



BILL RICHARDSON  
Governor

DIANE DENISH  
Lieutenant Governor

Permit  
NEW MEXICO

ENVIRONMENT DEPARTMENT

*Hazardous Waste Bureau*

2905 Rodeo Park Drive East, Building 1

Santa Fe, New Mexico 87505-6303

Phone (505) 476-6000 Fax (505) 476-6030

[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)

ENTERED



RON CURRY  
Secretary

JON GOLDSTEIN  
Deputy Secretary

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

May 19, 2008

David Gregory  
Federal Project Director  
Los Alamos Site Office  
Department of Energy  
528 35<sup>th</sup> Street, Mail Stop A316  
Los Alamos, NM 87544

David McInroy  
Remediation Services Deputy Project Director  
Los Alamos National Laboratory  
P.O. Box 1663, MS M992  
Los Alamos, NM 87545

**RE: FINAL DECISION AND RESPONSE TO PUBLIC COMMENT ON THE  
MODIFICATION TO THE CONSENT ORDER FOR GROUNDWATER  
NOTIFICATION REQUIREMENTS, LOS ALAMOS NATIONAL LABORATORY**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED), the Department of Energy (DOE), and the Los Alamos National Security, L.L.C. (LANS) have agreed to the modification of the notification requirements for groundwater monitoring results under the March 1, 2005 Order on Consent (Order). The modification was required by a Settlement Agreement and Stipulated Final Order (No. HWB-07-27) filed on June 14, 2007. With NMED's signature, the agreement became effective on May 13, 2008.

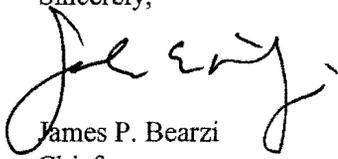
Public comments were solicited by NMED on the proposed Order modification for a period of 60 days beginning August 8, 2007. NMED also held a public meeting on August 27, 2007, to provide additional information on the proposed modification to the Order. Comments concerning the Order modification were received from one commenter. One change was made to the proposed language based on the comments. The final modification language, a redline strikeout version of the modification language, and the response to comments can be viewed on NMED's web page at [www.nmenv.state.nm.us/hwb/lanlperm.html](http://www.nmenv.state.nm.us/hwb/lanlperm.html) under "Modification of Consent Order (5-13-2008)". These documents, as well as the final signature page, are also attached for your review.



Messrs. Gregory and McInroy  
May 19, 2008  
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Should you have any questions please contact John Kieling at (505) 476-6000.

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

Cc:

S. Yanicak, NMED DOE OB, MS J993  
T. Skibitski, NMED DOE OB  
L. King, EPA 6PD-N  
G. Rael, DOE LASO, MS A316  
S. Stiger. ENV MS J591  
file: Reading and LANL'08 General

#### **IV.A.3.g**

#### **Notification**

By the fifteenth day of each month, the Respondents shall review the analytical data from all groundwater monitoring conducted under this Consent Order that was received during the previous month, and shall record the date of such review; provided, however, that if the fifteenth day of a month is a non-business day, then the review shall be conducted by the next business day. The Respondents shall notify the Department orally within one business day after review of the analytical data if such data show detection of a contaminant in a well screen interval or spring at a concentration that exceeds either the WQCC water quality standard or the federal maximum contaminant level if that contaminant has not previously exceeded such water quality standard or maximum contaminant level in such well screen interval or spring.

The Respondents shall notify the Department in writing within fifteen days after review of the analytical data if the data show any of the following:

1. Detection of a contaminant that is an organic compound in a spring or screened interval of a well if that contaminant has not previously been detected in the spring or screened interval.
2. Detection of a contaminant that is a metal or other inorganic compound at a concentration above the background level in a spring or screened interval of a well if that contaminant has not previously exceeded the background level in the spring or screened interval.
3. Detection of a contaminant in a spring or screened interval of a well at a concentration that exceeds either one-half the New Mexico water quality standard or one-half the federal maximum contaminant level, or if there is no such standard for the contaminant, one-half the EPA Region VI Human Health Medium-Specific Screening Level for tap water, if that contaminant has not previously exceeded one-half such standard or screening level in the spring or screened interval.
4. Detection of perchlorate in a spring or screened interval of a well at a concentration of 2 µg/L or greater if perchlorate at such concentration has not previously been detected in the spring or screened interval.
5. Detection of a contaminant that is a metal or other inorganic compound in a spring or screened interval of a well at a concentration that exceeds two times the background level for the third consecutive sampling of the spring or screened interval.
6. Detection of a contaminant in a spring or screened interval of a well at a concentration that exceeds either one-half the New Mexico water quality standard or one-half the federal maximum contaminant level, and that has increased for the third consecutive sampling of that spring or screened interval.

The written notification shall be submitted to the Department in a letter report that includes in table format, at a minimum, the date or dates of the sampling event, an identification of the well or spring, the location of the well or spring, the depth of the screened interval of the well or zone sampled, a list of the analytical data that triggered the reporting requirement, any known issues with sample quality, and the specific category for which the data is reported under this Section (IV.A.3.g). The Respondents may submit a proposal for further sampling or investigation, or the Department may require further sampling or investigation.

The Respondents shall develop and maintain an e-mail notification list to notify members of the public concerning groundwater analytical data reported under this Section (IV.A.3.g). The Respondents shall provide a link on the LANL/Environment Home Page <currently <http://www.lanl.gov/environment>> whereby members of the public may submit a request to be placed on this list. Within five working days of submittal to the Department of the written notification under this Section (IV.A.3.g), the Respondents shall post a notice on the LANL/Environment website and shall notify those on the e-mail notification list.

Previous data to be evaluated under this Section (IV.A.3.g) to determine whether specified levels have been exceeded, or to determine trends in data for three consecutive samples, shall include only data acquired after June 14, 2007. For the purpose of the notice requirements of this Section (IV.A.3.g), the background level of a contaminant shall be the most recent Department-approved 95 percent upper tolerance limit for the background for that contaminant set forth in the *Groundwater Background Investigation Report* prepared under Section IV.A.3.d of this Consent Order once approved by the Department, including any approved revisions, as it may be revised or replaced with another document.

#### **IV.A.3.g**

#### **Notification**

By the fifteenth day of each month, the Respondents shall review the analytical data from all groundwater monitoring conducted under this Consent Order that was received during the previous month, and shall record the date of such review; provided, however, that if the fifteenth day of a month is a non-business day, then the review shall be conducted by the next business day. The Respondents shall notify the Department orally within one business day after review of the analytical data if such data show detection of a contaminant in a well screen interval or spring at a concentration that exceeds either the WQCC water quality standard or the federal maximum contaminant level if that contaminant has not previously exceeded such water quality standard or maximum contaminant level in such well screen interval or spring.

The Respondents shall notify the Department in writing within fifteen days after review of the analytical data if the data show any of the following:

1. Detection of a contaminant that is an organic compound in a spring or screened interval of a well if that contaminant has not previously been detected in the spring or screened interval.
2. Detection of a contaminant that is a metal or other inorganic compound at a concentration above the background level in a spring or screened interval of a well if that contaminant has not previously exceeded the background level in the spring or screened interval.
3. Detection of a contaminant in a spring or screened interval of a well at a concentration that exceeds either one-half the New Mexico water quality standard or one-half the federal maximum contaminant level, or if there is no such standard for the contaminant, one-half the EPA Region VI Human Health Medium-Specific Screening Level for tap water, if that contaminant has not previously exceeded one-half such standard or screening level in the spring or screened interval.
4. Detection of perchlorate in a spring or screened interval of a well at a concentration of 2 µg/L or greater if perchlorate at such concentration has not previously been detected in the spring or screened interval.
5. Detection of a contaminant that is a metal or other inorganic compound in a spring or screened interval of a well at a concentration that exceeds two times the background level for the third consecutive sampling of the spring or screened interval.
6. Detection of a contaminant in a spring or screened interval of a well at a concentration that exceeds either one-half the New Mexico water quality standard or one-half the federal maximum contaminant level, and that has increased for the third consecutive sampling of that spring or screened interval.

The written notification shall be submitted to the Department in a letter report that includes in table format, at a minimum, the date or dates of the sampling event, an identification of the well or spring, the location of the well or spring, the depth of the screened interval of the well or zone sampled, a list of the analytical data that triggered the reporting requirement, any known issues with sample quality, and the specific category for which the data is reported under this Section (IV.A.3.g). The Respondents may submit a proposal for further sampling or investigation, or the Department may require further sampling or investigation.

The Respondents shall develop and maintain an e-mail notification list to notify members of the public concerning groundwater analytical data reported under this Section (IV.A.3.g). The Respondents shall provide a link on the LANL/Environment Home Page <currently <http://www.lanl.gov/environment>> whereby members of the public may submit a request to be placed on this list. Within five working days of submittal to the Department of the written notification under this Section (IV.A.3.g), the Respondents shall post a notice on the LANL/Environment website and shall notify those on the e-mail notification list.

Previous data to be evaluated under this Section (IV.A.3.g) to determine whether specified levels have been exceeded, or to determine trends in data for three consecutive samples, shall include only data acquired after June 14, 2007. For the purpose of the notice requirements of this Section (IV.A.3.g), the background level of a contaminant shall be the most recent Department-approved 95 percent upper tolerance limit for the background for that contaminant set forth in the *Groundwater Background Investigation Report* prepared under Section IV.A.3.d of this Consent Order once approved by the Department, including any approved revisions, as it may be revised or replaced with another document.

**NMED Response to Public Comment**  
**Order Modification Request for Changes to LANL's Groundwater Notification Requirements**  
**May 19, 2008**

CATEGORY	COMMENT AND PAGE NUMBER	COMMENT	NMED REPOSE
Groundwater	Comment 1, Page 1	Had LANL reported the Chromium in January 2004 to NMED as required, at the time the Consent Order was being negotiated, CCNS believes that the Consent Order would have been more protective of groundwater.	The March 1, 2005 Order on Consent (Order) groundwater cleanup requirements in Section VIII were developed for the purpose of protecting groundwater and human health and the environment. For purposes of establishing groundwater cleanup levels, the Order utilizes an extremely protective approach by selecting the lower of two values, Water Quality Control Commission (WQCCs) standards or maximum contaminant levels (MCLs), when both have been established for an individual contaminant. In the event that neither a WQCC standard nor a MCL has been established for a contaminant, NMED will use the most recent version of the EPA Region VI Human Health Medium-Specific Screening Level (HHMSSL) for tap water as a cleanup level.
Fines	Comment 2, Page 1	The fines and penalties were reduced from well over \$900,000 to \$251,870.	The fines and penalties are not a part of the proposed modification of the Order.
Groundwater	Comment 3, Page 1	Including funding for the "RACER" electronic database project as part of the settlement was a mistake. There are many questions about the reliability of the LANL groundwater data and including that data in a public database to calculate risk may allow someone who is at risk to calculate that they are not at risk from LANL radioactive, hazardous and toxic contaminants. In order to correct that error, we strongly urge NMED to require that the RACER electronic database include the disclaimer that the LANL data may be incorrect, questionable and subject	The United States Department of Energy (DOE) and the Los Alamos National Security, LLC (LANS) (collectively, the Respondents) are required to comply with the cleanup requirements included in Section VIII of the Order. RACER risk calculations do not apply to environmental cleanup conducted under the Order.  RACER, including the funding of it, is not a part of this proposed Order modification.

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		to error.	
Groundwater and Drinking Water	Comment 4, Page 2	<p>Almost four years after LANL first discovered the elevated chromium in the regional aquifer, we still do not know the nature and extent and direction of the plume. LANL's computer modeling demonstrates that once a contaminant source reaches the water table below Mortandad Canyon, that the direction of the plume is to the Buckman Wellfield, where the City of Santa Fe pumps over 40% of its drinking water. Figure 4-33, <i>Hydrogeologic Synthesis Report, LA-14263 MS</i>.</p> <p>Given the fact that plutonium-238 was reported in the Buckman Well No. 1 in the City of Santa Fe Water Division 2006 Water Quality Report, as required by the Environmental Protection Agency, our constituency is questioning the safety of their drinking water. More needs to be done to protect our precious water resources.</p>	Investigation of the chromium contamination was initiated under the Interim Measure (IM) and is ongoing under the investigation of Sandia Canyon. Like all water systems, the City of Santa Fe's must comply with the Safe Drinking Water Act, which is assured through sampling for chemical and radioactive contaminants. The proposed Order modification concerns reporting protocols, not ongoing investigations and sampling requirements.
Groundwater and Wells	Comment 5, Page 2	The National Academy of Sciences (NAS) stated that "many if not all of the wells drilled into the regional aquifer under the Hydrogeologic Work Plan appear to be compromised in their ability to produce water	NMED agrees with the Commenter's' concerns regarding the ability of some regional wells to produce representative water samples. However, drilling methods and the representativeness of samples are not a part of this proposed Order modification.

**Note:** Page numbers were not included in the original comments received on October 10, 2007. NMED numbered the pages and renumbered comments in chronological order

NMED Response to Public Comment  
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		<p>samples that are representative of ambient groundwater for the purpose of monitoring." <i>Plans and practices for Groundwater Protection at the LANL, Final</i>, p. 49.</p> <p>Granted that the regional wells, R-35 (a) and (b), were drilled with only air rotary casing advance in the regional aquifer, CCNS is adamant that all future wells drilled into the perched zones above the regional aquifer and the regional aquifer must be drilled using air rotary, casing advance drilling method with only air and limited use of water as drilling fluids.</p> <p>Further, at the June 8, 2007 release of the NAS report, Committee Chair, Larry Lake basically stated that the only cleanup decisions that can be made, based on the current understanding of groundwater beneath LANL, is excavation of the wastes.</p>	<p>Comment noted. No response necessary.</p> <p>NMED does not agree that the NAS Committee Chair advocates excavation of all wastes at LANL.</p>
Notification	Comment 6, Page 2	<p>The notification requirements should consistently apply to all contaminated media at LANL which is regulated by the Consent Order and Permit, be it water, soils or sediments. If the notification requirements for all contaminated media cannot be</p>	<p>The proposed Order modification addresses notification requirements for repeated, periodic monitoring for groundwater. Such reporting under this modification is not appropriate for soil, sediment, and pore-gas because the sampling is not repeated at the same location on a periodic basis. Reporting requirements for media other than groundwater, such as that sampled during site investigation activities, are covered under the approved Work Plans and the reporting</p>

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		<p>included in the [Consent Order] modification, then it must be incorporated into the draft LANL HWA/RCRA permit that is currently out for public comment.</p>	<p>requirements outlined in the Order, Section XI. Surface water monitoring is currently covered under the Federal Facilities Compliance Act (FFCA).</p>
<p>Notification and Public Participation</p>	<p>Comment 7, Page(s) 2-3</p>	<p>At the August 27, 2007 public information meeting, participants discussed the need to duplicate the public notification requirements that are found in the HWA permit for the Waste Isolation Pilot Plant (WIPP), another DOE site in New Mexico, for the Permits and Consent Orders for LANL and Sandia National Laboratories. Through the notification process, the public is kept informed about developments in the permitting process, and in the case the Consent Order process, the public is kept informed about the correspondence between the Regulator and the Permittees. EPA also provides an electronic public notification process regarding WIPP submittals. The public notification requirements mandate that the Permittees provide an electronic public notification system for the release of documents that are required by the Permit (and would include the Consent Order for LANL and SNL) to those who sign up. The HWA</p>	<p>The proposed Order modification addresses the notification requirements for groundwater monitoring only.</p> <p>Public notification of documents under LANL's permit or corrective action documents or of documents for other facilities not related to groundwater monitoring is not a part of this proposed Order modification. NMED nevertheless agrees that email notifications to interested persons of reports under the proposed Order modification would facilitate public participation in LANL corrective action. The Order will be modified to require such notification.</p>

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		<p>permits and Consent Orders for both LANL and SNL must include the same electronic public notification requirements in them as for the HWA permit for WIPP. The public notification requirements must include notification of decisions made by NMED, either approval, approval with modification, or denial of the submittals by the Permittees.</p> <p>As an additional method to provide public participation and to improve the quality of any permit modification requests (PMRs), before any PMR is submitted to NMED, the Permittees provide paper and electronic copies of the draft PMR to those who request it prior to a pre-submittal meeting that the Permittees host. The pre-submittal documents are sent and posted on the WIPP website in enough time to allow the public to review them prior to the meeting.</p>	
Analytical Methods	Comment 8, Page 3	Section IV.A.3.g. With regard to the Permittees' review of the analytical data as required in the proposed Section IV.A.3.g, the Permittees must be required to use the most sensitive analytical methods first. In several	Methods are proposed in the Interim Facility Wide Groundwater Monitoring Plan (IFWGMP). The Respondents are required to use the methods in this approved plan.

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		<p>cases, the Permittees have not used the most sensitive methods, thus reporting "not-detects" for groundwater contaminants. NMED must use its enforcement powers to ensure that the Permittees are using the most sensitive analytical methods.</p> <p>For example, the Permittees report that a deep perched zone below Mortandad Canyon is contaminated with the very mobile contaminant 1,4-dioxane but that the contamination is "not detected" in the regional aquifer.</p> <p>The analytical method used to investigate contamination in the regional aquifer has a limit of detection for 1,4-dioxane of 50 parts per billion (ppb), whereas there are analytical methods with a limit of detection of lower than 5 ppb for this contaminant. Early detection of contamination requires the most sensitive analytical methods, and this is not the practice at LANL.</p>	<p>Section IX.C.3.c of the Order requires the Respondents to use the lowest reporting limits for each analytical method, which shall not exceed background, screening, or cleanup levels.</p>
<p>Reporting Exceedance</p>	<p>Comment 9, Page 4</p>	<p>The Permittees must be required to report to NMED in writing within seven business days if the contaminant concentration exceeds</p>	<p>The requirements of 40 CFR §264.98(g) apply to the regulated units as stated in 40 CFR §264.90(a)(2). The fifteen (15) day reporting requirement is based on practical concerns for data management. Immediate threats to human health or the environment, identified by</p>

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		the federal maximum contaminant level, not after the fifteenth of the month. 40 CFR §264.98(g). The permit modification must be changed to reflect the seven business day requirement.	the Respondents, are addressed in accordance with the Order, Section VII.B.5 (Emergency Interim Measures), which obviates any other longer reporting timeframes.
Notification and Wells	Comment 10, Page 4	Section IV.A.3.g.2. What is the current process for determining background levels in springs or screened interval of a well?  How is the public notified about the availability of the <i>Groundwater Background Investigation Report</i> ?	The Respondents document titled <i>Groundwater Background Investigation Report-Revision 3, LAUR 07-2853, EP 2007-0250</i> (May 2007) contains the approved background reference levels.  The <i>Groundwater Background Investigation Report-Revision 3</i> is available on NMED's website: <a href="http://www.nmenv.state.nm.us/hwb/lanlperm.html">http://www.nmenv.state.nm.us/hwb/lanlperm.html</a>
Reporting Exceedance	Comment 11, Page 4	Section IV.A.3.g.5. Permittees must be required to report any detections "of a contaminant that is a metal or other inorganic compound in a spring or screened interval of a well at a concentration that exceeds two times the background level." We cannot wait for the contaminant to be detected "for the third consecutive sampling of the spring or screened interval. We must know the first time it is detected at two times the background level.	The proposed language for Section IV.A.3.g.5, Item 2 discusses the notification requirements for the <i>initial</i> inorganic compound detection concentrations greater than background. Therefore, information regarding exceedance of background will already have been reported. In addition, the watershed specific Periodic Monitoring Reports must include all the data from the three previous monitoring events for a specific watershed.
Reporting Exceedance	Comment 12, Page 4	Section IV.A.3.g.6. Again, we can't wait for the third consecutive increase of a contaminant being detected "in a spring or screened interval of a well at a concentration that exceeds either	The proposed language for Section IV.A.3.g.6, Item 1 discusses the notification requirements for the <i>initial</i> detection of organic compounds at concentrations greater than background. Therefore, information regarding exceedance of background will already have been reported. In addition, the watershed specific Periodic

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		<p>one-half the New Mexico water quality standard or one-half the federal maximum contaminant level.” The Permittees must report to NMED the first time it is put on the alert that the contaminant is present.</p>	<p>Monitoring Reports include all the data from the three previous monitoring events for a specific watershed. Also see Comment # 11.</p>
Analytical Methods	Comment 13, Page 4	<p>Permittees must be required to also report in their written notification the analytical method that was used to detect the contaminant.</p>	<p>Analytical methods used are those required in the Interim Facility Wide Groundwater Monitoring Plan (IFWGMP). Repeating this information is unnecessarily duplicative.</p>
Trending Analysis	Comment 14, Page 4	<p>The trending analysis should begin in April 2004 the date when LANL should have reported the elevated levels of chromium in the regional aquifer. There is a great need to protect groundwater supplies.</p> <p>Allowing the Permittees to begin their trending analysis after June 14, 2007 does not provide adequate protection given that fast moving groundwater contaminants, such as tritium, perchlorate and hexavalent chromium, have been found in the regional aquifer.</p>	<p>The summary of the most recent monitoring events and results of the three previous monitoring events are included in the watershed specific Periodic Monitoring Reports submitted in 2006 and 2007. There is sufficient data available in the Administrative Record to determine trends.</p>

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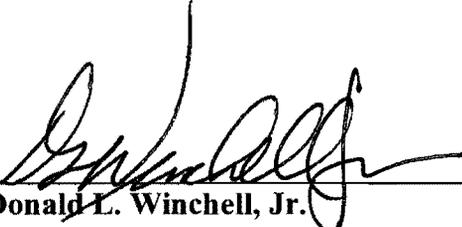
Modification to the March 1, 2005 Order on Consent consists of changes to the notification requirements (Section IV.A.3.g) for groundwater monitoring results. This modification to the March 1, 2005 Order on Consent is hereby AGREED and CONSENTED TO by the Parties, pursuant to Section III.J:

For the NEW MEXICO ENVIRONMENT DEPARTMENT:

  
\_\_\_\_\_  
Ron Curry  
Cabinet Secretary  
New Mexico Environment Department

5/13/08  
\_\_\_\_\_  
Date

For the UNITED STATES DEPARTMENT OF ENERGY:

  
\_\_\_\_\_  
Donald L. Winchell, Jr.  
Manager  
Los Alamos Site Office  
U.S. Department of Energy

5/8/08  
\_\_\_\_\_  
Date

For LOS ALAMOS NATIONAL SECURITY, LLC:

  
\_\_\_\_\_  
for Michael R. Anastasio  
Deputy Director  
Director  
Los Alamos National Laboratory

8 May 2008  
\_\_\_\_\_  
Date