population density is a mandatory criteria under any of the designation provisions.

In this case, EPA Region 6, reacting to a petition under 40 CFR §122.26(f)(2) and (4), has made a preliminary determination to designate certain MS4s in Los Alamos County pursuant to 40 CFR § 122.26(a)(9)(i)(A), 40 CFR 122.26(a)(9)(i)(D), and 122.32(a)(2).

C. General Characteristics of Stormwater Discharges from MS4s

Discharges from MS4s are comprised primarily of urban storm water. Such discharges typically contain elevated concentrations of pollutants that collect on impervious surfaces, such as city streets, driveways, parking lots, and sidewalks. The first national assessment of urban runoff quality was undertaken for the *Nationwide Urban Runoff Program (NURP)* study in the late 1970s and early 1980s. Overall, data from the NURP study indicated that discharges from separate storm sewer systems draining runoff from residential, commercial, and light industrial areas carried more than 10 times the annual loadings of total suspended solids (TSS) than discharges from municipal sewage treatment plants that provide secondary treatment. The NURP study also indicated that runoff from residential and commercial areas carried somewhat higher annual loadings of chemical oxygen demand (COD), total lead, and total copper than effluent from secondary treatment plants, as well as high levels of bacteria during warm weather conditions. 65 Fed. Reg. at 68725. More recently, discharge monitoring data from medium and large MS4s has been compiled in the National Stormwater Quality Database (NSQD) (Pitt, et al. 2008). Although the NQSD data indicate significant variations in pollutant loadings among different land uses, the data affirm the significance of discharges from MS4s as contributors of

pollutants to waters of the United States. For example, the median TSS concentration for all samples was 62.0 mg/L, more than double the 30-day average limit of 30 mg/L for discharges from municipal sewage treatment plants that provide secondary treatment. The median fecal coliform concentration was 4300 mpn/100 mL, which exceeds the former National Recommended Water Quality Criteria (NRWQC) for bathing waters by an order of magnitude.

III. THE PETITION

A. Los Alamos County

The Petition alleges that urban storm water pollution from Los Alamos County sites, particularly urban storm water runoff from developed areas at LANL, the Los Alamos Townsite, and the community of White Rock Canyon is contributing to violations of New Mexico state WQS, including state WQS for PCBs, copper, zinc and nickel, and that as a result, these sites should be covered by an NPDES permit. In support, the Petition cites the following factual information, which EPA has verified and accepts as undisputed.

Los Alamos County is located in north-central New Mexico, approximately 60 miles northeast of Albuquerque and 25 miles northwest of Santa Fe. The main population center is called the Los Alamos Townsite. The other densely inhabited place in the County is the community of White Rock. Los Alamos County is the governing body for both Los Alamos Townsite and White Rock. Los Alamos County is also home to the 36 square mile Los Alamos National Laboratory (LANL or the Laboratory).[5,6]

The Los Alamos Townsite and the urbanized areas of LANL sit on the Pajarito Plateau. The Pajarito Plateau consists of a series of finger-like mesas separated by deep east-to-west-oriented canyons cut by streams. Most Laboratory and community developments are confined to the mesa tops. Urban landscapes at the Townsite and at include parking lots, roads, and structures·

White Rock is located in eastern Los Alamos County, above and within approximately 0.75 miles of the Rio Grande River. Pajarito Canyon goes through White Rock on its way towards the Rio Grande. Canada del Buey goes along the northern part of White Rock.

LANL property contains all or parts of seven primary watersheds that drain directly into the Rio Grande. Listed from north to south, these watersheds are: Los Alamos, Sandia, Mortandad, Pajarito, Water, Ancho, and Chaquehui Canyons. The Los Alamos Townsite and the urbanized areas of LANL drain into five canyons: Los Alamos, Pueblo, Sandia, Bayo and Mortandad

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[5] A Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit

[6] Los Alamos National Laboratory, *Los Alamos National Laboratory Environmental Report 2012*, 1-1 and 1-2 (2012) (LA-UR-13-27065) (2012 Environmental Report).

Canyons. White Rock drains into Rio Grande.

B. Water Quality Impaiments

The Petition also provides a discussion of urban-related surface water pollution as it relates to the various Canyons draining to the Rio Grande. After checking this information against the Water Quality impairment information contained in the 2012-2014 State of New Mexico Clean Water Act 303(d)/305(b) 2014 Integrated Report [hereinafter "2012-2014 303d/305b Report"], with updates from the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report [hereinafter "2014-2016 303d/305b Report"] and considering the additional information provided by LANL and Los Alamos County, EP finds the following.

Based on the 2012-2014 303d/305b Report, Los Alamos Canyon within LANL property is impaired for gross alpha, adjusted (a measurement of overall radioactivity and hereinafter referred to simply as "gross alpha"), PCBs, aluminum, copper.[7] However, based on the 2014-2016 303d/305b Report, copper has been removed from the probable causes of impairment list.[8] In addition, as stated in the Petition, New Mexico Environment Department (NMED) data show levels of PCBs in Los Alamos Canyon downgradient from most of the urbanized areas at LANL to be over 11,000 times greater than the New Mexico Human Health water quality criteria and 51 times greater than the New Mexico Wildlife Habitat water quality criteria.[9]Based on the 2012-2014 303d/305b Report, Sandia Canyon is impaired for PCBs, aluminum, copper, gross alpha, and mercury. However, based on the 2014-2016 303d/305b Report, Thallium has been added as a new impairment to the probable causes of impairment list. In addition, NMED data show levels of PCBs in Sandia Canyon below much of the urbanized areas at LANL to be over 14,000 times greater than the New Mexico Human Health water quality criteria and 66 times greater than the New Mexico Wildlife Habitat water quality criteria

Based on the 2012-2014 303d/305b Report, Mortandad Canyon is impaired for aluminum, copper, gross alpha. However, based on the 2014-2016 303d/305b Report, PCBs have been added as a new impairment to the probable causes of impairment list.

Based on the 2012-2014 303d/305b Report, Pajarito Canyon is impaired for gross alpha, aluminum, PCBs, and copper. However, based on the 2014-2016 303d/305b Report, copper has been removed and arsenic, and selenium have been added as the new impairments to the

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[7] State of New Mexico Water Quality Control Commission, *2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report,* Appendix A (303d/305b Report).

[8] State of New Mexico Water Quality Control Commission, *2014-2016 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report,* Appendix A (303d/305b Report).

[9] NMED, *Pajarito Plateau Assessment for the 2010-2012 Integrated Report* data set with PCBs and map of sampling stations http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/Pajarito/index.html (Pajarito Plateau Study).

probable causes of impairment list. Note that the portion of Pajarito Canyon from the Rio Grande to the LANL boundary (which goes through White Rock) is not listed as impaired by NMED.

Based on the 2012-2014 303d/305b Report, Canada del Buey is impaired for PCBs, aluminum, and gross alpha for at least the portion within LANL. However, based on the 2014-2016 303d/305b Report, aluminum has been removed from the probable causes of impairment list. Note that the section from the LANL boundary to San Ildefonso Pueblo has not been assessed.

Based on both the 2012-2014 303d/305b and 2014-2016 303d/305b Report, Pueblo Canyon (Acid Canyon to headwaters) is impaired for gross alpha, PCBs, aluminum. NMED data show levels of PCBs in Pueblo Canyon right in the middle of the Los Alamos urbanized areas to be over 3,500 times greater than the New Mexico Human Health water quality criteria and 16 times greater than the New Mexico Wildlife Habitat water quality criteria.[8]

The Rio Grande (Cochiti Reservoir to San Ildefonso boundary) is listed as impaired for PCBs, turbidity, E.coli, and gross alpha. This is the downstream segment of the Rio Grande receiving most of the flows from the canyons in Los Alamos County.

Atmospheric deposition – toxics, inappropriate waste disposal, natural sources, watershed runoff following forest fire, post-development erosion and sedimentation and source unknown were listed as sources of impairment in the 2012-2014 303d/305b Report. However, in the 2014-2016 303d/305b Report, the NMED Surface Water Quality Bureau (SWQB) removed previously-reported probable source lists from the 2014-2016 303d/305bReport and they are replaced with "Source Unknown".

C. **Cause of Water Quality Impairments**

The Petition alleges that available data and studies link the water quality impairment downgradient from the Pajarito Plateau to storm water runoff from urban areas. In support, the Petition states as follows:

> LANL conducted two detailed studies of storm water runoff from the Pajarito Plateau. One study was on PCB contamination and the second was on metals contamination. In these studies, LANL collected samples from non-urban, non-laboratory influenced reference sites as well as from sites representing runoff from the urbanized areas of the Los Alamos Townsite. Neither the reference nor the urban sites were influenced by point source discharges from LANL's individual storm water permit. These studies show a significant contribution of both PCBs and metals from urban runoff on the Pajarito Plateau.[4]
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> The LANL PCB study found 40 of the 41 Los Alamos urban storm water samples were above the New Mexico human health water quality criteria for PCBs and 19 of the 41 Los Alamos urban storm water samples were above the New Mexico wildlife habitat water

quality criteria for PCBs. (PCB Report[10] at 62). The LANL report concluded that suspended PCBs carried by urban runoff from the Los Alamos Townsite were 10 to 200 times more enriched with PCBs than at non-urban influenced Pajarito Plateau sites. (PCB Report at 62).

In 2007, the NMED collected storm water samples from the county's municipal annex into a tributary that leads into Los Alamos Canyon containing PCBs as high as 255 times the state's PCB human health water quality criteria.[11] NMED sampling data in 2006 and 2007 show levels of PCBs in storm water draining off of urban areas in Los Alamos Townsite to be more than 34,000 times greater than the NM Human Health water quality criteria.[4,6]

A Laboratory study of metals contamination in storm water runoff from urban areas at LANL and the Los Alamos Townsite found exceedances of New Mexico water quality criteria for cadmium, copper, and zinc. (Metal Report [12]at page 31, 32 and 33). In addition, the LANL metals report demonstrated that values for copper, zinc and nickel in urban storm water runoff in Los Alamos County substantially exceeded non-urban influenced Pajarito Plateau storm water concentrations. (Metal Report at p 17, 37).[4]

As noted above, 2012-2014 303d/305b Report the State of New Mexico found that water quality in Sandia, Mortandad, Pajarito, and Pueblo Canyons is impaired because of urban-related causes such as impervious surfaces, parking lots, construction and development.[5] NMED data also shows substantial water quality impairment in Los Alamos Canyon downgradient from most of the urbanized areas at LANL.[8] Note that the 2014-2016 Report now lists the probable sources as "unknown."

The LANL studies of PCB and metal contaminated runoff tie these contaminants to the urban areas of the Pajarito Plateau. In LANL's 2013 request to EPA for alternative compliance with its Clean Water Act discharge permit for industrial storm water, the Laboratory argues that the cause of its exceedances of New Mexico water quality criteria for zinc and copper is urban runoff from sources such as motor oil accumulation on parking lots, brake pad and tire material released on pavement, galvanized fencing, culverts and other building materials.[13]

In their responses to the Petition, LANL and Los Alamos County dispute certain aspects of Petitioners 'characterization of the information from the various LANL reports and the possible

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[10] Los Alamos National Laboratory, Polychlorinated Biphenyls in Precipitation and Stormwater within the Upper Rio Grande Watershed 2 (May 2012) (LA-UR-12-1081) (PCB Report).
[11] New Mexico Environment Department, Press Release: Environment Department Issues Notice of Violation and Penalty to Los Alamos County for Allowing Discharge of PCBs into Canyon from County's Annex (December 15, 2009) (Press Release LA County Violations).
[12] Los Alamos National Laboratory, Background Metals Concentrations and Radioactivity in Storm Water on the Pajarito Plateau Northern New Mexico 2 (April 2013) (LA-UR-13-22841) (Metals Report).
[13] Alternative Compliance Request 2 at 31-2; Los Alamos National Laboratory, *Alternative Compliance Request for S-SMA-.25* 28 (April 2013) (Alternative Compliance Request .25).

sources of pollutants. For instance, both LANL and Los Alamo County state that although the PCB report identifies baseline values, it does not state that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters. Further, both LANL and Los Alamos County point out, as noted by EPA in Section III.B above, that in the 2014-2016 303d/305b Report NMED has removed the probable source lists and replaced them with "Source Unknown."

A more detailed explanation of Petition allegations, additional information provided by LANL and Los Alamos County, and EPA's preliminary response, is attached as Exhibit 3 to this document. Based on the agency's independent review of all available information, EPA finds that available information indicates the presence of pollutants associated with impairment in storm water discharges from MS4s on LANL property and urban portions of Los Alamos County. EPA further concludes these discharges may be causing or contributing to the impairments listed by the state.

III. SCOPE OF PRELIMINARY DESIGNATION

In accordance with 40 CFR §122.26(a)(9)(i)(A) and (D) and §122.32(a)(2), small MS4s may be designated based upon a determination that a storm water discharge from the small MS4 results in or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts. 40 CFR §122.26(a)(9)(i)(D) allows for designation of a category of discharges within a geographic area, based upon a determination that the category "contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States."

This designation of regulated small municipal separate storm sewer systems requiring NPDES permit coverage applies to municipal separate storm sewer systems owned or operated by:

1. LANL including the Department of Energy (DOE) and Los Alamos National Security, LLC (LANS) located within Los Alamos County
2. Los Alamos County located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census
3. New Mexico Department of Transportation (NMDOT) located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census
4. NMDOT located within and interconnected with regulated LANL (DOE and LANS) storm sewer systems.

Alternatives considered, but rejected, were:

- Designation of all MS4s in the entire Los Alamos County – rejected due to the unintended consequence of including of municipal storm sewers operated by the National Park Service (Bandolier National Monument), Los Alamos County, and NMDOT in rural areas of the county without information to evaluate contribution to water quality impairments above background levels.

- Designation of MS4s in Los Alamos Urban Cluster and LANL only – rejected since receiving waters associated with White Rock Urban Cluster are also on the NMED CWA §303(d) list as impaired for pollutants associated with urban runoff. EPA does note that while Pajarito Canyon and Canada del Buey, are listed as impaired above White Rock, the portions immediately within White Rock are not. Canada del Buey within White Rock has not been assessed. The Rio Grande below White Rock is impaired. It appears that current growth is more likely to occur in the White Rock Urban Cluster, so post development controls would likely have more effect in preventing future impacts in this area. EPA also notes that Los Alamos County is the operator of the MS4s serving both Los Alamos and White Rock and the programs Los Alamos County established for one part of the county could simply be applied (modified as necessary) in both Urban Clusters.

IV. EPA's PRELIMINARY DETERMINATION

After analysis of the Petition, the additional information provided by LANL and Los Alamos County and of the State of New Mexico's assessment of water quality in the area, EPA Region 6 has determined the available data indicates that storm water discharges from MS4s on LANL property and urban portions of Los Alamos County contribute to violations of water quality standards or have the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts. As a result, Region 6 has made a preliminary determination to designate these storm water discharges as needing NPDES permit coverage pursuant to 40 CFR § 122.26(a)(9)(i)(A), 40 CFR 122.26(a)(9)(i)(D), and 122.32(a)(2).

A. The Discharges Contribute to or have the Potential to Result in Exceedences of Water Quality Standards

As noted in the Petition, the NMED's 2006 and 2007 data shows significant exceedances of the state's human health water quality criteria for PCBs. Additional exceedances of various state water quality standards – are identified in the state's 303d/305b 2012/2014 Report, which also cites storm water runoff as a major cause for the impairment to several water courses discharging into the Rio Grande. Though the state's 2014-2016 303d/305b Report documents the possible source of impairments as "unknown", there are many more exceedances of standards in the above referenced canyons adjacent to the Los Alamos County and LANL.

Further, as discussed above the LANL PCB and metals reports, as well as its requests for alternative compliance under its individual NPDES storm water permit, indicate that many exceedances of water quality standards at the Laboratory are likely caused or contributed to by urban storm water discharges from Los Alamos County.

B. Other Considerations

EPA guidance at 40 C.F.R. § 123.35(b)(1)(ii) recommends consideration of various factors in

determining other significant water quality impacts with regard to a decision whether to designate an MS4 discharge for permitting, including discharge to sensitive waters, high growth or growth potential, high population density, contiguity to an urbanized area, significant contributor of pollutants to waters of the United States and ineffective protection of water quality by other programs. After careful consideration, EPA believes several of these factors weigh in favor of designation of storm water discharges from MS4s on LANL property and urban portions of Los Alamos County. The overall significance of the discharges from the Los Alamos County MS4s under discussion here as a contributor of pollutants to waters of the United States is discussed in section IV.A above. The remaining factors recommended for consideration under § 123.35(b)(1)(ii) are addressed below.

1. **High Population Density/ High Growth**

The main population center for Los Alamos County is Los Alamos Townsite. The Townsite is a Census Designated Place (CDP) and according to the 2010 Census the population of the CDP is 12,019, with a density of 1,078.7 persons per square mile. The other densely inhabited place in the County is the community of White Rock, which is also a CDP. According to the 2010 Census the population of White Rock Canyon is 5,725 and the density is 811.8 persons per square mile. According to US Census Bureau, the 1990 population for Los Alamos was 18,115, the 2000 population was 18,342, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County was 17,798. In their comments on the Petition, Los Alamos County noted the population decline in recent years. Urbanized Areas, the basis for automatic designation of small MS4s must have a population density of 1,000 per square mile and a minimum population of 50,000. Accordingly, high population density and high growth were not major contributing factors in EPA's designation determination.

2. **Sensitive Receiving Waters**

"Sensitive waters" would generally include public drinking water intakes and their designated protection areas; swimming beaches and waters in which swimming occurs; shellfish beds; state-designated Outstanding Resource Waters; National Marine Sanctuaries; waters within Federal, State and local parks; and waters containing threatened or endangered species and their habitat.

There are several sensitive waters downstream of the waters directly receiving runoff from the MS4s in Los Alamos County. For instance, as noted in the Petition, both Santa Fe's and Albuquerque's public water intakes are potentially affected by storm water runoff from Los Alamos County. The City of Santa Fe diverts water from the Rio Grande at its surface water

diversion, the Buckman Direct Diversion Project. Santa Fe shuts down its diversion whenever the City's monitor in Los Alamos and Pueblo Canyons detect storm water flows.[14][15][16]

The Petition also alleges the following:

> Farther downstream, the City of Albuquerque draws fifty percent or more of its drinking water from a surface diversion on the Rio Grande.[17] Consistent with this, the designated uses to be supported by New Mexico Water Quality Standards for the Rio Grande from the Cochiti Pueblo boundary to north of where runoff from Los Alamos' canyons enters the river include "primary contact" (that is, ingestion) and "public water supply."[18]
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> ... [t]he Rio Grande feeds Cochiti Lake, which is a very popular swimming location in the summer for residents of Albuquerque and others, according to the Army Corps of Engineers. http://krqe.com/2014/05/22/cochiti-lake-swim-beach-closed-for-memorial-day/
>
> ...-[h]e Rio Grande is also adjacent to Bandelier National Monument and makes up more than four miles of this Federal park's eastern boundary.
> https://www.lib.utexas.edu/maps/national_parks/bandelier_park97.pdf
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> Finally, although they are not threatened or endangered, the Rio Grande provides habitat for reintroduced river otters, which have been observed below the point where the Los Alamos canyons intersect the river.[4,19]

EPA has confirmed the accuracy of this information and agrees with Petitioners that the sensitive nature of the affected waters weighs in favor of designation.

3. Storm water runoff from these MS4s is not effectively addressed by other water quality programs

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[14] LANL lies in the upper Rio Grande watershed denoted by U.S. Geological Survey (USGS) hydrologic unit codes 13020101 and 1301000. http://water.usgs.gov/wsc/reg/13.html.

[15] City of Santa Fe, *Buckman Direct Diversion Project Water Quality FAQs*, http://bddproject.org/water-quality/water-quality-faqs/.

[16] http://bddproject.org/water-quality/early-notification-system/

[17] Albuquerque Bernalillo County Water Utility Authority, *Water Resources Management Strategy Implementation 2024 Water Conservation Plan Goal and Program Update* 2 (July 2013), http://www.abcwua.org/uploads/files/2024_Water_Conservation_Plan_Update.pdf (Figure 1).

[18] 20.6.4.114.A NMAC.

[19] James N. Stuart, *River Otter Reintroduction Update* (Feb, 23, 2012) (presentation by NMG&F to N.M. Game Commission).

The individual NPDES storm water permits for LANL and Los Alamos County do not cover storm water discharges from the urbanized features that generate much of the pollution. LANL's several requests for alternative compliance under its individual storm water permit repeatedly state that there is no mechanism under the Laboratory's individual storm water permit to control the water quality exceedances found in its sampling because the pollution is caused by runoff from urban features. Because the stormwater runoff from urban features is not industrial activity, it is not covered by LANL's individual stormwater permit. NPDES coverage of stormwater runoff from MS4s on LANL property can address pollutants from current or past activities that are not considered industrial activity, but may be contributing to water quality impairment.

V. DESIGNATION PROCEDURE

EPA plans to provide public notice of its "Preliminary Designation" (this document) and a 30 day public comment period via a Federal Register Notice in the near future specifically notifying the operators of the preliminarily-designated discharges. The Region will, after consideration of all public comments, issue a final designation decision. If the designation is confirmed, the Region will proceed with permitting process.

Since the facilities to be permitted in this case are Phase II MS4s, the regulations for Phase II MS4 permits at 40 CFR § 122.34 would apply. Permit requirements will also be developed to address the impacts of the discharges on the receiving and downstream waters.

VI. CONCLUSION

For the reasons outlined above, EPA has determined that this Preliminary Designation is appropriate under the CWA and its implementing regulations. Upon final designation of the storm water discharges specified above for an NPDES permit, Region 6 will proceed with development and issuance of NPDES permits for the Los Alamos area.

3/6/2015
Dated:

Samuel Coleman, P.E.
Acting Regional Administrator, Region 6

REFERENCES

1. A Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit

2. Los Alamos National Laboratory individual stormwater permit NM0030759.

3. http://quickfacts.census.gov/qfd/states/35/3542320.html

4. http://quickfacts.census.gov/qfd/states/35/3584740.html

5. http://www.census.gov/geo/reference/ua/urban-rural-2010.html, For Census 2000, the definition of an "urban cluster" is identical to that of an "urbanized area" except that the population of a cluster is at least 2,500 people, but fewer than 50,000 people."

6. Los Alamos National Laboratory, *Los Alamos National Laboratory Environmental Report 2012*, 1-1 and 1-2 (2012) (LA-UR-13-27065) (2012 Environmental Report).

7. State of New Mexico Water Quality Control Commission, *2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report,* Appendix A (303d/305b Report).

8. NMED, *Pajarito Plateau Assessment for the 2010-2012 Integrated Report* data set with PCBs and map of sampling stations http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/Pajarito/index.html (Pajarito Plateau Study).

9. Alternative Compliance Request 2 at 31-2; Los Alamos National Laboratory, *Alternative Compliance Request for S-SMA-.25* 28 (April 2013) (Alternative Compliance Request .25).

10. Los Alamos National Laboratory, Polychlorinated Biphenyls in Precipitation and Stormwater within the Upper Rio Grande Watershed 2 (May 2012) (LA-UR-12-1081) (PCB Report).

11. New Mexico Environment Department, Press Release: Environment Department Issues Notice of Violation and Penalty to Los Alamos County for Allowing Discharge of PCBs into Canyon from County's Annex (December 15, 2009) (Press Release LA County Violations).

12. This NMED sampling data was obtained via an Inspection of Public Records Act request. The data is included in the Appendix.

13. Los Alamos National Laboratory, Background Metals Concentrations and Radioactivity

in Storm Water on the Pajarito Plateau Northern New Mexico 2 (April 2013) (LA-UR-13-22841) (Metals Report).

14. LANL lies in the upper Rio Grande watershed denoted by U.S. Geological Survey (USGS) hydrologic unit codes 13020101 and 1301000. http://water.usgs.gov/wsc/reg/13.html.

15. City of Santa Fe, *Buckman Direct Diversion Project Water Quality FAQs*, http://bddproject.org/water-quality/water-quality-faqs/.

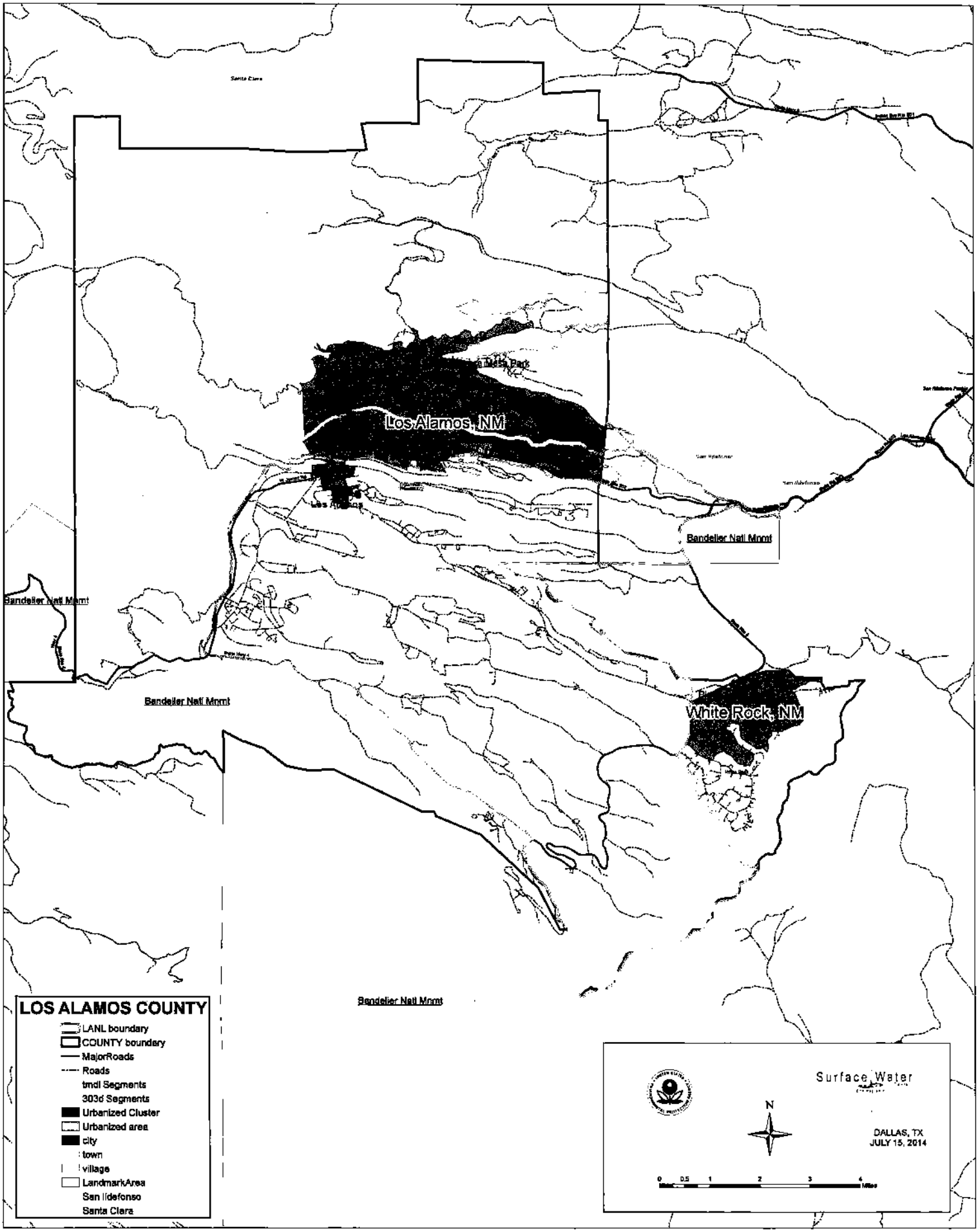
16. http://bddproject.org/water-quality/early-notification-system/

17. Albuquerque Bernalillo County Water Utility Authority, *Water Resources Management Strategy Implementation 2024 Water Conservation Plan Goal and Program Update* 2 (July 2013), http://www.abcwua.org/uploads/files/2024_Water_Conservation_Plan_Update.pdf (Figure 1).

18. 20.6.4.114.A NMAC.

19. James N. Stuart, *River Otter Reintroduction Update* (Feb, 23, 2012) (presentation by NMG&F to N.M. Game Commission).

Appendix 1: Los Alamos, LANL and NMDOT (State Hwy) Map


Los Alamos, NM
White Rock, NM
Bandelier Natl Mnmt
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Bandelier Natl Mnmt
Bandelier Natl Mnmt
LOS ALAMOS COUNTY
LANL boundary
COUNTY boundary
MajorRoads
Roads
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303d Segments
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LandmarkArea
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Santa Clara
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Miles

Appendix 2: Amigos Bravos Petition and Supporting Documents

Petition and supporting documents are available online at:
http://www.epa.gov/region6/water/npdes/publicnotices/nm/nmdraft.htm

A Petition by Amigos Bravos
for a Determination that Storm Water Discharges
in Los Alamos County
Contribute to Water Quality Standards Violations
and Require a Clean Water Act Permit

June 30, 2014

Ron Curry, Regional Administrator
EPA Region 6
1445 Ross Avenue, Suite 1200, Dallas, Texas 75202
gray.david@epa.gov

Dear Administrator Curry,

As the Regional Administrator of EPA Region 6, Amigos Bravos hereby petitions you for a determination, pursuant to 40 C.F.R. 122.26(a)(9)(i)(D), that non-de minimis, currently non-NPDES permitted storm water discharges in Los Alamos County are contributing to violations of water quality standards in certain impaired waters throughout the area, and therefore require a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402(p) of the Clean Water Act and/or designation as a municipal separate storm sewer system. *See* 33 U.S.C. §§ 1342(p)(2)(E), (p)(6); 40 C.F.R. §§ 122.26(a)(1)(v), (a)(9)(i)(D), (f)(2), (f)(4).

I. Regulatory Framework

In order to achieve the Clean Water Act's (CWA or the Act) fundamental goal of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters,"33 U.S.C. § 1251(a), EPA and states delegated authority to administer the Act must establish minimum water quality standards. 33 U.S.C. § 1313; 40 C.F.R. § 131.2. These standards define "the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses." 40 C.F.R. § 131.2. New Mexico has established, and EPA has approved, water quality standards pursuant to this requirement.

In order to ensure that such water quality standards will be achieved, no person may discharge any pollutant into waters of the United States from a point source without a National Pollutant Discharge Elimination System (NPDES) permit. 33 U.S.C. §§ 1311(a), 1362(12)(A). NPDES permits must impose water quality-based effluent limitations, in addition to any applicable technology-based effluent limitations, when necessary to meet water quality standards. 33 U.S.C. § 1311(b).

The Act defines "point source" as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit . . . from which pollutants are or may

be discharged." 33 U.S.C. § 1362(14). EPA's Clean Water Act regulations further specify that "discharge of a pollutant" includes "additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man." 40 C.F.R. § 122.2. Consequently, although storm water discharges are often characterized as "non-point" in nature, it is legally well settled that "[s]torm sewers are established point sources subject to NPDES permitting requirements." *Environmental Defense Center v. EPA*, 344 F.3d 832, 841 (9th Cir. 2003) *(citing Natural Resources Defense Council v. Costle*, 568 F.2d 1369, 1379 (D.C. Cir. 1977)). As EPA has stated, "[f]or the purpose of [water quality] assessments, urban runoff was considered to be a diffuse source or nonpoint source pollution. From a legal standpoint, however, most urban runoff is discharged through conveyances such as separate storm sewers or other conveyances which are point sources under the CWA." National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990, 47,991 (Nov. 16, 1990).

Despite the fact that storm water runoff channeled through a conveyance is a point source subject to the Act's permitting requirements, EPA did not actually regulate storm water through the NPDES program until Congress amended the statute in 1987 to explicitly require it, *see* 33 U.S.C. § 1342(p), and EPA promulgated its Phase I and II regulations in 1990 and 1999, respectively.[1] As a result, the Clean Water Act now requires NPDES permits for discharges of industrial and municipal storm water. 33 U.S.C. § 1342(p)(2). While these are the only categories of storm water discharges called out for regulation in the text of the statute, Congress also created a catch-all provision directing EPA to require NPDES permits for any storm water discharge that the Administrator or the State director determines "contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States." 33 U.S.C. § 1342(p)(2)(E); 40 C.F.R. § 122.26(a)(1)(v).

This catch-all authority – known as EPA's "residual designation authority" (RDA) – is a critical tool to ensure that problematic discharges of storm water do not go unregulated. In the preamble to its Phase II Storm water regulations, EPA described the need for this authority: "EPA believes . . . that individual instances of storm water discharge might warrant special regulatory attention, but do not fall neatly into a discrete, predetermined category. Today's rule preserves the regulatory authority to subsequently address a source (or category of sources) of storm water discharges of concern on a localized or regional basis."[2]

Citizens may petition EPA for designation of storm water sources for regulation under this authority. 40 C.F.R. § 122.26(f)(2) and (f)(4). In recent years, often acting in response to such petitions, EPA and delegated states have exercised this residual designation authority on multiple

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[1] National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990 (Nov. 16, 1990); National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722 (Dec. 8, 1999).

[2] National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. at 68,781.

[3] U.S. EPA Region IX, Request for Designation of MS4 Discharges on the Island of Guam for NPDES Permit Coverage (Feb. 2011), [illegible]

[4] National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. at 68,781.

occasions.[3]
Once EPA has made a finding or determination that a category of discharges meets the statutory criterion of "contribut[ing] to a violation of a water quality standard," it must designate that category for regulation, and those "operators shall be required to obtain a NPDES permit." 40 C.F.R. § 122.26(a)(9)(i)(D). In other words, "the Agency's residual designation authority is not optional." *In re Storm water NPDES Petition*, 910 A.2d 824, 835-36 (Vt. 2006). As EPA has explained, "designation is appropriate as soon as the adverse impacts from storm water are recognized." Letter from G. Tracy Mehan III, EPA Assistant Administrator, to Elizabeth McLain, Secretary, Vermont Agency of Natural Resources 2 (Sept. 16, 2003).[4]

EPA has not defined a threshold level of contribution to water quality standards violations that would suffice to make such a determination. However, the agency has advised delegated states that "it would be reasonable to require permits for discharges that contribute more than *de minimis* amounts of pollutants identified as the cause of impairment to a water body." *Id.*

In New Mexico, EPA Region VI is the permitting agency. Thus, the Region would make a determination under 40 C.F.R. § 122.26(a)(9) whether a storm water discharge is contributing to a water quality standards violation or is a significant contributor of pollutants. Once you receive an RDA petition requesting that EPA exercise this authority, the Agency must make a final decision on the petition within 90 days. 40 C.F.R. § 122.26(f)(5).

In responding to similar petitions filed last year, EPA Regions I, III and IX have indicated that they considered five factors. We do not concede that these five factors are consistent with the relevant provisions of the Clean Water Act or EPA's implementing regulations; however, they provide a useful framework for this analysis. The factors are:

1. Likelihood of exposure of pollutants to precipitation at sites in the categories identified in the petition;
2. Sufficiency of available data to evaluate the contribution of stormwater discharges to water quality impairment from the targeted categories of sites;
    a. Data with respect to determining causes of impairment in receiving water quality;
    b. Data available from establishment of Total Maximum Daily Loads;

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[3] U.S. EPA Region IX, Request for Designation of MS4 Discharges on the Island of Guam for NPDES Permit Coverage (Feb. 2011), available at http://www.epa.gov/region9/water/npdes/pdf/guam/Guam-ms4-residual-designation-memo.pdf; Vermont Agency of Natural Resources, Department of Environmental Conservation, Final Designation Pursuant to the Clean Water Act for Designated Discharges to Bartlett, Centennial, Englesby, Morehouse and Potash Brooks (Nov. 2009), available at http://www.vtwaterquality.org/stormwater/docs/swimpairedwatersheds/sw_rda_permit_FINAL.pdf; U.S. EPA Region I, Final Determination Under Section 402(p) of the Clean Water Act—Long Creek (Oct. 2009), available at http://www.epa.gov/region1/npdes/stormwater/assets/pdfs/LongCreekFinalResidualDesignation.pdf; U.S. EPA Region I, Residual Designation Pursuant to Clean Water Act—Charles River (Nov. 2008), available at http://www.epa.gov/region1/charles/pdfs/RODfinalNov12.pdf.

[4] All documents cited in this Petition and the attached Statement of Facts are provided in the Appendix, which is submitted as part of the Petition.

3. Whether other federal, state, or local programs adequately address the known stormwater discharge contribution to a violation of a water quality standard.[5]

Additional factors can be found in Addendum D to a Region VI document titled "FACT SHEET, August 29, 2003, Proposed Issuance of National Pollutant Discharge Elimination System (NPDES) Storm Water General Permit for Small Municipal Separate Storm Sewer Systems (MS4s)" [hereinafter "Region VI Fact Sheet"]. The Region VI Fact Sheet details the results of an effort by EPA to determine the need for MS4 coverage within the region. The factors listed in Addendum D were used to decide which MS4s would be included in the general permit. The factors are:

1) Does the MS4 discharge storm water to sensitive waters?

"Sensitive waters" generally include public drinking water intakes and their designated protection areas; swimming beaches and waters in which swimming occurs; shellfish beds; state-designated Outstanding Resource Waters; National Marine Sanctuaries; waters within Federal, State and local parks; and waters containing threatened or endangered species and their habitat. Discharges of storm water to sole-source aquifers will be considered by EPA Region 6 on a case-by-case basis.

2) Is the MS4 a significant contributor of pollutants to waters of the United States?

A municipal storm water discharge that has been identified as a "contributing source of pollutants" to a Clean Water Act section 303(d)-listed waterway will be considered a significant contributor of pollutants for purposes of designation decisions. A storm water discharger that is required to reduce loading through an EPA-approved Total Maximum Daily Load (TMDL) analysis shall also be considered a significant contributor of pollutants to waters of the United States.

3) Is the MS4 densely populated?

Population density is related to the level of human activity, and has been shown to be directly linked to total impervious land surfaces; impervious surfaces are directly related to pollutant loadings from storm water runoff. EPA is also taking into consideration whether or not the MS4 serves a larger seasonal or commuter population.

4) Has the MS4 experienced high population growth over the last 10 years?

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[5] Enclosure to Letter from H. Curtis Spalding, Regional Administrator, EPA Region I, to Jeffrey Odefey, Christopher Kilian, and Jon Devine 4 (March 11, 2014); Enclosure to Letter from Shawn M. Garvin, Regional Administrator, EPA Region III, to Jeffrey Odefey, Director of Storm water Programs, American Rivers 6 (March 12, 2014); Enclosure to Letter from Jared Blumenfeld, Regional Administrator, EPA Region IX, to Jeffrey Odefey, Director of Storm water Programs, American Rivers 5 (March 12, 2014) [hereinafter "March 2014 Letters"].

High population growth or growth potential means the local residential population has grown by 10% or more, based upon the latest Census Bureau information. A discussion on selection of 10% as a high growth rate outside urbanized areas was included in the proposed Phase II regulations published January 9, 1998 (63 FR 1561).

5) Is the MS4 contiguously located to an Urbanized Area?

Jurisdictions that are directly adjacent to a U.S. Census Bureau-defined Urbanized Area will be considered to have potential impacts on a neighboring regulated municipality.

6) Is the MS4 physically interconnected to another MS4?

As required by 40 CFR 123.35 (b)(4), an MS4 located outside a UA that contributes substantially to the pollutant loadings of a physically interconnected MS4 already regulated under Phase II must be included in the program. To be "physically interconnected," the MS4, including roads with drainage systems and municipal streets, is physically connected directly to a municipal separate storm sewer of another entity.

7) Is the storm water runoff from this MS4 effectively addressed by other water quality programs?

EPA will consider, on a case-by-case basis, whether the storm water runoff from a potentially designated MS4 is effectively addressed under other regulations or programs, such as the Coastal Zone Act Reauthorization Amendments, the National Estuary Program under Clean Water Act section 320, and/or other non-point source programs. Information in support of this criterion should be provided directly to EPA Region 6 by the candidate MS4.

Region VI Fact Sheet at 51-3 (Addendum D). In the Fact Sheet EPA describes the analytical process it used: "water quality considerations and overall impacts of storm water discharges will be given more 'weight' than population characteristics in this decision-making process." *Id.* at 53.

II. Factual Background

A statement that summarizes the undisputed facts and some relevant documents is attached as Exhibit A, and is incorporated herein by reference. A summary of this statement is set forth below:

A. LAY OF THE LAND

Los Alamos County in located in north-central New Mexico, approximately 60 miles north northeast of Albuquerque and 25 miles northwest of Santa Fe. Statement of Facts in Support of Amigos Bravos' Petition at 1 (Paragraph 1) (Attached as "Exhibit A") [hereinafter "Statement of

Facts"]. The main population center is called the Los Alamos Townsite. *Id.* (Paragraph 2). The other densely inhabited place in the County is the community of White Rock Canyon. *Id.* Los Alamos County is also home to the 36 square mile Los Alamos National Laboratory (LANL or the Laboratory). *Id.* (Paragraph 4).

The Los Alamos Townsite and the urbanized areas of LANL sit on the Pajarito Plateau. *Id.* (Paragraph 5). The Pajarito Plateau consists of a series of finger-like mesas separated by deep east-to-west-oriented canyons cut by streams. *Id.* (Paragraph 6). Most Laboratory and community developments are confined to the mesa tops. *Id.* Urban landscapes at the Townsite and at LANL include parking lots, roads, and structures. *Id.* (Paragraph 7).

LANL property contains all or parts of seven primary watersheds that drain directly into the Rio Grande. *Id.* at 2 (Paragraph 11). Listed from north to south, these watersheds are: Los Alamos, Sandia, Mortandad, Pajarito, Water, Ancho, and Chaquehui Canyons. The Los Alamos Townsite and the urbanized areas of LANL drain into five canyons: Los Alamos, Pueblo, Sandia, Bayo and Mortandad Canyons. *Id.*

B. WATER IMPAIRMENT

The Statement of Facts provides a detailed discussion of urban-related surface water pollution downgradient from LANL and the Los Alamos Townsite.

1. Several Canyons are Impacted by Runoff Pollution

Los Alamos Canyon within LANL property is impaired for gross alpha (a measurement of overall radioactivity), PCBs, aluminum, copper, mercury, and zinc. *Id.* (Paragraph 16). New Mexico Environment Department (NMED) data show levels of PCBs in Los Alamos Canyon downgradient from most of the urbanized areas at LANL to be over 11,000 times greater than the New Mexico Human Health water quality criteria and 51 times greater than the New Mexico Wildlife Habitat water quality criteria. *Id.* at 3 (Paragraph 18).

Sandia Canyon is impaired for PCBs, aluminum, copper, gross alpha, and mercury. *Id.* (Paragraph 19). Post-development erosion and sedimentation are listed as sources of impairment in the 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report [hereinafter "303b/305b Report"]. Statement of Facts at 3 (Paragraph 19). NMED data show levels of PCBs in Sandia Canyon below much of the urbanized areas at LANL to be over 14,000 times greater than the New Mexico Human Health water quality criteria and 66 times greater than the New Mexico Wildlife Habitat water quality criteria. *Id.* (Paragraph 20). In a 2013 request to EPA for alternative compliance with its Clean Water Act discharge permit, LANL explains that copper, zinc, and PCB storm water pollution above New Mexico water quality standards was from urban storm water sources. *Id.* at 7 (Paragraph 56).

Mortandad Canyon is impaired for aluminum, copper and gross alpha. *Id.* at 2 (Paragraph 15). Impervious surface/parking lot runoff, post-development erosion and sedimentation, and watershed runoff following forest fire are listed as sources of impairment in the 303b/305b Report. *Id.*

Pajarito Canyon is impaired for gross alpha, aluminum, PCBs, and copper. *Id.* at 3 (Paragraph 21). Post-development erosion and watershed runoff following forest fire are listed as sources of impairment in the 303b/305b Report. *Id.*

Pueblo Canyon is impaired for gross alpha, PCBs, aluminum, copper, and zinc. *Id.* at 2 (Paragraph 13). Industrial/commercial site storm water discharge, post-development erosion and sedimentation are listed as sources of impairment by the NMED in the 303b/305b Report. *Id.* NMED data show levels of PCBs in Pueblo Canyon right in the middle of the Los Alamos urbanized areas to be over 3,500 times greater than the New Mexico Human Health water quality criteria and 16 times greater than the New Mexico Wildlife Habitat water quality criteria. *Id.* (Paragraph 14).

2. Urban Runoff is the Cause

The data and studies summarized in the Statement of Facts firmly link the water quality impairment downgradient from the Pajarito Plateau to storm water runoff from urban areas.

LANL conducted two detailed studies of storm water runoff from the Pajarito Plateau. One study focused on PCB contamination and the second focused on metals contamination. In these studies LANL collected samples from non-urban, non-laboratory influenced reference sites as well as from sites representing runoff from the urbanized areas of the Los Alamos Townsite. Neither the reference nor the urban sites were influenced by point source discharges from LANL's individual storm water permit. These studies show a significant contribution of both PCBs and metals from urban runoff on the Pajarito Plateau.

The LANL PCB study found 40 of the 41 Los Alamos urban storm water samples were above the New Mexico human health water quality criteria for PCBs and 19 of the 41 Los Alamos urban storm water samples were above the New Mexico wildlife habitat water quality criteria for PCBs. *Id.* at 4 (Paragraphs 33-34). The LANL report concluded that suspended PCBs carried by urban runoff from the Los Alamos Townsite were 10 to 200 times more enriched with PCBs than at non-urban influenced Pajarito Plateau sites. *Id.* at 5 (Paragraph 36).

In 2007 the NMED collected storm water samples from urban sites containing PCBs as high as 255 times the state's PCB human health water quality criteria. *Id.* at 8 (Paragraph 64). NMED sampling data in 2006 and 2007 show levels of PCBs in storm water draining off of urban areas in Los Alamos Townsite to be more than 34,000 times greater than the NM Human Health water quality criteria. *Id.* (Paragraph 65).

A Laboratory study of metals contamination in storm water runoff from urban areas at LANL and the Los Alamos Townsite found exceedances of New Mexico water quality criteria for cadmium, copper, and zinc. *Id.* at 6 (Paragraphs 43-50). In addition, the LANL metals report demonstrated that values for copper, zinc and nickel in urban storm water runoff in Los Alamos County substantially exceeded non-urban influenced Pajarito Plateau storm water concentrations. *Id.* at 6-7 (Paragraphs 49-51).

As noted above, in its 303b/305b Report the State of New Mexico found that water quality in Sandia, Mortandad, Pajarito, and Pueblo Canyons is impaired because of urban-related causes such as impervious surfaces, parking lots, construction and development. *Id.* at 2-3 (Paragraphs 13, 15, 19, 21). NMED data also shows substantial water quality impairment in Los Alamos Canyon downgradient from most of the urbanized areas at LANL. *Id.* at 8 (Paragraph 64).

The LANL studies of PCB and metal contaminated runoff tie these contaminants to the urban areas of the Pajarito Plateau. In LANL's 2013 request to EPA for alternative compliance with its Clean Water Act discharge permit, the Laboratory argues that the cause of its exceedances of New Mexico water quality criteria for zinc and copper is urban runoff from sources such as motor oil accumulation on parking lots, brake pad and tire material released on pavement, galvanized fencing, culverts and other building materials. *Id.* at 5 (Paragraphs 38-41).

III. Analysis

Los Alamos County and LANL have a storm water pollution problem. The NMED's 2006 and 2007 data shows dramatic exceedances of the state's PCB human health water quality criteria. The state's 303b/305b Report documents many more exceedances of standards – for a variety of pollutants and locations – and identifies storm water runoff as a major cause. LANL's own documents confirm these findings and identify urban runoff as the culprit.

A. EVALUATION FACTORS FROM MARCH 2014 LETTERS

The evaluation factors from the March 2104 Letters confirm that this Petition should be granted.

Factor one is the **"[l]ikelihood of exposure of pollutants to precipitation at sites in the categories identified in the petition."** The 303b/305b Report and the LANL reports show that exceedances of state water quality criteria are associated with storm water; in other words, precipitation comes in contact with sites within Los Alamos County containing pollutants that end up in the storm water flow.

The Petition also meets the second factor, **"sufficiency of available data to evaluate the contribution of stormwater discharges to water quality impairment from the targeted categories of sites."** The first sub-factor is the sufficiency of "[d]ata with respect to determining causes of impairment in receiving water quality." The 2006/2007 NMED data, the 303b/305b Report, the LANL PCB and metals reports and the LANL requests for alternative compliance all provide data and/or analysis that support the Petition. The second sub-factor, the sufficiency of "[d]ata available from establishment of Total Maximum Daily Loads," is not relevant here as there are no TMDLs for the water-bodies at issue.

Finally, the third factor, **"[w]hether other federal, state, or local programs adequately address the known stormwater discharge contribution to a violation of a water quality standard,"** is also met. As noted above, there is no TMDL that addresses this storm water-borne pollution. Further, the individual permits for LANL and Los Alamos County do not cover storm water discharges from the urbanized features that generate the pollution. The LANL requests for

alternative compliance repeatedly state that there is no mechanism under the Laboratory's individual storm water permit to control the water quality exceedances found in their sampling because the pollution is caused by runoff from urban features.

EPA's Multi Sector General Permit (MSGP) provides no protection from the sources of pollution involved here. The MSGP applies to operators of storm water discharges associated with thirty different industrial activities, such as scrap recycling facilities, auto salvage yards, and steam electric generating facilities. However, the MSGP does not cover general urban storm water discharges such as the discharges from parking lots and roads that are causing the toxic runoff in Los Alamos County.

B. FACTORS FROM REGION VI FACT SHEET

Application of the factors in the Region VI Fact Sheet also supports this petition.

Factor one is, **"[d]oes the MS4 discharge storm water to sensitive waters?"** Sub-factors identified by EPA include public drinking water intakes, swimming areas, federal and state parks and threatened or endangered species. Factor one is met for a variety of reasons.

Regarding intake for public drinking water systems, both Santa Fe's and Albuquerque's public water intakes are potentially affected. The runoff from Los Alamos is enough of a public health concern to the downstream City of Santa Fe that it shuts down its surface water diversion on the Rio Grande (the receiving water for runoff from Los Alamos County) used to supply drinking water when storm water flows from Los Alamos are predicted. Statement of Facts at 8-9 (Paragraph 66). Farther downstream, the City of Albuquerque draws fifty percent or more of its drinking water from a surface diversion on the Rio Grande. *Id.* at 9 (Paragraph 67). Consistent with this, the designated uses to be supported by New Mexico Water Quality Standards for the Rio Grande from the Cochiti Pueblo boundary to north of where runoff from Los Alamos' canyons enters the river include "primary contact" (that is, ingestion) and "public water supply." *Id.* (Paragraph 68).

Regarding the sub-factor for swimming areas, the Rio Grande feeds Cochiti Lake, which is a very popular swimming location in the summer for residents of Albuquerque and others. *Id.* (Paragraph 69).

Regarding the sub-factor for federal and state parks, the Rio Grande is adjacent to Bandelier National Monument and makes up more than four miles of its eastern boundary. *Id.* (Paragraph 70).

Finally, although they are not threatened or endangered, the Rio Grande provides habitat for re-introduced river otters, which have been observed below the point where the Los Alamos canyons intersect the river. *Id.* (Paragraph 71).

Factor two is, **"[i]s the MS4 a significant contributor of pollutants to waters of the United States?"** The Region VI Fact Sheet, in explaining this factor notes, "[a] municipal storm water discharge that has been identified as a 'contributing source of pollutants' to a Clean Water Act

section 303(d)-listed waterway will be considered a significant contributor of pollutants for purposes of designation decisions." Region VI Fact Sheet at 52. The 303b/305b Report identifies storm water discharges from Los Alamos County as causes for the impairment to several water courses discharging into the Rio Grande. Further, the LANL PCB and metals reports as well as its request for alternative compliance confirm that exceedances of water quality standards are caused by storm water discharges from Los Alamos County.

Factor three, **"[i]s the MS4 densely populated?"** is met because Los Alamos has been designated as an "urban cluster," based on the results of the 2010 census. 77 Fed. Reg. 18,651, 18,662 (Mar. 27, 2012). In addition Los Alamos Townsite meets the small MS4 definition as detailed in 40 CFR 122.32 in that it has a population greater than 10,000 and a population density of greater than 1,000 per square mile. Statement of Facts at 1 (Paragraph 2). Adding to the density in Los Alamos County is its growing commuter population. As of the year 2000 the commuter population in the county was 8,673 and had grown steadily from 1980 through 2000. *Id.* (Paragraph 3). By 2010 the commuter population had grown to 9,072. *Id.*

Factor three, **"[h]as the MS4 experienced high population growth over the last 10?"** is not met based on permanent population but the commuter population has grown steadily, as noted above.

Factors five and six – whether contiguous to an urbanized area, and whether physically interconnected to another MS4 -- are not met. However, as the Region VI Fact Sheet explains at page 53: "water quality considerations and overall impacts of storm water discharges will be given more 'weight' than population characteristics in this decision-making process."

Factor seven, **"Is the storm water runoff from this MS4 effectively addressed by other water quality programs?"** is the same as the third factor from the March 2014 Letters. This factor is met as noted above.

C. THE PETITION SHOULD BE GRANTED

Petitioner Amigos Bravos, and others, have repeatedly requested LANL and Los Alamos County to address this pollution and also requested that EPA Region VI mandate such efforts. MS4 coverage is required to address this pollution.

Based on the well-documented water quality impairment caused by urban runoff from Los Alamos County sites, Amigos Bravos requests that EPA require an individual NPDES permit (or permits)[6] for these discharges into municipal separate storm sewer systems. In the alternative, Amigos Bravos requests that EPA designate the systems through which these discharges travel

[6] Because of its existing monitoring infrastructure and baseline studies as well as the unique concerns associated with storm water flows mobilizing historic contamination from the Lab, Amigos Bravos believes LANL should have an individual MS4 permit with appropriate treatment and monitoring requirements. See Letter from Rachel Conn to William Honker (June 30, 2014) (copy provided in the Appendix). However, whatever form the permit takes -- whether general or individual – EPA has a responsibility to protect water quality by subjecting urban stormwater from the Los Alamos to Clean Water Act regulation.

as a municipal separate storm sewer system under the Act and add it to the general permit.

For all the foregoing reasons, the Petition has merit and should be granted.

Sincerely,

/s/ Rachel Conn

Rachel Conn
Projects Director
Amigos Bravos

Cc: William K. Honker
Claudia V. Hosch
Brent Larsen
Nancy K. Stoner
Michael H. Shapiro
Sarah Holcomb, NMED

AMIGOS BRAVOS *Friends of the Wild Rivers*
P.O. Box 238, Taos, NM 87571
Telephone: 575.758.3474
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Via USPS and email (Honker.William@epa.gov)

June 30, 2014

William K. Honker, Division Director
Water Quality Protection Division
U.S. EPA, Region VI
Fountain Place, 12th Floor, Suite 1200
1445 Ross Avenue
Dallas, TX 75202-2733

Dear Mr. Honker,

Under separate cover, Amigos Bravos is petitioning the Regional Administrator for a determination that storm water discharges in Los Alamos County are contributing to violations of water quality standards and, therefore, require NPDES permits pursuant to Section 402(p) of the Clean Water Act and/or designation as a municipal separate storm sewer system. Our petition is supported by extensive data and analysis from the New Mexico Environment Department and the Los Alamos National Laboratory. We firmly believe this petition has merit and should be granted.

If the petition is granted, your division will have the task of implementing the decision. In this letter I would like to share with you our vision of how MS4 coverage for Los Alamos could be accomplished. Urban storm water pollution from Los Alamos should be covered by an individual permit.

Both the nature of the pollution and the current monitoring infrastructure that is unique to this area support the case for coverage under an individual permit. The urban storm water runoff from developed areas at LANL and the Los Alamos Townsite are additionally harmful because of LANL's history of releases. Many of the canyons on the Pajarito Plateau have old dump sites called solid waste management units (SWMUS), which continue to release pollution. Annual reports for LANL's individual industrial storm water permit (IP) detail the scope of continuing storm water exceedances from these SWMUS. Specifically, of the 246 sites for which samples were collected, 233 of them had releases that exceeded water quality standards.[1] Some of these

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[1] Los Alamos National Laboratory, *Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2013, NPDES Permit No 0030759* 154 (March

exceedances continue to be over 32,000 times greater than water quality standards.[2] The urban storm water that is discharged into these canyons exacerbates and mobilizes this historic toxic pollution. The unique contamination issues associated with Los Alamos merit the individual treatment and monitoring opportunities available under an individual permit.

Another reason why an individual permit is appropriate in this case is LANL, as demonstrated by its detailed background study reports on PCBs and Metals, as well as by its extensive monitoring under the IP, has the needed monitoring infrastructure already in place as well as an extensive baseline to compare monitoring results collected under an individual MS4 permit.

An individual permit could provide for needed monitoring and specific treatment options that are not available under the general small MS4 permit. Appropriate treatment options for Los Alamos could be similar to those proposed for the individual MS4 permit for Charles County, Maryland under which treatment of twenty percent of the County's impervious surface would be required by the end of the 5-year permit term.[3]

We look forward to having a constructive dialogue with you and your staff on this topic.

Sincerely,

Rachel Conn
Projects Director
Amigos Bravos

Cc: Claudia Hosch
Brent Larsen

2014) (table 8.2), http://permalink.lanl.gov/object/tr?what=info:lanl-repo/eprr/ERID-254067.

[2] Los Alamos National Laboratory, *Renewal Application for NPDES Permit Number NM0030759, Individual Permit for Storm Water Discharges from Solid Waste Management Units and Areas of Concern, Volume 1 of 2* 133 (March 2014) (Table 10), http://permalink.lanl.gov/object/tr?what=info:lanl-repo/eprr/ERID-254864.

[3] *Maryland Department of the Environment Draft National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit* 8 (June 18, 2014) (Draft permit for Charles County, Maryland. Permit No MD0068365, http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/Charles%20Permit%20tentative%20determination.pdf.

Los Alamos
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Date: November 20, 2014
Symbol: ENV-DO-14-0354
LA-UR: 14-28913, 14-28375
Locates Action No.: N/A

Mr. Brent Larsen
Chief, NPDES Permits and Technical Assistance Section (6WQ-PP)
U. S. Environmental Protection Agency (EPA), Region 6
1445 Ross Avenue
Dallas, Texas, 75202-2733

Dear Mr. Larsen:

Subject: Supplemental Information Regarding the Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit

Thank you for the opportunity to provide information regarding Los Alamos National Laboratory (LANL or the Laboratory) and the Amigos Bravos Petition for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit (the "Petition"). The Department of Energy and Los Alamos National Security, LLC ("DOE/LANS") appreciate and share Amigos Bravos' commitment to water quality in New Mexico. DOE/LANS want to ensure EPA has sufficient and accurate information upon which to base its decision on the Petition.

DOE/LANS have prepared the attached comments on the Statement of Facts submitted by Amigos Bravos in support of its Petition (Enclosure 1). DOE/LANS is also providing a description of its existing storm water programs, the areas of the Laboratory that might be considered urban in nature (Enclosure 2), and of their view regarding the factors used to determine whether a small MS4 permit is appropriate.

I. Storm Water Programs

DOE/LANS implement multiple storm water programs focused primarily on applicable NPDES permits. DOE/LANS operate under the Multi-Sector General Permit ("MSGP"), the Construction General Permit ("CGP"), and an Individual Permit (IP) which regulates storm water discharges from 405 solid waste

management units ("SWMUs") or areas of concern ("AOCs"). LANS storm water personnel maintain required documentation and perform routine inspections at all regulated sites and facilities pursuant to these permits, and maintain an extensive system of sampling stations and storm water control structures. In addition, LANS staff participate in and conduct on-site/off-site seminars, informational meetings, facility tours, and training sessions regarding discharges of storm water and regulatory requirements.

The MSGP at LANL regulates storm water discharges from metal fabrication, power generation, asphalt production (this facility is subject to effluent limits), recycling operations, transportation facilities, a nonferrous foundry and hazardous waste management units. DOE/LANS manage approximately 30 facilities that are regulated under the MSGP. These facilities are routinely inspected and their storm water discharges are monitored for benchmark parameters and water quality standards. In accordance with the 2008 MSGP and through successful implementation of MSGP requirements during the last five years, multiple benchmark parameter and impaired water constituents have been eliminated from further monitoring because analytical data indicate that concentrations of benchmark parameters are below target levels identified in the MSGP.

The CGP program applies to clearing, grading, excavating, and stockpiling performed in connection with construction activity that disturbs one or more acres or less than one acre of land that is part of a common plan of development that will ultimately disturb one or more acres of land. Since February 2012 when the current CGP was issued, DOE/LANS have submitted 25 NOIs to EPA, prepared over 65 storm water pollution prevention plans ("SWPPPs"), and have completed over 1900 site inspections. Each regulated site has a SWPPP and best management practices are employed.

The IP directs DOE/LANS to monitor storm water discharges from SWMUs and AOCs at specified sampling points. The sites regulated under the IP are a subset of the SWMUs and AOCs that are being addressed under the Resource Conservation and Recovery Act 2005 Compliance Order on Consent ("Consent Order") issued by the New Mexico Environment Department. The majority of the sites covered by the IP are remotely located and are not near current industrial activities. Finally, the IP requires, among other things, installation of control measures, monitoring, and corrective action for exceedences of target action levels. Under the IP, numerous storm water controls have been engineered and constructed.

DOE/LANS storm water programs demonstrate commitment to protecting surface waters at the Laboratory. Significant work has been completed and additional work is underway to reduce discharges of storm water at the Laboratory. For example, the completion of the Sandia Wetland Stabilization Project will reduce the potential for migration of contaminated sediments and provide the necessary controls for attainment of the dissolved copper standard in the Upper Sandia Assessment Unit. This assessment unit receives water from the most densely populated area at the Laboratory (Technical Area 3, discussed below). Detention ponds, low-head weirs, stabilization of disturbed areas, and numerous other storm water controls are installed and maintained yearly.

II. Urban Areas or Urban Clusters

The Laboratory footprint is approximately 36 square miles of mostly undeveloped land. The two areas that could potentially be characterized as urban clusters or developed in nature and that are also served by municipal storm sewer infrastructure are the Technical Area ("TA") 3 area[1] and the western one-third of the Pajarito Corridor. These areas are shown in Enclosure 2.

The TA-3 area is the location of, among other things, administrative buildings, numerous laboratory facilities, craft shops, several parking lots, a cafeteria, a New Mexico Park & Ride transfer station and two multi-story parking structures. Approximately 2900 employees work in facilities located within TA-3.

The western one-third of the Pajarito Corridor includes TAs 48, 55, 50, 63, 66, 35 and 52 (these TAs are listed roughly as one would encounter them if traveling eastbound on Pajarito Road with the exception of TAs 35 and 52, which are accessed via TA-55). These TAs include within their boundaries the plutonium facility, radiological and chemical laboratories, administrative and office buildings, craft shops, the Radioactive Liquid Waste Treatment Facility, and multiple parking lots. Approximately 2300 employees work in these areas. A map outlining the geographic boundaries of TA-3 and the western one-third of the Pajarito Corridor is attached.

The remainder of the Laboratory consists of dispersed facilities, open space in which firing sites are located and undeveloped, unoccupied land. Many of these facilities and sites are regulated under the MSGP, the IP or the 2005 Consent Order. The majority of construction projects at the Laboratory are regulated under the CGP. Additionally, the Energy Independence and Security Act requires federal development or redevelopment projects with a footprint that exceeds 5,000 square feet to maintain or restore to the maximum extent technically feasible the predevelopment hydrology of the property. MS4 regulation of undeveloped areas or sites outside of the TA-3 area and the western one-third of the Pajarito corridor, and areas or sites already regulated by the IP, Consent Order, or both, is not necessary or appropriate.

III. Factors Addressed in the Petition

The Petition lists two sets of factors used to determine whether a small MS4 permit should be required. The first set is derived from EPA response letters denying similar petitions in EPA Regions I, III and IX. The second is from a 2003 fact sheet published by Region VI when it proposed its small MS4 general permit. In addition to these factors, EPA's Office of Water also lists five factors in a fact sheet published in 2012 (EPA 833-F-00-003). In the main, the factors are similar and focus on current and forecasted populations, discharges to sensitive waters, discharges of pollutants and the adequacy of existing programs (discussed above).

With respect to populations, the number of residents of Los Alamos County is stable or decreasing. Employment levels at the Laboratory have similarly remained stable or decreased. These numbers are expected to remain the same if not decrease further.

[1] For ease of description, the adjacent and developed area of TA-60 is grouped with TA-3.

With respect to sensitive waters and discharges, five canyons are identified by Amigos Bravos as impaired from, at least in part, discharges from the Laboratory or Los Alamos County: Los Alamos, Sandia, Mortandad, Pajarito and Pueblo. Amigos Bravos listed the probable causes and sources of impairment based on the 2012-2014 303d/305b Integrated Report ("IR"); however, the 2014-2016 IR makes significant changes to those causes and sources. Copper, zinc and mercury were removed as probable constituents in several canyons and the probable source lists were removed and replaced with "Source Unknown". Probable sources are to be developed by the New Mexico Environment Department in the TMDL planning process. Details regarding each canyon's probable cause and source of impairment are provided in the attached comments on Amigos Bravos' Statement of Facts. Generally, the most recent IR listings tend to show a reduction in the constituents causing impairments and uncertainty regarding sources.

Finally, DOE/LANS are unaware of data reflecting Laboratory impacts on any drinking water system. The Los Alamos County 2013 Water Quality Report, summarizes the most recent monitoring results required by EPA's Safe Drinking Water Act program. The water in Los Alamos County meets all federal and state drinking water quality standards. Additionally, the City of Santa Fe in cooperation with LANS/DOE and NMED monitor Buckman Wells 1, 6 and 8 for LANL-derived contaminants on a quarterly basis. Samples are analyzed for radionuclides, general inorganic chemicals, metals, high explosives and organics. Data collected from 2001-2013 indicate no LANL-derived constituents are present in these wells.

IV. Conclusion

DOE/LANS appreciate the opportunity to provide this information and looks forward to participating fully in the decision making process on the Amigos Bravos Petition.

Sincerely,

Alison M. Dorries
Division Leader
Environmental Protection Division
Los Alamos National Security LLC

Sincerely,

Gene E. Turner
Environmental Permitting Manager
Environmental Projects Office
Los Alamos Field Office
U.S. Department of Energy

AMD:GET:TWL/kt

Enclosures: (1) Response to the Statement of Facts
(2) LANL NPDES MS4 Boundary Proposal

Cy: Bryan Aragon, Los Alamos County, (E-File)
Gene E. Turner, NA-LA, (E-File)
Kirsten Laskey, NA-LA, (E-File)
Lisa Cummings, NA-LA, (E-File)
Carl A. Beard, PADOPS, (E-File)

Cy (continued):
Michael T. Brandt, ADESH, (E-File)
Raeanna Sharp-Geiger, ADESH, (E-File)
Alison M. Dorries, ENV-DO, (E-File)
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ENCLOSURE 1

Response to the Statement of Facts

ENV-DO-14-0354

LA-UR-14-28913

Date: NOV 2 0 2014

Response to the Statement of Facts

The Amigos Bravos Petition for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit included a "Statement of Facts". Below are responses to the sequentially numbered statements, where clarification or additional information is applicable. The provided information is a cooperative effort between DOE/LANS and Los Alamos County.

2. According to the 2010 Census, the county has a population of 17,950. The main population center is called the Los Alamos Townsite. The Townsite is a Census Designated Place (CDP) and according to the 2010 Census the population of the CDP was 12,019. According to the 2010 Census, the density of the Los Alamos Townsite CDP is 1,078.7 persons per square mile. The other densely inhabited place in the County is the community of White Rock Canyon, which is also a CDP. According to the 2010 Census the population of White Rock Canyon is 5,725 and the density is 811.8 persons per square mile. 2010 Census, http://quickfacts.census.gov/qfd/states/35/3542320.html

The 1990 population for Los Alamos County was 18,115, the 2000 population was 18,343, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County is 17,798. This shows that there has been very little growth to the County over the last twenty years. The persons per square mile in 2010 was 164 for the overall County.

6. The Pajarito Plateau consists of a series of finger-like mesas separated by deep east-to-west-oriented canyons cut by streams. The mesa tops range in elevation from approximately 7,800 feet on the flanks of the Jemez Mountains to about 6,200 feet at the edge of White Rock Canyon. Most Laboratory and community developments are confined to the mesa tops.

The majority of both the Laboratory and Los Alamos Townsite are confined to the mesa tops.

13. Pueblo Canyon is impaired for Gross Alpha, PCBs, Aluminum, Copper, and Zinc. Industrial/commercial site storm water discharge, post-development erosion and sedimentation are listed as sources of impairment.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

The report was adopted by the WQCC on September 9, 2014 and forwarded to EPA Region VI for approval.

Copper is not listed as a cause of impairment for the main stem of Pueblo Canyon from the headwaters to Los Alamos Canyon.

14. New Mexico Environment Department (NMED) data presented in NMED's Pajarito Plateau Assessment show levels of PCBs in Pueblo Canyon right in the middle of the urbanized areas at LANL and at Los Alamos Townsite (sampling station EO55) to be over 3,500 times greater than the New Mexico Human Health WQC and 16 times greater than the New Mexico Wildlife Habitat WQC.

The NMED Pajarito Plateau Assessment identifies a sample that was taken within Pueblo Canyon at the levels indicated, but this sample was not taken at sampling station E055. Also, none of the urbanized areas at LANL discharge to Pueblo Canyon.

15. Mortandad Canyon is impaired for Aluminum, Copper and Gross Alpha. Impervious surface/parking lot runoff, post-development erosion and sedimentation, and watershed runoff following forest fire are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 238.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

16. Los Alamos Canyon within LANL property is impaired for Gross Alpha, PCBs, Aluminum, Copper, Mercury, and Zinc. *Id.* at 125 and 127.

Copper and zinc are not listed as a cause of impairment for the main stem of Los Alamos Canyon located within LANL property. In the 2014-2016 listing cycle, mercury was removed as a cause of impairment in the assessment unit below DP Canyon to the LANL boundary.

19. Sandia Canyon is impaired for PCBs, Aluminum, Copper, Gross Alpha, and Mercury. Post-development erosion and sedimentation are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 250-51.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

Mercury is not listed as a cause of impairment in Sandia Canyon. Copper is no longer listed as a cause of impairment in the lower assessment unit of Sandia Canyon.

21. Pajarito Canyon is impaired for Gross Alpha, Aluminum, PCBs, and Copper. Post-development erosion and watershed runoff following forest fire are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 240-43.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

Copper is not listed as a cause of impairment for any of the assessment units within Pajartio Canyon.

23. The target action levels (TALs) developed in the LANL IP are based on and equivalent to New Mexico State water quality criteria. LANL IP at 3 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

37. The LANL PCB Report shows that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters. The PCB Report calculated the baseline value for total PCBs in storm water runoff from the Los Alamos Townsite to be 98 ng/L, which is substantially greater than the baseline value of 11.7 ng/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.* at 49, 64.

The PCB Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters.

39. Studies have shown that motor oil accumulation on parking lots that then is discharged during storm events is a large contributor of zinc in storm water. *Id.* at 15.

The referenced LANL Alternative Compliance Request cites a study identifying that motor oil contains zinc, and that motor oil accumulating on paved surfaces contributes to an industrial facility's storm water discharge. It does not state that motor oil accumulation on parking lots that then is discharged during storm events is a large contributor of zinc in storm water.

47. The maximum value for dissolved cadmium in urban runoff samples from LANL and Los Alamos Townsite was 0.894 ug/L. *Id.* at 33. The TAL and NM WQC for dissolved cadmium is 0.6 ug/L. LANL IP at 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

48. LANL sampling found concentrations of dissolved copper in Los Alamos urban storm water discharges at values well above the NM WQC. The maximum value for dissolved copper in urban runoff samples from LANL and Los Alamos Townsite was 31.8ug/L and the mean value was 10.17 ug/L. Metals Report at 34. The TAL and NM WQC for dissolved copper is 4.3 ug/L. LANL IP at 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

49. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of copper to receiving waters. The Metals Report calculated the baseline value for dissolved copper in storm water runoff in Los Alamos County to be 32.3 ug/L, which is substantially greater than the baseline value of 3.43 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. Metals Report at 17, 37.

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of copper to receiving waters.

50. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of zinc to receiving waters. The Metals Report calculated the baseline value for dissolved zinc in storm water runoff in Los Alamos County to be 1,120 ug/L, which is substantially greater than the baseline value of 109 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.*

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of zinc to receiving waters.

51. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of nickel to receiving waters. The Metals Report calculated the baseline value for dissolved nickel in storm water runoff in Los Alamos County to be 7.57 ug/L, which is substantially greater than the baseline value of 3.53 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.*

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of nickel to receiving waters.

52. LANL sampling found concentrations of dissolved zinc in Los Alamos urban storm water discharges at values well above the NM WQC. The maximum value for dissolved zinc in urban runoff samples from LANL and Los Alamos Townsite was 882 ug/L and the mean value was 181 ug/L. *Id.* at 34. The TAL and NM WQC for dissolved copper is 42 ug/L. LANL IP 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

53. LANL, in their 2013 Alternative Compliance request to EPA, reports that there is copper storm water pollution above NM WQC from urban development in Sandia Canyon. Alternative Compliance Request .25 at 15.

The referenced LANL Alternative Compliance Request reports that copper values exceed TALs. It does not state values exceed NM WQC.

55. LANL reports in their 2013 Alternative Compliance request to EPA that the primary source of PCB exceedances of permit TALs (and therefore NM WQC) at site monitoring area S-SMA-.25 is from urban runoff. *Id.* at 22.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

56. In their 2013 Alternative Compliance Request to EPA, LANL claims that installing controls at the storm water point sources in S-SMA-.25, a drainage area in the Sandia Canyon Watershed, would not lead to attainment of TALs (the same as NM WQC) because the primary source of exceedances are from storm water runoff from urban and natural background sources. *Id.* at 26, 28. LANL goes on to identify urban storm water runoff as the main source of TAL and NM WQC exceedances for zinc, copper and PCBs. *Id.* at 28.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

57. LANL identifies urban runoff from sources such as brake pad wear on parking lots, galvanized fencing, culverts and other building materials as the sources of zinc and copper exceedances of TALs (same as NM WQC). *Id.* at 31.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

58. Site-specific storm water run-on samples collected by LANL in Sandia Canyon demonstrate urban storm water runoff contributes to TAL (same as NM WQC) exceedances of PCBs. *Id.*

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

59. In another drainage area in Sandia Canyon (S-SMA-2.0), LANL identifies anthropogenic urban sources as one of the sources of TAL (and NM WQC) exceedances for PCBs. Alternative Compliance Request 2 at 14.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

60. LANL identifies runoff from urban development as the likely source of TAL (and NM WQC) exceedances for copper. At one specific site in Sandia Canyon, which is the focus of one of their alternative compliance request, copper exceedances from urban runoff ranged from 4.78 ug/L to 21.3 ug/L. The TAL (same as NM WQC) for copper is 4.3 ug/L. *Id.* at 16.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

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63. In 2009 the New Mexico Environment Department (NMED) issued a Notice of Violation (NOV) and proposed penalty of $13,200 to Los Alamos County for violating state surface water quality standards by discharging contaminated storm water.

The County has since mitigated this site and no penalty charges were paid. In 2012, the County constructed a retention pond to prevent the release of storm water from the site. Since then, a private developer has improved the site and provided water quality measures while maintaining a retention pond to prevent the release of storm water runoff from the site.

64. NMED collected storm water samples on 8/3/07 that showed a geometric mean of 0.16316 ug/ of PCBs. They collected another set of samples on 9/5/07 that revealed a geometric mean of 0.00360 ug/L of PCBs. These samples were approximately 255 times and six times the state's PCB human health WQC. The 8/3/07 sample was 12 times the PCB wildlife habitat WQC. Press Release LA County Violations.

As stated above, this site has been mitigated by building a retention pond to prevent the release of storm water runoff from the site.

65. NMED sampling data in 2007 and 2006 show levels of PCBs in storm water draining off of urban areas in Los Alamos Townsite to be more than 34,000 times greater than the NM Human Health WQC. The concentration of PCBs at Los Alamos County Yard (site 1; 28CtyYdSite1) on 8/2/06 was 22.2 ug/L, which is over 34,000 times greater than the Human Health WQC. A sample taken on 7/26/07 from Timber Ridge (Timber Ridge drainage; 28TimbRg000.2) showed a PCB concentration of 0.133 ug/L, which is 207 times greater than the Human Health WQC. Timber Ridge is a development of apartment buildings in Los Alamos Townsite that drains into Los Alamos Canyon.11

As stated above, this site has been mitigated by building a retention pond to prevent the release of storm water runoff from the site.

66. The City of Santa Fe diverts water from the Rio Grande at its surface water diversion, the Buckman Direct Diversion Project. This surface water is critical to Santa Fe's effort to meet its current and future water needs. City of Santa Fe, *How the BDD Works*, http://bddproject.org/about-the-bdd/how-the-bdd-works/. Santa Fe shuts down its diversion whenever the City's monitors in Los Alamos and Pueblo Canyons detect storm water flows. City of Santa Fe, *Buckman Direct Diversion Project Water Quality FAQs*, http://bddproject.org/water-quality/water-quality-faqs/.

It is acknowledged that the City of Santa Fe diverts water from the Rio Grande, however the overall conclusion from the Buckman Direct Diversion Project, Independent Peer Review, Final Report from December 3, 2010 states the following:

- *In summary, stormwater discharge from LANL is episodic, and does not pose a health risk, and contaminated groundwater at LANL does not impact the water quality at the BDD intake.*
- *There is no significant health risk for BDD water system consumers.*
- *Chemical and radionuclide levels in the Rio Grande are within acceptable drinking water criterias and/or are naturally occurring.*
- *There is very little if any contribution from LANL to the Rio Grande during normal baseflow conditions.*
- *Stormwater discharge from LANL does not pose a health risk.*
- *There are no contributions from LANL groundwater to the Buckman well field.*

67. The City of Albuquerque also diverts surface water from the Rio Grande and uses it for drinking water. Albuquerque Bernalillo County Water Utility Authority, *San Juan Chama Project*, http://www.abcwua.org/San_Juan_Chama_Project.aspx. The City relies upon this diversion project, referred to as the San Juan-Chama Drinking Water Project, for the majority of the City's drinking water and projects a substantial need for this surface water far into the future.12

The City of Albuquerque and the Albuquerque Bernalillo Water Utility Authority have consistently used San Juan-Chama water captured in the Rio Grande with the water delivered to their customers meeting all Safe Drinking Water Quality requirements.

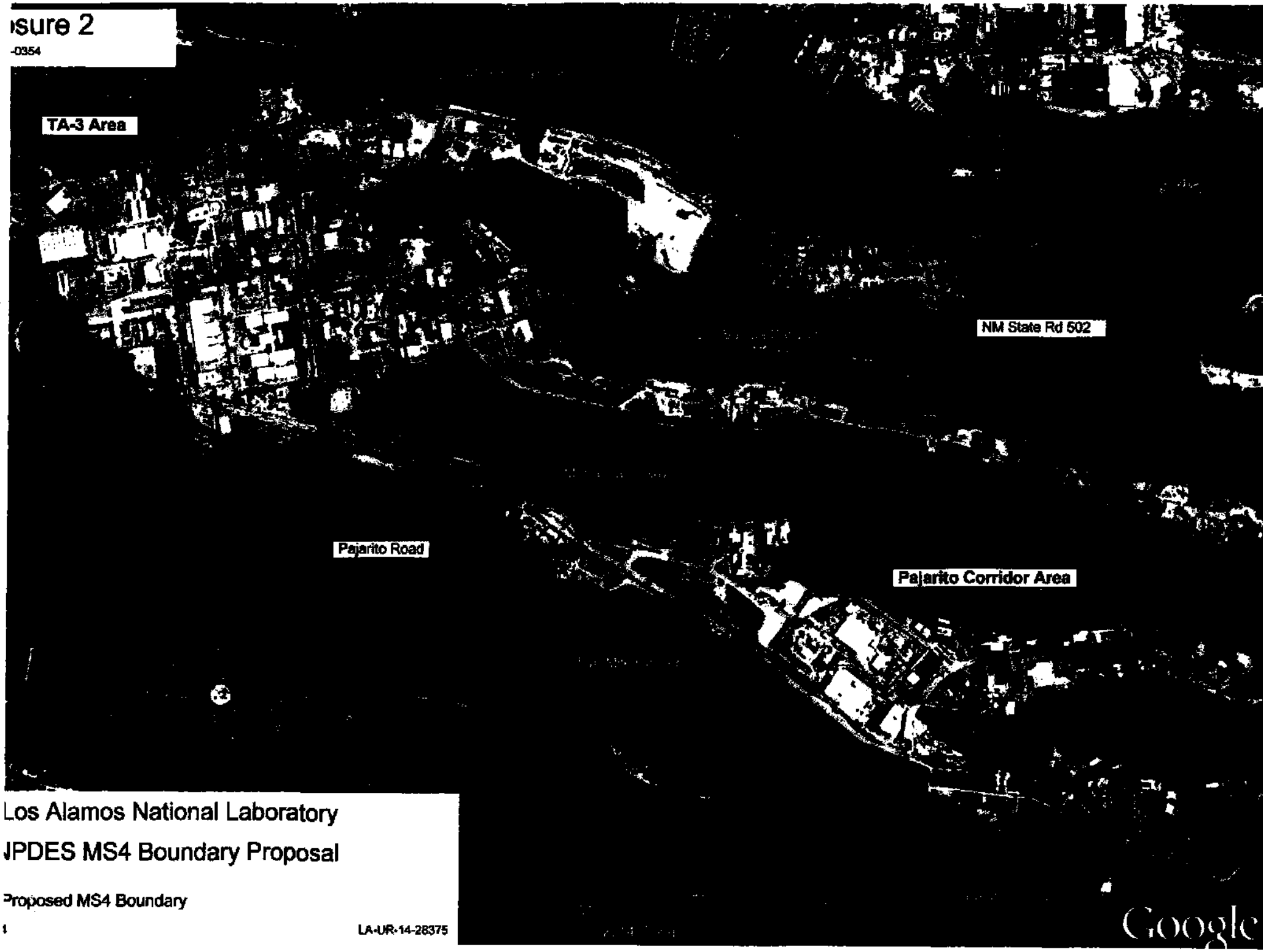
ENCLOSURE 2

LANL NPDES MS4 Boundary Proposal

ENV-DO-14-0354

LA-UR-14-28375

Date: NOV 2 0 2014



sure 2

-0354

Los Alamos National Laboratory

JPDES MS4 Boundary Proposal

Proposed MS4 Boundary

LA-UR-14-28375

LOS ALAMOS COUNTY

1000 Central Avenue, Suite 350 - Los Alamos, NM 87544
Phone (505) 663-1750 Fax (505) 662-8079
Website: www.losalamosnm.us

COUNTY COUNCIL
Council Chair
Geoff Rodgers
Council Vice-Chair
Kristin Henderson
Councilors
Frances M. Berting
Steven Girrens
David Izraelevitz
Rick Reiss
Pete Sheehey
COUNTY ADMINISTRATOR
Harry Burgess

October 29, 2014

Mr. Brent Larsen
Chief NPDES Permits and Technical Assistance Section
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Response to the Amigos Bravos Petition, Dated June 30th, 2014 to William K. Honker, Division Director

Dear Mr. Larsen,

Please accept this letter in response to the petition submitted by Amigos Bravos to the Environmental Protection Agency regarding an MS4 designation for Los Alamos County. This letter will focus on four main points of discussion. First, the population of Los Alamos County has shown a decline for the last thirteen years. Second, statements gathered from existing Los Alamos National Laboratory reports and studies have not been represented accurately. Third, the downstream impact of storm water runoff from Los Alamos County and the Los Alamos National Laboratory has not had an adverse impact to the various communities. Finally, if Los Alamos County and Los Alamos National Laboratory are designated as an MS4, the boundary for the designation should be discussed.

The population in 1990 for Los Alamos County was 18,115, the 2000 population was 18,343, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County was 17,798. This shows that there has been very little growth in the County over the last twenty years. In fact, there has been a decline in the population over the last thirteen years. The persons per square mile in 2010 was 164 for the overall County.

The statement of facts gathered from the various Los Alamos National Laboratory reports have not all been portrayed accurately, as you will see in the enclosed Response to the Statement of Facts document. Several of these statements have been taken out of context.

The communities downstream of Los Alamos County and Los Alamos National Laboratory have not experienced an adverse impact from the storm water runoff. The overall conclusion from the Buckman Direct Diversion (BDD) Project, Independent Peer Review, Final Report from December 3, 2010 is as following:

- Storm water discharge from Los Alamos County and Los Alamos National Laboratory is episodic, and does not pose a health risk, and contaminated groundwater at Los Alamos National Laboratory does not impact the water quality at the BDD intake.
- There is no significant health risk for BDD water system consumers.
- Chemical and radionuclide levels in the Rio Grande are within acceptable drinking water criteria's and/or are naturally occurring.
- There is very little if any contribution from Los Alamos County and Los Alamos National Laboratory to the Rio Grande during normal base flow conditions.
- Storm water discharge from Los Alamos County and Los Alamos National Laboratory does not pose a health risk.
- There are no contributions from Los Alamos County and Los Alamos National Laboratory groundwater to the Buckman well field.

Therefore, based on the above information, Los Alamos County respectfully requests that the EPA respond to the petition with a "No Designation" finding.

However, per your request, if Los Alamos County is designated as an MS4, the County requests that the boundary of the designation be limited to the Urbanized Cluster areas be confined to the mesa tops of Los Alamos town site. Los Alamos National Laboratory will provide a similar map of their requested designated areas. Additionally, the County requests that White Rock not be included in the designation. The 2010 population density of White Rock is approximately 812 people per square mile, which is below the 1,000 people per square mile requirement for an MS4 Phase II designation. Enclosed is an exhibit of the proposed boundary limits.

Additionally, if Los Alamos County is designated as an MS4, then the County requests to be covered under a General Permit. This will allow the County to partner with Los Alamos National Laboratory and utilize the resources and expertise of each agency to meet the six minimum control measures required by an MS4 designation.

If you require additional information, please contact Bryan Aragon at 505.662.8117 or bryan.aragon@lacnm.us.

Sincerely,

Harry Burgess
County Administrator

Enclosures

Response to the Statement of Facts

Below are responses to the statement of fact submitted by Amigos Bravos. The statements which are not listed below did not require a written response or were assigned a "no comment" response. These responses are a collaborative effort between Los Alamos County and Los Alamos National Laboratory.

1. Los Alamos County in located in north-central New Mexico, approximately 60 miles north northeast of Albuquerque and 25 miles northwest of Santa Fe.

We concur.

2. According to the 2010 Census, the county has a population of 17,950. The main population center is called the Los Alamos Town site. The Town site is a Census Designated Place (CDP) and according to the 2010 Census the population of the CDP was 12,019. According to the 2010 Census, the density of the Los Alamos Town site CDP is 1,078.7 persons per square mile. The other densely inhabited place in the County is the community of White Rock Canyon, which is also a CDP. According to the 2010 Census the population of White Rock Canyon is 5,725 and the density is 811.8 persons per square mile. 2010 Census, http://quickfacts.census.gov/qfd/states/35/3542320.html.

The 1990 population for Los Alamos County was 18,115, the 2000 population was 18,343, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County is 17,798. This shows that there has been very little growth to the County over the last twenty years. The persons per square mile in 2010 was 164 for the overall County.

6. The Pajarito Plateau consists of a series of finger-like mesas separated by deep east-to-west-oriented canyons cut by streams. The mesa tops range in elevation from approximately 7,800 feet on the flanks of the Jemez Mountains to about 6,200 feet at the edge of White Rock Canyon. Most Laboratory and community developments are confined to the mesa tops.

We concur, most of the Laboratory and Los Alamos Town site are confined to the mesa tops.

13. Pueblo Canyon is impaired for Gross Alpha, PCBs, Aluminum, Copper, and Zinc. Industrial/commercial site storm water discharge, post-development erosion and sedimentation are listed as sources of impairment.7

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

The report was adopted by the WQCC on September 9, 2014 and forwarded to EPA Region VI for approval.

Copper is not listed as a cause of impairment for the main stem of Pueblo Canyon from the headwaters to Los Alamos Canyon

14. New Mexico Environment Department (NMED) data presented in NMED's Pajarito Plateau Assessment show levels of PCBs in Pueblo Canyon right in the middle of the urbanized areas at LANL and at Los Alamos Town site (sampling station EO55) to be over 3,500 times greater than the New Mexico Human Health WQC and 16 times greater than the New Mexico Wildlife Habitat WQC.[8]

The NMED Pajarito Plateau Assessment identifies a sample that was taken within Pueblo Canyon at the levels indicated, but this sample was not taken at sampling station E055. Also, none of the urbanized areas at LANL discharge to Pueblo Canyon.

15. Mortandad Canyon is impaired for Aluminum, Copper and Gross Alpha. Impervious surface/parking lot runoff, post-development erosion and sedimentation, and watershed runoff following forest fire are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 238.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

16. Los Alamos Canyon within LANL property is impaired for Gross Alpha, PCBs, Aluminum, Copper, Mercury, and Zinc. *Id.* at 125 and 127.

Copper and zinc are not listed as a cause of impairment for the main stem of Los Alamos Canyon located within LANL property. In the 2014-2016 listing cycle, mercury was removed as a cause of impairment in the assessment unit below DP Canyon to LANL boundary.

19. Sandia Canyon is impaired for PCBs, Aluminum, Copper, Gross Alpha, and Mercury. Post-development erosion and sedimentation are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 250-51.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

Mercury is not listed as a cause of impairment in Sandia Canyon. Copper is no longer listed as a cause of impairment in the lower assessment unit of Sandia Canyon.

21. Pajarito Canyon is impaired for Gross Alpha, Aluminum, PCBs, and Copper. Post-development erosion and watershed runoff following forest fire are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 240-43.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

Copper is not listed as a cause of impairment for any of the assessment units within Pajarito Canyon.

23. The target action levels (TALs) developed in the LANL IP are based on and equivalent to New Mexico State water quality criteria. LANL IP at 3 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in the this petition report exceedances of TALs and do not reference NM WQC.

30. When collecting data for the PCB report, storm water samplers were placed in ephemeral channels around the edge of urban development in Los Alamos County and LANL. No urban samplers were located below any know areas of concentrated contamination (point sources). PCB Report at 59.

The Current understanding of geo-hydrologic modeling in the regional aquifer suggests the aquifer pumped by the Buckman well field is not directly fed by the aquifer underlying the Los Alamos County localized region.

37. The LANL PCB Report shows that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters. The PCB Report calculated the baseline value for total PCBs in storm water runoff from the Los Alamos Town site to be 98 ng/L, which is substantially greater than the baseline value of 11.7 ng/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.* at 49, 64.

The PCB Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters.

39. Studies have shown that motor oil accumulation on parking lots that then is discharged during storm events is a large contributor of zinc in storm water. *Id.* at 15.

The referenced LANL Alternative Compliance Request cites a study identifying that motor oil contains zinc, and that motor oil accumulating on paved surfaces contributes to an industrial facility's storm water discharge. It does not state that motor oil accumulation on parking lots that then is discharged during storm events is a large contributor of zinc in storm water.

47. The maximum value for dissolved cadmium in urban runoff samples from LANL and Los Alamos Town site was 0.894 ug/L. *Id.* at 33. The TAL and NM WQC for dissolved cadmium is 0.6 ug/L. LANL IP at 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

48. LANL sampling found concentrations of dissolved copper in Los Alamos urban storm water discharges at values well above the NM WQC. The maximum value for dissolved copper in urban runoff samples from LANL and Los Alamos Town site was 31.8ug/L and the mean value was 10.17 ug/L. Metals Report at 34. The TAL and NM WQC for dissolved copper is 4.3 ug/L. LANL IP at 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

49. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of copper to receiving waters. The Metals Report calculated the baseline value for dissolved copper in storm water runoff in Los Alamos County to be 32.3 ug/L, which is substantially greater than the baseline value of 3.43 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. Metals Report at 17, 37.

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of copper to receiving waters.

50. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of zinc to receiving waters. The Metals Report calculated the baseline value for dissolved zinc in storm water runoff in Los Alamos County to be 1,120 ug/L, which is substantially greater than the baseline value of 109 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.*

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of zinc to receiving waters.

51. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of nickel to receiving waters. The Metals Report calculated the baseline value for dissolved nickel in storm water runoff in Los Alamos County to be 7.57 ug/L, which is substantially greater than the baseline value of 3.53 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.*

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of nickel to receiving waters.

52. LANL sampling found concentrations of dissolved zinc in Los Alamos urban storm water discharges at values well above the NM WQC. The maximum value for dissolved zinc in urban runoff samples from LANL and Los Alamos Town site was 882 ug/L and the mean value was 181 ug/L. *Id.* at 34. The TAL and NM WQC for dissolved copper is 42 ug/L. LANL IP 4 (Part I).

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53. LANL, in their 2013 Alternative Compliance request to EPA, reports that there is copper storm water pollution above NM WQC from urban development in Sandia Canyon. Alternative Compliance Request .25 at 15.

The referenced LANL Alternative Compliance Request reports that copper values exceed TALs. It does not state values exceed NM WQC.

55. LANL reports in their 2013 Alternative Compliance request to EPA that the primary source of PCB exceedances of permit TALs (and therefore NM WQC) at site monitoring area S-SMA-.25 is from urban runoff. *Id.* at 22.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

56. In their 2013 Alternative Compliance Request to EPA, LANL claims that installing controls at the storm water point sources in S-SMA-.25, a drainage area in the Sandia Canyon Watershed, would not lead to attainment of TALs (the same as NM WQC) because the primary source of exceedances are from storm water runoff from urban and natural background sources. *Id.* at 26, 28. LANL goes on to identify urban storm water runoff as the main source of TAL and NM WQC exceedances for zinc, copper and PCBs. *Id.* at 28.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

57. LANL identifies urban runoff from sources such as brake pad wear on parking lots, galvanized fencing, culverts and other building materials as the sources of zinc and copper exceedances of TALs (same as NM WQC). *Id.* at 31.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

58. Site-specific storm water run-on samples collected by LANL in Sandia Canyon demonstrate urban storm water runoff contributes to TAL (same as NM WQC) exceedances of PCBs. *Id.*

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

59. In another drainage area in Sandia Canyon (S-SMA-2.0), LANL identifies anthropogenic urban sources as one of the sources of TAL (and NM WQC) exceedances for PCBs. Alternative Compliance Request 2 at 14.

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63. In 2009 the New Mexico Environment Department (NMED) issued a Notice of Violation (NOV) and proposed penalty of $13,200 to Los Alamos County for violating state surface water quality standards by discharging contaminated storm water.10

The County has since mitigated this site and no penalty charges were paid. In 2012, the County constructed a retention pond to prevent the release of storm water from the site. Since then, a private developer has improved the site and provided water quality measures while maintaining a retention pond to prevent the release of storm water runoff from the site.

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As stated above this site has been mitigated by building a retention pond to prevent the release of storm water runoff from the site.

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As stated above this site has been mitigated by building a retention pond to prevent the release of storm water runoff from the site.

66. The City of Santa Fe diverts water from the Rio Grande at its surface water diversion, the Buckman Direct Diversion Project. This surface water is critical to Santa Fe's effort to meet its current and future water needs. City of Santa Fe, *How the BDD Works*, http://bddproject.org/about-the-bdd/how-the-bdd-works/. Santa Fe shuts down its diversion whenever the City's monitors in Los Alamos and Pueblo Canyons detect storm water flows. City of Santa Fe, *Buckman Direct Diversion Project Water Quality FAQs*, http://bddproject.org/water-quality/water-quality-faqs/.

We concur, however the overall conclusion from the Buckman Direct Diversion Project, Independent Peer Review, Final Report from December 3, 2010 states the following:

- *Storm water discharge from Los Alamos County and LANL is episodic, and does not pose a health risk, and contaminated groundwater at Los Alamos County and LANL does not impact the water quality at the BDD intake.*
- *There is no significant health risk for BDD water system consumers.*
- *Chemical and radionuclide levels in the Rio Grande are within acceptable drinking water criterias and/or are naturally occurring.*
- *There is very little if any contribution from Los Alamos County and LANL to the Rio Grande during normal base flow conditions.*
- *Storm water discharge from Los Alamos County and LANL does not pose a health risk.*
- *There are no contributions from Los Alamos County and LANL groundwater to the Buckman well field.*

67. The City of Albuquerque also diverts surface water from the Rio Grande and uses it for drinking water. Albuquerque Bernalillo County Water Utility Authority, *San Juan Chama Project*, http://www.abcwua.org/San_Juan_Chama_Project.aspx. The City relies upon this diversion project, referred to as the San Juan-Chama Drinking Water Project, for the majority of the City's drinking water and projects a substantial need for this surface water far into the future.12

The City of Albuquerque and the Albuquerque Bernalillo Water Utility Authority have consistently used San Juan-Chama water captured in the Rio Grande with the water delivered to their customers meeting all Safe Drinking Water Quality requirements.

Vicinity Map

Los Alamos County
Proposed MS-4 Boundary

Legend

- Proposed MS-4 Boundary
- Los Alamos County Boundary

Appendix 3: Summary of Issues Raised on the Petition by LANL and Los Alamos Country

	Summary of Issues Raised by Los Alamos County and the Los Alamos National Laboratory (LANL) on the Amigos Bravos Petition				
#	**Topic**	**Amigos Bravos Petition To EPA Region 6**	**Los Alamos County**	**Los Alamos National Laboratory (LANL)**	**EPA's Response**
1	**Population growth/densely populated**	The petition states that The Los Alamos has meets the small MS4 definition as detailed in 40 CFR 122.32 in that it has a population greater than 10,000 and a population density of greater than 1,000 per square mile. According to the 2010 Census, the density of the Los Alamos Town site CDP is 1,078.7 persons per square mile. The other densely inhabited place is the County is the community of White Rock Canyon and the density is 811.8 persons per square mile. Adding to the density in Los Alamos County is its growing commuter population. As of the year 2000 the commuter population in the county was 8,673 and had grown steadily from 1980 through 2000. By 2010, the commuter population had grown to 9,072.	The population in 1990 for Los Alamos was 18,115, the 2000 population was 18,343, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County was 17,798. This shows that there has been very little growth to the County over the last twenty years.	In regards to the population, the number of residents of Los Alamos County is stable or decreasing. Employment levels at the Laboratory have similarly remained stable or decreased. These numbers are expected to remain the same if not decreased further.	Note that unlike the Phase I and II automatic designations by rule, neither population nor population density is a mandatory criteria under any of the designation provisions. EPA is focusing more on the impaired waters and potential for discharges to be causing or contributing to the impairments.

2	**LANL individual storm water permit**	LANL has coverage under an individual storm water permit NM0030759 (LANL IP), issued by the Environmental Protection Agency. This permit covers 405 contaminated sites, which are called either Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs). These sites are monitored at 250 Site Monitoring Areas (SMAs). NM0030759 only regulates these sites. NM0030759 does not regulate general urbanized runoff at LANL or from the Los Alamos Townsite. See NPDES permit # NM0030759 (LANL IP). The target action levels (TALs) developed in the LANL IP are based on and equivalent to New Mexico State water quality criteria (WQC). LANL IP at 3 (Part I).	Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels (TALs) are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.	Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels (TALs) are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.	EPA agrees that the TALs are not same as the NM WQC but there also have been several contaminants exceedances in the storm water samples collected by the NMED Pajarito Plateau Special Study / Assessment. In addition, based on both 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report and the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury.

3	**LANL studies of storm water runoff on PCBs contamination**	The LANL PCB study found 40 of the 41 Los Alamos urban storm water samples were above the New Mexico human health water quality criteria for PCBs and 19 of the 41 Los Alamos urban storm water samples were above the New Mexico wildlife habitat water quality criteria (WQC) for PCBs. Id. at 4 (Paragraphs 33-34). The LANL report concluded that suspended PCBs carried by urban runoff from the Los Alamos Townsite were 10 to 200 times more enriched with PCBs than at non-urban influenced Pajarito Plateau sites.	The statement of facts gathered from the various LANL reports have not all been portrayed accurately. The PCB report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amount of PCBs to receiving waters.	The PCB report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amount of PCBs to receiving waters. LANL/ Department of Energy (DOE) are unaware of data reflecting Laboratory impacts on any drinking water system. The Los Alamos County 2013 Water Quality Report, summarizes the most recent monitoring results required by EPA's Safe Drinking Water Act Program. The water is Los Alamos County meets all federal and state drinking water quality standards.	Based on both 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report and the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury. In addition, EPA notices that in the NMED Pajarito Plateau Special Study / Assessment, the 2007 NMED sampling data in 2007 and 2006 show levels of PCBs in storm water draining off of urban areas in Los Alamos Townsite to be more than 34,000 times greater than the NM Human Health WQC.

4	**LANL studies of storm water runoff on metal contamination**	A Laboratory study of metals contamination in storm water runoff from urban areas at LANL and the Los Alamos Townsite found exceedances of New Mexico water quality criteria for cadmium, copper, and zinc.	The statement of facts gathered from the various LANL reports have not all been portrayed accurately. The metal report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amount of metals to receiving waters.	The metal report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amount of metals to receiving waters. LANL/ Department of Energy (DOE) are unaware of data reflecting Laboratory impacts on any drinking water system. The Los Alamos County 2013 Water Quality Report, summarizes the most recent monitoring results required by EPA's Safe Drinking Water Act Program. The water is Los Alamos County meets all federal and state drinking water quality standards.	Based on both 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report and the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury. Discharges containing these pollutants have the potential to be causing or contributing to the in stream impairments.

5	**Possible sources of pollutants in the New Mexico Clean Water Act §303(d)/305(b) Integrated Report**	Based on the **2012-2014** State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report , several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury and **Impervious surface/parking lot runoff, post-development erosion and sedimentation, and watershed runoff following forest fire are listed as sources of impairment.**	Los Alamos County states that in the **2014-2016** State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, the probable source lists are removed and replaced with "Source Unknown". Probable sources are to be developed by the New Mexico Environmental Department in the Total Maximum Daily Load (TMDL) planning process.	LANL states that in the **2014-2016** State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, the probable source lists are removed and replaced with "Source Unknown". Probable sources are to be developed by the New Mexico Environmental Department in the Total Maximum Daily Load (TMDL) planning process.	Based on both 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report and the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury. Even though the probable causes and sources of impairments are removed and replaced with "Source Unknown", urban and LANL discharges in the area do contain these pollutants.

6	**Buckman Direct Diversion(BDD) Project**	The City of Santa Fe diverts water from the Rio Grande at its surface water diversion, the BDD Project. This surface water is critical to Santa Fe's effort to meet its current and future water needs. City of Santa Fe, How the BDD Works, http://bddproject.org/about-the-bdd/how-the-bdd-works/. Santa Fe shuts down its diversion whenever the City's monitors in Los Alamos and Pueblo Canyons detect storm water flows. City of Santa Fe, Buckman Direct Diversion Project Water Quality FAQs, http://bddproject.org/water-quality/water-quality-faqs/.	It is acknowledged that the City of Santa Fe diverts water from the Rio Grande, however the overall conclusion from the Buckman Direct Diversion Project, Independent Peer Review, Final Report from December 3, 2010 states that storm water discharge from Los Alamos County and LANL is episodic, does not pose a health risk, and contaminated ground water at Los Alamos County and LANL does not impact the water quality at the BDD intake.	It is acknowledged that the City of Santa Fe diverts water from the Rio Grande, however the overall conclusion from the Buckman Direct Diversion Project, Independent Peer Review, Final Report from December 3, 2010 states that storm water discharge from Los Alamos County and LANL is episodic, does not pose a health risk, and contaminated ground water at Los Alamos County and LANL does not impact the water quality at the BDD intake.	BDD once was shut down due to the storm water flow. Designation and regulation of storm water discharges from Los Alamos County and LANL will reduce the potential for water quality impacts in the Rio Grande.

7	**Proposed MS4 Boundary**	MS4 designation on Los Alamos County.	If Los Alamos is designated as an MS4, the County requests that the boundary of the designation be limited to the Urbanized Cluster areas be confined to the mesa tops of Los Alamos town site only. The County, requests that White Rock not be included in the designation.	LANL Proposed MS4 Boundary would cover portions of LANL closest to Los Alamos Townsite, but not all of LANL property.	This designation of regulated small municipal separate storm sewer systems requiring NPDES permit coverage applies to municipal separate storm sewer systems owned or operated by: 1. LANL located within Los Alamos County. 2. Los Alamos County located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census. 3. New Mexico Department of Transportation located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census, plus serving or interconnected with regulated LANL storm sewers. Other storm sewers in more rural areas of the County would not be designated.